



The Nutrition and Hydration Digest: Improving Outcomes through Food and Beverage Services

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FOOD COUNTS!

The Nutrition and Hydration Digest: Improving Outcomes through Food and Beverage Services

**Produced by The Food Counts Group in consultation with
The British Dietetic Association**

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Foreword

As Honorary Chairman of the British Dietetic Association I am delighted to support the publication of The Digest. Good nutritional care in care settings is fundamental to good health and of course the provision of food and fluid are at the centre of this.

Dietitians are uniquely placed to be involved in each stage of food service, from menu planning and recipe development to nutritional analysis, ensuring that nutritional standards can be met. Knowing about food and the basic principles of food service makes a unique combination of the knowledge and skills of dietitians. This is a subject close to my heart and I feel that the level of skill required in this area of dietetics should not be underestimated.

The role of the dietitian is set out in the Digest and although I am writing this foreword on behalf of the BDA I endorse the references made throughout the Digest that this is a multidisciplinary area of work. It is essential, in the development of food services for groups of the population for example in schools, hospitals or care homes that this multidisciplinary working begins from the outset.

The potential for catering or food services to influence the health of the whole population should be embraced whether in the fight against malnutrition in our communities or young people in our schools. Dietitians have the necessary skills from both a public health and clinical perspective to ensure that opportunities to influence the food provision in such areas are best used.

The Digest is for use by the profession across the United Kingdom. It is important to note that whilst health policies and nutritional standards may differ slightly between the four home countries that the skills required of dietitians in this area will be the same. Dietitians should work alongside their catering colleagues and support them in achieving the standards established in the applicable care setting.

This is an excellent document which all dietitians must keep to hand and I would like to congratulate and thank the multidisciplinary working party for their hard work.

Helen Davidson
Honorary Chairman British Dietetic Association

Introduction

One thing struck me as I reviewed the various sections for this document and thought about what we had discussed when the Toolkit Revision Working Group met is this; the number of times that food is mentioned. “Food First” was the key message in the winning debate at the BDA conference in 2010 and the growing interest in the importance that food plays for people in hospitals and in care settings cannot go un-noticed.

Knowing about food and the basic principles of food service should be common to all dietitians. This document provides a platform for dietitians and caterers alike to speak with one voice. Nurses, speech and language therapists and others interested in delivering excellence in food and beverage services will also find it inspiring.

The original Toolkit was written in 2006 and it had an agreed revision planned for 5 years. The aim of the revised toolkit is not only to update the original document, but also to make it more streamlined and user friendly. The passage of time and many changes in food service, catering, legislation, monitoring and dietetics since 2006 gave us much ‘food for thought’ to incorporate into the new document. We also intend that it will be used for a wider ‘audience’, so in addition to patients in hospital who were the main ‘beneficiaries’ in the 2006 toolkit, people in care settings, recipients of community care and even those in their own homes will be included. As such, throughout the document we often refer to ‘people’, residents or ‘service users’ where the term ‘patient’ is not applicable but in some sections we have retained the use of the word ‘patients’ where it is most relevant.

The document has been produced by a dedicated working party comprising dietitians, caterers and those with a ‘foot’ in both camps. Highlights of the Digest includes sections on the Role of the Dietitian in Food Service, how to ensure optimal consumption, nutritional analysis, introduces the day parts approach, menu design structure, content and capacity, texture modified, cultural and therapeutic diets, dietary coding guidance, catering specifications and contracts and food service systems.

The new document also warranted a new name and a plethora of suggestions were proposed at one of our stakeholder meetings. The new title is not short or snappy, (and neither should it be), but we feel it is the most apt. For convenience we refer to it as The Digest and hope this shorthand term will become widely adopted. The document is designed to be used as a reference providing:

- A source for standards, coding, guidance and good practice
- An evidence document for tenders and specifications
- A tool providing a common language for clinicians, caterers, industry etc
- The definitive approach in food service in care settings for professional (and other) bodies
- A quick reference document on a multitude of food related topics

Information is constantly changing; even shortly after publishing this document, it will not surprise me that new guidance documents will emerge. Keeping up to date is vital to ensure the best provision for the people in our care. I hope this Digest will enable all clinicians and those involved in food provision for people in care settings to be an inspiration to keep seeking utopia.

