Food in Hospitals

NHS SCOTLAND

FOOD IN HOSPITALS

National Catering and Nutrition Specification for Food and Fluid Provision in Hospitals in Scotland

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SCOTTISH GOVERNMENT

FOOD IN HOSPITALS

National Catering and Nutrition Specification for Food and Fluid Provision in Hospitals in Scotland

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Glossary of Terms

Acute sector	Hospital-based health services which are provided on an in-patient or out-patient basis.
Aids to eating	Dishes, cups and cutlery that have been specifically adapted to allow individuals who have difficulty eating.
À la carte menus	Dishes prepared individually out with the normal set menu.
Anaphylaxis	A severe, potentially life-threatening allergic reaction.
Artificial Nutrition Support	Provided to patients who cannot consume sufficient foods to meet their nutritional requirements. This is maybe in the form of a liquid oral supplement or a specially formulated liquid feed that is provided via a feeding tube either into the stomach or via a vein and is prescribed by a dietitian or doctor.
Assessment	The process of measuring patients' needs and/or the quality of an activity, service or organisation.
Audit	Systematic review of the procedures used for diagnosis, care, treatment, and rehabilitation, examining how associated resources are used and investigating the effect care has on the outcome and quality of life for the patient.
Audit Scotland	Helps the Auditor General and Accounts Commission ensure that public bodies, including the NHS, spend money properly, effectively and efficiently, by carrying out financial and performance audits.
BAPEN	British Association for Parenteral and Enteral Nutrition is a charitable association that raises awareness of malnutrition and works to advance the nutritional care of patients and those at risk from malnutrition in the wider community.
Beverage	Any drink which exceeds 85% water content.
Breakfast	First light meal of the day, usually comprising cereals and toast/rolls etc.
British Dietetic Association (BDA)	The professional association for dietitians in the UK.

Choice	More than one option that meets an individual's dietary and nutrient needs. With careful menu planning, one option may meet the differing needs of more than one patient group.
Coeliac disease	Coeliac disease is a common digestive condition where a person has an adverse reaction to gluten.
Commodity Advisory Panel	Commodity Advisory Panels (CAPs) are advisory groups who have clinical, technical or commercial expertise in the goods or services under consideration. CAPs are formed for each major area of expenditure, including food and fluids, to help to ensure that the goods or services meet the needs of those who use them and offer best value for money. They advise National Procurement on the clinical, technical or commercial aspects of the goods and services to be purchased.
Composite dish	A composite dish should consist of a protein containing food, vegetables and a carbohydrate/ starchy item.
Core Nutritional Pathway	Incorporates the 'Malnutrition Universal Screening Tool' (MUST) and is intended to clarify what patients should expect in terms of effective nutritional care. It defines six critical points in the patient's journey from Admission to Discharge.[4]
Cross-contamination	This can refer to the transfer of either bacteria or allergen traces from one product to another via surface contact or the use of the same equipment.
Dietary coding	Dietary coding provides information to patients, carers and staff to enable them to make an informed food choice whilst in hospital. Hospital menus should be coded for healthier eating and higher-energy nutrient-dense meal options. Vegetarian options should also be coded. Foods that are not coded may still be suitable for patients to choose, but are perhaps not the preferred choice.
Dietary needs	Individuals' dietary needs include their eating and drinking likes and dislikes; food allergies/ intolerances and need for therapeutic diet; cultural/ ethnic/religious requirements; social/environmental mealtime requirements; physical difficulties with eating and drinking; and also whether there is a need for equipment to help with eating and drinking.

Dietary needs assessment	The process of assessing the specific dietary needs of individual patients (see 'dietary needs'). The findings of the dietary needs assessment should be considered in the patient's nutrition care plan (see 'nutrition care plan').
Dietitian	A person who is specially trained in the nutritional needs/care of patients. A dietitian will assess a person in order that the food/fluid given to the person is nutritionally balanced and meets their therapeutic needs.
Dish descriptor	A description of each dish on the hospital menu which includes a general description of the dish, a list of ingredients to allow for the identification of allergens and the macronutrient content per portion which will enable carbohydrate counting as appropriate.
Evaluation	The study of the performance of a service (or element of treatment and care) with the aim of identifying successful and problem areas of activity.
Food allergen	Something in food, generally a protein which causes some individuals to have an immune reaction.
Food allergy	An immune reaction to food.
Food-based standards	See 'menu planning' and 'food-based standards'.
Food chain	The processes involved in obtaining, preparing, delivering and serving food.
Food enrichment	Strategies are used to increase the energy and nutrient content (density) of foods and beverages without significantly affecting their volume (also known as food fortification).
Food in Hospitals	The short title for the national nutrition and catering specification for food and fluid provision in hospitals in Scotland.
Food intolerance	A reaction to food that does not involve the immune system.
Food Standards Scotland	From 1 April 2015 Food Standards Scotland is the independent public body in Scotland responsible for protecting consumers and public health in respect of food safety and food standards.
Healthier eating diet/ principles	A diet that follows the principles for a healthy balanced diet, including five portions of fruit and vegetables per day, reduced total and saturated fats, reduced free sugar and reduced salt content.[1]
Healthy balanced diet	See above.

Healthcare Improvement Scotland (HIS)	A national healthcare improvement organisation for Scotland and part of NHSScotland. Works with staff who provide care in hospitals, GP practices, clinics, NHS Boards and with patients, carers, communities and the public.
Healthcare Retail Standard	A set of criteria launched in early 2015 under the Health Promoting Health Service for retail outlets including trolley services in healthcare buildings. The HRS sets out provision and promotion criteria for food and drinking retail that are broadly in line with the Healthyliving Award for catering outlets.
Healthyliving Award	The Healthyliving Award is a national award for the foodservice sector in Scotland. The award criteria are based on the general principles of a healthy balanced diet and have been developed to be in keeping with Scottish dietary targets. Simple changes to the way a caterer works could make a significant difference to their business.
Health Facilities Scotland (HFS)	Health Facilities Scotland is a division of National Services Scotland and provides operational guidance to NHSScotland bodies on a range of healthcare facilities topics.
Higher energy and nutrient-dense diet	A diet recommended for the 'nutritionally vulnerable' patient with a poor appetite or increased requirements. The diet is characterised by provision of energy and nutrients in small portions of foods and drinks and increased eating opportunities (e.g. provision of substantial snacks).
Hospital Caterers Association (HCA)	National organisation with aims and objectives for the promotion and improvement of the standards of catering in hospitals and healthcare establishments in the UK; the education and training of persons in health care catering services; and the provision and improvement of the professional interests and status of those engaged in health care catering services.
Hot meal	A cooked meal (soup and sandwich not included).
Hypertriglyceridaemia	A condition in which triglyceride levels are elevated, often caused or exacerbated by uncontrolled diabetes mellitus, obesity, and sedentary habits. This condition is a risk factor for coronary artery disease (CAD).
Late meal	A meal served out with the normal set mealtimes usually due to patients being admitted to a ward during or after a mealtime.

Main meal	A serving of food which provides the greatest contribution to the energy and range of nutrients required daily. Usually consists of hot cooked dishes with accompaniments.
Malnutrition	A state of nutrition in which a deficiency, excess or imbalance of energy, protein or other nutrients, including minerals and vitamins, causes measurable adverse effects on body function and clinical outcome.[2]
'Malnutrition Universal Screening Tool' ('MUST')	The 'Malnutrition Universal Screening Tool' ('MUST') is a validated, simple five-step nutritional screening tool designed to identify adults who are malnourished or at risk of malnutrition.
Menu capacity	The ability of the menu to meet the range of nutrient and dietary needs of the patient population for whom it is intended.
Menu planning guidance	Statements and further practical information to help caterers and menu planning groups achieve the nutrient and food-based standards.
Menu planning and food-based criteria	The menu planning and food-based criteria aim to ensure that patients' differing dietary needs are catered for and opportunities to ensure nutritional needs can be met are maximised. They are intended to assist hospitals achieve the nutrient specification detailed in Section 2 and also a number of the standards set in HIS Standards for Food, Fluid and Nutritional Care.[3]
Missed meal	A meal which a patient has been unable to take due to a clinical treatment or attendance at a clinic/ diagnostic service during a planned mealtime.
Modified texture/ consistency diets	See 'texture-modified diets'.
Monitoring	The systematic process of collecting information on clinical and non-clinical change, improvement and performance. Monitoring may be intermittent or continuous. It may also be undertaken in relation to specific incidents of concern or to check key performance areas.

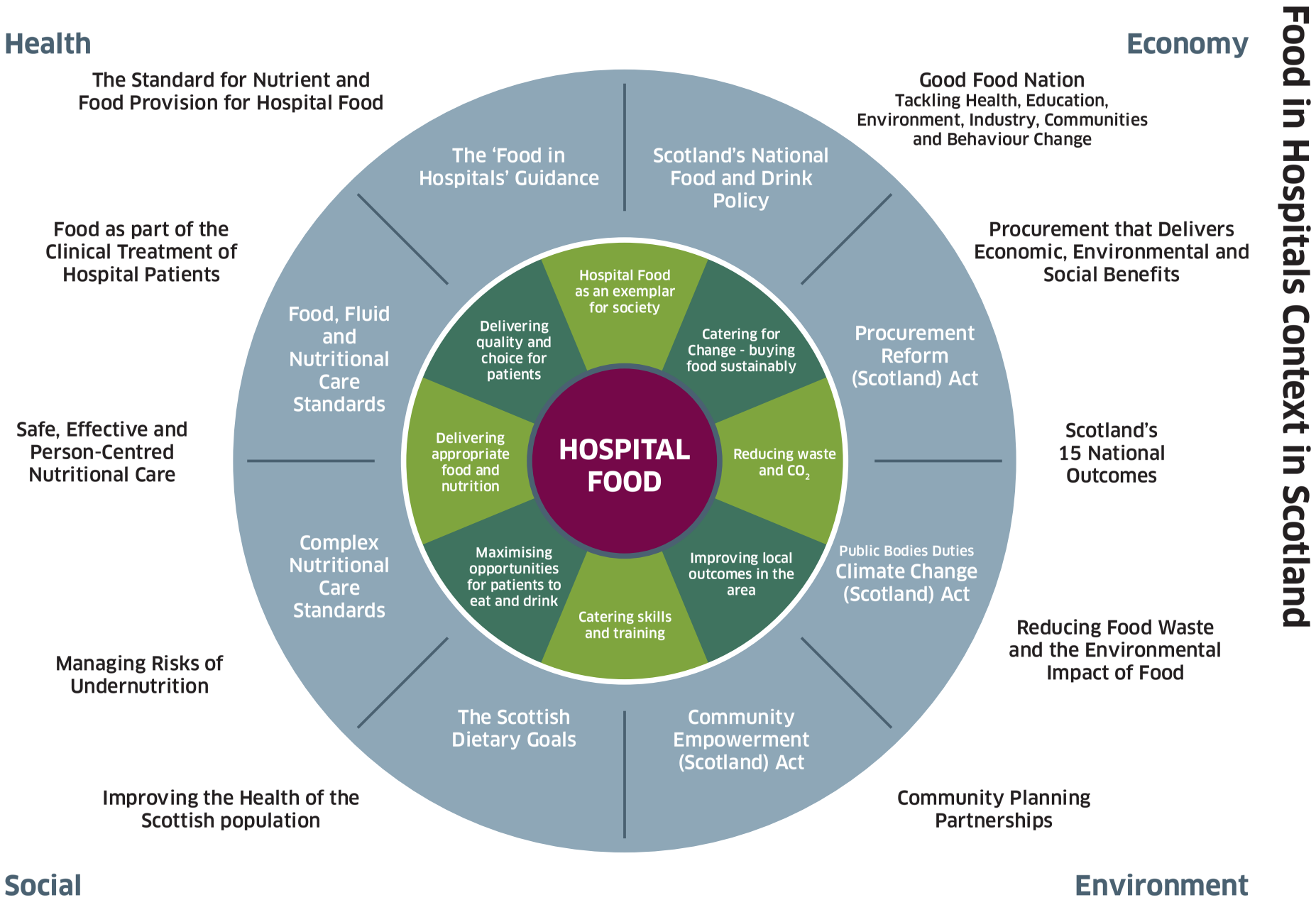
Multidisciplinary	A multidisciplinary team is a group of people from different disciplines (both healthcare and non-healthcare) who work together to provide care for patients with a particular condition. The composition of multidisciplinary teams will vary according to many factors. These include: the specific condition, the scale of the service being provided, and geographical/socio-economic factors in the local area.
National Catering and Nutrition Specification	The document named *Food in Hospitals* which states the catering, food and nutritional requirements that a hospital establishment must meet or provide.
National Institute for Health and Care Excellence (NICE)	An independent organisation responsible for providing national guidance on promoting good health and preventing and treating ill health.
National Procurement	National Procurement (NP) is a division of NHS National Services Scotland and was officially launched in 2005. NP combines the collective history and experience of Scottish Healthcare Supplies (SHS) and the Best Procurement Implementation (BPI) Programme into one coordinated, professional procurement organisation. NP is responsible for ensuring that an efficient service of the highest standards in modern procurement practice is provided to all NHSScotland organisations. There are three main components to National Procurement: Strategic Sourcing (Better Buying), e: Procurement and Systems (Technology), Logistics (Product Distribution).
Neutropenia	The presence of abnormally few neutrophils in the blood, leading to increased susceptibility to infection.
National Services Scotland (NSS)	A non departmental public body which provides advice and services to the rest of NHSScotland. Accountable to the Scottish Government, NSS works at the heart of the health service, providing national strategic support services and expert advice to NHSScotland.
Nutrient analysis	To calculate the amount of energy and nutrients in a particular food, recipe or menu using a standard procedure.

Nutrient (based) standards	The nutrient requirements of a 'general' hospital population, which a hospital catering service is required to meet through food and fluid provision. These are defined for the 'nutritionally vulnerable' patient and also the 'nutritionally well'.
Nutrient specification	A document which states the food and nutritional requirements that a catering establishment must meet.
Nutritional Care	Embodies a coordinated approach to the delivery of food and fluid by different healthcare professionals, and recognises the patient as an individual with needs and preferences. As a process, nutritional care determines a person's preferences and cultural needs, defines their physical requirements, and then provides the person with what they need. It follows a person's progress through an illness, responding to changing nutritional requirements. It involves the monitoring and reassessment of nutritional status at regular intervals, referral for specialist care when appropriate, and good communication between services and during periods of transition of care.
Nutritional Assessment	A more in-depth evaluation of a patient's nutritional state, undertaken by an individual(s) with nutritional expertise, for example a dietitian. Note: This is not the same as a nurse's nutritional care assessment.
Nutritional needs	Refer to 'nutritional requirements'.
Nutritional requirements	The amounts of energy and nutrients that individuals need for health.
Nutritional screening	A simple, rapid process by which an individual's nutritional status or risk of developing poor nutritional status is determined. This then allows a care plan of monitoring and treatment to be implemented for the individual patient. This ideally should be carried out using a validated nutritional screening tool.
'Nutritionally vulnerable'	Individuals who have normal nutritional requirements but with poor appetite and/or unable to eat normal quantities at mealtimes; or who have increased nutritional needs.

'Nutritionally well'	Individuals who have normal nutritional requirements and normal appetite or those with a condition requiring a diet that follows healthier eating principles.
Obesity	Obesity occurs when energy intake from food and drink consumption, including alcohol, is greater than energy requirements of the body's metabolism over a prolonged period, resulting in the accumulation of excess body fat. The Body Mass Index (BMI) is commonly used as a measure of obesity and overweight with BMI greater than 30kg/m^2 taken to indicate obesity.
Operational Group	Responsible for implementing local protocol or protocols for the provision of food and fluid to patients. The core membership of this group includes a senior member of catering staff, a senior nurse, a doctor, a senior member of the oral health team, a senior dietitian, other allied health professionals including a speech and language therapist, and patient representation. The group will also have other representatives appropriate to population need and to the food delivery system.
Oral Nutritional Supplements (ONS)	Are typically used in addition to the normal diet, when diet alone is insufficient to meet daily nutritional requirements. ONS not only increase total energy and protein intake, but also the intake of micronutrients.
Out-of-hours provision	The provision of appropriate food and drinks to individuals outwith the scheduled mealtimes set within the hospital. Defined as food or fluid provided when the catering facility has closed for the day.
Patient	A person who is receiving care or medical treatment. A person who is registered with a doctor, dentist, or other healthcare professional, and is treated by him/her when necessary.
Protected meal-times	Periods of time on a hospital ward when all non-urgent activity stops, allowing the patient to eat without being interrupted and staff are available to provide assistance.
Protein source	A food item such as meat, fish, eggs, cheese or pulses which provides the nutrients necessary for proper growth and function of the human body.

Renal diets	Therapeutic diets for individuals who have kidney disease.
Satisfaction survey	Seeking the views of service users through responses to pre-prepared questions and carried out through interview or self-completion questionnaires.
Scottish Dietary Goals	The Goals describe, in nutritional terms, the diet that will improve and support the health of the Scottish population. They are set at the Scottish population level. They indicate the direction of travel, and assist policy development to reduce the burden of obesity and diet-related disease in Scotland. They will continue to underpin diet and health policy in Scotland and will be used for scientific monitoring purposes.
Screening tool	A nutritional screening tool is an aid to assess a patient's nutritional status.
Special and personal diets	For example, religious or ethnic dietary requirements or other life style diet choices i.e. vegan.
Standard	A level of quality or achievement that is considered acceptable.
Standard recipe	A recipe where the quantities, ingredients and methods are set and defined, and should not be deviated from. A standard recipe should give a consistent quality product.
Snack	A snack is a small quantity of food eaten between meals.
Substantial snacks	Two small quantities of food which contribute a minimum of 300kcals.
Texture-modified diet	Food/fluid that has had its consistency altered to enable a person to chew and swallow it safely without choking.
Therapeutic diet	Food/fluid which has had its nutrients modified to meet the nutritional needs of a person, and which forms part of their medical treatment to prevent symptoms or improve nutritional status.
Ward supplies	Minimum food and beverage provisions that must be available on a ward to provide to patients.
Wholegrain cereals	Fibre content is >3g/100g or at least 3g in reasonable expected daily intake of food (Healthy Living Award).

Food in Hospitals Context in Scotland



POLICY
CLINICAL STANDARDS
PURPOSE

1. Introduction

1. Introduction

1.1 Introduction

Eating well and enjoying food is fundamentally important for every individual's health and wellbeing. In a hospital setting appealing food and good nutrition is more than this, here it is vitally important.

Catering provision in NHS hospitals should always be exemplary, promoting a healthy balanced diet for patients, staff and visitors. This is a complex task. The challenge requires efficient service delivery, coordination, and excellent communication to share information, knowledge and understanding between caterers, procurement, suppliers and medical staff. Further, input from patients is pivotal to the success of *Food in Hospitals*. In a diverse hospital population, food must meet the nutritional requirements of patients as well as providing food that is appropriate for different age groups, religious, cultural and social backgrounds across a range of medical conditions.

Food provided for patients needs to be familiar, appealing and available at appropriate times. Above all it needs to be eaten and enjoyed. **Maximising opportunities** for individuals to eat and drink and **delivering quality and choice** are fundamental to improving consumption.

For many patients who are assessed as 'nutritionally vulnerable', good nutrition means the provision of small, energy and nutrient-dense meals with frequent snacks to address problems of poor appetite and risk of malnutrition.

There is also a significant proportion of patients who may be classified as 'nutritionally well' whose nutritional needs do not differ from that of the general population. Nearly two-thirds of adults and a third of children in Scotland may be classed as 'nutritionally well' but are overweight or obese. Poor diet contributes significantly to high rates of preventable disease such as cancer, heart disease and diabetes in Scotland.

The advice for the 'nutritionally well' is a healthy balanced diet that is characterised by a higher proportion of lower fat, salt and sugar foods and the inclusion of at least five portions of fruit and vegetables a day plus a higher proportion of starchy foods including high fibre foods.[5, 6]

There are other important aspects which we expect will characterise food in hospitals including a focus on improving the social aspects of eating with encouragement from staff, visitors and volunteers and developing dining areas where these are present.

The types of food and menus are a priority identified in *'Scotland's National Food and Drink Policy – Becoming a Good Food Nation'* which advocates greater use of fresh, seasonal, local and sustainable produce and *Procurement Reforms* which recognise the purchase of food to improve the health, wellbeing and education of communities in an authority's area, and promote the highest standards of animal welfare.

Food in Hospitals Catering and Nutrition Specification

This *Food in Hospitals Specification 2008* has been revised and updated to support Scottish NHS Boards in implementing:

- the Healthcare Improvement Scotland *Food, Fluid and Nutritional Care Standards* specifically Standards 3, 4 and 5[3]; and
- the delivery of a healthy balanced diet for patients who are considered to be 'nutritionally well'.

As such, *Food in Hospitals* provides information on standards for nutritional care, nutrient and food provision for patients within hospitals. It provides information on how the standards/guidance can be met, through assessment of the hospital population's dietary needs, menu planning, and practical suggestions on food choices suitable for different dietary needs, including special and therapeutic diets.

The Specification aims to ensure a common and accurate understanding about different patients' nutritional and dietary needs by everyone involved in food provision in hospital settings. It sets out how not only caterers, but all those involved in the provision of food and fluids to patients, including menu planning groups, nurses, dietitians, Speech and Language Therapists (SLT) and Commodity Advisory Panels can help ensure appropriate food is procured, produced, available and provided to meet the varying dietary needs of such a diverse population.

Ultimately this document aims to support the current culture change surrounding hospital catering to one that recognises the fundamental importance of providing appropriate food provision for every patient as part of his or her treatment. This in turn will positively influence health and recovery.

Food service provision must reflect the needs of the local patient population. The size of the catering facility and also the method of food production, whether it is on-site, out-sourced, ready-prepared bought-in, cook-fresh, cook-chill or cook-freeze will impact on the scope of service that different establishments can provide.

Hospital catering and the food it provides, although previously viewed as a non-clinical service within the NHS, and grouped with facilities services such as portering and cleaning, is now widely accepted to play an important clinical role in the treatment of hospital patients. Understanding of the importance of food and nutrition in the wellbeing of hospital patients has also increased and it is implicit that providing appropriate food and fluid for the patient population can be effective in cutting the length of hospital stay and cost of in-patient admissions. As the cost of malnutrition was estimated to be £19.6 billion in England in 2011 and 2012 (there is no equivalent Scottish data), preventing and managing this has the potential for significant cost savings across the NHS.[7]

1.2 Purpose

Nutritional care is more than the provision of food and fluid to patients and demands effective multi-disciplinary team working to ensure the dietary needs of all patients are met.

The purpose of this Food in Hospitals Catering and Nutrition Specification is to:

- set out nutrition and catering criteria to ensure that NHS Boards support HIS *Food, Fluid and Nutritional Care Standards*;[3]
- provide guidance for the planning group responsible for the implementation of local protocols for the provision of food and fluid to patients;
- act as a practical resource for catering and dietetic staff to ensure that the provision of patient catering across NHSScotland is operating in line with Scottish Government and NHS policies,[8, 9, 10] ; and
- define the nutritional and dietary requirements of hospital patients.

Table 1: Healthcare Improvement Scotland Food, Fluid and Nutritional Care Standards[3]

Standard 1: Policy and Strategy	Each NHS Board has a policy, and a strategic and coordinated approach, to ensure that all patients receive safe, effective and person-centred nutritional care, irrespective of speciality and location (hospital or community).
Standard 2: Assessment, Screening and Care Planning	When a person is admitted to hospital, or to a community caseload, a nutritional care assessment is carried out. Screening for the risk of malnutrition is also carried out, both initially and on an ongoing basis. A person-centred care plan is developed, implemented and evaluated.
Standard 3: Planning and Delivery of Food and Fluid in Hospital	Formalised structures and processes are in place to plan the provision and delivery of food and fluid in hospitals, in line with *Food in Hospitals*.
Standard 4: Provision of Food and Fluid to Patients in Hospital	Food and fluid are provided in a way that is acceptable to all patients in hospital.
Standard 5: Patient Information and Communication	Patients have the opportunity to discuss, and are given information about, their food, fluid and nutritional care. Patient views are sought and inform decisions made about the food, fluid and nutritional care provided.
Standard 6: Education and Training for All Staff	Staff have the knowledge and skills required to meet patients' food, fluid and nutritional care needs, commensurate with their duties and responsibilities, and relevant to their professional discipline and area of practice.

It is intended that this document is used in conjunction with other key documents such as the *Hospital Caterers Association (HCA) Good Practice Guide Healthcare Food and Beverage Service Standards, A Guide to Ward Level Services* and *Nutrition and Hydration Digest: Improving Outcomes through Food and Beverage Services* to support healthcare establishments achieve this specification.[11, 12]

The hospital population

While the majority of patients depend on ordinary hospital food to improve or maintain their nutritional state in order to optimise their recovery from illness, many patients, who are ill in hospitals or other care settings have poor appetites or have an impaired ability to eat, with the resultant risk of developing malnutrition.[13]

In 2000 the Clinical Resource and Audit Group (CRAG) found 21% of older people in Scotland's long-term care establishments (including NHS hospitals) were undernourished.[14] The food consumed by residents was significantly less than the dietary recommendations for many nutrients including energy.

Amalgamated data from hospitals in Scotland that participated in the four BAPEN Nutrition Screening Week Surveys (NSWs) undertaken between 2007 and 2011 revealed that overall, 'malnutrition' (medium + high risk according to 'MUST') affected 24% of adults on admission to hospital which was lower than the UK as a whole (29%) and lower than any of the other nations of the UK. Most of those affected were at high risk. The prevalence varied significantly between seasons being higher in the summer (29%) and winter (27%) than in autumn (23%) and spring (21%).[15]

There were marked differences between certain characteristics of adults admitted to hospital and the general population of Scotland. The mean age of adults admitted to hospital during the five year period was around 17 years higher, while the mean BMI slightly lower than the general population. More people were admitted to hospital who were underweight (<20 kg/m^2) or severely obese (≥40 kg/m^2) than were found in the general population.

Older people are more likely to be undernourished when admitted to hospital and remain undernourished during their hospital stay. They also have longer periods of hospital stay. Sixty-one per cent of patients in the NHS in Scotland are over 65 years and around 36% of NHS in-patient beds in Scotland are for older patients with or without mental health acute care needs.[16] The mean length of stay per episode for all specialty in-patient facilities was 4.5 and 4.4 days in 2013 and 2014 respectively, but for the older population were 6.3 and 6.1 days in the same years.

1.3 Policy Background

Food is a high priority in Scotland and food procured and served in hospitals can contribute to the success of a range of policies and legislation. It should in particular be a service which exemplifies Scotland's National Food and Drink Policy. Scotland has one of the poorest diet related health records globally. We waste a fifth of the food we buy and we remain disconnected from where our

food comes from, how it is produced and the impact of food on the environment even although 30% of greenhouse gases relate to food production and consumption. Some key policies and legislation are detailed in the following.

1.4 Scotland's National Food and Drink Policy

Scotland's overarching National Food and Drink Policy - *Recipe for Success* aims to promote Scotland's sustainable economic growth in relation to food and drink and it focuses attention on the need to address issues of quality, environmental stewardship, health and wellbeing and access to good food and nutrition in public settings such as hospitals.

1.5 Good Food Nation

A refocusing of the policy is set out in *Becoming a Good Food Nation*, which commits to tackling head-on difficult areas such as, behaviour change and what we consume as a nation. It recognises that there are deep-seated poor dietary habits in Scotland which we need to turn around and it acknowledges that we need to support a thriving and resilient food system. Food purchased and served in schools, hospitals, prisons, universities and colleges must strive to be the exemplar of all that being a *Good Food Nation Bill* entails:

- Championing fresh, in season, local and sustainable produce.
- Celebrating provenance and ethical sourcing.
- Ensuring food in public settings provides access to good nutrition, and that how it is purchased, prepared and served exemplifies a 'Good Food Nation'.

Leadership will be key and NHSScotland and local authorities, alongside the Scottish Government, are vitally important to making progress. Creating the demand for healthy and appealing food and menus is an opportunity for hospital caterers and will require imagination, innovative menus and procurement. The challenge for the hospital caterer is to achieve best value from public funding, deliver quality and choice and to work with the supply chain to stimulate demand for new, healthy, resource efficient products and delivery arrangements.[17] Within NHSScotland this is undertaken through NHS National Procurement.

1.6 The Scottish Dietary Goals

The Scottish Dietary Goals (SDGs) revised in 2013, describe, in nutritional terms, the diet that will improve and support the health of the Scottish population.[18] The goals encompass foods (fruit and vegetables, red meat, oil rich fish) and nutrients (total fat, saturated fatty acids, trans fatty acids, free sugar, fibre and salt intakes).

These evidence-based goals indicate the direction of travel, and assist policy development to reduce the burden of obesity and diet related disease in Scotland. As such, improvements in hospital food and the exemplary role of the Health Service in relation to food provision will support achievement of the SDGs.

The 'eatwell guide' provides a pictorial representation of the proportions of foods we should eat to help meet the Scottish Dietary Goals. The 'eatwell guide' therefore describes the healthy diet for patients with no specific clinical dietary requirements.[1]

1.7 Food, Fluid and Nutritional Care Standards – Healthcare Improvement Scotland

In Scotland, NHS Quality Improvement Scotland published the clinical standards for *Food, Fluid and Nutritional Care in Hospitals* in 2003.[19] The standards have been revised by Healthcare Improvement Scotland and published in 2014.[3] The revised standards apply to the care of all patients, children and adult, in both community healthcare and hospital settings and have been developed in recognition of health and social care integration.[3]

Two fundamental considerations that hospitals need to address in order to provide a service which is likely to meet the dietary and nutritional needs of its patients is: **maximise opportunities** for patients to eat and drink, the provision of substantial snacks, out-of-hours service provision, on-ward provisions; and also **maximising the choice of suitable foods** and fluids available.

The HIS *Food, Fluid and Nutritional Care Standards* apply to the care of all patients, paediatric and adult, in both community healthcare and hospital care in Scotland, whether directly provided by an NHS Board or secured on behalf of an NHS Board. Although the standards apply specifically to healthcare settings, they have been developed in recognition of the integration agenda and the principles that apply to standards in both health and social care.