Maxine Cartz

Chair Toolkit Review Working Group

Executive Summary

Chapter 1 International, National and Local Influences

In care settings, food and beverage service systems are influenced by an increasingly broad range of legislation and guidance, both international and national, of which all UK clinicians and those with responsibility for food provision and catering services should be aware.

This chapter summarises the relevant documents and legislation, both at home and further afield. The main message is that the application of these policies in care settings needs to be relevant, with the focus being on appropriate food and beverage provision for the end user. Multi-disciplinary working is also discussed and there are summaries of international, national and local influences that impact on food and beverage services.

Chapter 2 Role of the Dietitian in Food Service

Providing an excellent food provision for hospital patients or residents in nursing and care settings is complex, and it is often challenging to appreciate all aspects of the food service. Success depends on a close and effective collaboration among a number of people who may have very different priorities and on limited resources being best targeted. A robust food chain will contribute to a good food service and within hospital settings, this will work best when there is good communication between the various disciplines of all staff, from chef to nurse and from store-man to food service assistant at ward level; everyone has a role to play. All dietitians can play a key part in this process, but there is a recommendation for a dedicated catering liaison dietitian in every hospital department to lead development, conduct training and manage processes.

Chapter 3 Nutrition and Hydration, Eating and Drinking

This chapter discusses how to ensure optimal consumption and includes strategies for introducing protected mealtimes, providing adequate hydration and reducing unnecessary food waste. It touches on patient safety as well as looking at food and fluid intake. It discusses the use of volunteers and food service assistants and it explores some aspects of training for these people. There is useful guidance for developing strategies to reduce food waste from existing resources developed by the Department of Health and Hospital Caterers Association and links to further reading on this previously explored but often unexploited topic.

Chapter 4 Food Composition

This chapter is all about the food; where it's from, what it contains, how to get the most from suppliers and how to understand the complexities of how food is labelled. The 2012 food labelling laws are described and there is a link to the fuller document for those who require more information.

A key feature of this chapter is the methodology for nutritional analysis. Despite this being a fundamental role of many practicing nutritionists as well as clinical and catering dietitians, the variance in practice is large and in this chapter a definitive method is given for a more consistent approach. Various nutritional software packages are listed but no particular tools have been endorsed; nor is the list exhaustive. The suitability of the individual doing the analysis is also discussed as is the best practice to recommend that only registered nutritionists and dietitians who are suitably trained in nutritional analysis undertake this complex task.

Chapter 5 Nutritional Standards; Day Parts Approach

Food for people in hospital and care settings often gets criticised for not following typical healthier eating messages and as food service providers, dietitians often have to defend the higher calorie choices our menus require. Here the principles of two categories of people are discussed; those who are nutritionally well and those who are nutritionally vulnerable as are the nutritional requirements for each of these 2 categories.

Previous nutritional guidelines for food provision have quantified the calories, protein and other nutrients required in the menus and targets per meal were used to benchmark the suitability of menus from a nutritional perspective. The existing guidelines were very precise, and some argued that they were too rigid and in some cases unfair. Vegetarian meals have a lower protein target but this should not simply be the case because it was more difficult to achieve. The targets were also based around meals and courses but could be difficult to assess, in part due to their specific nature, as they did not really allow for any flexibility in eating patterns or the inclusion of between meal snacks. The 'Day Parts' Approach' is introduced and a structure that reflects the contribution of protein and energy across all eating events of the day is demonstrated providing an adequate overall intake for the whole day.

Chapter 6 Menu Design, Structure and Planning

This chapter revisits the key aspects of menu planning but aims to streamline the information by presenting it in a user friendly format for easy reference. It covers menu planning in all care settings and as such is fairly detailed. It includes menu design, differing clinical need such as renal and oncology, local policy making and consideration of different client groups such as maternity and the elderly.

It expands on the à la carte menu which is now more popular since the 2006 Toolkit was written and suggests a menu structure for both cyclical and à la carte menus.

There is also guidance as to the suggested content of a local food and health policy, menu planning process and the multi-disciplinary team involved.

Chapter 7 Menu Content

This chapter starts with food based guidance and discusses the eatwell plate as a tool to aid menu planning and in particular it relates to the varying needs of the two categories of people in our care; those who are nutritionally well or nutritionally vulnerable.

The main part of this chapter discusses the main components of food and menus offered in care and healthcare settings as well as tackling the controversial topic of soups and sandwiches which are strongly discouraged as a sole choice on menus as they cannot sufficiently meet the needs of people who are nutritionally vulnerable. However some recommendations are offered to menu planners to ensure that people with special needs whether it is modified texture or increased nutritional needs, can have a sandwich meal which provides all their requirements. Menu planners must also consider alternatives for those who require texture modification, cultural meals or therapeutic diet choices to meet amongst others gluten free, allergy and renal requirements.

Chapter 8 Analysing Menu Capacity

Analysing menu capacity helps to provide satisfactory evidence that the menu is capable of delivering the menu day parts recommended percentage for the major nutrient markers i.e. energy and protein. Using the day parts philosophy introduced in chapter 5, this chapter illustrates menu nutritional analysis for nutritionally well and nutritionally vulnerable people. It requires the user to be experienced in nutritional analysis as well as relatively numerate. Readers should not be put off by the initial impression of complexity; it is anticipated this will become a useful tool in analysing menu capacity.

Chapter 9 Standard, Texture Modified, Cultural and Therapeutic Diets

With considerable input from various BDA specialist groups to whom we extend our grateful thanks, the needs of people with additional dietetic challenges due to special medical conditions, demographics and religious, cultural or personal preference are discussed.

Guidance is included for people with diabetes, renal disease, coeliac disease, food allergies, liver disease and cancer as well as those for whom it should be possible to cater from our standard menus such as vegetarian, higher energy and softer meals which are encountered everyday. There is also a small section on the needs of those with mental health problems.

Various dietary descriptors are defined to diffuse the confusion which often exists as to whether something is a therapeutic diet, something for religious cultural or personal reasons or a temporary regime prior to medical investigation.

Chapter 10 Dietary Coding Guidance

Simplicity is still the key to the guidance on the use of dietary coding for hospital in-patient menus. They are primarily used for guidance on the suitability of dishes particularly for people who have special dietary requirements. Patients, their relatives and carers, and hospital staff, nurses, housekeepers, caterers and chefs, very much appreciate a source of accurate information and practical reassurance.

However an added complication is the nutritional and health claims legislation. The Department of Health has produced some guidance on diet codings on menus for healthcare settings. Caterers and dietitians know that codes are not used to steer people towards lower cost dishes or to improve profit but unfortunately in some cases, a menu will be seen as a commercial communication which makes it exempt from the safety net of the guidance and could lead to possible prosecution if claims are made which could be misleading. Locally used dietary coding terms for in-patients must therefore be interpreted within the compliance guidance given by DH on the EC Regulations and a link to the guidance is given.

Chapter 11 Catering Specifications and Contracts

Catering specifications can at first appear daunting to the untrained eye. We point you in the direction of easy interpretation of these complex, and sometimes contractual documents. It is recommended that every catering specification has a nutritional element and that dietitians are involved in the creation and implementation of services arising from them. All too often dietitians are involved in contract and quality monitoring yet without access to the catering specification, it will be impossible to ascertain the under or indeed over performance of a catering service.

The reader is guided through the tendering process and all those involved in it are encouraged to treat the nutritional aspects of these with the utmost importance.