Within the standards the term 'community' is used to mean services and care provided by the NHS in a patient's home or NHS setting (for example, community hospitals, day centres, or outreach services) and care delivered by district nurses, health visitors, community psychiatric/mental health nurses, and school nurses. The remit of the standards does **not** include care provided by social care or independent private care staff, or care provision within a care home.

Standards 3 and 4 only apply to the care of patients in hospital.

They encompass the planning, assessment, provision, delivery and education of nutrition care (refer to Table 1 for overarching standards). This document supports the delivery of all of these standards; however it gives further clarity and support in specifically achieving Standards 3, 4 and 5.[3]

Strategies to meet HIS *Food, Fluid and Nutritional Care Standards*, and fulfil the Council of Europe Resolution must ensure respect and valuing of the diversity of patients' needs.[3, 13, 20]

NHS Boards and Operational groups must gather information on the diverse needs of the populations they are serving and ensure inclusive attitudes and practises to food service provision if all individuals' needs are to be met.

1.8 Nutrition Support for Adults: Oral Nutrition Support, Enteral Tube Feeding and Parenteral Nutrition, Methods, Evidence and Guidance

The National Institute for Clinical Excellence published Guidance in February 2006.[21]

The recommendations re-iterate the need for regular nutritional screening, multi-disciplinary working and education and training in the hospital setting. They also state that 'healthcare professionals should ensure adequate quantity

and quality of food and fluid is available in an environment conducive to eating and there is appropriate support'.[21]

The nutritional requirements of some people cannot be met by the usual oral route, even with extra help at mealtimes or by the prescription of simple oral nutritional supplements. Under these circumstances additional help is sometimes required, either by feeding by a tube into the gut, or through a line placed into the vein. Techniques that involve tubes or lines constitute 'complex nutritional care'.

In December 2015, Healthcare Improvement Scotland produced the *Complex Nutritional Care Standards* to support NHS Boards to ensure that patients who require complex nutritional care are safely and effectively managed. The Standards also outline that NHS Boards must ensure that patients are informed, involved and supported in all stages of their care and that staff have the knowledge, skills and experience to deliver safe, effective and person-centred complex nutritional care to patients.[22]

1.9 The Council of Europe Produced Resolution ResAP (2003) Food and Nutritional Care in Hospitals: How to Prevent Undernutrition[13]

In November 2003, The Council of Europe produced resolution ResAP (2003)[13] Food and Nutritional Care in Hospitals: *How to Prevent Undernutrition*, to which the UK is a signatory. It states that 'All patients have the right to expect that their nutritional needs will be fulfilled during a hospitalisation'.[13] This resolution acknowledges there are differences in nutritional care across Europe with improvements required in nutrition screening, food provision and education and training of staff. In November 2003 Audit Scotland audited all NHS Boards in Scotland and showed similar findings.[23] Recommendations included that the Departmental Implementation Group should develop or commission national catering and nutrition specifications for NHSScotland. Subsequent policies have built on this work.

1.10 The Procurement Reform (Scotland) Act

The role of NHS food procurement should be recognised for its potential to promote healthier eating and sustainable supply chains. The Procurement Reform (Scotland) Act 2014 establishes a national legislative framework for sustainable public procurement that supports Scotland's economic growth through improved procurement practice. The Act focuses on a small number of general duties on contracting authorities regarding their procurement activities. For example, it introduces a **Sustainable Procurement Duty** on contracting authorities to consider how, they can improve economic, social and environmental wellbeing; reduce inequality; promote innovation; and involve SMEs, the third sector and supported businesses.

The Act also makes a requirement for the NHS to publish its procurement strategies. A contracting authority required to produce a procurement strategy must include a statement of the authority's general policy on how it intends its approach to regulated procurements involving the provision of food to improve the health, wellbeing and education of communities in the authority's area, and promote the highest standards of animal welfare.[10]

1.10.1 Catering for Change: Buying Food Sustainably in the Public Sector

This guidance is aimed at the procurement of food or catering services in the Scottish public sector. It tells how public bodies, including the NHS, can use food procurement to make a significant contribution towards economic, environmental, social, and health related objectives, including taking steps to encourage the involvement of smaller suppliers and improving the quality of the food we buy. Sustainable Procurement means that hospitals should achieve a balance that takes account of the quality of food as well as its cost. Its principles and its content are equally applicable whether the hospital is buying food directly or using a catering provider:

- specifying fresh and seasonal produce in tender documents;
- removing barriers which stop small businesses bidding for work;
- structuring contracts in a way that attracts a wide range of suppliers;
- addressing quality and nutrition characteristics;
- buying food which will help to meet the Scottish Dietary Goals;
- taking account of how food has been produced and processed and considering animal welfare;
- thinking about the most efficient delivery and distribution.

1.11 Non-patient Food-related Policies and Initiatives

Healthyliving award plus

The healthyliving award is a national award for the food service sector which aims to assure the principles of a healthy balanced diet and in keeping with Scottish dietary targets. Hospitals are required to achieve the healthyliving award plus for staff and visitor catering only which requires a greater provision and promotion of foods that support healthier eating.[24]

Supporting Healthy Choices

The Scottish Government and the Food Standard Scotland (FSS) voluntary framework for Supporting Healthy Choices sets out the action required to shape and better support healthier diets in Scotland including supporting healthier catering for staff and visitors.[25]

The Healthcare Retail Standards (HRS)

The Standards apply to retail outlets within healthcare buildings including trolley services whether the outlet is run by the hospital or voluntary, private or public sector. It does not apply to hospital catering outlets or vending although mixed outlets with a significant retail element are expected to attain the HRS as well as the healthyliving award.[26]

1.12 Food Standards Scotland (FSS)[27]

FSS was created to ensure that information and advice on food safety and standards, nutrition and labelling is independent, consistent, evidence-based and consumer-focused. The key aims of FSS are to help protect the public from risks to health which may arise through the consumption of food and advise on how what we eat will promote good health.

The key aims of Food Standards Scotland (FSS) are:

- to protect the public from risks to health which may arise in connection with the consumption of food;
- to improve the extent to which members of the public have diets which are conducive to good health; and
- to protect the other interests of consumers in relation to food.

Food safety incidents – The Public Sector Incident Protocol

The Public Sector Incident Protocol (PSIP) sets out the national arrangements for responding swiftly and effectively to food incidents that require coordinated action across the public sector.

In the event of an incident affecting hospitals, NHS National Services Scotland (NHS NSS) Procurement will be the main link with the FSS and you should communicate any issues to NHS NSS Procurement's Commodity Manager (Food), National Procurement.

The Protocol defines the communication and coordination arrangements between Food Standards Scotland (FSS) and the affected public sector organisations including hospitals.[28]

The types of incidents which can be anticipated are Food Hazards with a potential to impact on consumer safety, Food Fraud and Non-Hazardous Incidents which may impact on the food supply chain, including issues of quality, provenance, authenticity, composition and labelling.

1.13 Business Continuity

Plans for ensuring safe delivery of food depend on local processes and patterns of providers. Catering and Facilities Managers (in consultation with Emergency Planning Officers) need to work together locally to produce, review and update robust plans for a range of emergencies. e.g. disruption to all power supplies, water, food supplies, staffing shortages, equipment failure, loss of catering service, site lift failure, transportation, communications etc (this indicative list is not exhaustive).

Any plans should be tested to ensure validity and that communication of these includes not only direct staff involved but other departments who are co-dependent on a catering service. Exercises in testing could be table-top or where appropriate live.

PATIENT'S NEEDS
NUTRITIONALLY VULNERABLE
NUTRITIONALLY WELL
RATIONALE

2. Nutrient Needs of the Hospital Population

2. Nutrient Needs of the Hospital Population

Summary

- An assessment of individual patients' dietary needs should form part of their individual medical and nursing care along with a plan of how these needs will be met.
- Assessment of likes, dislikes, allergies/intolerances, need for therapeutic diet and difficulties with eating/drinking should be made.
- Nutrient standards are based on two groups, the 'nutritionally well' and the 'nutritionally vulnerable'.
- The 'nutritionally vulnerable' i.e. those at risk of malnutrition often have small appetites and poor food intakes and so may require the provision of tasty, energy and nutrient-dense foods that come in modest portion sizes along with increasing food choice and eating opportunities.
- 'Nutritionally well' patients are those people whose reason for admission to hospital will not affect their food and fluid intake. The food provision for these people should be in line with the Scottish Dietary Goals.
- The nutrient specification is based on the most recent evidence i.e. energy, carbohydrate and salt from SACN guidance, fluid from European Food Safety Authority Guidance and the remainder are DRVs from the COMA report.[29, 30, 31, 32 ,33]
- It is essential that a hospital menu is capable of meeting the nutrient Standards set out in Table 2.

2.1 Introduction

It is important to remember hospitals, by their very nature, consist of varied population groups and with the exception of specialist centres such as children's hospitals, the food service will have to provide suitable food and fluid for babies to older adults.

This section lays out the nutrient requirements of a 'general' hospital population, which a hospital catering service is required to meet. Unlike food service in other institutions such as schools or prisons, the hospital population's nutritional and dietary needs are much more diverse. These will vary according to a number of factors, including individuals' age, physical condition and/or illness.

Each age group of the hospital population has different nutritional requirements, e.g. children have specific needs to facilitate growth and development whilst adult requirements are necessary to achieve or maintain good health. In terms of health, at one end of the scale there are, short-term admissions where an individual's normal diet is not interrupted, whilst at the other end of the scale long-term illness and/or treatments that adversely affect a patient's food intake and have negative effects on their health are also commonplace.

Local assessment of the dietary needs of each hospital population is therefore fundamental for successful menu planning and appropriate food provision.

A large proportion of hospital patients, such as the acutely ill or undernourished, require diets that are more energy and nutrient-dense. This means that the same amount of energy (from fat and carbohydrate), protein, vitamins, minerals and trace elements must be provided in a smaller volume of food.

Many patients may also require a therapeutic diet, e.g. patients with increased requirements, patients with kidney disease or patients requiring a texture-modified diet. Critically-ill patients or those requiring specialised nutrition care, in relation to their illness, should continue to be assessed individually by the appropriate healthcare professionals. Specific dietary parameters of common therapeutic diets are covered in Section 5.

2.2 Recognising Patient Needs

Assessment, Screening and Care Planning

Healthcare Improvement Scotland's *Food, Fluid and Nutritional Care Standards*, Standard 2 states:[3]

> **'When a person is admitted to hospital, or to a community caseload, a nutritional care assessment is carried out. Screening for the risk of malnutrition is also carried out, both initially and on an on-going basis. A person–centred care plan is developed, implemented and evaluated'.***

Nutritional Care Assessment

In addition to the need for nutritional screening of all patients, an assessment of each patient's dietary needs should also form part of their individual medical and nursing care. A plan of how these needs will be met should be developed, implemented and monitored.

Healthcare Improvement Scotland's *Food, Fluid and Nutritional Care Standards*, criteria 2.2 states:[3]

> **'The Nutritional care assessment should accurately identify and record:**
>
> - **measured height and weight, with the date and time that these measurements were taken (if estimates are used, this should be stated and a rationale provided);**
> - **food allergies/intolerances;**
> - **eating and drinking likes and dislikes;**
> - **therapeutic or texture-modified diets requirements;**
> - **cultural, ethnic or religious dietary requirements;**
> - **social and environmental mealtime requirements;**
> - **physical difficulties with eating and drinking, including swallowing difficulties;**

- **the need for help and support with eating and drinking, for example prompting and encouragement, equipment or community meals;**
- **oral health status.'**

This may require referral to a physiotherapist, occupational therapist or speech and language therapist (SLT) for advice on positioning individuals when eating or drinking, the identification of suitable cutlery, dishes and cups to assist with eating and drinking and promote independence and hence maximise dietary intakes.

It is important to remember that individuals' dietary needs can change with changes in their medical condition(s) and thus monitoring individuals' nutritional needs is important to inform appropriate food provision.

2.2.1 'Nutritionally Vulnerable' Hospital Patients

Studies have shown that a significant proportion of patients admitted to hospital are at risk of malnutrition or are malnourished and that many of these patients' nutritional needs go unrecognised leading to preventable complications and an increase in length of stay.[34] Older adults in long-stay care have been shown to be at particular nutritional risk.[14]

Patients can be 'nutritionally vulnerable' if they:

- are admitted to hospital malnourished;
- have preceding unexplained or unintentional weight loss;
- have physical difficulty eating and/or drinking;
- have acute or chronic illness affecting appetite and food intake;
- have cognitive or communication difficulties;
- have increased nutritional requirements (e.g. due to trauma, burns);
- require the texture of food and/or fluid to be modified;
- have an increased length of stay.

The dietary intakes of hospital patients have been found not to meet energy and nutrient requirements, even when the hospital menu is designed to meet dietary and nutritional needs of the hospital population.[35] Patient choice/selection can however, have a bearing on nutritional intake.[36] These individuals' dietary needs are very much more focused on the provision of tasty, energy and nutrient-dense foods that come in modest portion sizes.[37]

Increasing the availability of suitable food choices and also the opportunities to eat will be critical in enabling patients to achieve their nutritional and dietary needs. For many of these patients it may not be appropriate for a healthy balanced diet to be provided at this time.

2.2.2 'Nutritionally Well' Hospital Patients

A proportion of patients who are in hospital can be classified as 'nutritionally well' individuals. This will include, for example, patients who may be hospitalised due to a minor illness, maternity patients not experiencing complications and previously fit healthy people whose illness does not/will not affect their food and fluid intake such as those having minor elective surgery.

There are also other patient groups with chronic conditions, for example, young adults with mental health problems who are in long-stay care and who may be nutritionally at risk e.g. those with eating disorders, whilst other individuals' dietary needs are very much more in line with those of the general healthy population. It would be appropriate for these patients to be provided with a diet that is based on general healthy eating principles and is in line with the Scottish Dietary Goals.

2.3 Nutrient Specification

Healthcare Improvement Scotland's *Food, Fluid and Nutritional Care Standards*, Standard 3 states:[3]

> **'Formalised structures and processes are in place to plan the provision and delivery of food and fluid in hospitals, in line with Food in Hospitals.'**

2.3.1 Nutritional Requirements of Hospital Patients

The Department of Health Committee on Medical Aspects of Food Policy (COMA) in 1991 published *Report on Health and Social Subjects number 41, Dietary Reference Values for Food Energy and Nutrients for the United Kingdom*.[30]

This publication sets out recommended Dietary Reference Values (DRVs) which are the daily requirements for nutrients for all age groups (Appendix 2). The current document uses these nutrient DRVs. However, for energy requirements, for salt and for carbohydrate more recent advice from the Scientific Advisory Committee on Nutrition (SACN) are the nutrient specifications for the general hospital population.[29, 31, 32] The Scottish Dietary Goals for macronutrients are generally the same as the guidance provided by SACNP for the population with the exception of trans fatty acids.[32]

There currently is no UK DRV for water intake therefore the European Food Safety Authority DRV for water is used for water intakes for all ages.[33] In addition, fluid requirements for children can be used using the guidance from Great Ormond Street Hospital for Children NHS Foundation Trust (GOSH).[38]

The following terms relating to energy and nutrient intakes are used to define the needs of population groups of the UK:[30]

- **EAR** (Estimated Average Requirement) – the amount of energy required each day by an average person in the specified age group, some people require more, and some less than this figure;
- **RNI** (Reference Nutrient Intake) – the amount of a nutrient estimated to meet the needs of the majority of the population;

- **Safe Intake** – some nutrients can be toxic in high amounts, safe levels of intake are recommended for these.

These recommendations were developed specifically for use with healthy groups of the population. The British Association of Parenteral and Enteral Nutrition (BAPEN) has proposed amendments to the recommendations for energy and protein for the unwell hospital patient.[39] The amendments to the DRVs for a hospital population and the rationale behind this are explained fully in Appendix 3.

The nutrient specifications in the current document endorse the recommendations provided by the British Dietetic Association (BDA) and NICE guidance.[12, 21]

Using DRVs to plan the food and fluid provision in hospitals alongside nutritional care assessments that have clear nutritional management guidelines to support those individuals identified 'at-risk', should ensure that Standard 3 of the HIS *Food, Fluid and Nutritional Care Standards* can be achieved.[3]

It is essential that a hospital menu is capable of meeting the nutrient criteria set out in Table 2, as appropriate for the patient population it is catering for:

- **energy on a daily basis;**
- **protein on a daily basis;**
- **salt on a daily basis;**
- **fluid on a daily basis;**
- **RNI for micronutrients (vitamins and minerals) on a weekly basis.**

This pragmatic approach allows menus to be planned with greater flexibility. It is unlikely that a free-living individual at home will meet the RNI for all nutrients on a daily basis, with most being met on average over a week.

As noted, hospital menus must meet the nutritional requirements of diverse patient population groups.[32] Two sets of nutrient criteria have been specified in Table 2, this is acknowledgement of the extremes of the core nutritional requirements in the hospital setting (outlined in Section 2.2).

One set of criteria is applicable to the needs of 'nutritionally vulnerable' patients: those with poor appetites, poor food intakes and those who are undernourished. The other set of nutrient criteria is in line with the requirements of a healthy balanced diet and thus are applicable to the needs of those patients who are considered to be 'nutritionally well'.

Provision of a menu that meets the nutritional requirements outlined for hospital patients, must also be a menu that provides options of dishes that tempt all patients to eat, and which they will enjoy.

2.3.2 Rationale for Differences in Nutrient Criteria

Many of the nutrient criteria that have been set in Table 2 are common to both 'nutritionally well' and 'nutritionally vulnerable' patients. A healthy balanced diet is inappropriate for the 'nutritionally vulnerable' patient. However, food from the various food groups should still be incorporated into the diets of 'nutritionally vulnerable' people.

The DRV for fat (<35% of food energy), for saturated fat (</=11% of food energy) and also that set for carbohydrate (approx 50% food energy), free sugars* (not more than 5% of food energy) and fibre** (30g) have therefore not been included as core nutrient standards for this population group.

Given the poor appetites and poor food intakes of many patients one of the key aims of the core food service should be to provide food with concentrated energy and nutrients in small portions in the form of three meals and two snacks.[36] The very nature of providing a diet that is energy and nutrient-dense in small serving sizes may require the addition of extra fat, protein, or refined carbohydrate (sugars), or selection of food items that are perhaps considered 'less healthy'. This practice is incompatible with a recommendation that limits the percentage of energy from these macronutrients. More specific guidance about individual meals and components of the meal for the 'higher-energy' diet is provided in Section 5.

A diet high in fibre is beneficial for individuals whose needs are in line with a healthy balanced diet, it is important in preventing constipation, it gives a feeling of fullness and thus individuals are less likely to want to eat as frequently. As such, a diet that is very high in fibre is not advocated for individuals with a poor appetite where the aim is to ensure maximum food and thus energy and nutrient intakes.

*Free sugars are all monosaccharides and disaccharides added to foods by the manufacturer, cook or consumer, plus sugars naturally present in honey, syrups and unsweetened fruit juices. Lactose when naturally present in milk. [29]

**Average population intake of AOAC fibre for adults (16+) to increase to 30g/day by increasing consumption of whole grains, pulses and vegetables.

Table 2: Essential criteria for the provision of nutrients for hospitalised adults[29, 30, 31, 32, 33]

Nutrient (/ day)	Nutritionally vulnerable patients	Nutritionally well patients (DRVs)	Provided
Energy (kcal)	Adults 2,250–2,625[a]	Adults 1,800–2,400[b]	Daily
Protein (g)	60–75	56	Daily
Total fat (% food energy)	Not specified[4]	<35	Averaged over a week
Saturated fat (% food energy)	Not specified	<11	Averaged over a week
Carbohydrate % food energy)	Not specified	>50	Averaged over a week
Free sugars[c] (% food energy)	Not specified	</=5%	Averaged over a week
Fibre[d] (g)	Not specified[4]	30[32]	Daily
Sodium (mg)	< 2,400	< 2,400	Daily
Salt equivalents (g)	< 6	< 6	Daily
Vitamin A (µg)	700	700	Averaged over a week
Vitamin D (µg)	10[e]	10[e]	
Calcium (mg)	> 700	> 700	Averaged over a week
Potassium (mg)	3,500	3,500	Averaged over a week
Iron (mg)	> 14.8[f]	> 14.8[f]	Averaged over a week
Vitamin B12(µg)	> 1.5	> 1.5	Averaged over a week
Folate and folic acid (µg)	> 200	> 200	Averaged over a week
Vitamin C (mg)	> 40	> 40	Averaged over a week
Water[g]	Men 2,000ml Woman 1,600ml[g]	Men 2,000ml Woman 1,600ml	Daily

a Estimated Average Requirement (EAR) for males and females 65+ years.

b BAPEN recommendations for the energy requirements for the 'unwell' hospital patient are 1.3 to 1.5 times resting energy expenditure that equates to approximately 25-35kcal/kg/day (using midpoint as minimum value to prevent malnutrition this equates to 2,250-2,625 for 75kg individual).[32] Recommendations are based on reference weights used for DRVs.

c Free sugars are all monosaccharides and disaccharides added to foods by the manufacturer, cook or consumer, plus sugars naturally present in honey, syrups and unsweetened fruit juices. Lactose when naturally present in milk.[29]

d Average population intake of AOAC fibre for adults (16+) to increase to 30g/day by increasing consumption of whole grains, pulses and vegetables.

e The provision of food that will provide >10 µg/day vitamin D is difficult. Individual patients may still require additional supplementation, especially older patients and those who are in long-stay care and house/hospital bound.

f When catering solely for older adults, use 10T10TRNI10T10T for individuals 50+ years (9mg/day).

g Values assume dietary intake: if no food intake corresponding figures are 2,000ml for women and 2,500ml for men.

MEAL CHOICES SNACKS

3. Menu Planning and Food-Based Criteria

3. Menu Planning and Food-based Criteria

Summary

- Any hospital menu planning and food-based criteria aims to ensure that differing dietary needs are catered for and thus maximising opportunities to ensure nutritional needs can be achieved.
- Hospital menu requirements are informed by assessment of local patient population needs which require to be regularly reviewed; this includes energy and nutrient requirements.
- The minimum portion offered by the catering department is the portion size used when analysing all patient menus.
- The hospital menu provides for breakfast, lunch, and evening meal and at a minimum will include two additional substantial snacks throughout the day
- It will enable the range of energy and protein requirements of patients to be met i.e. 'nutritionally well' and 'nutritionally vulnerable'.
- Providing a choice of foods for individuals who require or would benefit from following a diet based on 'healthy eating' principles enabling them to meet their nutritional requirements.
- Ensure provision is made for a choice of foods for individuals with poor appetites or increased requirements to enable them to meet their nutritional requirements.
- Ensure that the dietary needs of individuals who follow diets for cultural or religious reasons are met e.g. vegetarian diet, vegan diet.
- A hospital menu must enable a range of energy and nutrient requirements and dietary preferences of the patient population to be met.

The following menu planning and food-based criteria have been set to assist hospitals achieve the nutrient criteria detailed in Section 2 and also a number of the standards set in HIS *Food, Fluid and Nutritional Care Standards*.[3]

These menu planning and food-based criteria also aim to ensure that patients' differing dietary needs are catered for and thus maximise opportunities to ensure nutritional needs can be met.

3.1 Menu Planning Criteria

Menu requirements need to be informed by assessment of local patient population needs which should be regularly reviewed.

To meet energy and nutrient requirements it is essential that the minimum portion offered by the catering department is the portion size used when analysing all patient menus.

Table 3: Menu planning criteria

Criteria	Rationale
The hospital menu **must** provide breakfast, lunch, meal and a minimum of two additional substantial snacks throughout the day.	
400 kcal breakfast The BDA Nutrition and Hydration Digest suggests that breakfast for 'nutritionally well' should be 400kcal and 10g protein but for 'nutritionally vulnerable' it should be 485kcal and 12g protein.[12]	To provide a menu that will enable the range of energy and protein requirements of patients to be met i.e. 'nutritionally well' and 'nutritionally vulnerable'. It assumes that breakfast, two hot meals with the minimum of two courses and a minimum of two substantial snacks per day are provided.
A **minimum of 300kcal per main meal and 500kcal for an energy-dense main meal** and **18g protein** (protein source + starch + vegetables + sauce/ gravy).[12]	To provide a menu that will enable the range of energy and protein requirements of patients to be met i.e. 'nutritionally well' and 'nutritionally vulnerable'. This applies to the midday and evening meals (main course). It assumes that breakfast, two hot meals with a minimum of two courses and a minimum of two substantial snacks per day are provided.
A 'healthy eating' meal choice at each eating occasion (must fulfil criteria as specified in Table 18).	To provide a choice of foods for individuals who require or would benefit from following a diet based on 'healthy eating' principles to enable them to meet their nutritional requirements.
A 'higher energy and nutrient-dense' meal choice at each eating occasion (must fulfil criteria as specified in Table 16).	To provide a choice of foods for individuals with poor appetites or increased requirements to enable them to meet their nutritional requirements.
A vegetarian meal choice at each eating occasion.	To provide for the dietary needs of individuals who follow a vegetarian diet. These dishes must comply with other nutrient and food-based standards based on local population needs.
A **minimum of two courses** at the midday and evening meals.	To provide a menu that will enable the range of energy and nutrient requirements and dietary preferences of the patient population to be met.

Table 3: Menu planning criteria (continued)

Criteria	Rationale
The smallest portion served must meet the minimum standard of nutrient provision. Larger portions should be available for those who need them.	To provide for the range of patients' appetites. The standard portion (will be the based on the smallest available portion) and should meet the minimum nutrient requirement. Larger portions should be available for those patients who choose it. Larger portions can consist of any component of the main meal as indicated by patient choice.
A hot main meal option **at midday and at the evening meal.**	To ensure the varying dietary needs and preferences of the patient population are met.
A variety of substantial snacks must be provided a minimum of twice per day. Two snacks must be capable of supplying a minimum of 300kcal in total. Must include fruit as a snack option.	Provision of substantial snacks in addition to meals allows patients to maximise opportunities for patients to select foods enabling them to meet their energy and nutrient requirements. It would be considered good practice to offer snacks three times per day for those individuals with increased energy and nutrient requirements (Section 5.2). [3, 12] Provision of fruit as a snack can enable individuals to meet the standard of 5 A Day.
On-ward provisions must provide the minimum food and beverage items (Table 13).	Increasing the choice, range and variety of food items and beverages available to patients in between meals will mean patients are more likely to eat something and meet their nutritional requirements.

Table 3: Menu planning criteria (continued)

Criteria	Rationale
Mandatory use of Standard recipes for patient meals must be used in all locations. • There must be an up-to-date nutritional analysis of each menu item. • In addition caterers must ensure the standard recipe includes up-to-date allergy information.	Standard recipes can help to ensure there is a consistent quality and nutritional content of dishes produced and ensure consistent budgetary control. There are significant patient health and safety risks associated with not following standard recipes. Up-to-date nutritional analysis of each menu item enables determination of whether the menu meets the nutrient and food-based standards set. Use of standard recipes is also good practice in non-patient catering. A system must exist to ensure allergy information is available to access for all involved in ordering and delivery of meals to patients.
Healthier eating, higher energy and **vegetarian dishes must** be **identified as a minimum** on the hospital menu. (According to criteria provided in Section 5).*	This must be used to inform staff and patients of the suitability of menu items and guide patient choice.[12] This can be identified through a number of means including menu coding, ward manuals etc.
Food must be readily available for all patients who do not have the opportunity to have a meal at the normal mealtime (missed meals and out-of-hours). **The food offered must provide the minimum 300kcal and 18g protein, assuming that patients will only have one missed meal. Systems should be in place to record and manage consecutive missed meals.**	There needs to be a flexible service and recognised procedures that provides for the dietary and nutritional needs of patients who miss meals at normal meal-times.[3]

*National standards for children should apply. Local expertise and therefore local standards may vary.

3.2 Food-based Criteria

The following food-based criteria are known to contribute to a diet of good nutritional quality and have been set to assist hospitals achieve the nutrient criteria detailed in Section 2 for the 'nutritionally vulnerable' and the 'nutritionally well' patients.

Table 4: Food-based criteria

Breads, other cereals and potatoes	
A selection of wholegrain breakfast cereals must be available at breakfast time. A selection of extra breads, including brown and wholemeal, must be available as an accompaniment to all meals.	Wholegrain breakfast cereals are a good source of fibre and can be useful in managing individuals with constipation (>3g fibre/100g).[40] Bread is a good source of energy. Offering extra bread with every meal will allow those with higher energy requirements to increase energy intakes. (Offering extra bread to 'nutritionally vulnerable' patients who are likely to have a small appetite may not be appropriate).
Fruit and vegetables	
The menu must provide the opportunity for patients to **choose at least five servings of fruit and vegetables** across a day's menu providing as wide a variety as possible.	There is increasing evidence that consuming >400g of fruit and vegetables every day may reduce the risk of developing chronic diseases such as coronary heart disease and some cancers. It is also beneficial in the management of constipation. Fruit and vegetables are generally a good source of vitamin C which has a role to play in wound healing and also immune function.
Meat, fish and alternatives	
The menu must provide a choice of meat or meat alternatives at both midday and evening meals. The menu must provide a choice of **fish a minimum of twice a week**, one choice of which should be an oily fish variety.	Meat and fish are key sources of protein, iron, zinc and vitamin B12 in the diet. It is recommended that the maximum intake of processed red meat must not exceed 90g/day for an individual. This should be considered in menu planning.[18] Oily fish provides long-chain omega-3 fatty acids that are deficient in the Scottish diet. Appendix 4.[41]

Table 4: Food-based criteria (continued)

Milk and dairy foods	
There must be provision for a minimum of **600ml of milk for each patient every day.** A choice of whole milk and lower fat milk (semi-skimmed) must be available.	Milk is a key source of protein, calcium, and vitamin B12 in the diet. 600ml allowance is based on provision for breakfast cereal (200ml) and drinks throughout the day (400ml).[12] Providing a choice of both whole and lower fat milk and milk-products will enable the dietary needs of both those choosing a 'healthier diet' and 'higher energy and nutrient-dense' diet to be met.
Foods containing fats, foods and drinks containing sugar	
Offer a choice of butter and spreads including those low in fat, at all meals where a spreading fat is offered. Spreads should be rich in polyunsaturated fatty acid (PUFA) or monounsaturated fats (MUFA) Only spreads and oils that are rich in polyunsaturated and monounsaturated fats should be used in cooking.	Increasing the intake of poly or monounsaturated fats in place of saturated fats may help reduce the risk of diseases such as cardiovascular disease and stroke. Provision of additional spreading fats including butter at mealtimes can increase the energy density and palatability of the diet, which can assist those individuals with poor appetites and also those with increased energy requirements.
Fluids	
There must be a provision of water and beverages to ensure patients are able to access a **minimum of:** • 1.6L of fluid per day for woman.[33] • 2L of fluid per day for men.[33] **Potable Water must be available at all times**, (preferably this should be chilled mains water)	Sufficient fluids are needed to ensure optimal health, including digestion and absorption of nutrients, renal, cardiovascular and respiratory function.[42] Insufficient intakes can contribute to constipation, confusion and pressure ulcers.[43] Mild dehydration often begins before the sensation of thirst is triggered; this is particularly the case in older people and children thus drinks should be offered and encouraged throughout the day.[42, 43, 44, 45]

PLANNING
ASSESSMENT
MENU STRUCTURE
FOOD GROUPS

4. Menu Planning Guidance

4. Menu Planning Guidance

Summary

- Effective menu planning is essential to meet the dietary and nutritional needs of the hospital population and requires the collection of a wide range of information and input from numerous groups.
- Before considering menu planning or development of a recipe database, local menu planning groups need to consider the wider issues that can affect patient food choice and hence food intakes. Gathering of information about the differing dietary needs of different hospital patient groups can help menu planners develop an appropriate food service that is in a form that is familiar to patients.
- Menu planning groups need to recognise the often complex needs of specific patient populations to be cared for including 'nutritionally vulnerable' patients and those on specialised therapeutic diets.
- The menu structure needs to consider the dietary needs of the population group and needs to provide choice for all patients if it is likely to help patients improve their intakes.
- It is essential to follow a standard recipe in NHS catering to ensure consistent quality, consistent nutritional value and consistent budgetary control.
- In addition to meals, snacks provide an essential addition to the menu by adding flexibility, interest and variety and 'nutritionally vulnerable' patient groups can easily improve their nutritional intake by the consumption of snacks.
- Malnourished people have more frequent hospital admissions/readmissions and increased length of hospital stay. As a result, the healthcare costs associated with the management of people with malnutrition are more than twice that of the costs of managing people without malnutrition. Better nutrition and hydration care for individuals at a risk of malnutrition can therefore result in substantial cost saving to the NHS. In view of this it is vital that hospital catering budgets are not constrained, to enable menu development which meets the nutritional needs of the patient group served.
- It is important to remember that the menu should be reviewed and updated regularly in order to continue to meet the dietary needs of a potentially changing hospital.

4.1 Introduction

Effective menu planning is essential to meet the dietary and nutritional needs of the hospital population and requires the collection of a wide range of information and input from numerous groups within a hospital.[46] Healthcare Improvement Scotland *Food, Fluid and Nutritional Care Standards* Standard 3 has set the following rationale in relation to planning and delivery of food and fluid in hospital:[3]

- to plan menus effectively, multidisciplinary input is required, together with comprehensive knowledge of the hospital population;
- effective multidisciplinary communication is vital for the efficient provision of food and fluid in hospital to ensure that patients' nutritional requirements are met, and to help minimise waste;
- the nutritional content of dishes needs to be analysed to ensure their nutritional adequacy; and
- meals need to be distributed to the wards and served without delay, to ensure nutritional content, temperature and quality are maintained.

Audit Scotland supports this with their recommendation that NHS Board areas must plan their menus in line with recognised menu planning principles and must use a multi-disciplinary group to carry this out.[23]

In theory the hospital menu should be designed to meet nutritional requirements. However, in practice it may not be eaten by individuals who are unwell or have a suppressed appetite and such individual nutritional needs will not be met.[36, 39, 46] In addition, the involvement of a multi-disciplinary planning group, including patient representation provides stronger support in planning decisions and implementation at ward level and should not be underestimated. The different steps involved in planning a menu are discussed in this section.[46]

It is important to remember that the menu should be reviewed and updated regularly in order to continue to meet the dietary needs of a potentially changing hospital population.

4.2 The Planning Process

Food provision should be planned in order to be responsive to patients' needs not those of medical, nursing and other healthcare staffP and should be managed as an integral component of clinical care rather than a 'hotel' function.[13, 39, 46]

Healthcare Improvement Scotland *Food, Fluid and Nutritional Care Standards*, recommend that mealtimes are appropriate for patient groups.[3] There should be sufficient time between each meal to allow for in-between snacks that are critical for enabling patients to meet their nutrient requirements.

4.2.1 Assessment of Patient Population Dietary Needs

Before considering menu planning or development of a recipe database, menu planning groups need to consider the wider issues that can affect patient food choice and hence food intakes. Gathering of information about the differing dietary needs of different hospital patient groups can help menu planners develop an appropriate food service that is in a form that is familiar to patients.

Individual requirements and the need for equipment to help with eating and drinking need to be considered in the menu and food service planning including individuals:

- likes and dislikes;
- disabilities that may affect their ability to eat and drink;
- social/environmental mealtime requirements;
- food allergies/intolerances;
- need for therapeutic diet;
- cultural/ethnic/religious.

Assessment of each patient's dietary needs should form part of their individual medical and nursing care (as outlined in Section 2.1) and in line with Healthcare Improvement Scotland *Food, Fluid and Nutritional Care Standards*, criteria 2.1.[3]

To assess the dietary needs of different patient populations, the following information should be included:[3, 12, 39, 46]

- age;
- gender;
- cultural, ethnic, social and religious diversity;
- physical and/mental health needs;
- food preferences;
- length of stay; and
- nutritional risk.

Clinical specialties also need to be considered for provision of therapeutic diets.[12, 15, 39] This information can be collected from NHS health information departments, patient surveys, nutritional screening data, compliments and complaints, other hospital staff and anecdotally. Collated food services data such as menu item uptake and wastage information can also be extremely useful in the initial stages of menu planning.[12]

Hospital patients can be broadly categorised into the following groups:

- 'nutritionally vulnerable' (normal nutritional requirements but with poor appetite and/or unable to eat normal quantities at mealtimes; or with increased nutritional needs);
- 'nutritionally well' (normal nutritional requirements and normal appetite or those with a condition requiring a diet that follows healthier eating principles);
- those who require therapeutic diets e.g. kidney disease, coeliac disease; and
- special or personal dietary needs.

It is important to note that some patients will require a combination diet which meets their therapeutic and/or personal or religious needs. It is essential that the hospital is able to provide appropriate food and fluids to meet these individual's needs for example a gluten-free, texture-modified diet, for a vegetarian.

There are some groups of the population whose dietary requirements may need to be considered separately when planning a menu:

- children;
- people with swallowing difficulties;
- people with dementia; and
- people receiving end of life care.

These groups of patients may have different dietary needs to the wider population and if these are not met, then they may end up in a 'nutritionally vulnerable' state (further information is provided in Appendix 1).

4.2.2 Cost and Resource Implications

Malnourished people have more frequent hospital admissions/readmissions and increased length of hospital stay. As a result, the healthcare costs associated with the management of people with malnutrition are more than twice that of the costs of managing people without malnutrition.[7, 47]

It has been estimated that the public health and social care expenditure associated with malnutrition in England in 2011 and 2012 was £19.6 billion with the majority of this expenditure associated with health rather than social care. There is no equivalent data for Scotland but there is no reason to assume that the per capita expenditure would differ significantly between Scotland and England.[7]

Better nutrition and hydration care for individuals at risk of malnutrition can therefore result in substantial cost saving to the NHS.[47] In view of this it is vital that hospital catering budgets are not constrained to enable menu development which meets the nutritional needs of the patient groups it serves.

Cost and resource constraints to consider include:

- total budget per patient day/week;
- method of production;
- kitchen equipment and related budget;
- existing staff levels and rosters;
- staff skill level;
- food storage facilities;
- procurement and sustainability issues; and
- method of distribution.

4.3 Food-based Menu Planning Guidance

Different foods provide different nutrients; some nutrients are only found in sufficient quantities if specific foods or food groups are included in adequate amounts in the diet. Thus, in order to meet the nutrient standards specified in

Section 2, patients will need to be provided with a diet that is made up of a combination and balance of foods from all of the five food groups, namely:

- breads, other cereals and potatoes;
- fruit and vegetables;
- milk and dairy foods;
- meat, fish and alternatives; and
- foods high in fat and/or sugar.

The 'eatwell guide'

The balance of foods set out in the 'eatwell guide' is not suitable for children under the age of 2 years. Children between the age of two and five should gradually be introduced to more low-fat, high-fibre foods so that by the time they are five they are eating a diet that represents the balance set out in this model. (For further information refer to Section 7 on children).

4.3.1 Healthy Eating Advice – Basic Principles:[48]

- plenty of starchy foods such as rice, bread, pasta and potatoes (choose wholegrain varieties when possible);
- plenty of fruit and vegetables; at least five portions of a variety of fruit and vegetables a day;

- some milk and dairy, choosing reduced fat versions or eating smaller amounts of full fat versions or eating them less often. Children up to two years should use full-fat versions;
- some protein-rich foods such as meat, fish, eggs, beans and non-dairy sources of protein, such as nuts and pulses;
- just a little saturated fat, salt and sugar.

The balance of each of these food groups in the diets of hospital patients will vary depending on the dietary and nutritional needs of the different patient populations. The provision of different types of foods or choices of food items within each food group needs to recognise the differing dietary needs that are to be catered for.

Prevention of undernutrition in patients should focus on delivery of 'ordinary food' via the oral route, Oral Nutritional Supplements (ONS) or artificial nutrition support must not substitute the adequate provision of food and fluid by a hospital, unless there are clear clinical indications.[49]

Patients provided with food with which they are familiar and enjoy are more likely to consume it, ensuring that they receive the nutrition provided on the plate.[46] Provision of greater choice is more likely to meet individual food preferences and individuals' dietary needs.

The inclusion, preparation and cooking of a variety of foods specified in the five food groups needs to remain flexible if the diverse needs of the hospital population are to be met using a 'food first' approach. Additional dietary needs, for example the need for a texture-modified diet (refer to Section 5.6) should be underpinned by this menu planning guidance.

In contrast to some other public sector catering services the exclusive use of low fat/sugar cooking methods and procurement of low fat/sugar products would limit the ability of a catering department to meet the nutritional needs of the 'nutritionally vulnerable' hospital population. Such patients' meals should still be based on starchy foods with wholegrain choices available, they should have moderate portions of meat, poultry, fish and alternatives and should aim for five portions of fruit and vegetables per day. Full-fat foods should be available. Sugary foods can be eaten in moderation, but not at the expense of more nutrient-dense foods.

4.3.2 Food Group Menu Planning Guidance

Tables 5-10 provide generic food-based menu planning guidance to assist meeting the nutrient and food-based standards for food service in hospitals; those practices that apply specifically to meeting the healthy balanced diet and those practices that apply specifically to meeting a diet that is more energy and nutrient-dense.

Further and more detailed food-based guidance for the provision of higher-energy and nutrient-dense menu choices (Table 17) and healthier eating menu choices (Table 19) is provided in Sections 5.2 and 5.3. For all food groups, foods need to be provided in a way that is suitable to meet the dietary needs

of different patient populations. The five food groups should underpin menu planning for all patients.

Table 5: Potatoes, bread, rice, pasta and other starchy carbohydrate

Criteria	**A selection of extra breads, including wholemeal, must be available as an accompaniment to all meals.** **A selection of wholegrain breakfast cereals must be available at breakfast time.**
Rationale	This food group is an important source of carbohydrate and therefore energy, protein, fibre and vitamins and minerals including folate, folic acid and zinc. Wholegrain varieties are higher in fibre. The provision of extra bread at mealtimes can assist patients with a good appetite to meet their overall energy and nutrient requirements and can also assist in prevention of constipation.
Food options	All bread – white, wholemeal, granary, bagels, chapattis, naan, pita bread and tortilla. Potatoes and sweet potato. Breakfast cereals, including wholegrain varieties (fibre>3g/100g).[40] Porridge. Rice, couscous and semolina. Noodles and pasta (including wholegrain varieties).

Table 5: Potatoes, bread, rice, pasta and other starchy carbohydrate (continued)

Menu planning guidance	A **variety** and **choice** of foods from this group including bread, potato, sweet potato, rice and pasta should be offered across the menu cycle (meals and snacks). Provide **at least two** options of bread/cereal/starch items at each meal – breakfast cereals, bread, rice, pasta, noodles, and potatoes. A variety of cooking methods for potato should be used across the menu cycle. Always ensure a low fat alternative *to deep fried or roast potatoes* is available. A variety of breakfast cereals should be provided at breakfast time including, **at least two wholegrain** options, (fibre >3g/100g or at least 3g in a reasonable expected daily intake) and **at least one** option fortified with folic acid. Introduce alternative sources of bread and cereals such as couscous, tortillas and pita bread. Consider adding grains such as barley, rice and pasta to homemade soups throughout the menu cycle. Offer cereal-based desserts such as rice pudding or semolina. Provide *small sandwiches*, crackers, oatcakes, *muffins*, tea breads, plain or fruit scones or pancakes as snacks appropriate for the patient group. Bran **must not** be added to foods to increase fibre content – it inhibits the absorption of some minerals.

Further information on gluten-free diets can be found in Section 5.5.

*Energy and nutrient-dense information has been highlighted in the table above in italics.

Table 6: Fruit and vegetables

Criteria	A hospital menu must offer the opportunity to choose **at least five servings** of fruit and vegetables (**minimum 400g uncooked**) across a day including as wide a variety as possible (can include snacks).[50]
Rationale	This food group is an important source of fibre, folate, potassium and vitamin C. In addition green leafy vegetables provide some non-haem iron.
Food options	Fresh, frozen, tinned and dried fruit. Fresh, frozen and tinned vegetables. Pure fruit and vegetable juices. Salad

Table 6: Fruit and vegetables (continued)

Menu planning guidance	Guidance on portion sizes for a range of fruits and vegetables is available at DoH – 5 A Day.[51] Provide a fruit option on the menu **at least three times** per day, e.g. fresh fruit, canned fruit. (At least one which must be fresh fruit daily.) Provide pure unsweetened fruit juice **daily (100% juice).** Provide **at least two** vegetable choices at the main meal each day. Provide **at least one** vegetable choice at the lighter meal in each day. Add vegetables to soups and to other appropriate dishes, e.g. casseroles. Use steam cooking in preference to boiling for vegetables if facilities and production allows. Always ensure a low fat alternative to *roast or fried vegetables* is available. Provide a choice of fresh, uncooked vegetables, e.g. salads at mealtimes (see below). Fresh, stewed, dried or canned fruit could be provided as an accompaniment at breakfast and for dessert. Provide an option for soft, easy to eat fruit or prepared fruit salad. Cook vegetables as close to service as practical to minimise nutrient loss. **Don't** cook, chill, store, transport, or reheat for unnecessary lengths of times – it results in the loss of heat labile and water soluble vitamins. **Don't** hot-hold for more than 90 minutes to ensure maximal vitamin retention.[52]

*Energy and nutrient-dense information has been highlighted in the table above in italics.

Table 7: Beans, pulses, fish, eggs, meat and other proteins

Criteria	A hospital menu must offer the opportunity **to choose a meat or meat alternative at both the midday and evening meal.** A hospital menu must offer the choice of **fish a minimum of twice a week**, one choice of which should be an oily fish variety (see Appendix 4).
Rationale	This group provides a good source of energy, protein, haem iron, vitamin B12 and zinc. Oily fish contributes to omega-3 intakes, while beans, pulses, nuts and seeds contribute to protein, non-haem iron, zinc and fibre intakes.
Food options	Meat – all cuts of beef, lamb, pork and meat products such as bacon, ham, corned beef and sausages. Poultry – all cuts of chicken and chicken products. Fish – fresh, frozen, canned and fish products such as fish cakes and fish fingers. Oily fish includes salmon, sardines, mackerel and herring (see Appendix 4). Eggs are a useful source of nutrients. Scrambled eggs may provide a suitable option of a cooked breakfast for a range of patients if required. Beans and pulses – baked beans, butter beans, kidney beans, chickpeas and lentils. Nuts – includes, almond, hazel, walnut, cashew, pecan, Brazil, pistachio, macadamia and Queensland nuts (NB: refer to Section 5.4 for menu planning guidance for allergen-free diets). Vegetarian products such as burgers, sausages. Textured soy proteins such as tofu, and Quorn® (mycoprotein).

Table 7: Beans, pulses, fish, eggs, meat and other proteins (continued)

Menu planning guidance	A variety of red meat, poultry and pork in different cuts should be provided across the menu cycle. Processed meat products should be minimised on the menus. When offering meat, poultry and fish products try to procure leaner cuts. Choose meat products with higher meat content. **Always** include a protein alternative to meat for vegetarian meals such as kidney beans, chickpeas and texture-modified proteins. NB: On occasion, cheese can also be used. Meat alternatives for vegetarian dishes should offer a variety of foods from this group. Use eggs as a base for vegetarian meals **regularly** throughout the menu cycle. Try to procure canned beans and pulses with no added salt and sugar. Use pulse-based soups **at least once per week** throughout the menu cycle. Always offer an alternative to *fried or roasted meats*. Always offer an alternative choice to *deep fried fish*. It is recommend that pregnant and breast-feeding females should not consume oily fish more than twice a week.

*Energy and nutrient-dense information has been highlighted in the table above in italics.

Table 8: Dairy and alternatives

Criteria	There must be provision for patients to have access to a **minimum of 600ml of milk for each patient every day** e.g. for tea, coffee, cereal and as a beverage A choice of *whole milk* and lower fat milk (semi-skimmed) must be available.
Rationale	This food group is a good source of protein, calcium and vitamin B12.
Foods	Milk Hard cheese* Yoghurt or fromage frais. Sauces and desserts made from milk, e.g. custard, rice pudding.
Menu planning guidance	A hospital menu should offer the opportunity to choose **two to three servings** of this group across the day (can include snacks). Use cheese as a base for some vegetarian meals during a menu cycle, with awareness of the high fat and saturated fat content of this product. Use of vegetarian cheeses should be considered.** (Refer to Table 7 for alternative sources of protein.) Ensure that there is provision of low fat cheeses for individuals requiring a healthy balanced diet. Provide yoghurt, both low fat and *full fat*, including thick and creamy varieties, as a snack or accompaniment. Provide 'smooth' yoghurt for texture-modified dietary choices as appropriate Provide milk-based desserts as part of a menu cycle, as appropriate for patient group.

*This is because ripened soft cheeses are less stable than hard cheeses (they are less acidic and contain more moisture) and are therefore more inclined to allow growth of undesirable bacteria such as listeria

** Vegetarian sources of protein should be varied over the week. Over-use of cheese should be avoided. Vegetarians should be provided with a range of foods not only to provide protein but also other vitamins and minerals. Too heavy reliance on eggs and cheese results in a diet too high in energy and fat especially saturates.

* Energy and nutrient-dense information has been highlighted in the table above in italics.

Table 9: Oils and spreads, including sugar and salt

Criteria	Where a spreading fat is offered, spreads that are rich in PUFA and MUFA, including those low in fat, and butter should be available at all meals. Oils and spreads rich in polyunsaturated and monounsaturated fats should be used in cooking. Nutrient standard for salt <6g/day.[31]
Rationale	This food-group increases the palatability of foods. *Fats, oils and sugar are important contributors to energy-dense meals for "nutritionally vulnerable" patients; those patients with small appetites and those with increased requirements.* For those individuals who require a diet that is 'healthy eating', the fat and sugar content needs to be modified in line with national goals
Foods	Fat containing foods – butter, margarine, spreads, cooking oils, salad dressings, mayonnaise, *cream, chocolate, crisps, biscuits, pastry-based items, cakes, puddings, icecream, rich sauces and gravies.* Foods containing sugar – *soft drinks, sweets, jam and foods such as icecream, chocolate, cakes and biscuits.* Foods containing salt – soy sauce, gravy mix, bouillon, salt and foods purchased ready-made, e.g. vegetarian products.

* Energy and nutrient-dense information has been highlighted in the table above in italics.

Table 9: Oils and spreads, including sugar and salt (continued)

Menu planning guidance	A hospital menu should offer a range of foods from this group, some containing higher amounts of fat and sugar as part of a balanced and varied menu. Specify a **measured** amount of salt to be used in a recipe. Introduce alternative flavourings in place of salt and bouillon such as garlic, herbs and spices. Don't over rely on convenience foods that may contain large quantities of added salt, e.g. packet soups (and minimal nutrition content). *Biscuits, cakes and crisps can be offered as a snack in moderation to the appropriate patient group.* (Refer to Table 12 for suggestions of substantial snacks.) Offer low fat/low sugar items such as yoghurt or crème fraiche as alternatives to cream and ice-cream with desserts. Offer an alternative choice *to cream-based sauces*, for example tomato or vegetable-based sauces. Offer an alternative choice to *cream soups* or *use milk in place of cream*. Oils rich in monounsaturated and/or polyunsaturated fats are likely to include: olive, rapeseed (canola), safflower, sunflower, corn, soy, walnut, linseed, sesame seed and nut oils for cooking. Fat spreads that are rich in monounsaturated or polyunsaturated fats are likely to include rapeseed, olive oil, sunflower, soy oil. Use spreads fortified with folic acid and vitamin D where possible, especially with older adults or those patients hospitalised for a long period of time. Don't overheat deep frying oil or over use before replacing.

Table 9: Oils and spreads, including sugar and salt (continued)

Menu planning guidance	*Make extra fat spread potions available.* *Sugar should be freely available at ward level for patients requiring it to supplement their energy intake.* Don't replace sugar in baking with an artificial sweetener.

* Energy and nutrient-dense information has been highlighted in the table above in italics.

Table 10: Water and beverages

Criteria	There must be provision to ensure patients are able to access water and beverages providing a **minimum of 1.6 litres of fluid per day** for women and 2.0 litres of fluid per day for men.[33] **Water must be available at all times;** preferably this should be portable/ chilled mains water, not from stored water tanks.[53]
Rationale	Fluid and water is a basic nutrient of the human body and is critical to human life.[11]
Foods	Water Pasteurised milk. Pure, unsweetened fruit juice. Squash or cordial (choice should include 'no added sugar' variety). Tea, coffee (including *all milk coffee*). Malted drinks and hot chocolate.
Menu planning guidance	A range of drinks should be provided over each 24-hour period including hot and cold beverages.[54] Fluids need to be provided at the correct temperature and texture, and in an appropriate drinking vessel to meet individual needs. Water jugs provided must have lids to minimise foreign debris and bacteria contaminating the water. Some patients may require assistance in pouring water from a jug so this should be provided accordingly. Practical tips for encouraging water consumption are provided in Water for Health: Hydration Best Practice Toolkit for Hospitals and Healthcare.[53]

* >75% of beverages are consumed compared to only about 40% of water from jugs so it would be good practice to ensure numerous beverage rounds daily.[54]

* Energy and nutrient-dense information has been highlighted in the table above in italics.

4.4 Menu Structure

Menu structure may vary between hospitals. The menu structure needs to consider the dietary needs of the population group. For example, some populations may prefer their main meal in the evening, and others may prefer it in the middle of the day. The menu needs to provide choice for all patients if it is likely to help patients improve their intakes.

In reality individual food choices are likely to combine a mixture of menu items, some healthier eating options, some energy and nutrient-dense options. It is the skill of the menu planning group to design a menu that provides an appropriate balance of differing dietary needs based on assessment of the patient population at the local level and ensure the menu has the capacity to meet the range of dietary and nutritional needs. Menu planning groups also need to recognise the often complex needs of specific patient populations to be cared for including 'nutritionally vulnerable' patients and those on specialised therapeutic diets.

Dishes placed on menus require a brief description which enables patients to make a more informed choice. Often the naming of the dish on a menu will give a hint of what is likely to be the main make up of a dish, however, it is recognised that as space can be prohibitive on a printed menu then consideration should be given to additional information being available. This information should include a list of ingredients, include cooking method i.e. frying, steaming etc and make note of any allergen information.

4.4.1 Catering Specification

Table 11 provides a suggested structure for hospital menus to enable food service provision to meet the nutrient and food criteria set in Section 2 and 3 of the Specification, many hospitals may exceed this. It can be used during the planning process, helping to ensure the finalised menu meets the nutritional needs of the population; a template for this can be found in Appendix 6.

Caterers, dietitians, nurses, SLT and patient representatives must work together to meet the needs of patients. The menu must provide as a minimum a choice of any two courses at each mealtime, allowing patients to choose a combination of foods that meets their appetite needs.

When assessment of local patient populations' needs indicate, menus must provide a 'healthy eating' meal choice at each eating occasion (which fulfil criteria for total energy, protein, fat and carbohydrate as detailed in Table 18) and a 'higher energy and nutrient-dense' meal choice at each eating occasion (which must fulfil criteria for total energy and protein refer Table 16).

Table 11: Suggested menu structure

		Notes
On wakening	Beverage	
Breakfast	Pure unsweetened fruit juice Fruit Cereal (include wholegrain varieties) Porridge oats Milk for cereal Bread/bread roll/toast (a choice of white and wholemeal) Butter/low fat spread/PUFA/ MUFA spread (e.g. olive-oil based) Preserves (regular and low sugar varieties) Beverage	*Assuming the patient chooses fruit juice, cereal and milk (semi-skimmed – 200ml from daily allowance), bread and butter/ spread this meal will provide approximately 400kcal and 8g protein.[12] The option for a cooked breakfast may be considered an important inclusion on some menus in order to maximise opportunity to meet some patient groups dietary needs.*
Mid morning	Beverage Snack Fruit	*An allowance of 600ml of milk in total which includes milk for drinks will provide an additional 396kcal, 18g protein (whole milk); 276kcal, 18g protein (semi-skimmed milk).* *A variety of substantial snacks must be provided a minimum of twice per day. Two substantial snacks must be capable of supplying a minimum of 300kcal in total.*

* Energy and nutrient-dense information has been highlighted in the table above in italics.

Table 11: Suggested menu structure (continued)

		Notes
Midday meal	**A minimum of two courses provided one of which must be a main course.** For example: split into starter, mains and dessert Soup and bread roll with butter/ spread portion Pure unsweetened fruit juice Sandwich (choice of vegetarian and non-vegetarian fillings) must be offered with soup as one course Main course 1 (meat or fish based) Main course 2 (meat or fish based) Main course 3 (vegetarian)* Vegetables (able to choose 2) Carbohydrate/ starchy food, e.g. potato, rice, pasta, bread (2 choices)	*Within the range of choices available the menu should be capable of providing minimum 300-500kcal from a main meal (inclusive of main dish, vegetables, and starchy accompaniment). Each main course should provide 18g protein. It is recommended that desserts which contain over 300kcal and 5g protein should be included since they are a useful energy source for 'nutritionally vulnerable' patients.*[12]

Table 11: Suggested menu structure (continued)

		Notes
Midday meal	Dessert Fruit (fresh or tinned in light syrup or juice) Yoghurt/pot rice/custard Beverage	
Mid afternoon	Beverage Snack Fruit	*An allowance of 600ml of milk in total which includes milk for drinks will provide an additional 396kcal, 18g protein (whole milk); 276kcal, 18g protein (semi-skimmed milk).* *A variety of substantial snacks must be provided a minimum of twice per day. Two substantial snacks must be capable of supplying a minimum of 300kcal in total.*
Evening meal	**A minimum of two courses provided one of which must be a main course** Soup and bread roll with butter/ spread portion or fresh fruit juice Sandwich (choice of vegetarian and non vegetarian fillings) must be offered with soup as one course Main course 1 (composite** meat or fish based) Main course 2 (composite** vegetarian)	*Soup and sandwiches should be considered as a course and therefore together must be capable of providing a minimum of 300kcal and 18g protein (500kcal for energy and nutrient-dense diet). It is recommended that desserts contain over 300kcal and 5g protein should be included since they are a useful energy source for 'nutritionally vulnerable' patients.*[12]

Table 11: Suggested menu structure (continued)

		Notes
Evening meal	Carbohydrate/ starchy food as above Vegetables (able to choose 2) Dessert Fruit (fresh or tinned in light syrup or juice) Yoghurt/pot rice/custard Beverage	
Before bedtime	Beverage Snack Fruit	*An allowance of 600ml of milk in total which includes milk for drinks will provide an additional 396kcal, 18g protein (whole milk); 276kcal, 18g protein (semi-skimmed milk).* *A variety of substantial snacks must be provided a minimum of twice per day. Two substantial snacks must be capable of supplying a minimum of 300kcal in total.*
	Note	*An allowance of 600ml of milk in total which includes milk for drinks will provide an additional 396kcal, 18g protein (whole milk); 276kcal, 18g protein (semi-skimmed milk).* *A variety of substantial snacks must be provided a minimum of twice per day. Two substantial snacks must be capable of supplying a minimum of 300kcal in total.*

* Vegetarian main courses should provide a minimum of 18g protein, however it is recognised that may be difficult to achieve. Achievement of an absolute minimum of 12g protein from a main meal is feasible, however extra protein will need to come from desserts and snacks. Menu planners should avoid excessive reliance on cheese as the meat alternative.[46]

** A **composite** dish should consist of a **protein** containing food, **vegetables** and a **carbohydrate/starchy** item. Examples would be cottage pie (minced beef, onions, carrots and mashed potato), lasagne (minced beef, tomatoes, onions, mushrooms, peppers and pasta sheets). Caterers should offer a side salad or one vegetable with this type of dish. This would increase the likelihood that patients could meet five a day targets for fruit and vegetable consumption and would be regarded as good practice. Composite meals will need to meet the specific nutrient criteria if they are to be coded as 'healthier eating' or 'higher energy and nutrient-dense'.

* Energy and nutrient-dense information has been highlighted in the table above in italics.

4.4.2 A Choice of a Hot Meal at Midday and at the Evening Meal

Offering the option of a hot meal in the middle of the day and in the evening provides greater choice for patients. Greater choices mean dietary preferences are more likely to be met, food more likely to be eaten and thus nutritional requirements more likely to be met.

Hot meals generally lend themselves more readily to texture modification rather than sandwiches. Menu structure and meal types should be based on local assessment on patients' dietary preferences and needs. If soup and sandwiches are provided they must be treated as one course. Whichever type of service is offered menus must meet the nutrient and food criteria set out in Section 2 and 3.