Chapter 12 Food Service Systems, Food Hygiene and Safety

Good communication and close working relationships at a local level between dietitians and caterers is vital to ensure that essential requirements and joint strategies are delivered in a timely way for the ultimate benefit of the patient or end user.

Various styles of food service are discussed and it is interesting to appreciate how over the past 20 years and in particular the last six or seven years, the drive to improve efficiency has resulted in reductions in staff numbers involved in the catering service, along with the centralisation of skills and equipment to produce economies of scale. This has led to new methods and technologies in food service settings both large and small.

Illustrations are given of three different styles of food service; traditional, cook chill/freeze and plated 'steam' meals. The latest food service solutions are described. New steam technology has enabled food to be cooked nearer to the end user making for a flexible and viable solution to the challenges that a large site and numerous food service locations can bring.

Chapter 1 International, National and Local Influences

In care settings, patient food and beverage service systems are influenced by an increasingly broad range of legislation and guidance, both international and national. All UK clinicians and those with responsibility for food provision and catering services should be aware of the international and national regulations and recommendations for nutrition and food provision e.g. Council of Europe (CoE) and World Health Organisation (WHO). The application of such policies to hospital food provision needs to be appropriate to patient-focussed food and beverage services especially for the nutritionally vulnerable. The principles of nutritional standards and their monitoring can be applied to other care settings and when commissioning services in these settings it is important the same standards are applied.

International

In Resolution ResAP (CoE, 2003), the CoE recommended that governments implement national recommendations on food and nutritional care in hospitals based on nutritional assessment and treatment by nutritional care providers, food service practices, hospital food and health economics costs. This report applies across the UK and contains over 100 recommendations. Of the 100 recommendations, 10 key characteristics can be applied to all care settings across the UK.

National

Throughout this document, there is a bias towards practices used in England – it is recognised that all home countries take a synergistic approach but each country has developed population specific guidance for their own food and beverage services.

Dietitians have been active contributors to policies affecting nutritional care in England within the modernisation of the NHS and the improvement of patient focussed care, for example in the Better Hospital Food (BHF, 2001) programme which was part of the 10 year NHS Plan (Department of Health (DH), 2000). The BHF programme reinvigorated the quality of hospital food, including the nutritional content and led the way forward for nutritional standards to be introduced in the format of the Delivering Nutritional Care through Food and Beverage Services (British Dietetic Association (BDA), 2006).

Food labelling law is managed by Department for Environment, Food and Rural Affairs (DEFRA), and is now subject to the Regulation (EU) No 1169/2011 The Provision of Food Information to Consumers (FIR) (The European Parliament and the Council of the European Union, 2011) and can be accessed here:

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:304:0018:0063:EN:PDF>

All existing food labelling regulations have been combined into one new regulation which came into force in December 2011. This applies to all packaged foods, including those for sale to mass caterers. All caterers must be able to provide allergen information, including for food sold loose.

The national implementation of nutrition screening (National Institute for Health and Clinical Excellence (NICE), 2006 – CG32) emphasised the importance of screening for malnutrition by healthcare professionals with appropriate training with the core objective of achieving appropriate nutritional intake for all hospital patients taking into consideration nutritional status, length of stay and clinical situation.

Mind the Hunger Gap is a campaign launched by the BDA in November 2011, which focuses on older people living in the community and highlights national concern for this vulnerable group. The campaign website (www.mindthehungergap.com) provides useful tools and case studies.

Local

Dietitians and clinical colleagues should lead on the development, implementation and monitoring of these policies as part of clinical governance, developing relevant and workable guidelines, protocols and training to support service improvement on nutritional care.

Many healthcare organisations have contracts with external providers for food and catering services, or service agreements with internal providers. Dietitians working for healthcare organisations and catering providers should take part in the planning and negotiation of these documents. To do this, both provider and hospital dietitians must be familiar with the relevant national and local standards and implement monitoring processes to evaluate food provision.

It is important that nutrition steering groups have representation from a multidisciplinary team including catering, dietetics, nursing and clinical staff. An example is illustrated in figure 1.