4.4.3 Between-meal Snacks

Healthcare Improvement Scotland *Food, Fluid and Nutritional Care Standards* Standard 3 Planning and Delivery of Food and Fluid in hospitals, criteria 3.2 (f and g) states:[3]

The operational group is responsible for:

> **'setting main mealtimes appropriate for patient groups ensuring that when the evening meal and breakfast are more than 14 hours apart, a substantial snack is available'.[3]**

Snacks provide an essential addition to the menu by adding flexibility, interest and variety. Also, several 'nutritionally vulnerable' patient groups can easily improve their nutritional intake by the consumption of snacks in this way. In order to meet the nutritional needs of many patient groups it will be necessary to supplement the energy consumed from meals with that from snacks.[35, 55]

In addition, the provision of fruit as a snack can help patients achieve the five a day target.

- Snacks must be provided at a minimum twice per day to all patients.
- Two snacks must be capable of providing a minimum of 300kcal per day.
- Snacks can be comprised of ward provision supplies (Table 12).
- A choice of fruit must also be provided.

At least two snacks must be provided during the day, one of which has to be in the evening. The exact timings for the provision of snacks will depend on the mealtimes in each area. Hospitals may wish to move the mid-morning snack to the afternoon if the gap between lunch and evening meal is longer than the gap between breakfast and lunch, this would be considered good practice.

It would be considered good practice to offer snacks at least one hour prior to the next meal being offered, so as to maximise food intakes. A list of a range of suggested snack items suitable for a range of different patient groups, detailing energy and protein content are detailed in Table 12.

For those individuals with small appetites and those requiring a more energy and nutrient-dense diet (for example 'nutritionally vulnerable' patient groups), the provision of snacks three times per day can assist them in meeting their energy and nutrient requirements. This would be considered good practice. The types of foods that are made available should again consider the local patient population group and cater to their specific dietary needs.

Table 12: A suggested range of snack items including energy and protein contents [13, 56]

Food group	Food item	Minimum Portion size	Energy (calories) approximate	Protein (g) approximate
Breads and cereals	Slice of toast and butte §	27+10g	143 (69+74)	3
	English muffin, butter and jam§	One (100 +10+18)g	344 (223+74+47)	10
	Malt loaf (snack size)*§	64g	189	5
	Scone with spread and jam§	One (48g)	275-300 (150-175+74+47)	4
	Crackers (cream) and cheese§	Two (2 x 7g)+20g	58+103	6
	Oatcakes and cheese§	Two (2x15g)+20g	85+103	6
	Muesli/cereal bar§	One (30g)	120-140	2-3
	Flapjack§	60g	296	3.0
	Pancake with spread and jam*§	Two (2x31g) +10+18g	288 (167+74+47)	3-4
	Crumpet and spread§	Two (2x40g)+10g	240 (166 + 74)	5-6
	Small meat or cheese sandwich§	70-100g	150-200	10
Fruit and vegetables	Fresh fruit§	One piece	50-100	<1
	Chopped fruit	113g	70	1
	Pureed fruit portion*	120g	60-90	<1.0
	Dried fruit (apricots)§	Eight (50g)	80	2

Table 12: A suggested range of snack items including energy and protein contents [13, 56] (continued)

Food group	Food item	Minimum Portion size	Energy (calories) approximate	Protein (g) approximate
Milk and milk products	Yoghurt (whole milk, fruit)*	150g	160	7
	Thick 'n' creamy yoghurt	150g	190	7
	Yoghurt (low fat milk, fruit)	125g	98	5
	Rice pot (+/- fruit)	200g	200-225	6-7
	Mousse*	60g	90	2-3
	Icecream* (choc ice)§	75g	115	2-3
	Flavoured milk*	500ml	320	18
	Cheese§	15-25g	60-105	4-6
Fats, oils, sugar and salt	Mini pack of biscuits §	30g	80-200	1-2
	Cake (carrot; fruit)*§	50-60g	210-225	3
	Chocolate biscuit§	20g	100	1-2
	Shortbread§	20g	105	1
	Crisps§	25g	150	2
	Muffin* (chocolate)§	150g	570	9

* Suitable for some texture-modified diets if prepared following guidelines provided in tables 23a, 23b, 24.

§ Suitable as finger food snacks.

Individually packaged snacks would provide improved food hygiene, snack quality and assist with stock control.

Strategies such as ensuring that snack availability and how to order snacks should be communicated to patients.

4.4.4 Outwith Main Meal/Missed Meal Time Provision

Healthcare Improvement Scotland *Food, Fluid and Nutritional Care* Standards Standard 3 Planning and Delivery of Food and Fluid in hospitals criteria 3.2 (h) states the operational group is responsible for:

> **'Ensuring there is appropriate food and fluid available out with main mealtimes'.**

In some circumstances patients may be away from their bedside during mealtimes, for instance to attend therapy sessions, have tests or x-rays and provision must be made for all patients who do not have the opportunity to have a meal at the normal mealtime.

The appropriate meal or meal replacement will depend on the patient group and also on the type of food service system available. For some patients a sandwich and yoghurt may be sufficient until the next mealtime, whilst for others, for example, those on texture-modified food, caterers will need to work with speech and language therapists (SLT) and dietitians to ensure that there is a choice of suitable options available to meet the dietary needs of the patients.

Outwith main meal time food provision must supply the minimum 300kcal and 18g protein. Local procedures on how patients and/or nursing staff can access out of hour's foods and fluids need to be developed and communicated to the patients.

4.4.5 Ward Provisions

Ward provisions are an essential part of enabling nursing staff to access food for patients. Food and beverage items considered as a minimum must be available are detailed in Table 13. Some wards may recognise that the local patient population has increased needs and thus increased ward provisions may be carried to meet local patient dietary requirements for example more protein-based foods such as UHT milk-based puddings, custards, cheese portions.

Nursing staff are the health professionals who are directly in contact with patients on a daily basis. Whether patients have been identified to be nutritionally 'at risk' and thus are requiring nourishing drinks and snacks or whether a patient feels hungry and needs something substantial to eat between meals, they should have access to a range of different snacks and beverages. Increasing the choice, range and variety of food items and beverages available to patients in between meals will mean patients are more likely to eat something and meet their nutritional requirements.

Policy surrounding the ordering, storage, stock rotation and management of ward provisions, needs to be developed at the local level, including who takes overall responsibility. Food handling and hygiene practices must be considered in any policy that is developed.

Table 13: List of minimum ward provisions

1. Biscuits (sweet and savoury)
2. Breakfast cereal
3. Bread and spread/butter
4. Preserves, e.g. jam, marmalade
5. Salt, pepper, vinegar and other condiments
6. Tea
7. Coffee
8. Sugar/sugar-free sweetener
9. Hot chocolate/malted milk drink
10. Milk (full-fat and/or semi-skimmed depending on local need)
11. Fruit squash or cordial (regular and no added sugar)

4.5 Standard Recipes

Healthcare Improvement Scotland *Food, Fluid and Nutritional Care Standards*, Standard 3 Planning and Delivery of Food and Fluid in hospitals criteria 3.3 states:

> **'All dishes and menus are analysed for nutritional content in line with Food in Hospitals'.**

It is essential to follow a standard recipe in NHS catering; their use can help to ensure:

- consistent quality – a dish prepared with exactly the same ingredients using the same method should produce the same end product each time;
- consistent nutritional value – a nutrient profile of each dish can be established*; and
- consistent budgetary control – clearer planning for budgets and costing of menus.

4.5.1 Safe Provision of Therapeutic Diets

The nutrient profile and allergen content of a dish will be affected by non-compliance with standard recipes such as missed or incorrect quantities of ingredients and alteration to cooking methods.

There are significant patient health and safety risks associated with not following standard recipes. The level of clinical risk is highest to patients requiring a therapeutic diet, texture-modified diet or who have allergies/intolerances. The importance for the need to follow standard recipes for the food provided in the hospital setting cannot be overemphasised.

4.5.2 Required Information

Creating a standard recipe involves developing, testing, adapting the recipe according to need, and testing again to ensure a consistent product is being produced, no matter who cooks it.[57] Standard recipes allow a product to be made to the same specification every time. Table 14 details the essential and useful criteria to be included in a standardised recipe.

Table 14: Essential information to be included in a standardised recipe

The following information must be included in a standardised recipe [11, 57]

1. A title which describes the recipe content.
2. All ingredient components of the recipe, including water and seasoning; quantities in **metric** units.
3. Ingredient names clearly stating name and brand of product, product type/form (fresh, frozen, canned), and any preparation technique(s) (peeled, grated, minced, diced). Size for preparation techniques should also be specified. This information is key to identifying the 14 EU allergens.
4. Detailed methodology, directions must be listed in the order the recipe is prepared.
5. Recipe yields, i.e. the amount of the product available for service at the completion of production in weight or volume **and** number of servings.
6. Volume and/or weight of a single portion and the equipment used to serve this portion; portion size and weight/volume should be based on how the particular product fits with a full meal and how it looks on a plate.

The following information is useful if included in a standardised recipe:[57]

7. Equipment and utensils used for preparing cooking and serving food are important. The yield and portion capacity of cooking equipment can change with length, width, and depth of pans. As there is evidence to demonstrate that providing smaller portions results in patients consuming less energy and protein, it is important that appropriate serving crockery is used and as such all main meals should be served on a dinner plate.
8. Cooking temperature and approximate cooking time.
9. Different portion sizes and therefore yield.
10. Critical control points as part of Hazard Analysis Critical Control Point (HACCP), e.g. safe thawing, internal cooking, holding, serving and storage temperatures.

4.5.3 Recipe Development

The amount of time needed for this review process will differ depending on the source of the recipe. However, the time required should not be underestimated.

When developing a standardised recipe the following process should be followed.[57]

1. Recipe review

- Review the recipe and its existing format/content against the required information.

2. Recipe preparation

Once the recipe is reviewed, it can be prepared (it is recommended the first version is made to yield 25 servings). During this process keep careful and specific notes on:

- any variations made to the original recipe – record directly onto the working recipe;
- information noted as missing during the review process.

3. Determination of recipe yield

- Once the recipe preparation is completed either weighing the final product or measuring its volume will determine the yield;
- ingredient product quality, preparation techniques, cooking times and temperatures affect yields.

4. Portion size

Determine the portion size or weight by taking the weight of the total final product and dividing by the number of servings the recipe makes. The portion must be checked to ensure it:

- is appropriate for the patient group being served;
- fits well with the rest of the meal.

5. Recipe evaluation

Once the recipe has been trialled it must be tasted and evaluated for its suitability. This should involve the catering manager, dietitian, cook(s) and patients where possible. It is important to consider:

- product appearance on the plate and in bulk form as appropriate;
- product taste and taste suitability to consumer group;
- product texture;
- product suitability to catering production and distribution type.

Notes

- If a different yield is needed the recipe will require quantity adjustment and need to be prepared again;
- notes of any changes or concerns should be recorded on the recipe sheet during the preparation phase.

4.6 Recipe Analysis

Standard recipes as defined in Section 4.5 must be in place and in use in a kitchen before a menu can be nutritionally analysed. Nutritional analysis of standardised recipes should only be undertaken and/or supervised by registered, experienced dietitians who can appropriately interpret both the input data and the results produced by software programmes

A minimum specification for nutrient analysis software e.g. the NHSScotland Nutrition for Patients (N4P) should include the ability to account for nutrient and weight losses associated with cooking. That is, they need to be aware of food regulations and the limitations of the nutritional analysis software so that results can be interpreted correctly.[58]

4.6.1 Analysing Menu Capacity

NHS hospitals must offer menus with several choices to meet their patients' dietary and nutritional needs and individual preferences in order to comply with Healthcare Improvement Scotland *Food, Fluid and Nutritional Care Standards*[3] relating to choice. Dietitians are required to analyse the menus capability to deliver the nutrients in accordance with the levels detailed in this specification, both for a general menu and any therapeutic menus offered.

Methodologies for analysing menu capacity are described in the BDA's *The Nutrition and Hydration Digest: Improving Outcomes through Food and Beverage Services*.[12] An example of appropriate methodology is the minimum/maximum method, which provides a best approximation.[15] This method looks first at energy (calories) as the lead nutrient and then if the estimated average requirement (EAR) for energy can be supplied the capacity of the menu to meet protein requirements is assessed. If these criteria can be met then it is assumed most other nutrients will be sufficient.

Where menus include a higher-energy option at each meal occasion, this should be modelled to ensure that patients who consistently require and choose the higher energy option are able to meet the criteria for energy, protein and micronutrients over the period of one week. Also, by using the same technique when offering a healthier eating option at each meal occasion, the menus should be modelled to ensure that if the healthier option is chosen at each meal occasion, the macro and micronutrient criteria for a healthy balanced diet are met.

Table 15: Methodology for analysing menu capacity[12]

1 A minimum choice for the 'nutritionally well' may be calculated in the following way:

- Breakfast: Select the appropriate energy and protein from Table 3 and insert under breakfast.
- Snacks and beverages: Select the appropriate energy and protein from Table 12.
- Lunch and supper: Assign the energy and protein for lunch and supper for each item along with their dietary coding. This data will either be available from the food supplier or calculated in house on a software analysis package based on food composition tables.

2 Look at the whole day menu and pick the appropriate minimum choice (i.e. providing the lowest energy) for lunch depending on menu structure and specifications.

3 A maximum choice covering the 'nutritionally vulnerable' may be calculated in the following way:

- Breakfast: Select the appropriate energy and protein from Table 9 and insert under breakfast.
- Snacks and Beverages: Select the appropriate energy and protein from Table 12.
- Lunch and Supper: Look at the menu and pick the appropriate **maximum choice** (i.e. providing the highest energy) for lunch and supper depending on menu structure and specifications.

4 Analysing three random days and including one weekend day of the cycle would give a good indication of the figures. Including a Saturday or Sunday ensures consistency of meeting nutritional capacity over the entire week. Cold choice items like salad and sandwiches can skew the results so it is always recommended to analyse them separately to identify the capacity of cold options. The nutrient standards for cold meal options remain the same. The worked examples illustrate the day parts approach. They can be adjusted to suit different circumstances.

5 When analysing menus for a healthcare setting it may be beneficial to analyse three lowest and three highest meal choices for minimum/maximum examples to give a more realistic span replicating the average length of stay in an acute care.

6 It is also important to remember that menu capacity figures are based on 100% consumption and food intake records are a more appropriate method to measure the actual food intake of the patient.[59]

Patients often consume only about two-thirds of the food they are provided (wasting between 6-65%), irrespective of how much is provided.[60]

4.7 Portion Sizes

Healthcare Improvement Scotland *Food, Fluid and Nutritional Care Standards* Standard 4 Provision of food and fluid to patients in hospital criteria 4.3 states:

> **'Patients are given a choice for all food and fluid options provided, including therapeutic and texture-modified diets. There is a choice of portion size for all main courses'.**

A portion size indicates the weight of food from a particular recipe, which would be served within a meal for example, casserole, potato, or rice. This is generally reported as a weight (grams) or volume (ml) and may also be described in terms of household or serving units.

4.7.1 Essential Criteria

When defining portion sizes from a recipe it is important to consider the following:

- the smallest available portion size must meet the minimum nutrient/ energy requirement portion sizes need to comply with specific tender recommendations, but this should not compromise meeting patient needs;
- a choice of different portion sizes for patients can be achieved in a number of ways, with portion sizes being altered with use of carbohydrates, vegetables and some proteins where appropriate;
- portion sizes must look appealing on the plate, in relation to other components of the whole proportionate meal;
- portion sizes must satisfy the relevant patient populations' appetite;
- current advice regarding the appropriate portion size for fruit and vegetables for five a day.

There are several studies that have shown that many patients in hospital do not eat all the food they are served.[35] This may be due to a number of factors including poor appetite. Increasing the energy and nutrient-density of meals can encourage nutritional intake for patients with decreased appetite. Small increases in standard portion sizes have been shown to result in improved energy and protein intake.[35] However excessively increasing the standard portion size may overwhelm the patient.

Portion sizes must be set in order that they can deliver the required nutrition (as specified in this document) to the relevant patient population in a size that can be eaten.

Therefore the appropriate portion sizes for individual meal items must:

- be set locally and in agreement between dietitian(s) and catering including any relevant stakeholders;
- have their nutrient content and size in relation to serving and food wastage audited annually;[61]

- guidance and training at the local level of which utensils/crockery should be used for serving different recipes, dishes and food items is necessary[11]; and
- relevant NHS standards such as food wastage standards need to be considered.[61]

Where in-house production exists, Boards should be working towards a single recipe method however, at local level, ingredient and therefore nutrient content, of individual recipes may vary from hospital to hospital.

4.7.2 Meal Presentation

The quality of the presentation of the final dish presented to the patient is extremely important. If the dish does not look appealing it will not be eaten and thus its nutritional value will be nil.

HIGH ENERGY
HEALTHIER
ALLERGEN-FREE
TEXTURE-MODIFIED
RENAL

5. Therapeutic Diet Provision

5. Therapeutic Diet Provision

Summary

- A therapeutic diet is modified from a 'normal' diet and is prescribed to meet a medical or special nutritional need. It is part of a clinical treatment and in some cases can be the principle treatment of a condition. Whenever a patient has a therapeutic diet prescribed by a dietitian or by medical staff, all hospitals and Health Boards must be able to provide this.
- Menus should reflect local population needs and healthcare organisations need to develop their own protocol for the requirement and provision of therapeutic diets for their population.
- Dietary coding provides information for patients, carers and staff to enable them to make an informed food choice whilst in hospital. The key dietetic codes displayed on a hospital menu should be 'Healthier Eating' and 'Higher Energy'.
- When planning any facilities and purchasing contracts, health facilities and catering departments should consider the provision of any therapeutic diets and set targets to ensure the environment allows them to be met.
- Many clinical conditions such as respiratory disease, cardiac disease, gastrointestinal disorders and neurological disorders, require therapeutic diets. Malnutrition is common and good nutrition is crucial for optimal clinical outcome.
- This section provides the rationale for dietary modification in common therapeutic diets and catering guidance to meet these dietary requirements. Diets covered in this section are:
    - Higher energy and nutrient-dense diet
    - Healthy eating
    - Allergen-free diets
    - Gluten-free diets
    - Texture-modified diets
    - Diets for renal disease
    - Diet suitable for people with neutropenia
    - Monoamine oxidase inhibitors (MAOI) diet.

5.1 Introduction

A therapeutic diet is modified from a 'normal' diet and is prescribed to meet a medical or special nutritional need.[12] It is part of a clinical treatment and in some cases can be the principle treatment of a condition. Whenever a patient has a therapeutic diet prescribed by a dietitian or by medical staff, all hospitals and Health Boards must be able to provide this.

Dietitians and/or appropriate members of the dietetic team e.g. dietetic support worker, as recommended by the British Dietetic Association, are required to work with catering departments to provide initial and ongoing information, guidance and support for the catering team.

Healthcare Improvement Scotland *Food, Fluid and Nutritional Care Standards* Standard 3 criteria 3.6 states:

> **'There are protocols, which are implemented and monitored, for the provision of:**
> **(a) all therapeutic diets, for example texture-modified diets, gluten-free diets, low potassium diets, oral nutritional supplements, high-energy and high-protein food and fluid, and**
> **(b) any requirement out with the planned menu, such as nut allergy or vegan meals.'**

Healthcare Improvement Scotland *Food, Fluid and Nutritional Care Standards* Standard 4 criteria 4.3 states:

> **'Patients are given a choice for all food and fluid options provided, including therapeutic and texture modified diets and there is a choice of portion size for all main courses'.**

In addition, when planning therapeutic diets it is essential to have accurate knowledge of the nutrient and ingredient composition of all dishes and individual menu items to determine their suitability. This makes the use of standardised, analysed recipes crucial in the delivery of appropriate food.

5.1.1 Criteria

Menus should reflect local population needs and healthcare organisations need to develop their own protocol for the requirement and provision of therapeutic diets for their population:

- there must be a hospital protocol for the provision of all therapeutic diets;
- patients must be given choice for all food and fluid options provided, including therapeutic and/or texture-modified diets;
- hospitals whose populations require certain therapeutic diets irregularly and in minimal numbers must include in their policy a formal contingency for the provision of these diets in the event they are required, for example an à la carte menu;
- therapeutic diets must be capable of meeting the nutritional and dietary requirements of patients using them[12]; and
- where relevant, catering service contracts must be sufficiently detailed and cover the provision of both therapeutic and special diets.

This section specifies the therapeutic diets commonly prescribed in hospital settings and comments on the practical implications for planners and caterers in putting together meals and menus incorporating therapeutic diets. The criteria for the coding of therapeutic diets are also explained.

5.1.2 Dietary Coding

Dietary coding provides information for patients, carers and staff to enable them to make an informed food choice whilst in hospital. It is important when coding a menu that:[12]

- there is an up-to-date nutritional and content analysis of the menu item;
- a standard recipe is followed each time the dish is made;
- too many letters/codes on a menu can appear confusing to a patient, and can be irrelevant to the majority of the hospital population;
- nutrition education for nursing and catering staff must accompany dietetic codes so that patients receive consistent messages;
- suitability of any one particular dish needs to be considered in the context of the whole diet[12];
- dish descriptors should be available; and
- it is recommended that pictorial menus be available.

This specification endorses the BDA recommendation that dietary codes should be kept to a minimum on hospital menus. The key dietetic codes displayed on a hospital menu should be 'Healthier Eating' and 'Higher Energy'.

It is also helpful for many service users if the 'normal' menu indicates those dishes that are 'easily chewed' and those 'suitable for lacto-ovo vegetarians'.

Dietitians may deem it appropriate for other therapeutic diets to be coded on the hospital menu: this needs to be determined at the local level with consideration of the above points noted.

An à la carte menu can be useful in the effective delivery of any additional therapeutic diets required by a hospital, as it will enable caterers to provide patients with more choice.[12] Not all dishes will necessarily be coded.

5.1.3 Kitchen Space and Equipment

When planning any facilities and purchasing contracts, health facilities and catering departments should consider the provision of any therapeutic diets and set targets to ensure the environment allows them to be met.[50] Therapeutic diets may require additional preparation, storage or distribution space and equipment, especially if isolation from production of other diets is required, e.g. in the case of allergen-free diets and risk of cross-contamination of food items.

The presence of even the smallest amount of allergenic food can be a risk for an individual who has a food allergy. Minimising the risk of cross-contamination is as important as ensuring intentional ingredients do not include the allergen(s). The Food Standards Scotland advice to minimise cross-contamination include thoroughly clean work areas, surfaces, serving areas, utensils, equipment, chopping boards, hands, the table, crockery, cutlery, and trays to remove traces of food allergens.[62] Further details are provided in Section 5.4 Table 21.

Food hygiene laws, with respect to cross-contamination of different food groups are an important part of a number of different faiths' dietary practices. Ensuring these 'laws' are respected and adhered to including how different foods need to be prepared ensuring separate storage, separate cooking utensils and equipment are used for particular foods needs to be considered in the planning stages. Further guidance on particular faiths' beliefs is provided in Section 6.

5.2 Higher Energy and Nutrient-dense Diet

Energy and nutrient-dense diets are indicated for patients with a small or poor appetite who find it difficult to eat sufficient foods to meet their energy and nutrient requirements.[39] These diets are also indicated for those patient groups with increased energy and protein requirements, including those who have had a major trauma such as a head injury, burns patients, cancer patients and undernourished patients. These individuals require additional energy and protein to meet their increased needs or to enable them to replace lost body weight and improve their nutritional status. The provision of substantial snacks three times a day is likely to be necessary to meet individual requirements.

A diet higher in energy and nutrient-density can be achieved by increasing the overall amount of food eaten by:

- increasing the energy and nutrient content of enrichment[63];
- increasing the number of foods offered, for example increasing the number of times snacks are provided between meals;
- providing greater choice of energy and nutrient-dense foods on the menu; and
- increasing portion sizes.

5.2.1 Coding Criteria

Table 16: Criteria for higher energy code (per portion)[12]

Option	Energy (kcal)	Protein (g)
Snacks	≥150	≥2
Nourishing soup	≥150	≥6
Protein e.g. meat/fish/chicken/ alternative	~300	12 - 14
Total meal e.g. protein + vegetables + starch + condiments	≥500	≥18
Dessert (including accompaniments)	≥300	5

- It would be considered good practice that snacks are available three times a day.[12]
- Additional milk should be provided daily for those patients who wish it over and above the 600ml provided.[12]

5.2.2 Catering Guidelines

If a hospital menu is to provide a diet that is higher in energy and more nutrient-dense then there must be provision at each eating occasion of a 'higher energy and nutrient-dense' choice that meets the specific criteria outlined in Table 16. Caterers and dietitians need to work together to meet this requirement and must ensure that the overall weekly menu has the capacity to meet the nutrient standards for the higher energy and nutrient-dense diet, detailed in Section 2. Food-based guidance is provided in Table 17.

Table 17: Higher energy diet menu planning guidance

Aims	Rationale	Practical applications
Improve nutritional status or achieve a normal nutritional status. Meet the target nutrient specifications for 'nutritionally vulnerable' hospital menus (outlined in Section 2).[12]	One in four adult patients admitted to hospital are undernourished.[15]	Increase energy and nutrient-density of foods and meals by: • providing a wide choice of breakfast items, including a choice of higher calorie breakfast cereals, e.g. sweetened muesli, porridge made with milk, a cooked option • using whole milk and full-fat milk products, e.g. yoghurts • adding spreading fat or butter to sandwiches, mashed vegetables and baked potatoes • providing milk-based sauces to accompany vegetables or meats, e.g. mustard sauce, white sauce or cheese sauce.

Table 17: Higher energy diet menu planning guidance (continued)

Aims	Rationale	Practical applications
Meet the needs of patient groups who require increased intakes of energy and protein. Promote energy and nutrient intake with modest portion sizes and food presentation which is appealing and easy to eat.[12]	Many patients present with small or poor appetites, have difficulty with chewing and swallowing and thus have difficulties eating sufficient food to meet their nutrient requirements.[64]	• adding cream to milk puddings and soups • offering cream/ice-cream to accompany dessert • making cream-based sauces for use with pasta or rice • adding gravy and sauce enriched with a protein powder to meat dishes • add glucose polymers or protein powders to dishes as appropriate • enriching milk with milk powder • add sugar to stewed fruit. Food preparation which allows food to be more easily consumed includes: • pureed, stewed or juiced fruit • vegetables well-cooked to a manageable texture, but not overcooked • meat cut into small pieces and cooked to ensure it is tender, e.g. casseroles and stews

Table 17: Higher energy diet menu planning guidance (continued)

Aims	Rationale	Practical applications
		• removal of all bones from meat before cooking or serving • foods with added sauce or gravy • during texture modification, water should never be used to liquidise foods, as it contains no energy or nutrients. Promote and offer calorie-containing fluids such as fruit juice, milk and flavoured milk, diluting juice, hot chocolate, tea and milky coffee. Offer small, energy and nutrient-dense easy to eat snacks as appropriate for patient group*: • cakes and biscuits • small sandwiches • crisps • full fat custard pot or yoghurt.

*Refer to Table 12 (snacks)

5.3 Healthier Eating

The healthy balanced diet is recommended for the general population but it is also recommended for the dietary management of a number of medical conditions and in such situations it can be interpreted as a therapeutic diet, for example:[12]

- patients with Type 1 or Type 2 diabetes;
- patients with dyslipidaemia and cardiovascular risk;
- patients who are managing their weight;
- patients with hypertension; or
- patients suffering from constipation or irregular bowel movements.

As outlined in Section 2, the healthy balanced diet is designed to meet specific nutrient criteria with reference to levels of fats, sugar and salt as well as overall dietary balance over a week. This is to account for the day-to-day variation in individual's food intakes and recognition that these targets are unlikely to be met on a daily basis.[30]

Food Standards Scotland has produced guidance to caterers on what proportion of the overall daily energy, protein, fibre, fat, saturated fat, sugar, salt and micronutrient intakes should be provided by the different meals and snacks in the day for the healthy balanced diet.[48] This may prove useful when modelling menus to meet nutrient criteria.

As indicated in Section 5.1.2, dietary coding of menu choices is primarily used to enable patients and staff to make informed choices in their food selection. As such, nutrient criteria have been proposed by the British Dietetic Association (BDA) that defines meals, or components thereof as 'healthier options'. This is to enable dietary coding of menu items to inform those patients who require this diet for therapeutic purposes.[12]

It is important to note that some dishes may meet the criteria specified for a 'healthier eating' option, but these may not fully support the overall healthy balanced diet messages. In contrast some foods will meet the overall dietary principles of a healthier diet, but do not meet the coding criteria presented in Table 18 (for example, oily fish).

Therefore, care must be taken when using the criteria suggested in Table 18 to ensure that the overall nutrient targets set in Section 2 for the 'nutritionally well' patient (healthy balanced diet) and Section 3 (food-based criteria) are met over a week when modelling the menu. The food-based criteria provided in Table 19, supplements the information provided in Tables 5-10 and should assist caterers to meet the nutrient criteria for a healthy balanced diet.

Please note, that in some instances a healthier balanced diet may be inappropriate for individuals within this group due a separate condition, associated co-morbidities or additional factors affecting their overall nutrition requirements. The assessment of individual patient's dietary needs within 24 hours of their admission to hospital should ensure that these individuals' needs are identified and thus can be met.[3]

5.3.1 Coding Criteria

- A standard main meal must provide a minimum of 300kcal per meal; this is inclusive of potatoes, pasta and vegetables.[12, 46]
- A standard main meal must provide a minimum of 18g protein per meal inclusive of potatoes, rice, pasta and vegetables.[12, 46]

Table 18: Criteria for healthier eating code (per portion)[12]

Meal component	Energy (kcals)	Protein (g)	Fat (g)	Added sugar
Protein e.g. meat/fish/chicken/ alternative		12-14	< 15 g total < 5g saturated	
Total meal e.g. protein + vegetables + starch + condiments (excluding desserts)	>300	>18	Not specified	
Dessert (including accompaniment) e.g sponge and custard	X		< 5g total < 2g saturated	< 15

- Overall, total fat, salt and added sugar should be low and fats added should be poly and monounsaturated rather than saturated.[12]
- Wholegrain foods should be offered daily.[12]
- Fruit should be offered as a choice of snack to enable the 5 A Day recommendation to be met.[51]

5.3.2 Catering Guidelines

Catering and dietetic departments must work together to offer a balanced menu incorporating a healthier eating option at each eating occasion (main course and dessert), this is with the back-drop of an individual being able to choose a healthy balanced diet overall. It is the responsibility of the dietitian and catering department to ensure all food items coded as a healthier eating option continue to meet the criteria. Ultimately, they must ensure that the overall weekly menu has the capacity to meet the nutrient and food-based criteria for the healthy balanced diet, detailed in Section 2 and 3.