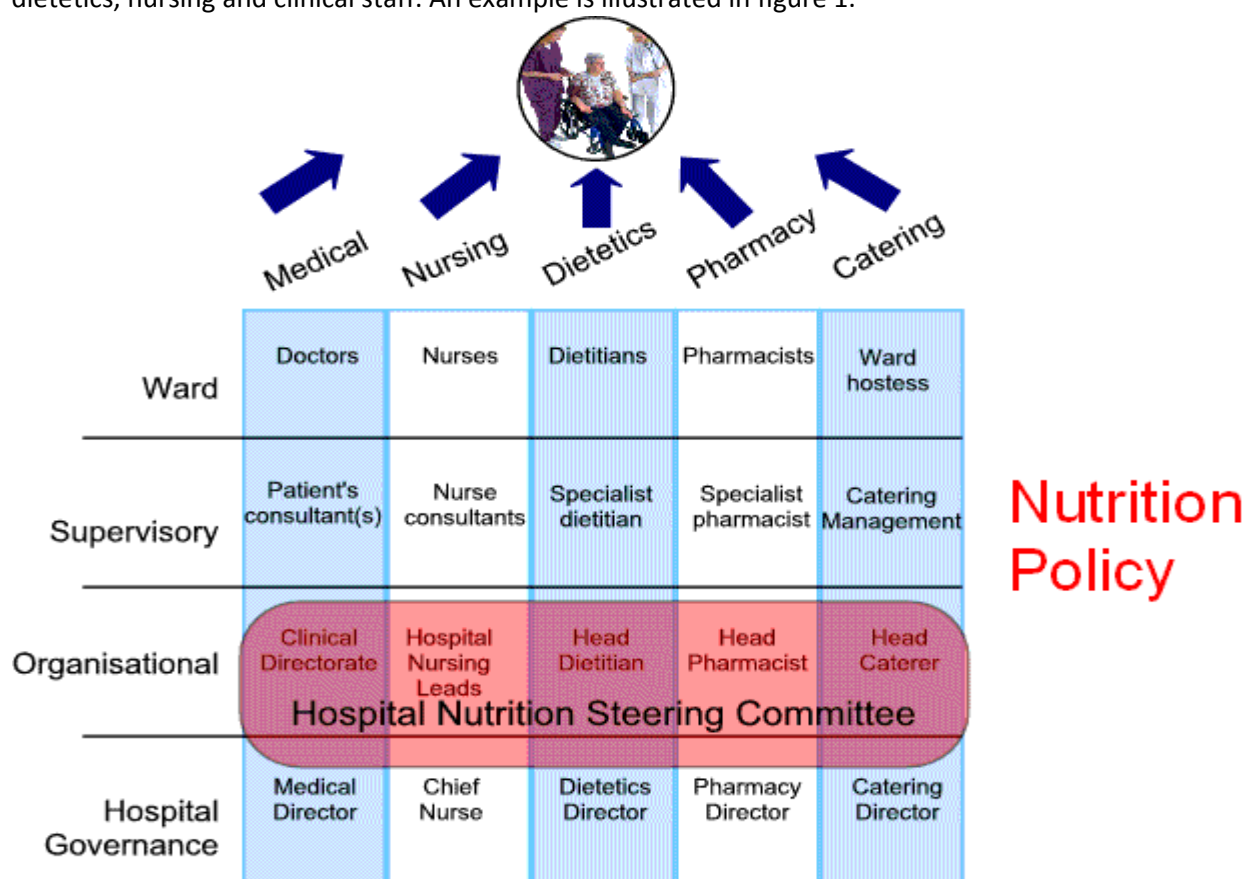


Figure 1: An Example of Multi-disciplinary Working (Reproduced from: British Association for Parenteral and Enteral Nutrition (BAPEN, 2007) Report on Organisation of Food and Nutritional Support in Hospitals)

England

The NHS Plan (DH, 2000) required hospitals to have nutrition policies in place. Hospital Trusts are now regulated under the Care Quality Commission (CQC), which regulates Outcome 5 of Regulation 14 (CQC, 2010). These goals were assessed by the Healthcare Commission, and were previously embodied in the Standards for Better Health (DH, 2006) until 2010 when the CQC's new registration process ensures the safe and effective provision of

services. The NHS Plan is no longer the DH policy direction as this has now been superseded by the NHS Health & Social Care Bill 2012.

Where food is provided, healthcare organisations should have systems in place to ensure:

- A choice of suitable, nutritious food and hydration that meets sufficient quantities to meet the service users' needs
- Food and hydration that meet the reasonable requirements arising from a service users' religious or cultural background
- Ensure adequate finance to provide for food and drink to meet individuals' needs
- Food and hydration includes oral nutritional supplements and artificial nutrition in the form of intravenous fluids when appropriate
- Help with eating and drinking is given to those people identified as vulnerable.

Government Buying Standards

The Government Buying Standards (GBS) for Food and Catering Services is an England-only policy introduced in 2011 (DEFRA, 2011).

The GBS includes a suite of criteria covering three areas of sustainable procurement:

- Foods (and food commodities) produced to higher sustainability standards
- Foods procured and served to higher nutritional standards
- Procurement of catering operations (including equipment, energy and water use) to higher sustainability standards.

These standards are self-assessed with regards to enforcement.

The GBS includes minimum mandatory criteria that are mandatory for central government departments and their related agencies, as well as best practice criteria, which are recommended. The wider public sector (including the NHS) is encouraged to make use of the GBS, however not all the best practice criteria are appropriate for patients in hospital. For full specifications and guidance see <http://sd.defra.gov.uk/advice/public/buying/products/food/>

Northern Ireland

The Department of Health, Social Services and Public Safety published "Promoting Good Nutrition, A Strategy for the Good Nutritional Care of Adults in all Care Settings in Northern Ireland 2011-2016" (Department of Health, Social Services and Public Safety, 2011).

This document builds on and incorporates the initiatives published by the Chief Nursing Officer, in conjunction with the Royal College of Nursing (RCN), in the "Get your 10 a Day. Nursing Care Standards for Patient Food in Hospital" (Department of Health, Social Services and Public Safety, 2007).

Prior to this, there were two documents which specifically detailed guidance on the nutritional content of meals provided for older people and those with learning disabilities respectively in nursing home, residential home or cared for in the community. These documents continue to be used by the Regional Quality and Improvement Authority, the statutory regulator for nursing and residential care homes.

The Strategy, which is focussed on malnutrition, adopts and translates the 10 Key Characteristics into a framework for action describing what good nutritional care looks like for each characteristic. The overall vision of the strategy is the prevention, identification and management of malnutrition in all health and social care settings including the person's own home.

The Strategy is based on a series of core principles:

- Prevention, anticipatory management and timely intervention are vital to achieve best outcomes
- Any adult identified as at risk of malnutrition should have a nutritional care plan appropriate to their needs
- Nutritional care should be provided in a manner that respects the equality and diversity of people
- The promotion of Food First as the preferred option for the majority with direction to support effective nutritional intervention where food or food alone is not appropriate
- The significant contribution of family, carers and volunteers as well as the independent, community and voluntary sectors should be recognised, valued and taken into consideration

A regional implementation group has been established by the Public Health Agency to develop and prioritise an action plan to realise the vision of the strategy.

Scotland

The focus for nutritional care in NHS Scotland is provided by Quality Improvement Scotland (QIS) 'Food, Fluid and Nutritional Care in Hospitals Standards' September 2003. They are based on research and development and reflect on the whole patient journey with respect to nutritional care and not just food provision.