An extension of the practical advice provided in Table 19 can be found in the then Food Standards Agency and Scottish Executive's Catering for Health - A guide for teaching healthier catering practices.[65]

Table 19: Healthier eating menu planning guidance

Aims	Rationale	Practical applications
Maintain or achieve normal nutritional status. Meet the target nutrient specifications for hospital menus (outlined in Section 2). Meet the needs of patient groups who may benefit from the promotion of healthier eating.[12, 15] Support the clinical management of relevant patient groups. Maintain normal blood sugar levels and other indices of diabetes control. Maintain normal bowel function.	Some patients' nutritional requirements, appetites, food intake and nutritional status are not affected by their illness or treatment. The NHS is well placed to provide fundamental education in healthy eating for some patients.[50] A healthy diet for people with diabetes or those with dyslipidaemia, hypertension or cardiovascular disease is often used as the main treatment and is beneficial in preventing further co-morbidities. High blood sugar levels can impair wound healing and recovery from illness.	Healthier breakfast items include:[40] • high-fibre breakfast cereals >3g fibre per 100g, e.g. porridge, unsweetened muesli, fruit and fibre, shredded wheat, bran flakes • scrambled eggs, grilled mushrooms, tomatoes, baked beans (ideally lower salt varieties), and grilled sausages. Use a variety of low fat or no-added fat cooking methods as often as practical: • discard poultry skin and trim visible fat from meat • drain visible fat from cooked meat dishes as production allows • braise, steam or bake as production allows • use thick-cut chips when deep-frying • strong cheese, e.g. parmesan adds flavour to cheese dishes and sauces in smaller amounts • don't add butter or spread to vegetables before service.

Table 19: Healthier eating menu planning guidance (continued)

Aims	Rationale	Practical applications
		Use appropriate low-fat options in place of standard products where palatable, e.g.: • tomato-based sauces for pasta dishes • yoghurt, milk, cheese • bakery products, e.g. tea breads, plain/fruit scones, oatcakes • low fat mayonnaise and salad dressings. Healthier sandwiches should consist of lower-fat filling and high-fibre bread and/or salad or vegetables. Use salt sparingly: • if stock or bouillon is used, salt should not be added • try to source lower-salt-content bouillon. Use a variety of no-added sugar cooking methods as often as practical: • add alternative flavours to stewed fruit in place of sugar, e.g. cinnamon to apple • offer a higher proportion of fruit-based puddings to jam/syrup-based puddings.

Table 19: Healthier eating menu planning guidance (continued)

Aims	Rationale	Practical applications
		Use appropriate low-sugar options in place of standard products where palatable, e.g.: • sugar-free jelly • sugar-free diluting juice and other drinks • fruit canned in natural juice. Artificial sweeteners must be available at ward level for those patients choosing to use them. Suitable healthy eating snacks for patients on diabetes medication (e.g. insulin), must be available for example: • fresh and dried fruit • low-fat yoghurts • fruit bread, malt loaf, oatcakes, crumpets. Special so-called 'diabetic foods' are not recommended.

5.4 Allergen-free Diets

Not everyone is able to eat all types of foods safely. Some people experience an adverse reaction when exposed to certain foods. This reproducible reaction can either be called a 'food allergy', when the immune system is involved, or a 'food intolerance', when the immune system is not involved. Food allergy can result in anaphylaxis which can be fatal in some cases.[66]

5.4.1 Food Allergy

True food allergy is an immune reaction to food that triggers the release of histamines and other substances into the tissues. The proportion of the population (UK) with a true food allergy is approximately 1-2% of adults and 5-8% of children.[65] This equates to around 1.5 million people in the UK. In addition, about 1:100 of the UK population has coeliac disease and needs to avoid gluten.

Food allergy may be caused by numerous different foods or additives and symptoms can be triggered by minute amounts of these. Allergic reactions range in severity from relatively short-lived discomfort through to anaphylactic shock which may be fatal. Therefore, there are significant risks to patients if allergen-free diets are not provided when required.

5.4.2 Food Intolerance

Food intolerance differs from food allergy in that it does not involve the immune system. Food intolerances may arise in a number of ways, for example by dietary components acting as irritants or due to enzyme deficiencies which may result in an inability to digest or metabolise certain food components. Reactions due to food intolerance may be severe but they are not generally life-threatening. They can, however, affect long-term health and do represent a health risk if not taken into account when required and thus these patients' dietary needs should be catered for in the hospital setting.

Coeliac disease is an autoimmune disease caused by intolerance to gluten. In coeliac disease, eating gluten causes the lining of the small intestine to become damaged. Other parts of the body may also be affected.[67]

The terms 'gluten-free' and 'very low gluten' are covered by legislation for the labelling of gluten-free foods.[68] The law is based on the revised international *Codex Alimentarius* standard for gluten-free, and applies to both packaged foods and to foods sold in catering establishments.[69]

Food labelling legislation surrounding wheat, rye and barley, gluten-containing cereals is provided in this section, along with generic practical catering guidance for providing foods that are free from specific allergens. However, as its prevalence affects one in one hundred individuals, more specific catering guidance has been covered separately in Section 5.5.

5.4.3 Catering Guidelines

It is difficult to define the number of hospital patients requiring an allergen-free diet at any given time; however, hospital-catering departments must work in conjunction with dietitians to meet these patient groups' needs. Good communication must exist between wards and catering to ensure that patients with allergies are identified and communicated appropriately.

Please note that catering provision for allergen-free diets must meet all the aspects of menu planning and food-based criteria.

As of 13 December 2014 new EU food labelling rules, adopted by the European Parliament and the Council in 2011, ensure that consumers receive clearer, more comprehensive and accurate information on food content, and help them make informed choices about what they eat.[70] This affects how allergen information is provided on pre-packed food labels and also introduces a new requirement to provide allergen information for foods sold or provided loose (non-pre-packed).

These rules require hospital catering services to provide information to patients, staff and visitors about the presence or use of any of the fourteen specified allergens (Table 20) as ingredients in any of the food that they serve, including

any food item served to patients at ward level and any food item sold in retail outlets.

To meet these obligations hospital caterers must know what is in food, and the requirements needed to meet the legal obligations. Caterers must be able to evidence the exact ingredients used, such as by brand names, pack sizes, or other information that details what is normally used or that of any replacement.

The EU Food Information to Consumers Regulation requires packaged food to have allergenic ingredients information emphasised in the ingredients list and food sold loose to have allergen ingredients information available.[70] 'Allergens' refers to the 14 listed in the legislation (Table 20).

This legislation does not require full ingredient lists for loose foods, the requirement is to declare any of the fourteen allergens when used as an ingredient or processing aid regardless of the level of use.

The British Dietetic Association has produced an Allergen Toolkit for Healthcare Catering.[66]

All dishes which are produced in-house must use standard recipes with ingredients from 'approved' suppliers. Any ingredient/supplier changes affecting standard recipes require to be assessed to identify the changes to the recipe.

It is also the responsibility of the person preparing that meal to ensure that any food prepared and sent to the wards for a patient with a suspected or confirmed food allergy is appropriate for their needs and labelled with the patient's name, ward and the type of allergy for the individual patient concerned.

It is the responsibility of the catering management team to ensure that they have in stock, or are able to access a core range of foods and ingredients to offer suitable alternatives for people with allergies and intolerances. At the very least, this should include wheat/gluten-free bread, pasta, biscuits and crackers, and alternatives to cow's milk and butter/margarine spreads e.g. milk free spread. Most of these are ambient or can be frozen.

5.4.4 Food Labelling – Food Allergen and Food Intolerance

People who suffer from food allergies and food intolerances need to know the exact ingredients in the food that they eat as even a small amount of allergen can make them very ill or in some cases could be fatal. The use of food product labels is fundamental to identify foods appropriate for patients' diets when exclusion of specific foods is required due to an allergy or food intolerance. The EU labelling Directive 1169/2011 is implemented in Scotland through The Food Information (Scotland) Regulation 2014.[70]

All of the 14 listed allergens and ingredients derived from allergens have to be listed on the label with a clear reference to the name of the allergenic ingredient whenever they are intentional ingredients in a food product.

Where an allergenic ingredient or its derivative is not clearly identified in the name of the food, e.g. malt vinegar, the allergenic ingredient should always be clearly identified in the labelling, for example 'malt vinegar (from barley)'.

All ingredients and the components of each of these ingredients are covered by the new labelling regulations if they are present in the finished product, even in an altered form. This includes carry-over additives, additives used as processing aids, solvents and media for additives or flavouring and any other substance used as a processing aid.

Some people may be allergic to foods that are not included in the Regulations, but all ingredients have to be listed on the label of pre-packed foods. The foods or ingredients that people are allergic to may be avoided by reading the label.

The Regulations do not apply to 'may contain' or nut trace warnings to indicate possible allergen cross-contamination. However, many manufacturers provide this information voluntarily in order to indicate the possible presence of unintentional ingredients that people may be allergic to in pre-packed food.

Food prepared for an allergen-free diet must be undertaken in a safe environment as patients must be provided with food safe for them to consume.

Catering/ward staff must understand the importance of providing a diet which is safe for someone with an allergy.

When a meal that needs to be allergen-free is being prepared, surfaces and all equipment and utensils (including, chopping boards, knives, pans and mixing bowls) must be thoroughly washed down prior to use.

Foods must be stored in sealed containers, especially peanuts, nuts, seeds, milk powder and flour. Ensure ingredients received are what has been ordered (different brands can have different ingredients).

Foods that need to be free from a particular allergen must not be fried in oil that has previously been used to cook food that contains the particular allergen.

Similarly separate toasters must be used to prepare gluten-free breads etc.

Separate serving utensils must be used for serving dishes that are allergen-free to prevent potential cross-contamination, in the kitchen and on the ward.

The hospital menu must list any of the 14 allergens if contained within individual menu items.

Table 20: Scope of allergenic ingredients required on food labelling

Food allergen	Guidance what is included
Celery	Includes celery seeds and celeriac. Salads, soups and celery salt, stock cubes, stew pack, some meat products.
Cereals containing gluten	Wheat, rye, barley, oats, spelt, Khorasan wheat (sometimes sold commercially as Kamut®) or their hybridised strains. Other types of cereal are not included. **NB:** There is no requirement for gluten itself to be indicated in the ingredient list. Bread, wheat flour, biscuits, crackers, pasta, breakfast cereals (including items like breadcrumbs and batter), cakes, pastry, semolina, soya sauce. It is also found in may processed foods such as soups, gravies, sauces, sausages, haggis, fish cakes and all processed foods must be checked to ensure they are gluten free.
Crustaceans	Includes all species, e.g. crab and prawns.
Eggs	Refers to eggs from laying hens and eggs from other birds, e.g. broiler chicken, duck, turkey, quail, goose, gull, and guinea fowl.
Fish	Includes fish from all species of fish and fish products. In common species, e.g. cod, mackerel, that name could be used to indicate the fish content of a product. Soy and Worcestershire sauce, Thai fish sauce, relish, some salad dressings. Fish extracts, oils and paste.
Lupin	Seeds and flour used in some breads and pastries. Some types of bread and pastries e.g. waffles, particularly those manufactured in France and Belgium.

Table 20: Scope of allergenic ingredients required on food labelling (continued)

Food allergen	Guidance what is included
Milk	Includes milk from cows, sheep, and goats. Milk powder, yogurt, butter, margarine, cheese, cream, ghee, milk glazed products, ice cream, custard and other milk puddings. Milk powder and milk products are used in many manufactured products. Some processed meats, chocolate, Quorn® and some canned fish.
Molluscs	Squid, octopus, cockles, mussels, periwinkles and snails.
Mustard	Mustard paste, seeds, leaves, flour, salad dressings, marinades, soups, sauces (e.g. if added to cheese sauce), curries, some meat products, occasionally cheese scones.
Nuts	Listed as almond, hazelnut, walnut, cashew, pecan nut, Brazil nut, pistachio nut, macadamia nut and Queensland nut. Pine nuts and chestnuts, which are known to cause allergy, are not listed as they are not 'nuts' as botanically defined. Cakes, biscuits, sauces, desserts, bread, crackers, ice cream desserts, praline (hazelnut), some chocolate spreads, nut butters, essences and oils, marzipan and frangipane (almond), pesto, nut salad dressings, breakfasts, confectionery, vegetarian products.
Peanuts	Commonly referred to as groundnuts or monkey nuts, but must be labelled as peanuts. Cakes, biscuits, ice cream desserts, breakfast cereal, salad dressing, confectionery and vegetarian products.
Sesame seeds	Products deriving from it such as tahini and sesame oil must also be clearly labelled. Houmous, halva, bread.
Soya	Can be labelled as 'soy' or 'soya'. Tofu, bean curd, textured vegetable protein, soy sauce, soybean flour used in cakes, biscuits, pasta, burgers, sausages, confectionery. Dairy products made from soya beans including soya milk some ice creams.
Sulphur dioxide and sulphites	Refers to levels above 10mg/kg or litre. Some meat products, stock cubes, bouillon mix, fruit juice drinks, dried fruit/vegetables, wine, beer, cider.

Table 21: Allergen-free food guidance

Aims	Rationale	Practical applications
Patients are provided with food safe for them to consume. Food provided meets the target nutrient specifications for hospital menus (outlined in Section 2). Food prepared for an allergen-free diet is undertaken in a safe environment.[62] Catering and ward staff must understand the importance of providing a diet which is safe for someone with an allergy.[62]	Following ingestion of a food allergen, symptoms experienced by a patient who is allergic can include rashes, diarrhoea, vomiting, stomach cramps, and difficulty in breathing. It can also cause anaphylaxis.[62] Someone with food intolerance may show similar symptoms, diarrhoea, bloating but these tend to develop more slowly and generally require greater amounts of foods to have been eaten.[42] In a busy kitchen the risk of non-allergic foods getting contaminated by potentially allergic foods is very high.[62]	

5.5 Gluten-free Diet

A gluten-free diet is used as the sole treatment for coeliac disease and the skin condition dermatitis herpetiformis. Coeliac disease is caused by an auto-immune reaction to a component of gluten, which is a protein that is found in certain cereals, namely wheat, barley and rye. Some individuals with coeliac disease also need to avoid oats. Consumption of even a minute quantity of gluten by someone with coeliac disease can result in malabsorption, gastro-intestinal symptoms and fatigue. Approximately 1 in 100 people need to avoid gluten in their diet.[62]

Regulations define gluten-containing cereals as wheat, rye, barley, oats, spelt, Khorasan wheat (sometimes sold commercially as Kamut®) or their hybridised strains.[5] It is found in a wide range of manufactured and processed foods, and imposes considerable restriction of food choice and variety.[42]

There are significant patient health risks associated with eating a food that contains gluten for those patients who have coeliac disease. A menu item should never claim to be gluten-free unless this has been confirmed. Coeliac UK (the charity of people with coeliac disease and dermatitis herpetiformis) has an up-to-date database of manufactured foods free from gluten and publishes an annual handbook for its members; *Food and Drink Directory*.

The Coeliac UK *Food and Drink Directory* is available in three formats: paper, electronic and mobile app.[67, 71] It is important to note that food manufacturers and supermarkets can voluntarily identify gluten-free products; some manufacturers use the Crossed Grain symbol and this can be regarded as a safety net as it is only licensed to manufacturers who can guarantee their foods are gluten-free.[67]

The 'Crossed Grain' symbol

Only foods that contain gluten in amounts that are 20ppm or less can be labelled as 'gluten-free'. The gluten-free label may also be used for uncontaminated oat products. For oat products labelled gluten-free the oats themselves must also contain no more than 20ppm of gluten.

Specialist substitute products such as breads, flours and crackers that contain a gluten-reduced ingredient (Codex wheat starch) with a gluten level above 20ppm and up to 100ppm may be labelled as 'very low gluten'. There is no foods currently labelled 'very low gluten' in the UK.

Gluten-free – foods containing 20 parts per million (ppm) gluten or less
Very low gluten – foods containing between 21 and 100ppm gluten

5.5.1 Oats

Until recently oats were thought to have the same harmful effect as other gluten-containing cereals and therefore have traditionally been excluded from a gluten-free diet.[42]

Although some people with coeliac disease can include oats in their diet, oat products are at high risk of contamination from other gluten-containing cereals including wheat and barley, therefore they should not be offered as part of a hospital gluten-free diet.

5.5.2 Catering Guidelines

With the correct processes in place to ensure the correct ingredients are used and processes in place to avoid cross contamination, gluten-free catering in a hospital kitchen environment may be possible. A risk assessment should be carried out to look at the feasibility of producing gluten-free meals on site and if not possible then pre-packed meals can be used as an alternative.

Meals prepared without gluten-containing ingredients, with correct controls in place to ensure they are gluten-free, will be suitable for people who wish to avoid gluten in their diet. For this patient group it is essential that non-gluten-containing ingredients are protected from the risk of contamination with gluten during their storage, preparation, transportation or during serving.

Ingredients that are non-gluten-containing must be prepared using separate utensils, boards and containers.

Caterers need to be aware of any ingredient changes in relation to non-gluten containing menu items and the importance of communicating this information and ensuring any necessary meal modifications are undertaken.

Table 22 provides guidance for the provision of non-gluten containing foods and Table 23 gluten containing foods to be avoided.

Table 22: Gluten-free food guidance

Aims	Rationale	Gluten-free foods include
Exclude all dietary sources of gluten.[42, 67] Ensure gluten-containing foods are substituted with a suitable alternative to maintain dietary balance.[42, 67] Meet the nutrient specifications for hospital menus (specified in Section 2).	Ingestion of gluten by people with coeliac disease results in malabsorption of nutrients. This may result in the following symptoms:[42, 67] • abdominal discomfort • mild gastrointestinal upsets • tiredness • irritability • breathlessness • anaemia • unexplained weight loss • osteoporosis. Adherence to a gluten-free diet for people with coeliac disease reduces the risk of some intestinal malignancies.[42] Maintain optimal nutritional status.	• Fresh fruit and vegetables (most canned and frozen) NB Standard fruit or vegetable pies, fruit or vegetables in crumb, batter or sauces will not be gluten-free) • NB: chips may not be gluten-free; they may also have been cooked in oil where crumbed or battered products have previously been cooked • Nuts, seeds and pulses (plain) NB Dry roasted nuts may be gluten-containing; canned baked beans may be gluten-containing • Fresh meat NB some processed and tinned meats may contain gluten, labels need to be checked), poultry, fish (fresh or canned in oil or brine) and eggs • Tofu and Quorn®

Table 22: Gluten-free food guidance (continued)

Aims	Rationale	Gluten-free foods include
Exclude all dietary sources of gluten.[42, 67] Ensure gluten-containing foods are substituted with a suitable alternative to maintain dietary balance.[42, 67] Meet the nutrient specifications for hospital menus (specified in Section 2).	Ingestion of gluten by people with coeliac disease results in malabsorption of nutrients. This may result in the following symptoms:[42, 67] • abdominal discomfort • mild gastrointestinal upsets • tiredness • irritability • breathlessness • anaemia • unexplained weight loss • osteoporosis. Adherence to a gluten-free diet for people with coeliac disease reduces the risk of some intestinal malignancies.[42] Maintain optimal nutritional status.	• soy, goats and cows milk (includes dried, evaporated, condensed and UHT), cream, coconut milk/cream NB artificial cream, coffee and tea whiteners may be gluten-containing) • cheese and cottage cheese • most yogurts and fromage frais (check label) • manufactured gluten-free muesli • rice, corn (maize), tapioca, polenta, millet, buckwheat, sago, arrowroot, corn flour, gram flour, potato flour, soy flour • bicarbonate of soda, cream of tartar, gelatine, yeast • butter, margarine and cooking oils • golden syrup, jam, honey, treacle, marmalade, peanut butter • wine, cider, malt and balsamic vinegar • modified starches (NB: modified wheat starch is not appropriate)

Table 22: Gluten-free food guidance (continued)

Aims	Rationale	Gluten-free foods include
		• tea, coffee, clear fizzy juice, fruit juice, cocoa. **It is advised that all food labels are checked prior to use.** **NB:** cornflakes and rice krispies gluten-free status will depend on the brand name and the *Food and Drink Directory*[71] should be checked.[71]

Table 23: Foods containing gluten

Gluten-containing foods

- Bulgar and durum wheat
- Semolina and couscous
- Any flour derived from wheat, rye, barley and any products made from these
- Foods coated with batter, breadcrumbs or flour, this can include vegetables, fruit, fish and meat
- Sweet/savoury pies and pastries
- Bread and bread products including croissants, naan bread, chapatti and pizza bases
- Noodles and pasta
- Wheat-based breakfast cereals, e.g. Weetabix ® and muesli
- Potato products e.g. potato croquettes
- Haggis, sausages, meat pies, some beef burgers
- Bouillon, packet sauces and gravies, baking powder
- Mayonnaise, mustard
- Soy sauce, mixed seasonings and spices
- Stuffing and stuffing mixes
- Biscuits and cakes
- Malted milk drinks and cloudy fizzy juice
- Beer, lager and stout.

5.6 Texture-modified Diets

The requirement for texture-modified or modified consistency food and fluid, usually results from difficulties in chewing and/or swallowing food (also known as dysphagia).[8] It is generally the result of a disease process and may be caused by either a mechanical, neurological or psychological problem which may include:[8, 64]

- oesophageal stricture;
- head, neck or oesophageal cance;r
- severe mouth or throat infections;
- maxillo-facial surgery;
- brain injury or stroke;
- degenerative diseases, e.g. motor neurone disease, Parkinson's, Huntington's, multiple sclerosis;
- complex needs learning disabilities; or
- dementia (especially later stages).

An older person's ability to adapt and compensate for an inadequate swallow is further reduced by less saliva or chewing difficulties, or inadequate lip seal causing dribbling of liquids. A reduced ability to manipulate food in the mouth can result from loss of sensation and poor tongue control.[64]

Providing food and fluid of an inappropriate consistency increases the risk of food or fluid going into the lungs, a major cause of chest infection, lung abscesses and aspiration pneumonia in hospitalised patients; it can also cause asphyxiation.[8] Aspiration can be silent, causing no outward signs of distress but still capable of causing pulmonary complications.[8] There are significant patient health risks associated with the provision of incorrect food and fluid textures to an individual who has been assessed unsafe for normal hospital diet.

5.6.1 Criteria

The National Patient Safety Agency (NPSA) along with the BDA, Royal College of Speech and Language Therapists (RCSLT), Hospital Caterers Association (HCA) and the National Nurses Nutrition Group (NNNG) produced *National Descriptors for Texture Modification in Adults* to guide local implementation and interpretation of different food consistencies.[8] The five textures are described in Table 24a.

- The menu must be capable of meeting the nutrient specification for all textures except B.
- Patients admitted to hospital must have any physical difficulties with eating/drinking identified and recorded within one day of admission.[3]
- Hospital catering services must be capable of providing a range of texture-modified foods and fluids as recommended by speech and language therapists (SLT), to meet their patient population needs.[12]

- There is a protocol for the provision of all therapeutic diets.[3]
- Food and fluid must be provided at the correct texture[3]
- Patients are given a choice for all food and fluid, including therapeutic and texture-modified diets.[3]

5.6.2 Coding Criteria

Adoption of these descriptors at local level is not mandatory. However, previous differing nomenclature between disciplines resulted in patients receiving inappropriate food and thus increasing the risk of complications due to aspiration. Use of the national descriptors would be considered best practice as it would reduce this occurrence and provide uniformity between hospitals when patients are transferred.[8]

Modification of the texture of foods generally requires the addition of fluid and in many instances dilutes the energy and nutrient-density of the food. This coupled with the fact that many of these patients have poor appetites makes this population group highly 'nutritionally vulnerable'. Comparison of the energy and nutrient intakes of older people consuming a texture-modified diet with a normal diet shows significantly lower intakes of energy and protein.[72] Many of these patients will also require a diet that is energy and nutrient-dense and the provision of suitable high energy snacks between meals will be essential to enable the individual to meet their requirements.

5.6.3 Catering Guidelines

Dietitians and caterers must work together to develop and adapt suitable recipes for texture-modified food and fluid for the relevant hospital population. Caterers are responsible for ensuring all texture-modified food items provided to patients meet local protocol and descriptors at all times. Table 24b provides guidance on the provision of texture-modified foods. Menu planning groups may consider that in order to provide appropriate foods for this particular patient population that it may be more cost-effective to source texture-modified foods from a specialist supplier.

Table 24a: National descriptors for texture-modified food[72]

Texture	General description
B Thin Puree Dysphagia Diet	Food has been puréed or has purée texture. It does not require chewing. It is smooth throughout with no 'bits' (no lumps, fibres, bits of shell/skins, bits of husk, particles of gristle/bone etc). It may need to be sieved to achieve this. It may have a *fine* 'textured' quality as long as the bolus remains cohesive in the mouth. It is moist. Any fluid in or on the food is as thick as the purée itself. There are no loose fluids that have separated off. The texture is not sticky in the mouth. No garnish. **Check before serving/eating:** No hard pieces, crust or skin has formed during cooking/heating/standing. It has not thinned out and any liquid within the food has not separated off. ***NB:*** *No ice cream or jelly unless advised as suitable by speech and language therapist on an individual basis.* It is a *thin purée.* **NB: Definition of 'thin' purée:** Does not hold its shape on a plate or when scooped. Cannot be eaten with a fork because it slowly drops through the prongs. The prongs of a fork do not make a clear pattern on the surface. It cannot be piped, layered or moulded.

Table 24a: National descriptors for texture-modified food[72] (continued)

Texture	General description
B Thin Puree Dysphagia Diet	Can be poured. 'Spreads out' if spilled. A light, disposable plastic teaspoon must be able to stand upright when the head is fully covered. If it does not do this, the texture is too thin.
C Thick Puree Dysphagia Diet	Food has been puréed or has purée texture. It does not require chewing. It is a *thick* purée (*please see note below). It is smooth throughout with no 'bits' *(no lumps, fibres, bits of shell/skin, bits of husk, particles of gristle/bone etc).* It may need to be sieved to achieve this. It may have a fine 'textured' quality as long as the bolus remains cohesive in the mouth. It is moist. Any fluid in or on the food is as thick as the purée itself. There are no loose fluids that have separated off. The texture is not sticky in the mouth. It is not rubbery. No garnish. **Note: Check before serving/eating:** No hard pieces, crust or skin have formed during cooking/heating/standing. Fluid/gravy/sauce/custard in or on the food has not thinned out or separated off. **Note: definition of 'thick' purée:** Holds its shape on a plate or when scooped. Can be eaten with a fork because it does not drop through the prongs. The prongs of a fork make a clear pattern on the surface.

Table 24a: National descriptors for texture-modified food[72] (continued)

Texture	General description
C Thick Puree Dysphagia Diet	It can be piped, layered or moulded. Cannot be poured. Does not 'spread out' if spilled. **Breakfasts and Desserts** The texture of thick smooth porridge made from powder (purée porridge) with no loose fluids. The texture of wheat-biscuit breakfast cereal fully softened with milk fully absorbed. The texture of thick blancmange or mousse with no 'bits'. The texture of purée rice pudding. There are no loose fluids. There are no lumps. Wheat-biscuit breakfast cereal has not fully softened. Milk has not fully absorbed leaving loose fluid. ***NB:*** *No ice cream or jelly unless advised as suitable by speech and language therapist on an individual basis.*
D Pre-Mashed Dysphagia Diet	Food is soft, tender and moist. Needs very little chewing. It has been mashed up with a fork before serving It usually requires a very thick, smooth (non-pouring) sauce, gravy or custard (see next point). Any fluid, gravy, sauce or custard in or on the food is very thick (*please see note below). No mixed (thick-thin) textures. No loose fluid. No hard, tough, chewy, fibrous, stringy, dry, crispy, crunchy or crumbly bits. No pips, seeds, pith/inside skin. No skins or outer shells e.g. on peas, grapes. No husks. No skin, bone or gristle.

Table 24a: National descriptors for texture-modified food[72] (continued)

Texture	General description
D Pre-Mashed Dysphagia Diet	No round or long-shaped foods e.g. sausages, grapes, sweets. No hard chunks e.g. pieces of apple. No sticky foods e.g. cheese chunks, marshmallows. No 'floppy' foods e.g. lettuce, cucumber, uncooked baby spinach leaves. No juicy food where juice separates off in the mouth to a mixed texture e.g. water melon. **Check before serving/eating:** No hard pieces, crust or skin has formed during cooking/heating/standing. Fluid/gravy/sauce/custard in or on the food has not thinned out or separated off. **Note: Definition of 'very thick' fluid:** Any fluid, gravy, sauce or custard in or on food must be very thick. It holds its shape on a plate or when scooped, cannot be poured and does not 'spread out' if spilled. Thinner single texture foods maybe suitable if a person is on thinner fluids, speech and language therapists (SLT) to advise on an individual basis. Texture D products must be mashed by the manufacturer/originator prior to 1. Heating for service i.e. it must be in a pre-mashed state when it reaches the client. **Meat** Must be finely minced – pieces approximately 2mm. No hard bits of mince. Serve in a very thick, smooth (non-pouring) sauce or gravy. If it cannot be finely minced it should be puréed (to Texture C).

Table 24a: National descriptors for texture-modified food[72] (continued)

Texture	General description
D Pre-Mashed Dysphagia Diet	**Fish** Serve finely mashed and in a very thick, smooth (non-pouring) sauce or gravy. **Fruit** Serve mashed and drain away any juice that has separated. **Casserole/stew/curry** Must be very thick. Can contain meat, fish or vegetable if prepared as above and overleaf and are fully mixed in. **Bread** No bread unless assessed as suitable by SLT on an individual basis. **Cereal** The texture of very thick smooth porridge with no lumps. Or the texture of fully softened wheat-biscuit breakfast cereal with milk fully absorbed. Any milk/fluid must not separate off (i.e. no loose fluid/no mixed (thick–thin) textures. Overall texture must be very thick (Because this is a single texture food it could be served thinner if a person is on thinner fluids – SLT to advise). **Desserts** The texture of *very thick*, smooth yogurt (no bits), stewed apple in very thick custard or the texture of soft sponge cake with smooth filling fully softened by mashing and mixing in with *very thick*, smooth (non-pouring) custard. Overall texture must be very thick. (If the texture of the dessert is single it could be served thinner if a person is on thinner fluids – SLT to advise). No icecream or jelly if a person requires thickened fluids (because these can change to normal fluid thickness in the mouth).