QIS is the special Health Board in Scotland that has the special responsibility to improve healthcare in NHS Scotland by setting standards and monitoring performance. There are six standards:

- Policy and Strategy
- Assessment, screening and care planning
- Planning and delivery of food and fluid
- Provision of food and fluid to patients
- Patient information and communication
- Education and training for staff

These are mandatory standards and are audited by QIS. Health Boards are responsible for the implementation of the standards and are required to consider Food, Fluid and Nutritional Care under the clinical governance agenda. In 2008, The Scottish Government published Food in Hospitals – National Catering and Nutrition Specification for Food and Fluid Provision for Hospitals in Scotland. It sets out the food and nutrient based standards and includes menu planning standards and guidance on therapeutic dietary provision. The specification is monitored twice a year with Boards undertaking a self assessment exercise, data being submitted to Health Facilities Scotland and published nationally.

Wales

The revised Healthcare Standards for Wales were published in 2010 bringing together the 2002 Nutrition and Catering Framework for NHS Hospitals in Wales and the All Wales Nutritional Care Pathway produced by the Food in Hospital Task and Finish Group formed in 2006. The latter details the pathway for the nutrition screening of patients on admission and the nutritional care throughout their hospital admission. The pathway is supported by the All Wales Food Record Chart and revised Daily and Weekly Intake and Output charts with accompanying posters giving pictorial illustrations of portion sizes to standardise record keeping. The Nutrition Awareness Campaign is supported by RCN Wales and aims to raise the importance of food and hydration to the same level given to medication.

The Food in Hospital Task and Finish Group also recommended that a review was undertaken of the requirement for national nutritional standards for hospitals in Wales. The Review of 2011 reported a consensus amongst caterers and dietitians that a multi disciplinary team approach is needed. It was recommended that these be food and nutrient based with direction on formalising menu planning procedures and provision of a menu template. A whole system approach is adopted in the management of malnutrition.

Table 1: International, National and Local Influences that impact on food and beverage services

	Guidance/Organisation	Link
International	Council of Europe World Health Organisation ESPEN European Society for Clinical Nutrition and Metabolism	www.coe.int/ www.who.int/ www.espen.org
National	DH responsibility for Patient Environment Action Teams (PEAT) and Food Standards Agency (England) Care Quality Commission (England) NICE Guidance: Nutritional support (CG32) (Not Scotland) Hospital Caterers Association (HCA) Good Practice Guide - Healthcare Food and Beverage Service Standards (HCA, 2006) Dysphagia Diet Food Texture Descriptors (NPSA, 2012) Caroline Walker Trust Guidelines National Association Care Caterers BDA Mind the Hunger Gap Campaign	www.dh.gov.uk www.cqc.org.uk www.nice.org.uk www.hospitalcaterers.org www.bda.uk.com www.cwt.org.uk www.nacc.org.uk www.mindthehungergap.com
Local	Service Level Agreements for service provision (BAPEN, 2007) NHS Trust or Health Board Nutritional Steering Groups NHS Trust or Health Board Food and Health Policies / Nutrition Policy CQIN Continuous Quality Improvement Network (England) Regional targets relating to Nutrition QIPP improving quality of care Voluntary groups	www.BAPEN.org.uk www.cqin.net www.improvement.nhs.uk/qipp/

Table 2: National Standards

Country	Controlling Body	Regulations/ Standards	Service delivery	Link
England	Dept of Health (DH) Patient Environment Action Team (PEAT)	Core 15	Catering services (NHS and other)	www.dh.gov.uk
	Care Quality Commission (CQC)	Regulation 14 (Outcome 5)	Hospital bed bases and Nursing Homes	www.cqc.org.uk
Scotland	Quality Improvement in Scotland (QIS)	Mandatory standards for which health boards are responsible for the implementation	Health boards	Health care Improvement Scotland: http://www.healthcareimprovementscotland.org/default.aspx?page=11926
Wales	Health and Social Services Directorate, Welsh government	Doing Well, Doing Better: standard for health services in Wales, April 2010 standard 14	Local health boards and catering services	www.nhs.uk/walesgovernance.com
Northern Ireland	Department of Health, Social Services and Public Safety (DHSSPS)	Council of Europe standards as part of nutrition coalition.	Health and social care settings	www.dhsspsni.gov.uk/promoting_good_nutrition.pdf