Table 24a: National descriptors for texture-modified food[72] (continued)

Texture	General description
E Fork Mashable Dysphagia Diet	Food is soft, tender and moist but needs some chewing. It can be mashed with a fork. It usually requires a thick, smooth sauce, gravy or custard (see next point). Any fluid, gravy, sauce or custard in or on the food is thick (*please see note below). No mixed (thick-thin) textures. No thin loose fluid. No hard, tough, chewy, fibrous, stringy, dry, crispy, crunchy or crumbly bits. No pips, seeds, pith/inside skin. No skins or outer shells e.g. on peas, grapes. No husks. No skin, bone or gristle. No round or long-shaped foods e.g. sausages, grapes, sweets. No hard chunks e.g. pieces of apple. No sticky foods e.g. cheese chunks, marshmallows. No 'floppy' foods e.g. lettuce, cucumber, uncooked baby spinach leaves. No juicy food where juice separates off in the mouth to a mixed texture e.g. water melon. **Check before serving/eating:** No hard pieces, crust or skin has formed during cooking/heating/standing. Fluid/gravy/sauce/custard in or on the food has not thinned out or separated off. **Note: Definition of 'thick' fluid:** Any fluid, gravy, sauce or custard in or on food must be thick – a light disposable plastic teaspoon would stand upright if the head were fully but just covered. Those on Texture E must therefore be able to cope with thinner fluids – stage 2.

Table 24a: National descriptors for texture-modified food[72] (continued)

Texture	General description
E Fork Mashable Dysphagia Diet	Thinner single texture foods maybe suitable if a person is on thinner fluids – SLT to advise on an individual basis. Texture E products must be in a consistency that allows them to be mashed easily using a fork at point of service/consumption. In addition to the general description overleaf: **Meat** Pieces of soft tender meat must be served no bigger than 15mm. Meat should be finely minced with no hard pieces and served in a thick smooth sauce or gravy. **For children** Specific guidance on the size of the meat particles based on the child's swallowing skills, their age and their development level will be provided by a SLT following individual assessment. **Fish** Soft enough to break up into small pieces with a fork. Serve in thick smooth sauce or gravy. **Fruit** Juicy fruit should be mashed – drain away any juice that has separated. **Casserole/stew/curry** Must be thick. Can contain meat, fish or vegetables if prepared as above and fully mixed in. **Bread** No bread unless assessed as suitable by SLT on an individual basis. **Cereal** The texture of thick smooth porridge with no lumps.

Table 24a: National descriptors for texture-modified food[72] (continued)

Texture	General description
E Fork Mashable Dysphagia Diet	Or the texture of fully softened wheat-biscuit breakfast cereal with milk fully absorbed. Any milk/fluid must not separate off (i.e. no thin loose fluid/no mixed (thick- thin) textures). Overall texture must be thick (because this is a single texture food it could be served thinner if a person is on thinner fluids – SLT to advise). **Desserts** The texture of thick smooth yogurt (no pieces) or stewed apple in thick custard. The texture of soft sponge cake with smooth filling, fully softened with thick smooth custard. Overall texture must be thick. (If the texture of the dessert is single it could be served thinner if the person is on thinner fluids – SLT to advise.) No icecream or jelly if a person requires thickened fluids (because these can change to normal fluid thickness in the mouth).
Normal	Include all foods.

Table 24b: Modified texture food guidance[8, 42]

Aims/Essential criteria	Rationale	Practical application
All textures must be provided according to speech and language therapists (SLT) and/or dietetic advice.[12] The menu must be capable of meeting nutrient specifications for all stages of modified texture foods except Texture B; this can be achieved through the provision of appropriate meals, snacks and drinks. Food must be provided in small energy and nutrient-dense portions.	Patient health and safety risks associated with provision of inappropriate texture foods and fluids are high and could be fatal. Patients with dysphagia are at risk of becoming or may already be nutritionally compromised due to difficulty eating sufficient foods to meet their nutritional needs, this includes risk of undernutrition, dehydration and also constipation.[12, 30, 64, 72] It is unlikely that patients requiring a Texture B will be able to consume enough food to meet energy and nutrient requirements. These patients may require additional nutritional support that should be advised by the dietitian. Patients may have small appetites or not be physically able to consume the quantity of food and fluids required to maintain good nutritional status. Enriching foods can significantly increase patients' energy intakes. [37]	**High Risk Foods to be avoided** in a texture-modified diet: stringy, fibrous texture, e.g. pineapple, runner beans, celery:[6] • husks, e.g. sweetcorn, granary bread • vegetable and fruit skins including peas, grapes, baked beans, soy beans and black eye beans • mixed consistencies, e.g. cereals which do not blend with milk (e.g. muesli), mince and thin gravy, soup with lumps • crunchy foods, e.g. toast, flaky pastry, dry biscuits, crisps • crumbly items, e.g. bread crusts, pie crusts, crumble, dry biscuits • hard foods, e.g. boiled sweets, chewy sweets, toffees, nuts, seeds.

Table 24b: Modified texture food guidance[8, 42] (continued)

Aims/Essential criteria	Rationale	Practical application
All textures must be provided according to speech and language therapists (SLT) and/or dietetic advice.[12] The menu must be capable of meeting nutrient specifications for all stages of modified texture foods except Texture B; this can be achieved through the provision of appropriate meals, snacks and drinks. Food must be provided in small energy and nutrient-dense portions.	Patients often consume a limited diet due to restrictions caused by modified texture or self-limitation to foods they know they can tolerate.[64] The process of modifying the texture or consistency of food will involve the addition of fluid that in turn increases the portion size and generally dilutes nutritional content.	**Enriching foods** • the addition of extra energy and/or protein and nutrients to normal food without increasing the volume of food to be eaten • addition of milk powder, cream, butter, margarine, oil, and jam to recipes can significantly increase energy and protein content of foods eaten. This should be built into the standard recipes when being developed. **Liquid added to modify texture should contain energy, for example:** • béchamel or cheese sauce • gravies with added butter • oral nutritional supplements as advised by the dietitian.

Table 24b: Modified texture food guidance[8, 42] (continued)

Aims/Essential criteria	Rationale	Practical application
Fluids must be provided at the appropriate consistency and served in a suitable drinking container at all times A minimum of a minimum of 1.6l of fluid per day for women and 2.0l of fluid for men should be provided.- assuming that food is also being consumed. If no food intake, the corresponding fluid volumes are 2.0l for women and 2.5l for men[33] Texture-modified menu items must be described and presented in an appetising form: avoid words such as sloppy; words such as pureed, soft-easy chew are acceptable.	Dehydration is not uncommon in patients requiring a texture-modified diet. Re-textured foods can sometimes be unrecognisable and unappetising.	Texture-modified foods and fluid may require a thickening agent to achieve the correct consistency, the appropriate product must be chosen in conjunction with the dietitian and speech and language therapists (SLT). The preparation of consistency-modified fluids is more suitable at ward level as consistency of some products can change over time. Consistency should be as determined safe by the SLT and preparation should be consistent with the fluid descriptors provided.

5.7 Diets for Kidney Disease

Diet therapy plays a crucial role in the management of individuals with kidney disease.[73] There is no single 'Renal Diet', but at different stages of kidney disease different dietary modifications may be necessary. The dietary needs of patients with kidney disease will also vary according to the treatment they are receiving and dialysis modality.

Modification of any or all of the following may be required:

- protein
- potassium
- phosphate
- salt
- fluids.

Many patients with kidney disease will be in the 'nutritionally vulnerable' group due to the nature of their illness and compounded by the specific dietary restrictions people with kidney disease are following. As kidney disease

progresses, the risk of malnutrition increases. Some dietary restrictions may be more critical than others depending on the patient's medical condition at the time. Loss of appetite whist hospitalised may however mitigate against dietary restriction.

Patients on dietary restrictions for kidney disease may need alternatives and additional snacks to meet their energy and protein requirements. Protein requirements for patients on renal replacement therapies are higher than normal.

Reaching the desired protein intake when combined with a potassium restriction may be outside the capacity of the standard menu. It may be best met by an à la carte approach, which will also help avoid menu fatigue among long stay patients. Input from a specialist renal dietitian who has a good understanding of these patients' dietary needs is essential.[12]

5.7.1 Coding Criteria

Table 25: Criteria for diets for renal diseases[73]

Nutrient	Total daily amount	Amount for main course *	Amount per dessert
Potassium	≤ 70mmol/day (2740 mg)	≤ 12mmol (470 mg)	≤ 8mmol (310mg)
Phosphate	≤ 35mmol/day (1080mg)	≤ 8mmol (250 mg)	≤ 7mmol (220 mg)
Sodium	≤ 100mmol/day (2300 mg)	≤ 26mmol (600 mg)	≤ 7mmol (160 mg)
Protein	60-80g/day	≥ 20g	At least 1 option to provide ≥ 5g
Energy	EAR **	Not specified ***	At least 1 option to provide ≥ 200kcal

** These amounts are for the main protein component only. Nutrients from potatoes, vegetables or side dishes are not included; but are estimated to provide approximately 12-14 mmol (47-55 mg) potassium per meal.

*** Recommended energy content of main courses not specified, however provision of energy-dense choices will be critical to ensure requirements can be met.[73, 74]

The specifications above assume an option of two cooked meals every day. If this is not offered, amounts for the 'main meal' may be increased and those for the 'snack' meal decreased accordingly to meet overall requirements.

The provision of energy-dense snacks and high-protein desserts will be necessary to ensure protein and energy requirements are met.[74]

Snack items for inclusion could be:

- sandwich (with suitable filling)
- fruit: apple/pear

- fromage frais
- cake/biscuit
- corn crisps.

5.7.2 Restriction Issues for Protein and Potassium

Forty per cent of the protein requirements of the nutritionally vulnerable group are typically met by breakfast, snacks and milk (approximately 1 pint or 550ml in total = 20g protein). However, in a potassium restricted diet only ½ pint milk or 275ml is allowed, which causes a deficit of 10g protein. This deficit must be replaced and is best achieved by increasing the protein portion of the main meals.[12]

The protein content of the main meal therefore gains importance, due to potassium restrictions higher protein puddings e.g. milk puddings may not be suitable, due to their potassium content. There may also be fluid restrictions, thus further affecting the nutritional delivery of the whole meal.

The total protein per meal (including dessert) aims to be at least 28g (i.e. an extra 5g per meal). However, it is recognised that this may not be achievable for vegetarian main courses.

As a guide, to ensure suitable lower potassium main course options are available, meals should be planned with the aim to provide the following:

Table 26: Potassium and protein allowances[12]

Meal element	Minimum portion size	Average protein content	Potassium content
Protein source		18g	< 12mmols
Starchy food	115g	> 3g	< 10mmols
Vegetable	80-160g	> 2-4g	< 8mmols
Dessert		5g	< 8mmols
Total meal		28g	Will vary depending on patient choices, as controlled by offering suitable dishes.

5.7.3 Catering Guidelines

Caterers must work with dietitians to provide and maintain a nutritionally-balanced menu which meets the very specific criteria set by the Renal Nutrition Group of the British Dietetic Association (BDA).[73] If a hospital menu item is coded as low potassium, low phosphate or both, it is the responsibility of caterers to ensure these menu choices meet the criteria at all times. Catering guidance is provided in Table 27 below.

Table 27: Diet guidance for foods and fluids in kidney disease

Aims/Essential criteria	Rationale	Practical application
Meet the increased energy requirements of patients with renal disease.[73] Ensure specifications for hospital menus of renal patients are met.[73] To provide a minimum 2-week menu cycle for this patient population.[73] Identify foods suitable for low potassium or low phosphate diets, or both.	Energy requirements are 30-35kcal/kg ideal body weight/d.[75] Protein requirements range from 1.0g/kg IBW/day - >1.2/kgIBW/day.[75] Patients with kidney disease frequently suffer from malnutrition. Renal patients are likely to have a longer hospital stay than other acute admissions. [73] High potassium in the body can cause irregular heart rhythms and in some cases cardiac arrest.[42] High phosphate levels in the body are involved in the development of renal bone disease and soft tissue calcification. Excess intake of sodium and fluid intakes can lead to fluid overload and hypertension.	**Potassium** **Foods and fluids high in potassium which need to be restricted** include:[42] • all bran, muesli and other cereals containing nuts or dried fruit • fruit – bananas, apricots, avocados, rhubarb, kiwi fruit, mango, dried fruits, fruit juices • vegetables – jacket potatoes, chips, crisps and roast potatoes, sweet potato, mushrooms, beetroot, tomato juice • chocolate, cocoa and chocolate flavoured products • coffee and coffee flavoured products • milk • malted milk drinks • yeast extracts and spreads, stock cubes, bottled sauces and ketchups

Table 27: Diet guidance for foods and fluids in kidney disease (continued)

Aims/Essential criteria	Rationale	Practical application
Meet the increased energy requirements of patients with renal disease.[73] Ensure specifications for hospital menus of renal patients are met.[73] To provide a minimum 2-week menu cycle for this patient population.[73] Identify foods suitable for low potassium or low phosphate diets, or both.	Energy requirements are 30-35kcal/kg ideal body weight/d.[75] Protein requirements range from 1.0g/kg IBW/day - >1.2/kgIBW/day.[75] Patients with kidney disease frequently suffer from malnutrition. Renal patients are likely to have a longer hospital stay than other acute admissions. [73] High potassium in the body can cause irregular heart rhythms and in some cases cardiac arrest.[42] High phosphate levels in the body are involved in the development of renal bone disease and soft tissue calcification. Excess intake of sodium and fluid intakes can lead to fluid overload and hypertension.	• chutneys and pickles • canned and packet soups, packets of instant desserts • cream of tartar, salt substitutes. Meat and fish should be provided in appropriate portion sizes to ensure that protein requirements are met.[74] • Pulses may be served as an alternative to meat Vegetables should be cooked by boiling instead of steaming to help reduce their potassium content.[12, 42] 1 serving daily of (3 egg-sized equivalent) potatoes that are boiled, mashed or parboiled chips or roast potatoes can be included in a menu. Boiled potatoes should always be available as an alternative to steamed, roast or baked potatoes for renal patients. Rice and pasta provide a good low potassium alternative to potatoes.

Table 27: Diet guidance for foods and fluids in kidney disease (continued)

Aims/Essential criteria	Rationale	Practical application
Meet the increased energy requirements of patients with renal disease.[73] Ensure specifications for hospital menus of renal patients are met.[73] To provide a minimum 2-week menu cycle for this patient population.[73] Identify foods suitable for low potassium or low phosphate diets, or both.	Energy requirements are 30-35kcal/kg ideal body weight/d.[75] Protein requirements range from 1.0g/kg IBW/day - >1.2/kgIBW/day.[75] Patients with kidney disease frequently suffer from malnutrition. Renal patients are likely to have a longer hospital stay than other acute admissions. [73] High potassium in the body can cause irregular heart rhythms and in some cases cardiac arrest.[42] High phosphate levels in the body are involved in the development of renal bone disease and soft tissue calcification. Excess intake of sodium and fluid intakes can lead to fluid overload and hypertension.	**Phosphate** **Phosphate** in the diet is generally associated with the intake of protein-containing foods. **The following foods need to be restricted:** • hard and soft cheeses, cheese spread • milk and yoghurts • malted milk drinks • offal, kidney, liver, sweetbreads[42] • oily fish, herring, kippers, mackerel, pilchards, sardines, salmon • chocolate, fudge, toffee • nuts, peanut butter • foods containing baking powder. Phosphate is also found in many food additives and is very readily absorbed by the body. Processed meats (including ham and sausages), cake and batter mixes and processed cheese may all contain additives rich in phosphate. Fresh food is best.

Table 27: Diet guidance for foods and fluids in kidney disease (continued)

Aims/Essential criteria	Rationale	Practical application
Meet the increased energy requirements of patients with renal disease.[73] Ensure specifications for hospital menus of renal patients are met.[73] To provide a minimum 2-week menu cycle for this patient population.[73] Identify foods suitable for low potassium or low phosphate diets, or both.	Energy requirements are 30-35kcal/kg ideal body weight/d.[75] Protein requirements range from 1.0g/kg IBW/day - >1.2/kgIBW/day.[75] Patients with kidney disease frequently suffer from malnutrition. Renal patients are likely to have a longer hospital stay than other acute admissions. [73] High potassium in the body can cause irregular heart rhythms and in some cases cardiac arrest.[42] High phosphate levels in the body are involved in the development of renal bone disease and soft tissue calcification. Excess intake of sodium and fluid intakes can lead to fluid overload and hypertension.	**Salt** **Salt** should not be added to foods during preparation or cooking.[12] Salt substitutes can be high in potassium and should not be used. Herbs, spices and pepper are all suitable alternatives to salt. Alternative specifications and arrangements will need to be made at a local level for the provision of vegetarian meals for renal patients.

5.8 Diet Suitable for People with Neutropenia

This type of diet is sometimes referred to as a clean diet, a 'neutropenic diet' or 'low microbial diet' is one with a low microbial content: it is not the same as a sterile diet.[42] The evidence to support the use of this type of diet is inconclusive although it is commonly used for patients who are immuno-suppressed and therefore at increased risk of infection from ingested micro-organisms such as campylobacter, listeria and salmonella. Such patients include:[42]

- haematology patients
- some cancer patients
- organ transplant patients
- patients with Human Immunodeficiency Virus (HIV).

Dietary restrictions to reduce the risk of infection need to be balanced against ensuring patients' nutritional needs can be met. This will be important to ensure that patients can benefit from the treatment they are receiving.

5.8.1 Catering Guidelines

Caterers and dietitians must work together in planning and implementing a 'neutropenic diet' menu for patients. A graded system of dietary restriction where the level of restriction is based on the severity of immunosuppression is recommended in clinical practice.[76] Using a graded system will help maximise food choice and minimise the use of unnecessary restrictions.

- Grade 1 Neutropenia Diet – (Neutrophil count 0.5-2.0 x 109/l, and other neutropenic 'at-risk' groups);[42]
- Grade 2 Neutropenia Diet – (Neutrophil count < 0.5 x 109/l).[42]

A menu based on an à la carte structure may be beneficial in meeting the food preferences of those patients that sometimes require this restrictive therapeutic diet for long periods of time.

In general, inappropriate foods are those that have been exposed to the 'atmosphere' in some way or are under/uncooked.[42] Good food safety and food handling practices are imperative. Health Boards should have local food safety policies for the handling and provision of food. Guidance on the minimum points that should be included in food handling policies is provided by the Hospital Caterers Association.[11]

In particular the following points should be strictly adhered to:

- ensure foods are thoroughly cooked and appropriate temperature;
- HACCP: foods must never be reheated.

Microwave ovens can only be used for heating the following types of food using the manufacturer's guidance for both the product and equipment:

- canned foods such as soups, milk pudding;
- commercially prepared cook chill/cook freeze products.

Additional catering guidance for the provision of a neutropenic diet is provided in Tables 28-30, The generic food safety guidance outlined, should be followed for all those requiring a neutropenic diet (i.e. avoidance of 'high-risk' foods, that is foods that potentially have a high microbial content and thus may cause infection in the patient who is immuno-compromised).

Table 28: Clean diet food guidance

Aims	Rationale	Practical Applications
Meet the target nutrient specifications for hospital menus (as specified in Section 2). Provide well-cooked food or food with minimal potential pathogen-forming organisms.	Maintain optimal nutritional status. Immuno-suppressed patients can be extremely ill and therefore nutritionally compromised.[42] Some patients experience side-effects of treatment such as:[42] • nausea • vomiting • loss of appetite • sore mouth and throat • taste changes • chewing and swallowing problems.	**Generic guidance**[42] Extra vigilance will be needed to ensure that HACCP procedures are followed to ensure safe and adequate food preparation, cooking and storage practices, including adequate washing of fruit and vegetables: washed, peeled and cooked fresh or frozen vegetables, washed, peeled and cored fresh or canned fruit, fresh vegetable soup, boiled soup, build-up soup and tinned soup – reheated according to manufacturer's instructions • fruit juice in small individual, sterilised cartons/bottles • pasteurised milk in small individual, sterilised cartons • use all foods within their use by/best before dates • cereals in individual boxes without dried fruit • fats and oils need not be restricted. Small individually contained portions, e.g. margarine/butter should be used

Table 28: Clean diet food guidance (continued)

Aims	Rationale	Practical Applications
Meet the target nutrient specifications for hospital menus (as specified in Section 2). Provide well-cooked food or food with minimal potential pathogen-forming organisms.	Maintain optimal nutritional status. Immuno-suppressed patients can be extremely ill and therefore nutritionally compromised.[42] Some patients experience side-effects of treatment such as:[42] • nausea • vomiting • loss of appetite; • sore mouth and throat • taste changes • chewing and swallowing problems.	• Avoid using foods from large packages (multi-portions) to minimise risk of airborne bacterial contamination. Drinking water: • freshly run mains tap water is considered the safest option. A jug of water intended to cater for the patient for a number of hours should not be provided • boiled water is at risk of contamination when left to cool. There is no evidence to suggest need for sterile or filtered water. Where filters are used, these must be maintained according to manufacturer's instructions • bottled mineral water should be avoided, as there are no control or safety standards for bottling at source. Where bottled water is used, carbonated is best due to slight acidity.

Specific advice for foods to avoid and suitable alternatives has been identified based on an individual's neutrophil counts. This advice is outlined in Table 29 and 30.[76]

Food safety advice if a patient's neutrophil count is between 0.5-2.0 x 109/litre

This list provides examples of high risk foods that should be avoided and suitable alternatives.

Table 29: High risk foods to avoid and alternatives

Foods to avoid	Alternatives
All unpasteurised dairy products e.g. milk sold on local farms	Any pasteurised milk, soya milk, Jersey milk or UHT milk
Soft cheeses made with unpasteurised milk e.g. feta, parmesan Homemade/deli paneer and labnah Mould-ripened cheeses e.g. camembert, brie, goat's cheese Blue veined cheeses e.g. Danish blue and stilton	Cheeses made with pasteurised milk, processed cheese e.g. dairylea, Kraft, Philadelphia, mesh and halloumi Pasteurised parmesan, pasteurised mozzarella Paneer made with pasteurised milk Vacuum-packed pasteurised and hard cheeses e.g. cheddar and edam
Raw or lightly cooked shellfish	Well-cooked shellfish e.g. prawn curry
Raw/undercooked meat, poultry or fish e.g. meat which is still pink, sushi, caviar and oysters Smoked meats e.g. salami Avoid smoked salmon unless eaten directly from a freshly opened packet	Well cooked meat, poultry and fish; tinned meat and fish Vacuum-packed cold meats such as turkey and ham stored below 3°C and eaten following the manufacturer's instructions Vacuum packed fish eaten straight from a new packet including smoked salmon
Raw eggs or undercooked eggs e.g. homemade mayonnaise, homemade ice cream, mousse, egg-nog, meringue, hollandaise sauce, and béarnaise Any dressing containing raw eggs e.g. home/restaurant-made caesar salad dressing	Hard boiled eggs; shop-bought mayonnaise and other products made with pasteurised egg
Probiotic or 'bio' foods, drinks or supplements eg Yakult, Actimel, ProViva Yogurt which is described on the label as bio or probiotic*	Any yogurt that does not describe itself as bio or probiotic including live, plain, Greek and fruit yogurts
Meat paté, vegetable paté	Pasteurised paté and paste in tins or jars that do not need to be refrigerated

* The live bacteria used in making yoghurts are not harmful. So yogurt described as 'live' is safe during neutropenia. However the bacteria used in bio or probiotic foods cannot be guaranteed as safe during neutropenia.

Food safety advice if a patient's neutrophil count is below 0.5 x 109/litre

When a patient has a neutrophil count <0.5 x 10PP/litre, during a stem or bone marrow transplant or when receiving high-dose chemotherapy patients may be more susceptible to infections, so more stringent food hygiene is required. [77]

Table 30: High risk foods that should be avoided and suitable alternatives

Foods to avoid	Alternatives
Raw unpeeled fruit or vegetables including salad items, stuffed vine leaves, fatoosh and taboulleh Raw dried fruit, products containing these e.g. muesli, Bombay mix, confectionary Damaged or over-ripe fruit or vegetables Unpasteurised or freshly squeezed fruit or vegetable juice or smoothies	Good quality fruit and vegetables that are well cooked or peeled Cooked dried fruit e.g. in fruitcake, flapjacks or cereal bars Tinned fruit Pasteurised smoothies UHT or long-life fruit juices – in cartons or jars
Fresh nuts, nuts in shells	Cooked nuts, nuts in cans peanut butter, roasted nuts
Uncooked herbs, spices and pepper	Cooked herbs, spices and pepper
Cold smoked salmon	Cooked dishes containing smoked salmon
Non-drinking water, bottled mineral or spring water, water from wells, water from coolers, domestic water filters and water fountains	Freshly run tap, carbonated water Please check with your hospital for guidance
Ice when away from home e.g. in a restaurant and Slush Puppies	Ice made from appropriate water sources (see above)
Ice cream from ice cream vans	Ice cream from reputable sources, individual portions, wrapped, small pots
Unpasteurised or 'farm fresh' honey and honeycomb	Pasteurised or heat-treated honey Ideally try to use individual sachets or portions

Table 30 High risk foods that should be avoided and suitable alternatives (continued)

Foods to avoid	Alternatives
Unnecessarily large packets of food items from pick and mix, universal jars Delicatessen counter foods e.g. olives, houmous, shawarma and baklava	Ideally, packets should be individual portions e.g. butter, sweets, pickles

5.9 Monoamine Oxidase Inhibitors (MAOI) Diet

Monoamine Oxidase Inhibitors (MAOIs) are a set of drugs that are used in the management of chronic depression and patients with severe phobias.[78] However, their use has declined significantly over the past few decades due to the development of newer generation antidepressants that do not have the same drug-food interactions and also have fewer side effects.[78]

MAOI drugs compromise the body's normal metabolism of a substance called tyramine which is found in a number of foods (Table 31). Build-up of tyramine levels in the blood can result in significant rises in individuals' blood pressure to dangerously high levels. Individuals present with a sudden severe headache, palpitations, nausea which can result in a stroke. As such, individuals who are prescribed MAOIs must be provided with a diet that does not contain foods that have a high concentration of tyramine in them.

Over the past few years, research has been carried out that shows that the diet for individuals prescribed MAOIs need not be as restrictive as previously thought. Tyramine content of foods varies with maturity of the food and also length of storage and also individual patient's tolerance levels vary. It is recommended that patients should receive individual advice from a dietitian.[79, 80]

5.9.1 Catering Guidelines

Table 31 shows those foods that should be avoided, taken in moderation or eaten freely.

Table 31: Dietary recommendations for individuals taking MAOI drugs (adapted)[42, 77]

Permitted	Moderation g per meal	Avoid
Cottage cheese, cream cheese, ricotta/Bonbel, mascarpone, processed cheese slices	Mozzarella (30g) Parmesan (30g)	All other cheese, e.g. blue cheese, cheddar, camembert, brie, gouda, edam, goats
Pasteurised milk, butter and spreads, cream, sour cream		Unpasteurised milk
Fresh, tinned and frozen meat and poultry	Pepperoni (30g) Pastrami (30g) Mince (100g)	All other aged/fermented meats inc. chorizo, salami
Meat alternatives	Quorn® (100g)	Textured vegetable protein (TVP)
Fresh, tinned and frozen fish inc. smoked fish	Pickled herring (150g)	Shrimp sauce Fermented fish
Soya milk, soya yoghurts and desserts	Tofu (100g)	Soy sauce and all other fermented soybean condiments e.g. Miso
All fruit and vegetables except those to avoid		Sauerkraut, banana skins, broad bean pods
Brewer's yeast, bakers yeast, gravies, stock, soup powders, fresh stocks, bouillon, MSG		Concentrated yeast extract e.g. Marmite ®
Wine, cider, spirits	Non alcoholic beer or lager (330ml)	All other beers/lagers
Chocolate		

VEGAN
VEGETARIAN
KOSHER
HALAL

6. Special and Personal Diets

6. Special and Personal Diets

Summary

- Special diets refer to those meeting cultural or religious needs, while personal diets are those meeting personal preferences. NHS Boards and menu planning groups therefore must gather information on the diverse dietary needs of the populations they are serving to ensure all individual dietary needs are met.
- Increasing numbers of people from different ethnicities and cultures coming to Scotland (8.46% of the population in 2011), widens the range of special diets required when patients are admitted to hospitals.
- This section sets out the essential criteria required to meet the alternative needs of hospital patients as specified in the Healthcare Improvement Scotland, *Food Fluid and Nutritional Care Standards*.
- Many different factors must be taken into consideration and assumptions should never be made as to an individual's dietary practices just because they belong to a particular faith or religious group.

Within this section, information can be found about various diets such as: vegetarian and vegan diets; Halal, Hindu, Kosher and Chinese diets.

Included is information about:

  - common dietary variations between vegetarians and vegans;
  - food laws and food restrictions;
  - festivals and fasting;
  - Characteristics of the Chinese diet; and
  - food rules of religions.

- In addition, it is important to consider the age of the population as it is likely that growing numbers of older people may require culturally adapted texture modified food and also to acknowledge that a proportion of patients from these populations may not speak or read English.

6.1 Introduction

Groups of people of diverse ethnicities, faiths or religions, as well as disabled people, older people and children are often considered not to have equal access to health services.[20] NHS Boards and menu planning groups must gather sufficient information on the diverse dietary needs of the populations they are serving and ensure inclusive attitudes and practices to food service provision to ensure all individuals' needs are met.[3]

'Special diets' refer to those meeting cultural or religious needs, while 'personal diets' are those meeting personal preferences.[11] Any organisational structures, policies, procedures and practices are required to treat ethnic minorities fairly and equally.[20] This applies to all public bodies including NHSScotland, and is

therefore applicable to the hospital catering service.[20] Although a 'normal' hospital menu meets the majority of patients' cultural and religious food needs, there are some patient groups with alternative needs. A patient's personal dietary needs must be met when they also require a therapeutic diet.

6.1.1 Religious and Ethnic Groups in the UK and Scotland

The 2011 Census showed that the population of the UK was 63.2 million, an increase of 3.7 million compared to the 2001 Census figures. Of these additional 3.7 million, 2.1 million were migrants.

The Scottish population in 2011 was 5.3 million, an increase of 4.6% compared to 2001. In Scotland, the total number of people in the categories 'White Scottish' and 'White Other British' was 4,847,645. People in other ethnic categories numbered 447,758 or 8.46%. The council areas with the highest proportion of people from an ethnic community background were Glasgow City at 12%, Aberdeen City and Edinburgh City both at 8% and Dundee City with 6%.

Increasing numbers of people from different ethnicities and cultures coming to Scotland widens the range of special diets required when patients are admitted to hospitals.[81]

6.1.2 Essential Criteria

Healthcare Improvement Scotland *Food, Fluid and Nutritional Care Standards*[3] Standard 3, 4 and 5 specify the criteria for meeting the alternative needs of hospital patients.

It is important to never assume what an individual's dietary practices are just because they belong to a particular faith or religious group. Dietary practices between and within the different cultural groups can be quite diverse. For many these are influenced by religious practices and beliefs, for example fasts and festivals, food restrictions and laws.

The Shap e:calendar on World Religions in Education produces an annual calendar of dates of festivals for major religions which may help guide provision for special diets.[82]

Menu planning groups and catering departments should consider how the ageing population may have different needs to those currently being provided for. It is likely that there will be growing numbers of older people requiring culturally adapted texture modified diets.

It is also important to acknowledge that a proportion of patients from these populations may not speak or read English. Communication to patients regarding the menu, food service provision and also obtaining patient feedback may need to be provided in different languages as determined by local need and steps to ensure that these can be translated correctly are available in the relevant language will be key in meeting Healthcare Improvement Scotland *Food, Fluid and Nutritional Care Standards*.[3]

6.2 Vegetarianism and Veganism

The current UK population is 62.3 million.[83] Most recent statistics indicate that 2% of adults and children are vegetarian (not eating meat or fish), this amounts to over 1.2 million individuals.[84, 85] People from a variety of backgrounds adopt vegetarian dietary practices for a number of reasons including: religion and culture, for example Hindus and Buddhists; moral or ethical beliefs; health; environment; ecological and economical concerns. Also about one-third of the UK population regularly eat vegetarian dishes, thus provision of a menu that provides variety and choice for this section of the population is vital if these individuals' dietary and nutritional needs are to be met.

Vegetarian dietary practices can vary quite considerably in terms of what foods will be eaten and what foods are excluded. The extent to which foods are excluded needs to be determined with the individual patient. Many of the principles of a vegetarian diet follow national goals for healthy eating, that is higher intakes of complex carbohydrates, fibre and fruit and vegetables.[5] If well planned, the vegetarian diet can be nutritionally adequate.

However, exclusion of certain foods or food group items requires careful planning to ensure that alternative foods are included in the diet to prevent any nutritional inadequacies. A hospital menu has traditionally provided a lacto-ovo vegetarian option for patients. Any variants of this diet must be planned for the individual patient by the catering department in conjunction with a dietitian as per the local protocol.[3] Examples of some suitable foods for inclusion in vegetarian and vegan diets can be found in Tables 5–10 contained within this document. Further information can be sought from the Vegetarian Society.[84]

Provision must be made for patients who follow a vegetarian or vegan diet. There must be a vegetarian meal choice at each eating occasion on hospital menus and thought must be given to including more choice for this patient group. Sources of protein should be varied over the week. Vegan diets prove more of a challenge and hospitals should develop a protocol for providing food for this group of patients. These diets are discussed further in Section 6.

Vegetarians need to get protein from a range of foods not only to supply adequate protein, but also other vitamins and minerals. Over-reliance on cheese as the protein source will result in a diet that is high in total and saturated fat. Table 7 provides suggestions of suitable protein sources.

6.2.1 Common Dietary Variations

The different dietary practices of vegetarians and vegans are summarised in the table below.

Table 32: Criteria for vegetarian and vegan diets[84]

Dietary type	Characteristic
Lacto-ovo vegetarian	Eats both dairy products and eggs. Excludes all red meat, poultry, fish and shellfish and ingredients derived from them, e.g. gelatine and rennet. Excludes: • all meat, poultry, game, fish, shellfish, crustaceans; • cheese produced using animal rennet. Vegetarian cheese is made from rennet from a microbial source; • slaughterhouse by-products, e.g. gelatine, animal fats. It is often found in confectionery, low fat spreads and desserts, and other dairy products; • animal fat refers to carcass fat and may be present in a wide range of foods, including biscuits, cakes and margarines. Suet and lard are types of animal fats. Certain food additives (E numbers) may be derived from animal sources; • generally prefer free-range eggs; • generally not happy to eat foods that have come in contact with animal products, e.g. utensils and chopping boards that have not be cleaned thoroughly after preparation of animal products, also, cooking vegetables in oil that has been used to cook meat.[84]
Lacto-vegetarian	Eats dairy products but not eggs. Excludes all red meat, poultry, fish and shellfish and ingredients derived from them, e.g. gelatine and rennet.
Vegan	Excludes all animal meat and products, derived ingredients and additives; no eggs, milk, dairy products (may or may not eat honey).[84]

6.3 Halal Diet

A Halal diet is followed by people of the Muslim faith. *Halal* food refers to a food that is lawful to consume, while *Haram* refers to foods which are unlawful.

6.3.1 Food Laws

Unlawful foods are:[86]

- food and food products from the pig;
- meat not slaughtered by proper Halal methods (kosher meat may be acceptable);
- foods containing ingredients or additives from a pig or from either of the above sources. Foods containing gelatin, animal fats or emulsifiers from animal derivatives must be avoided;
- blood and its by-products;
- shellfish or seafood without fins and scales; and
- alcohol both for consumption as a drink and in foods.

Food and cooking hygiene is an important part of Islamic dietary laws, and Haram and Halal foods must be cooked using separate cooking utensils, and ideally kept in separate kitchens. A patient may refuse to eat a food if they are not fully confident that the food has been produced in the correct way. The Muslim Food Board (UK) produces a list of manufactured food items available in the UK which have been certified as meeting Islamic Food Laws (Halal).[86]

6.3.2 Festivals and Fasting

Muslims are required to fast from sunrise to sunset during the month of Ramadan, this is known as *sawm*. This involves abstinence from all food and drink during daylight, with the intake of a substantial meal before sunrise and one again after sunset.[82]

Those exempt from fasting are:[82]

- older people and children under 12 years old;
- pregnant, breastfeeding or menstruating women;
- chronically ill people where fast is physically harmful to them, e.g. people with diabetes; and
- acutely unwell people.

In addition some devout Muslims may fast once or twice a week in addition to Ramadan.

A number of resources have been produced by the National Diet and Nutrition Resource Initiative (ndr-UK) for example the 'eatwell guide' model that has been tailored to represent the dietary practices of South Asian ethnic minority groups and are also produced in languages other than English.[86]

6.4 Hindu Diet

The Hindu diet is followed mainly by people from the Gurajat and Punjab areas of India, and also some parts of East Africa.

6.4.1 Food Restrictions

Dietary practices and food restrictions of the Hindu diet tend to vary depending on the degree of orthodoxy of the individual. The diet is largely a vegetarian diet, high in plant-based foods, fruit and vegetables and pulses (lentils and beans), with varying degrees of dietary restrictions or inclusions. The general principles are as follows:

- the cow is considered sacred, and the consumption of beef is rare;
- no specific prescriptions against consumption of meat but most Hindus are lacto-vegetarian;
- eggs are not usually eaten as they are potentially a source of life;
- mutton (goat or sheep), lamb, chicken and fish can be eaten by less strict Hindus, usually men;
- animal derived fats, e.g. dripping and lard are not acceptable; ghee (clarified butter) and vegetable oil should be used in cooking;
- milk and milk products are acceptable to consume; and
- strict Hindus like to know equipment used in food preparation has not been in contact with meat or fish.

6.4.2 Festivals and Fasting

Festivals and religious days are based on the lunar calendar, thus the exact dates can vary from year to year.[82]

Devout Hindus may fast several times a week in addition to religious days. Fasting occurs from sunrise to sunset. Some individuals will forego all foods and may only have fluids. Others will eat 'pure' foods, for example, yoghurt and fruit.

6.5 Kosher Diet

Kashrut dietary laws define which foods are 'fit' (Kosher) for consumption by Jewish consumers who observe these laws.[82, 87] They are Biblical in origin, but are interpreted and extended over the years to address new issues and technologies.[87] Again the degree to which each individual will adhere to food laws will vary. It is important to find out each individual's dietary needs and not assume these.

The Kashrut Division of the London Beth Din provide licensing and certification to food producers whose practices are Kosher.[82] They also produce a food guide which lists all those foods which have been certified as Kosher.[87]

6.5.1 Food Laws

Maintenance of health and food hygiene underlies these laws. Probably the strictest Kashrut law is the prohibition of mixing, i.e. the cooking and/or consumption of meat and milk products.[87] Keeping meat and milk separate requires the processing, handling and storage of all materials and products to fall into being a meat product, a milk product or a neutral product (which doesn't carry either milk or meat characteristics). Neutral products can be eaten directly before or after both meat and milk, and include:

- fruits and vegetables;
- salt and other non-organic foodstuffs;
- fish; and
- eggs.

In addition utensils, crockery, pots and pans used for milk or meat must be kept separate, this includes storage, washing and drying.[82, 87]

There are variations in the length of time needed between the consumption of meat and milk products depending on the individual's origin. For most Anglo-Jewish individuals this is three hours.[87]

Food permitted includes:[82, 87]

- meat from ruminant animals with split hooves that chew their cud, e.g. cattle, goats, sheep and deer, pig is forbidden;
- traditional domestic birds, e.g. domestic chicken, duck, turkey and goose;
- animals and birds must be slaughtered by the Jewish method, by a trained professional;
- fish with fins and removable scales, e.g. tuna, salmon, cod, plaice (not monkfish, shark or shellfish);
- eggs from Kosher birds;
- honey;
- unprocessed cereals and grains;
- fruit and vegetables that have been thoroughly cleaned and free from insects, although fruit from a tree less than three years old is not Kosher;
- processed products are permissible if they have the Kosher label[87];
- milk and milk-derived products from Kosher animals are permitted, except cheese made with rennet derived from a non-Kosher animal;
- bread and cakes must be certified; and
- margarines must be certified as being produced under rabbinical supervision.

6.5.2 Festivals and Fasting

The Sabbath begins at sundown on Friday and ends when the first star is visible on Saturday night. Food is not permitted to be prepared on the Sabbath, but food can be prepared in advance to be eaten during this time.[82]

The Day of Atonement in September is a fast day; no food or drink is to be consumed for 25 hours, sundown until sunset.[82]

Passover is over eight days during April and during this time Jews are forbidden to eat any leavened product, or any product made from wheat, rye, barley, oats or spelt. Observant Jews use separate sets of cutlery, dishes and pots for Passover in addition to those used for meat and milk products.[87]

6.6 Chinese People

Chinese people form part of the Asian population, the largest ethnic group in Scotland.[81] They may come from China, Taiwan, Hong Kong, Singapore and Malaysia. There are quite significant differences between the dietary practices of Chinese people due to their place of origin; different climates and hence different food availability for example, predominately rice growing regions in the south and central parts of China and wheat-producing regions in the North.[83]

Table 33: Characteristics of Chinese diets

Food group	Characteristics of diet
Cereals	• rice predominates in the southern regions; wheat-containing foods in the north; • rice – boiled, made into flour, noodles, cakes; • wheat flour – dumplings, noodles and bread; • maize may be used to make noodles, corncakes.
Vegetables and fruit	• green leafy vegetables – cabbage (brassica family), pakchoi, spinach, aubergine, tomato, chilli peppers and Chinese mushrooms; • melons, peach, apricots, apples, pears, cherry, star fruit, citrus fruits are all popular.
Meat, poultry, fish and alternatives	• pork and poultry most common meats eaten; mutton by people from the north; • fish and seafood widely eaten; • soybeans are widely used, bean-curd and soy sauce. Red beans (adzuki, kidney) used in soups; • nuts play a minor role in the diet.

Table 33: Characteristics of Chinese diets (continued)

Food group	Characteristics of diet
Milk and dairy products	• do not generally feature in Chinese people's diet.
Fats and oils	• vegetable oil used (rapeseed or peanut).

6.7 Food Rules of Religions

Food	Hindu	Muslim	Sikh	Jewish	Roman Catholic	Buddhist	Rastafarians	7th Day Adventist	Mormon
Vegetables	A	A	A	A	A	A	A	A	A
Fruit	A	A	A	A	A	A	A	A	A
Milk/ Yoghurt	Not with rennet	Not with rennet	A	A	A	A	A	Most	A
Cheese	Some	Vegetarian	Some	Not with meat	A	A	A	Most	A
Eggs	Some	No blood spots	Some	No blood spots	A	Some*	A	Most	A
Chicken/ turkey	Some*	Halal	Some	Kosher	Some still prefer not to eat meat, particularly during Lent or Friday	F*	Some	Some	A
Mutton/ lamb	F	Halal	Some	Kosher		F*	Some	Some	A
Beef	F	Halal	F	Kosher		F*	Some	Some	A
Pork	Rarely	F	Rarely	F		F*	F	F	A
Fish	With fins & scales	With fins & scales	Some	With fins, scales & backbone	A	Some	A	Some	A
Shellfish	Some*	Halal	Some	F	A	F	F	F	F
Nuts	A	A	A	A	A	A	A	A	A
Pulses	A	A	A	A	A	A	A	A	A
Tea/coffee/ cocoa	A	A	A	A	A	A (no milk)	A	F	F
Alcohol	Some*	F	A	A*	A	F	F	F	F
Fasting		Ramadan		Yom Kippur	Some for a short time before communion				24 hours once a month

*Reproduced with permission from NHS Ayrshire and Arran

A = acceptable

F = forbidden

S* = in Asian tradition eggs are not a vegetarian food. Hindus, particularly women, may not eat eggs since they are potentially a source of life, some Asian adults may find the flavour of Western cheese rancid and very strong. Cheeses that are not made with animal rennet may be acceptable

F* = some Buddhists are not vegetarian depending on degree of orthodoxy

GROWTH DEVELOPMENT MENU CHOICES

7. Catering and Nutritional Guidance for Children and Young People

7. Catering and Nutritional Guidance for Children and Young People

Summary

- Childhood is a time of rapid growth and development. As a result of the extra energy requirements for such growth, children are particularly vulnerable to poor nutrition. The fact that children's admissions are generally short should not be used as an excuse for disregarding nutritional standards.
- The food that children and young people eat while in hospital plays a crucial role in their treatment and recovery. Therefore, good food and good food provision within the hospital setting are critical. Where popular 'modern' children's foods are on the menu, they should be the lowest fat, sugar and salt options available.
- Menu planning groups, which should have specialist paediatric dietetic input and include clinical staff with child health experience, must work closely with children, parents and carers in planning the menu for children, taking into account likes and dislikes and making sure that suitable choices are available for the different ages and stages of development of the children being catered for.
- Children should be consulted about new menus/dishes before introduction.

  The child specific menu must take into account:

  - age
  - food preferences and special diets
  - length of stay
  - nutritional risk and status, using validated tools
  - national age-specific nutritional standards.

  Meals and mealtimes should be designed to ensure:

  - food is attractively presented
  - food choice
  - age appropriate portion sizes
  - access to milk and water throughout the day
  - age appropriate crockery and utensils
  - appropriate seating for age and disability
  - protection of mealtimes from interruption.

7.1 Introduction

Healthy eating is fundamental for proper growth and development in childhood and essential for good health and wellbeing in later life.[88] Excess energy intakes combined with low physical activity levels can lead to obesity whilst poor energy intakes can lead to poor growth and development. Children become nutritionally compromised more quickly than adults as they have less nutrient stores initially and this can result in decreased immune function leading to infections and increased length of stay.

The nutrition and feeding requirements of babies from birth to one year old differ from those of children over a year. Foods suitable for under ones should be available along with appropriate cutlery and tableware.[89]

Guidance has been provided for hospital catering services for children and young adults.[88] However, it is important to note that current healthy eating guidelines recommended for older children and adults are not appropriate for those under the age of two years old.[90] A low-fat, high-fibre diet recommended for older children and adults based on the proportions set out in the 'eatwell guide' is not suitable for young children as it may not provide enough energy, fat and other nutrients essential for growth and development.

Diets must be tailored to suit young children's nutritional and energy needs and also their stage of development. Guidance has been produced for early years childcare settings.[90] It is best to provide young children with smaller, more frequent meals. Snacks such as bread, fruit, sandwiches, and yoghurts are preferred to those high in fat, sugar and salt. The provision of foods high in sugar should be kept to a minimum, especially between meals and the use of highly salted foods and addition of salt to foods should be discouraged. However, if food is to have any nutritional value then it must be eaten, so children should be presented with a variety of foods and fluids that are tempting and familiar to them.[88] In some cases this may mean foods such as fish fingers, chicken goujons, baked beans, burgers, fries and icecream. Emphasis should be placed on the provision of popular and familiar foods, but choosing the lowest fat/lowest sugar/lowest salt options possible.[91, 92]

The main hospital menu may meet the needs of many children with traditional choices such as roast meats, vegetable and potatoes and cottage pie as well as more 'modern' choices such as mild curry, pizza, pasta, jacket potato and a filling. Menu planning groups should work closely with children, parents and carers in planning the menu for children taking into account likes and dislikes and making sure that suitable choices are available for the different ages and stages of development of the children being catered for. Menu planning groups and hospitals must produce a specially designed menu for children.

In a general hospital it is good practice to have a separate children's menu with child-friendly familiar dishes as well as access to the main hospital menu for those who wish to have more choice (particularly for older children).

7.2 Menu Planning Guidance

Menu planning should follow a similar process as set out in Section 4. However it is necessary to highlight the key relevant criteria for children.

The outlined three stages below should be followed:

- planning group with key responsibilities;
- ensure a separate children's menu; and
- after assessment of child specific needs the structure of menu should be determined.

7.2.1 Planning Group

A planning group must be implemented for provision of fluid and nutrition for children.

Core membership should include a senior member of catering staff, a doctor and senior nurse (preferably from a children's ward/experience), a senior paediatric dietitian, other allied health professionals including speech and language therapists and patient/parent representative.

The key responsibilities of the group should be to ensure that:

- menus are planned using standard recipes;
- national guidelines are followed for nutrient criteria;[29, 31, 32, 38]
- food and fluid requirements of the child are met and are age appropriate;
- meal times are relevant to children;
- nutritional content of menus is analysed by a dietitian; and
- children and parents are consulted about new menus/dishes before introduction. (The practical side of trialling new dishes may be more difficult. A wider approach of possibly involving local school children may be appropriate to ensure wider more accurate sampling.)

7.2.2 Planning Process

As stated, page 12, Nutrient needs of the hospital population: Each age group has different nutritional requirements, therefore, the dietary needs of children are better considered separately. As a result a separate children's menu must be developed.

The key considerations being:

- age
- food preferences
- length of stay
- nutritional risk.

As part of this process consideration is needed to ensure:

- age appropriate crockery and utensils;
- appropriate seating for age and any disability;
- age appropriate portion sizes;[93]
- age appropriate food choice – it is important to emphasize children can become nutritionally compromised very quickly. Popular, familiar dishes to entice consumption and some traditionally 'non healthy' food may be utilised, but choosing the lowest fat/lowest sugar/lowest salt options possible;
- access to flavourings for milk and water to encourage consumption;
- packaging and presentation to encourage healthy uptake-for example bags for packed lunches with colouring competitions; and
- information on choice in a child-friendly format and encouraging healthy eating in a fun way.

7.2.3 Food-based and Group Planning Guidance

The basic principles for healthy eating as indicated in the 'eatwell guide' should be followed for children except those under the age of two.[1]

The following criteria for menu provision for children up to the age of 16 should be followed.

Table 34: Children up to 16 years old

Potatoes, bread, rice, pasta and other starchy carbohydrate	This food group should form the basis of a child's diet. Provide a variety of cereals. Provide a choice of at least two carbohydrate options at each main meal. Bread and cereals can be offered as snacks including scones, muffins and crackers, but choosing the lowest fat/lowest sugar/lowest salt options possible. Wholegrain or wholemeal varieties must be offered as a choice, not the only choice and not at the expense of more energy dense food for children <5 years old.

Table 34: Children up to 16 years old (continued)

Fruit and vegetables	The opportunity to choose at least five servings per day of fruit and vegetables a day must be available. Fruit and vegetables must be offered in appropriate portion sizes for children to avoid choking. A mixture of smaller fruits and large fruits should be offered e.g. plums, grapes, and satsumas in addition to pears and apples. Pure unsweetened fruit juice should be available at meal times only Fresh or canned fruit should be offered at breakfast. Fresh fruit and fruit in juice can be offered as a snack. A choice of popular vegetables should be available at each main meal e.g., peas, carrots, sweet corn and broccoli.
Beans, pulses, fish, eggs, meat and other proteins	Offer the choice of a variety of meat or meat alternatives options at each main meal. Include familiar and palatable choices. It is recommended not to use peanuts in dishes for children.
Diary and alternatives	Provide 350-600ml of whole milk for each child daily. Semi-skimmed milk must be available only on request for children 2 years and older. Use whole milk for all milk based dishes. Offer milk/mousse-type desserts for snacks. Ice cream is a familiar and popular dessert choice which may be an appealing comfort food for children whilst in hospital.
Oils and spreads, including sugar and salt	Honey must not be added to foods prepared for infants <12 months old. Age specific nutrient standard for salt should be used. Use of limited processed meats/convenience food should be encouraged and where used, the of lowest fat, salt and sugar varieties should be provided. Where possible oven baked products should be substituted for traditionally fried products.

Table 35: Paediatric fluid requirements[38]

Age	Average weight (KG)	Fluid requirements (mls)
1-2 Months	4.9	735
3-4 Months	6.4	960
5-6Months	7.4	1,110
7-12 Months	8.7	1,044
1 Year	9.3	1,116
2 Years	11.9	1,100
3 Years	14.2	1,200
4 Years	16.2	1,300
5 Years	18.4	1,400
6 Years	21.0	1,525
7 Years	23.0	1,575
8 Years	26.0	1,650
9 Years	29.0	1,725
10 Years	32.0	1,800
11 Years	35.0	1,875
12 Years	39.0	1,975
13 Years	44.5	2,125
14 Years	50.0	2,250
15 Years	54.3	2,350
16 Years	57.8	2,450
17 Years	60.5	2,500
18 Years	61.7	2,500

Table 36:[32, 38] Energy requirements for males and females 0-18 years

Age	'Nutritionally well' patient[92]	'Nutritionally well' patient	'Nutritionally vulnerable' patient[91]	'Nutritionally vulnerable' patient
	Energy (kcal/d)	Energy (kcal/d)	Energy (kcal/d)	Energy (kcal/d)
	Males	Females	Males	Females
1-2 months*	526	478	631	574
3-4 months*	574	526	689	631
5-6 months*	598	550	718	660
7-12 months*	694	646	833	775
1 year	765	717	918	860
2 years	1,004	932	1,205	1,118
3 years	1,171	1,076	1,405	1,291
4 years	1,386	1,291	1,663	1,549
5 years	1,482	1,362	1,778	1,634
6 years	1,577	1,482	1,892	1,778
7 years	1,649	1,530	1,979	1,836
8 years	1,745	1,625	2,094	1,950
9 years	1,840	1,721	2,208	2,065
10 years	2,032	1,936	2,438	2,323
11 years	2,127	2,023	2,552	2,438
12 years	2,247	2,103	2,696	2,524
13 years	2,414	2,223	2,897	2,668
14 years	2,629	2,342	3,155	2,810
15 years	2,820	2,390	3,384	2,868
16 years	2,964	2,414	3,557	2,897
17 years	3,083	2,462	3,670	2,955
18 years	3,155	2,462	3,786	2,954

*Based on requirements for breast fed infants.

Table 37: Estimated Average Requirement (EAR) for Protein[38]

Age	Protein (grams per day)	Protein (grams per day)
	Males	Females
0-3 months	12.5	12.5
4-6 months	12.7	12.7
7-9 months	13.7	13.7
10-12 months	14.9	14.9
1-3 years	14.5	14.5
4-6 years	19.7	19.7
7-10 years	28.3	28.3
11-14 years	42.1	41.2
15-18 years	55.2	45.4

7.3 Menu Structure

The menu structure should suit the needs of children. The operational issues of different hospitals should be secondary to providing the right choice at the right time. The basic structure will be as Table 11. It may well be that the preferred choice is to switch the main meal and snack times to accommodate the needs and waking times of children. The children's menu must be a separate menu. Dependant on key considerations relevant to individual hospitals it may run in conjunction with the main menu or be a standalone menu.

7.3.1 Portion Sizes

Due to the wide range of ages within children's services single portion sizes cannot be determined and age appropriate portion sizes should be provided.

For practical application of serving meals, guidance should be taken from Nutrition and Diet Resources UK (ndr-UK).[93]

7.4 Fibre and Children

Proportionally lower intakes of fibre for smaller body size are used in practice. Infants' diets contain no fibre until weaning.[29]

Excessive fibre intakes can be an issue in small children. It may cause loose stools and at times poor weight gain due to the low energy density of such diets.

Fibre requirements:[29]

Age (years)	Recommended daily fibre intake (grams per day)
2-5	15
5-11	20
11-15	25
>16	30

7.5 Nutrient Criteria for Children and Young People

The nutrient criteria represent the amount of energy (calories) and nutrients required to be provided by an average day's lunch or evening meal. (see Appendix 2). This means that caterers must plan menus to ensure that the food and fluids provided meet the nutrient criteria.

It is recognised that there will be a wide range of nutritional needs and appetites. Catering staff, when appropriate in consultation with a dietitian, should use their skills, knowledge and judgement to provide appropriately sized portions for individual children.

The nutrient criteria are based on current scientific knowledge on the amount of energy and nutrients needed by different groups of the population.[29, 30, 31, 32, 38]

8. Audit and Monitoring

8. Audit and Monitoring

8.1 Introduction

Use of measures and monitoring practices are vital in ensuring that the standards and guidance outlined within this Specification are adhered to. Given the multi-disciplinary nature of nutritional care across the hospital environment, it is important to have robust monitoring processes in place.

Monitoring and evaluation provides a means for NHS Boards to demonstrate good practice in food and fluid provision, provide an assurance framework and identify areas for improvement.

Background

The *Food in Hospitals Catering & Nutrition Specification* (2008) Monitoring Tool required all NHS Boards with a responsibility for patient catering to submit a six-monthly return to Health Facilities Scotland detailing their level of compliance with the Specification.

Each Board was required to detail their level of compliance against each section of the document as follows:

- Nutritional needs of population
- Menu planning
- Food-based standards
- Menu planning guidance
- Therapeutic diet provision
- Special and personal diets
- Patient experience.

Future Monitoring Framework

A new monitoring framework is being developed to demonstrate compliance with this revised National Catering and Nutrition Specification for Food and Fluid Provision in Hospitals in Scotland. This will include aspects of menu planning, delivery, service and patient mealtime experience.

Boards will be required to provide more robust evidence to support their returns on nutritional compliance. The introduction of annual public and peer review of Boards' compliance with certain aspects of the Food in Hospitals Specification will also be recommended. The revised framework will be developed in the context of wider work to monitor and assure the quality of food, fluid and nutritional care in hospitals.

Adopting a robust improvement methodology is vital in ensuring that the quality of food and fluid provision is accurately measured and recorded with areas for

improvement being clearly identified, implemented and shared across the NHS Board area as appropriate.

The existing National Nutritional Compliance Audit Tool will remain in place for NHSScotland until a new tool has been developed and agreed.

Key elements for measuring food and fluid provision

The following elements are considered key to measuring food and fluid provision:

- gathering evidence based data from a range of sources;
- monitoring activity involving a range of multidisciplinary stakeholders/staff, patients, carers and public partners/volunteers;
- monitoring should form part of a continuous quality improvement culture;
- data collected should be used to inform patient food and fluid provision, linked to local nutritional care policy and be included in governance reporting systems; and
- mechanisms should be in place for supporting and sharing good practice.

9. Appendices

9. Appendices

Appendix 1

Dietary Needs of Significant Patient Groups

Older adults

In common with other age groupings of the population there will be fit and well older people who may benefit from adoption of healthier eating principles recommended for the general population. However, in hospitals the older patient can be more nutritionally vulnerable than younger adults.[94] Energy requirements are lower due to a decrease in lean body mass and a reduction in physical activity, but other nutrient requirements do not fall. Several studies have shown that intakes of several nutrients are lower than is desirable.[14, 35, 36, 37, 95]

The nutrients most likely to be lacking are:

- energy
- protein
- fibre
- vitamin C
- iron
- folate/folic acid
- potassium
- magnesium
- riboflavin
- vitamin D
- calcium
- fluid.

Smaller appetites

There is frequently a drop in appetite as a result of the ageing process therefore careful menu planning will be required to ensure that nutrient requirements are provided at the correct level within an energy and nutrient-dense diet. The use of modest portion sizes and substantial snacks is imperative. There is often a preference for sweet foods.

Need for softer options

Some patients may not have any difficulties swallowing; however, they may require a diet that is soft and easy to chew due to poor dentition or ill-fitting

dentures for example. When menu planning for older adults, consideration to the provision of soft and easy chew meal options in line with the guidance provided for modified textures stage D and above should be included in the core menu.[96] Soft snacks must also be available for such patients to enable them to maximise energy and nutrient intakes.

Oral health

Poor oral health can be a contributory factor to older people becoming 'nutritionally vulnerable'. High-sugar-containing snacks, regular squashes and fizzy drinks are frequently used to improve overall food and hence energy and nutrient intakes, however, this is at odds with advice for good oral and dental health. In such cases, adequate day-to-day oral care and regular oral health checks are paramount to prevent further dental erosion.

Finger foods

Some patients with physical disabilities such as severe arthritis, may find it difficult to use cutlery and thus have difficulties feeding themselves. Also, some patients with Parkinson's disease or dementia may find it difficult to sit down for long enough periods of time to eat a full meal. Meeting the dietary needs of such individuals may require the development of a finger foods menu. This should enable continued independence in eating and allow individuals to eat at their own pace, hopefully maximising food intakes. Guidance on both high energy and nutrient-dense food options and also food choices that are lower in fat and higher in fibre are available.[96]

Long-stay older population

A number of factors must be considered when planning a menu for hospitals with a long-stay older population.

- The patients in such hospitals are more likely to be the 'frail elderly' with increased nutritional vulnerability.
- It is important to involve patients and/or their carers in the menu planning process to ensure that dishes are familiar to the age group and include traditional choices.
- Hospitals should consider what times food is served for this patient group. A survey done by NHS Estates for the Better Hospital Food Program showed that most people in a general population prefer to eat their main meal of the day in the evening.[97] Whilst this reflects the majority of the (working) adult population it may be that older people prefer having their main meal of the day at lunchtime. Assessment of the population's dietary needs should include any preferences for timings of meals.
- The provision of a snack type meal or composite dish style meal may be more appropriate than a full meal for patients with a reduced appetite. Substantial snacks will need to be provided two to three times a day to ensure maximum food intake and thus energy and nutrient requirements are met. It

is a challenge for menu planners to ensure that this type of meal meets the guidance for the nutritional content of meals shown in Sections 3 and 5.

- Communication of the menu needs to consider the timing, e.g. asking individuals at time of service what they would like so that they can see what is on offer, or two meals prior if using menu cards. In terms of format of the menu card, consideration to the size of font used and perhaps the use of photographs.

Maternity

Most patients in maternity units will be in-patients for a short period of time and have normal deliveries with little complications. However, there will be a small number of patients whose admissions will be longer. Patients in this group requiring special consideration include:

- Prenatal admissions – some women may require to be hospitalised during their pregnancy due to complications. The advice of the Food Standards Agency with regard to safe foods must be adhered to.[98]
- Lactating women – in order to support women breastfeeding their babies the catering service must be flexible in meeting their needs. Consideration should be given to more flexible mealtimes, snack availability, and suitable meal replacements for mothers who may miss a meal whilst feeding their baby.
- The standard hospital menu should be adequate to provide for most pregnant women but may need supplementing, in terms of additional snacks or provision of additional food items at mealtimes, for example bread and milk in order to meet the increased nutritional requirements of lactating women.[30] The eatwell guide model for healthy eating should be core.[1]

Individuals with physical and learning disabilities

Physical disabilities may be present at birth (e.g. cerebral palsy, spina bifida) or may result later in life as a result of an accident or disease (e.g. stroke). The disability may affect physical movement and/or sensory function (communication); individuals may also present with learning difficulties.[42]

Learning disability is defined as 'the presence of a significant reduced ability to understand new or complex information or learn new skills (impaired intelligence), along with a reduced ability to cope independently (impaired social functioning), which started before adulthood'.[99] Learning disabilities are often classified based on an individual's IQ, but also on the amount of support an individual may require, where severe and profound learning disability will need significant if not total help with daily living. In Scotland, estimates of 20 in every 1,000 individuals have mild to moderate learning disability, with three to four people in every 1,000 having severe learning disability.[100] Individuals with learning disabilities may also present with physical disabilities; both are likely to affect an individual's food and fluid intakes.[99]

Generally individuals with physical or learning difficulties are at greater nutritional risk than the general population. This will vary according to the

severity and nature of a person's disability but also with the presence of other physical and health difficulties which impact on their ability to eat and drink.[42, 99]

Factors that are likely to affect food choice, dietary needs and dietary intakes include:[99]

- Communication – this includes, hearing, visual and oral communication, e.g. communicating likes, dislikes.
- Physical difficulties – restricted mobility (may cause chronic constipation), motor skills, posture, drooling, swallowing (dysphagia), chewing and eating difficulties.
- Medications – may affect appetite and thirst, cause nausea, loss of taste, dry mouth, alter bowel habits (constipation or diarrhoea), drowsiness that may cause meals or snacks to be missed.

In common with other groups of patients there will be individuals in this group who are 'nutritionally vulnerable', but also those who would benefit from a diet that follows general healthier eating principles where weight management may be more of a problem, for example Prader-Willi syndrome and Down's syndrome.[99]

The assessment of each individual's dietary and nutritional needs is fundamental to ensure appropriate provision can be made to meet individual's food and fluid requirements. Consideration needs to be given to the foods that need to be provided. Assessment of those with dysphagia and guidance from a speech and language therapist (SLT), is needed to ensure appropriate textures of foods and fluids are provided (refer to Section 5.6 Texture-modified Diets). Risk of chest infections through the provision of inappropriate food and fluid textures to individuals with difficulties in swallowing poses a serious health and safety risk. The provision of a diet largely based on finger foods can assist those individuals who cannot hold or use cutlery, or who do not sit down long enough to eat a meal. Provision of food in this format can help to preserve eating independence.[99, 100]

Consideration needs to be given to the appropriate format and timing of communication of menus, for example, photographs or point of service. Communication is needed with other health professionals including, physiotherapists regarding appropriate positioning of individuals for eating and drinking and occupational therapists regarding appropriate feeding and drinking aids including adapted cutlery, dishes and cups to assist the individual with eating and drinking.

For some individuals, the length of stay in hospital may be weeks if not months. As such local menu planning groups should involve patients and carers in any planning relating to the provision of food and fluid with particular attention paid to any repetition of dishes on the menu to prevent menu fatigue, provision for special occasions and celebrations.

The Mental Health Group of the British Dietetic Association has produced a professional consensus statement relating to 'The Nutritional Care of Adults

with a Learning Disability in Care Settings'.[101] The consensus statement echoes the Healthcare Improvement Scotland Standards for *Food, Fluid and Nutritional Care*.[3] The Caroline Walker Trust has recently published nutritional and practical guidelines for children and adults with learning disabilities.[99] The National Association of Care Catering (NACC) have produced guidelines for Menu Planning and Special Diets in Care Homes.[96] These documents provide further detailed guidance on menu planning for individuals with learning disabilities, including further examples of texture-modified diets and also finger food diets.

Appendix 2

Estimated Average Requirement (EAR) for Energy[32]

Age	Population-based EARs MJ/d (kcal/d)	
	Males	Females
1–2 months	2.2 (526)	2.0 (478)
3–4 months	2.4 (574)	2.2 (526)
5–6 months	2.5 (598)	2.3 (550)
7–12 months	2.9 (694)	2.7 (646)
1–3 years	4.1 (980)	3.8 (908)
4–6 years	6.2(1482)	5.8 (1378)
7–10 years	7.6 (1817)	7.1 (1703)
11–14 years	9.9 (2354)	9.1 (2175)
15–18 years	12.6 (3006)	10.2 (2432)
19–24 years	11.6 (2,775)	9.1 (2,180)
25–34 years	11.5 (2,750)	9.1 (2,180)
35–44 years	11.0 (2,630)	8.8 (2,105)
45–54 years	10.8 (2580)	8.8 (2,105)
55–64 years	10.8 (2,580)	8.7 (2,080)
65–74 years	9.8 (2,345)	8.0 (1,915)
75 + years	9.6 (2,295)	7.7 (1,840)
All adults	10.9 (2,610)	8.7 (2,080)

Estimated Average Requirement (EAR) for Energy[32] (continued)

Age	Population-based EARs MJ/d (kcal/d)	
	Males	Females
*Lactation 0–6 months exclusive breast feeding		1380kJ (330kcal)/day

*Increase in energy requirements recommended for the first six months during which time exclusive breastfeeding is recommended. Thereafter, energy intake required to support breastfeeding will be modified by maternal body composition and the breast milk intake of the infant.

Table 38: Reference nutrient intakes for protein[30]

Age	Reference nutrient intake* g/d
0–3 months	12.5**
4–6 months	12.7
7–9 months	13.7
10–12 months	14.9
1–3 years	14.5
4–6 years	19.7
7–10 years	28.3
MALES	
11–14 years	42.1
15–18 years	55.2
19–50 years	55.5
50+ years	53.3
FEMALES	
11–14 years	41.2
15–18 years	45.0
19–50 years	45.0
50+ years	46.5
PREGNANCY***	+6

Table 38: Reference nutrient intakes for protein[30] (continued)

Age	Reference nutrient intake* g/d
LACTATION* **	
0–4 months	+11
4+ months	+8

* These figures based on egg and milk protein assume complete digestibility.
** No values for infants 0-3 months are given by WHO. The RNI is calculated from the recommendations of COMA.
*** To be added to adult requirement through all stages of pregnancy and lactation.

Table 39: Reference nutrient intakes for vitamins[30]

Age	Thiamine mg/d	Riboflavin mg/d	Niacin mg/d	Vitamin B6 mg/d†	Vitamin B12 µg/d	Folate µg/d	Vitamin C mg/d	Vitamin A µg/d	Vitamin D µg/d **
0–3 months	0.2	0.4	3	0.2	0.3	50	25	350	8.5
4–6 months	0.2	0.4	3	0.2	0.3	50	25	350	8.5
7–9 months	0.2	0.4	4	0.3	0.4	50	25	350	7
10–12 months	0.3	0.4	5	0.4	0.4	50	25	350	7
1–3 years	0.5	0.6	8	0.7	0.5	70	30	400	7
4–6 years	0.7	0.8	11	0.9	0.8	100	30	400	-
7–0 years	0.7	1.0	12	1.0	1.0	150	30	500	-
MALES									
11–14 years	0.9	1.2	15	1.2	1.2	200	35	600	-
15–18 years	1.1	1.3	18	1.5	1.5	200	40	700	-
19–50 years	1.0	1.3	17	1.4	1.5	200	40	700	
50+ years	0.9	1.3	16	1.4	1.5	200	40	700	-
FEMALES									
11–14 years	0.7	1.1	12	1.0	1.2	200	35	600	-
15–18 years	0.8	1.1	14	1.2	1.5	200	40	600	-
19–50 years	0.8	1.1	13	1.2	1.5	200	40	600	-
50+ years	0.8	1.1	12	1.2	1.5	200	40	600	-
PREGNANCY +0.1 ***	+0.3	*	*	*	+100	+10 ***	+100	10	

Table 39: Reference nutrient intakes for vitamins[30] (continued)

Age	Thiamine mg/d	Riboflavin mg/d	Niacin mg/d	Vitamin B6 mg/d†	Vitamin B12 µg/d	Folate µg/d	Vitamin C mg/d	Vitamin A µg/d	Vitamin D µg/d **
LACTATION									
0–14 months	+0.2	+0.5	+2	*	+0.5	+60	+30	+350	10
4+ months	+0.2	+0.5	+2	*	+0.5	+60	+30	+350	10

*No increment

**RNI is 10µg/d after 65 years for men and women

***For last trimester only

Table 40: Nutrient intakes for minerals[30]

Age	Calcium mg/d	[a] Phosphorus mg/d	Magnesium mg/d	[b] Sodium mg/d	[c] Potassium mg/d	[d] Chloride mg/d	Iron mg/	Zinc mg/d	Copper mg/	Selenium µg/d	Iodine µg/d
0–3 months	525	400	55	210	800	320	1.7	4.0	0.2	10	50
4–6 months	525	400	60	280	850	400	4.3	4.0	0.3	13	60
7–9 months	525	400	75	320	700	500	7.8	5.0	0.3	10	60
10–12 months	525	400	80	350	700	500	7.8	5.0	0.3	10	60
1–3 years	350	270	85	500	800	800	6.9	5.0	0.4	15	70
4–6 years	450	350	120	700	1,100	1,000	6.1	6.5	0.6	20	100
7–10 years	550	450	200	1,200	2,000	1,800	8.7	7.0	0.7	30	110
MALES											
11–14 years	1,000	775	280	1,600	3,100	2,500	11.c	9.0	0.8	45	130
15–18 years	1,000	775	300	1,600	3,500	2,500	11.c	9.5	1.0	70	140
19–50 years	700	550	300	1,600	3,500	2,500	8.7	9.5	1.2	75	140
50+ years	700	550	300	1,600	3,500	2,500	8.7	9.5	1.2	75	140
FEMALES											
11–14 years	800	625	280	1,600	3,100	2,500	14.8 e	9.0	0.8	45	130
15–18 years	800	625	300	1,600	3,500	2,500	14.8e	7.0	1.0	60	140
19–50 years	700	550	270	1,600	3,500	2,500	14.8e	7.0	1.2	60	140

Table 40: Nutrient intakes for minerals[30] (continued)

Age	Calcium mg/d	a Phosphorus mg/d	Magnesium mg/d	b Sodium mg/d	c Potassium mg/d	d Chloride mg/d	Iron mg/	Zinc mg/d	Copper mg/	Selenium µg/d	Iodine µg/d
50+ years	700	550	270	1,600	3,500	2,500	8.7	7.0	1.2	60	140
PREGNANCY	*	*	*	*	*	*	*	*			
***LACTATION											
0–4 months	+550	+440	+50	*	*	*	*	+6.0	+0.3	+15	*
4+ months	+550	+440	+50	*	*	*	*	+2.e	+0.3	+15	*

*No increment
a Phosphorus RNI is set equal to calcium in molar terms
b 1 mmol sodium = 23mg
c 1 mmol potassium = 39mg
d Corresponds to sodium 1 mmol = 35.5mg
e Insufficient for women with high menstrual losses. Iron supplements advised.

Appendix 3

Rationale and Considerations for Provision of Nutrients to Hospital Patients

Table 41: Rationale and considerations for the provision of nutrients

Nutrient	Essential criteria	Rationale	Special considerations
Energy	A menu must provide: For the 'nutritionally well' patient, the EAR for energy on a daily basis: • Adults approx. 1,800-2,400kcal.[32] For the 'nutritionally vulnerable' patient on a daily basis: • Adults: 2,250-2,625kcals[39] Children (1-18 years) 720-3,150kcal.[32]	Hospital menus should be devised to meet the energy requirements of a general hospital population. As the majority of hospital patients are older adults (i.e. >65 years) the energy provision has been based on this age group. A hospitalised patient confined to bed will still require at least 80% of their usual energy intake.[46]	

Table 41: Rationale and considerations for the provision of nutrients (continued)

Nutrient	Essential criteria	Rationale	Special considerations
Energy	A menu must provide: For the 'nutritionally well' patient, the EAR for energy on a daily basis: • Adults approx. 1,800-2,400kcal.[32] For the 'nutritionally vulnerable' patient on a daily basis: • Adults: 2,250-2,625kcals[39] Children (1-18 years) 720-3,150kcal.[32]	Due to the possibility of reduced activity levels in hospital the EAR for less active females has been used for the lower range and the population EAR for males has been used for the upper range. This should therefore meet the nutritional needs of the majority of the 'nutritionally well' population. Hospital patients can have increased energy requirements due to wound healing, infection and sepsis, trauma, and the catabolic effects of disease.[39, 42] Acutely ill, malnourished patients or those with poor appetites energy requirements are 25–35kcal/kg/day. As median values (population EARs) have been used for establishing energy provision in the 'nutritionally well' patient group the midpoint of the range has been used as the minimum energy provision for the 'nutritionally vulnerable' group i.e. for a 75kg individual 2,250–2,625kcal/day.[30, 39]	

Table 41: Rationale and considerations for the provision of nutrients (continued)

Nutrient	Essential criteria	Rationale	Special considerations
Carbohydrates	No nutrient standard has been set for the carbohydrate intake for the 'nutritionally vulnerable' hospital population. For the 'nutritionally well' patient population, a menu must provide the DRV (adjusted for no alcohol) averaged across a week. Total carbohydrate approximately 50% of food energy. Guidance has been provided on an upper limit for added sugars to desserts that are to be coded for the 'healthier diet'.[29] A menu must provide a healthier eating dessert option each time dessert is offered: Appropriate sweeteners available at ward level for patients' use as chosen.	Like fat, carbohydrate and sugar are an important source of energy for hospitalised patients with poor oral intakes or increased energy requirements.[46] Free sugars are not directly related to the development of CVD, essential hypertension, diabetes mellitus or behavioural abnormalities however SACN have recommended a reduction in free sugar intake and this has been taken into consideration within the document.[29, 30, 102]	Diabetes UK states the population DRV, eaten as part of a healthy diet, distributed throughout the day, is appropriate for people with diabetes.[103] Patients' overweight or with hypertriglyceridaemia should avoid free sugar where possible, and be encouraged to choose the healthier eating option.[103] Patients who have diabetes who are unwell, should be encouraged to choose energy and nutrient-dense options. Diabetic control will require involvement of the diabetes care team in such instances.

Table 41: Rationale and considerations for the provision of nutrients (continued)

Nutrient	Essential criteria	Rationale	Special considerations
Protein	A menu must provide RNI for the relevant patient group on a daily basis. A menu must be able to provide increased protein requirements of 1.0g/kg/day through provision of nutrient-dense choices and/ or protein containing snacks. Each main meal (including accompaniments) should provide a minimum of 18g protein.	Protein is required by hospitalised patients to promote wound healing, e.g. in burns or surgery; maintain the immune system; aid recovery from critical illness.[30] [39] [42]	For vegetarian main meals that are based on beans or pulses, it may be difficult to achieve 18g protein. Extra thought needs to be given to the provision of protein from desserts and snacks and the use of dairy products, however excessive use of cheese should be avoided.[46]
Fat	No nutrient standard has been set for total fat intake for the 'nutritionally vulnerable' hospital population. For the 'nutritionally well' patient population, a menu must provide the DRV (adjusted for no alcohol) averaged across a week:[30] • Total fat <35% food energy • Saturated fatty acids <11% l food energy	Setting a standard for percentage energy from fat, conflicts with the provision of an energy-dense diet. Dietary Goals for Scotland, include reducing the percentage energy from total and saturated fat.[18] Hospitals play an important role in educating patients on healthy eating through provision of healthier choices but energy-dense foods for those with poor appetites or higher energy requirements are equally important.[12]	Fat, as the most concentrated form of energy, is crucial in providing adequate energy for patients with poor intakes/ appetites or higher requirements and increases the palatability of foods.[42] [46] High fat products, **as much as possible** should provide additional fat from unsaturated sources, not saturated.

Table 41: Rationale and considerations for the provision of nutrients (continued)

Nutrient	Essential criteria	Rationale	Special considerations
Omega-3	A menu must provide oily fish, high in omega-3, at least once per week.[41] A menu must provide fish at least twice per week.	Consuming higher levels of omega-3 aids in the prevention of coronary heart disease due to their anti-thrombotic effect.[41 42]	This recommendation is accepted for pregnant and lactating women with consideration for restrictions on fish containing unsuitable levels of toxins.[41] Groups of the population who do not eat fish (e.g. vegetarians and vegans) do not have a specific recommendation regarding the use of supplements due to insufficient evidence to conduct a risk assessment.[41]
Fibre	For the 'nutritionally vulnerable' hospital population no nutrient criteria has been set, For the 'nutritionally well' hospital population, a menu must provide 30g per day averaged across the week.[29] Young children's menus must be developed with consideration for their lower-fibre requirements.	High-fibre foods are generally less energy dense and can increase satiety compared with low fibre foods, reducing the energy intake of patients with a small appetite or increased requirements.[29] Providing a diet high in fibre is in line with principles of a healthy balanced diet.	Children require proportionately lower fibre intakes relative to body size and those under two years old should not take high-fibre foods at the expense of energy-dense foods required for growth.[29]

Table 41: Rationale and considerations for the provision of nutrients (continued)

Nutrient	Essential criteria	Rationale	Special considerations
Fibre	For the 'nutritionally vulnerable' hospital population no nutrient criteria has been set, For the 'nutritionally well' hospital population, a menu must provide 30g per day averaged across the week.[29] Young children's menus must be developed with consideration for their lower-fibre requirements.	Fibre slows the release of post-prandial blood glucose, useful for people with diabetes.[42] It is thought to have a role in decreasing the risk of high cholesterol, bowel disorders, cancer and gallstones, and passes through the digestive tract largely unabsorbed, helping prevent constipation if consumed with adequate fluids.[29 30]	Children require proportionately lower fibre intakes relative to body size and those under two years old should not take high-fibre foods at the expense of energy-dense foods required for growth.[29]
Salt	A menu must not provide more than 6g/day of salt (or age-specific 10TRNI10Ts for menus developed for children). [31]	Most sodium in the diet is derived from salt. Sodium intake is an important determinant of high blood pressure, therefore reducing the hospital population salt intake would be beneficial.[31 42] The RNI for salt is 4g per day for adults and a recommended reduction in the average intake for the adult population from 9g/day, to 6g/day is considered achievable.[31]	

Table 41: Rationale and considerations for the provision of nutrients (continued)

Nutrient	Essential criteria	Rationale	Special considerations
Vitamin A (retinal equivalents)	A menu must provide 700µg per day (or age-specific RNI for menus developed for children) averaged across a menu week.	Vitamin A is important for hospital patients as deficiency can decrease integrity of skin and mucous membranes, increasing risk of infection. [30]	Women who are pregnant or may become pregnant are advised against eating liver or liver products that are high in vitamin A and will require an alternative choice if offered on a menu. [30]
Calcium	700mg per day averaged across a menu week.	As 99% of the body's calcium is deposited in the bones and teeth, patients hospitalised with fractures require adequate calcium for fracture healing. It is also thought calcium aids wound healing.[46] Inadequate calcium intakes in children can result in stunted growth and failure to meet peak bone mass.[42]	For pregnant and lactating women the percentage of calcium absorbed increases, therefore the RNIremains the same as that of the adult population.[30] Patients 11-18 years old must be capable of meeting their higher RNI of 1000mg/day for males and 800mg/day for females.
Potassium	A menu must provide ≥3500 mg per day averaged across a menu week.	Potassium is necessary to maintain fluid and electrolyte balance within the body and may have a role to play in lowering blood pressure. Potassium intakes have been shown to be marginal in a proportion of the adult and older UK populations.[14, 85, 95]	Dietary supplements are not advocated unless under medical advice as high intakes can cause harm in older adults and individuals with renal impairment.

Table 41: Rationale and considerations for the provision of nutrients (continued)

Nutrient	Essential criteria	Rationale	Special considerations
Iron	A menu must provide ≥14.8mg/ day of iron averaged across a menu week.	Iron carries oxygen in the body and plays a central role in energy metabolism.[42] Iron deficiency can lead to fatigue, poor concentration and anaemia. In children iron deficiency can permanently impair mental or motor development.[42]	During pregnancy, lactation and growth or following acute blood loss, increased requirements are usually offset by the body's ability to increase its absorption of iron, therefore the RNI is unchanged in this patient group. [30 42] If catering solely for an older patient population, then the RNI for individuals 50+ years should be used (9mg/day).[30]
Vitamin B12	A menu must provide ≥1.5µg/day averaged across a menu week.	Vitamin B12 is an important component in a number of metabolic processes.[30 42]	Older people have increased risk of B12 deficiency but the adult RNI remains the same for the healthy older population.[64] Diet-related B12 deficiency can occur but requires supplementation to treat, it cannot be resolved by increased dietary intake.[30 42]
Folate and Folic Acid	A menu must provide ≥200µg/day averaged across a menu week.	Folic acid is important for the normal production of haemoglobin.	Women planning a pregnancy or in the first trimester are advised to eat foods rich in folic acid to reduce the risk of Neural Tube Defects. Supplements of folic acid should be taken by this group (400µg/day).[30 102]

Table 41: Rationale and considerations for the provision of nutrients (continued)

Nutrient	Essential criteria	Rationale	Special considerations
Vitamin C	A menu must provide ≥40mg/day averaged across a menu week.	Vitamin C is important for hospitalised patients as adequate levels are required to assist in wound healing and the prevention of pressure sores in the context of adequate energy intakes. Levels of vitamin C are commonly low in long-stay patients, but symptoms of scurvy are not always apparent.[12, 39]	Pregnant women require an additional 10mg/day from the hospital menu. Lactating women require an additional 30mg/day which if not met by the hospital menu should be provided as a supplement.
Fluid	There must be the provision of 2,000 ml for men and 1,600ml for women assuming food is also consumed. Corresponding values with no food intake are 2,500ml for men and 2,000ml for women.[33]	Fluid balance and the mechanisms controlling this can be affected by illness: increased fluid losses due to a raised body temperature; other significant fluid losses through vomiting and diarrhoea; wound exudates.[33 43 44] A better hydrated patient can use fewer medicines, e.g. laxatives.[11] The body's correct fluid balance can also be compromised by certain illnesses and medication use causing thirst and excess salivation, increasing requirements.[11 33 42]	The minimum fluid provision is also applicable to patients requiring modified thickness fluids.

Appendix 4

Omega-3 (-3) Polyunsaturated Content (g/100g Edible Portion) of Selected Fish[9]

Type of fish	Total ω-3
Herring	2.0
Mackerel	2.0
Pilchard/Sardine	2.2
Tuna (fresh)	1.6
Salmon	2.3

Appendix 5

Template for Suggested Menu Structure

Meal	Meal item	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
On wakening	Beverage							
Breakfast	Cereal (to include low sugar and wholegrain varieties) Cooked option: (Porridge oats/scrambled eggs/sausage/grilled tomatoes/grilled mushrooms) Bread/bread roll/toast (a choice of white and wholemeal) Fresh fruit juice/prunes Butter/low fat spread/PUFA/MUFA spread (e.g. olive-oil based) Preserves (regular and low sugar varieties) Beverage							
Mid morning	Beverage							
	Snack including fruit as choice							

Template for suggested menu structure (continued)

Meal	Meal item	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Main meal (minimum of 2 courses provided)	Soup and bread							
	Fresh fruit juice							
	Sandwich 1 (meat filling)							
	Sandwich 2 (vegetarian filling)							
	Main course 1 (meat or fish)							
	Main course 2 (meat or fish)							
	Main course 3 (vegetarian)							
	Vegetable 1							
	Vegetable 2							
	Carbohydrate/ starch 1							
	Carbohydrate/ starch 2							
	Dessert							
	Fruit (fresh or tinned)							
	Yoghurt/pot rice/custard							
	Beverage							
Mid afternoon	Beverage							
	(+/- Snack including fruit as choice)							

Template for suggested menu structure (continued)

Meal	Meal item	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Lighter meal (minimum of 2 courses provided)	Soup and bread roll							
	Fresh fruit juice							
	Sandwich 1 (meat filling)							
	Sandwich 2 (vegetarian filling)							
	Main course 1 (meat or fish based)							
	Main course 2 (vegetarian)							
	Vegetable							
	Carbohydrate/ starch							
	Dessert							
	Fruit (fresh or tinned)							
	Yoghurt/pot rice/custard							
	Beverage							
Before bedtime	Beverage							
	Snack including fruit as choice							

Appendix 6

Membership of Hospital Food Reference Group 2008

Over the development of the report membership has evolved. The following list includes members over the period.

Name/Surname	Board
David Bedwell	Health Facilities Scotland
Kenneth Birrell	Chair, West of Scotland Hospital Catering Association
Marjory Chirnside	NHS Lothian
Janice Gillan, MIH	NHS Ayrshire and Arran
Paul Kingsmore	Health Facilities Scotland
Lisa McLaren	NHS National Support Services
Heather Peace, RPhNutr	Food Standards Agency Scotland
Morag Mackellar, FBDA, RPhNutr	NHS Forth Valley
Anne Milne, MSc	Food Standards Agency Scotland
Brian Robb, MIH	NHS Lothian
Joyce Thompson	NHS Tayside
Gillian Kynoch	Public Health and Wellbeing Directorate, Scottish Government
Christine McGregor	Analytical Services, Scottish Government
Janet McVea	Public Health and Wellbeing Directorate, Scottish Government
Linda Miller	Public Health and Wellbeing Directorate, Scottish Government
Authors	Helen Davidson, BSc (April 06 - April 07)
	Lauren Scott (December 06 - March 07)
	Dr Elaine Bannerman, PhD, RD (April 07 - to completion)

Appendix 7

Membership of Hospital Food Reference Group 2015

Over the development of the report membership has evolved. The following list includes members over the period.

Name	Surname	Board	Designation
Michael	Everden (Chair)	Health Facilities Scotland	Facilities Support Manager
Pamela	Mailler (Deputy Chair)	Golden Jubilee National Hospital	Catering Operations Manager
Elaine	Bannerman	Queen Margaret University, Edinburgh	Senior Lecturer in Nutrition and Dietetics
David	Bedwell	Health Facilities Scotland	Assistant Director – Facilities Services
Claire	Blackwood	Healthcare Improvement Scotland	Inspector
Richard	Buckley	NHS Dumfries and Galloway	Catering Manager
Chris	Christie	NHS Forth Valley	Nutrition Champion
Helen	Davidson	NHS Greater Glasgow and Clyde	Catering Strategy Dietitian
Christine	MacTavish	NHS Ayrshire and Arran	
Robin	Gourlay	Scottish Government	Food and Drink Policy
Martin	Henry	Health Facilities Scotland	Programme Director – Shared Services
Fiona	MacKenzie	Chief Nursing Officer's Directorate, Scottish Government	Professional Advisor Nursing and Midwifery Workload and Workforce Planning and Acute Care Quality
Caroline	McKenzie	NHS Tayside	Tayside Nutrition MCN Manager (Food Fluid and Nutritional Care)
Marjory	MacLeod	NHS Lothian	Senior Dietitian and Chair of Scottish BDA Board
Elinor	McCann	NHS Grampian	Head of Catering

Membership of Hospital Food Reference Group 2015 (continued)

Name	Surname	Board	Designation
Anne	Milne	Food Standards Scotland	Diet and Nutrition Advisor
Shelia	Riddoch	NHS Grampian	Lead Dietitian
Brian	Robb	NHS Lothian	Area Manager Soft FM
Lesley	Robertson	NHS Lanarkshire	Hotel Services Manager
Peter	Faassen de Heer	Chief Medical Officer and Public Health Directorate, Scottish Government	Team Leader, Diet Policy
Rachel	Laird		Service User
Gordon	Fender	NHS Lothian	HCA Chair – East of Scotland Branch
Richard	Olver	Action for Sick Children Scotland (ASCS)	Emeritus Professor of Child Health
Jacklyn	Jones	Queen Margaret University	Senior Lecturer of Nutrition and Dietitics
Belinda	O'Shea	Health Facilities Scotland	Project Support Officer
Kerry	McLeod	NHS Lanarkshire	Specialist Paediatric Dietitian

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