Table 3: Local Service Requirements

Local Provision	Service Level Agreements	Outcomes
Service planning and support	Catering Specifications Staff training Provision for therapeutic diets	Provision of nutrition to meet all service users' clinical and personal needs and agreed locally
Service provision	Protected meal times and red tray initiative Managing the dining experience and environment Guidance and protocols on using the service Compliant menus and guidance for managing special diets Liaison with modern matrons, ward staff and food service assistants	The meal service and environment meets service users needs and agreed local standards
Service Monitoring and Audit	Service users satisfaction questionnaires Audit of service level agreement	Positive patient experience illustrates service users needs are met to agreed levels

Outcomes achieved for patients should be clearly identified and measurable and demonstrate benefit for the client user group.

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Chapter 2 Role of the Dietitian in Food Service

Food is vitally important to people. It embraces their health and enjoyment. The nutritional value of food left uneaten is nil. At best, mealtimes can provide both an enjoyable experience and the nutrients to support recovery and promote health including psychological well-being. Dietitians should promote improvement through food and beverage services that are cost-effective, good quality, safe, nutritionally adequate and appropriately patient-focussed.

Providing the best possible foodservice for hospital patients is complex, and may be a difficult and unremitting task. It depends on a close and effective collaboration between a number of people who may have very different priorities (Donelan, 1999). Menus must have the capacity to meet all nutritional needs. They must also be appealing. Patients will not eat food that is unfamiliar or that they do not like, especially when they are feeling unwell and have poor appetites.

In care settings people are unable to make their normal food choices and it may be difficult and undesirable for them to obtain food elsewhere. They are deprived of the normal consumer power and are left dependent on hospital food and beverage provision, and decisions that other people make about it. Where possible involve patients and service users in menu design. In addition, menu planners must be able to step into the patients' shoes and use local knowledge and feedback to inform menu choices.

The Food Chain

The term 'Food Chain' describes all the processes that provide patient food, from ordering and stock control to waste management. Choosing at point of service is the ideal at every meal or snack opportunity, however in practice, choices may need to be made a few hours prior to meal service. 24 hours is the absolute maximum recommendation from meal ordering until service.

The people linking the food chain include:

- The patient making the choice of food or drink
- Administrative staff collating and placing orders for ingredients or delivered meals
- Chefs and assistants producing the food, or assembling meals manufactured by suppliers
- Drivers and porters transporting and delivering the food
- Ward housekeepers and hostesses undertaking the final stages of food and beverage services, such as regeneration, and serving the food
- Nurses typically assisting patients to eat and monitoring consumption
- Dietitians who provide the expertise in food, nutrition and health.

The food chain is supported by:

- Standards set nationally and locally (See Chapter 1)
- Chief officers at management level
- Comprehensive high quality contracts and service agreements (See Chapter 11)
- Negotiated service specifications between food service stakeholders (See Chapter 11)
- Adequate funding by the organisation
- Menu planning
- Information systems for patients and staff
- Management of the food preparation and ward environments

- Training
- Monitoring and audit
- Day to day vigilance to supervise, problem-solve and adjust the service as required.

Dietitians have the skills to be involved at every level of care setting food and beverage services; they have a unique overview of food services and knowledge of how food and beverage services impact on nutritional care and clinical outcomes. They work directly with patients and with clinical and catering staff. Dietitians are well placed to identify and work to improve strengths and identify weaknesses in a food provision chain. They have specific responsibilities for many of the elements that support the chain, from developing policies and procedures, through service and menu planning, to day-to-day problem solving and amendments.

A dedicated catering liaison dietitian should be funded in every department to lead developments and act as the main interface between catering and clinical services. This should be a senior post, and funded as such so that the dietitian has sufficient authority to lead developments and initiate resolution of problems. This ensures somebody is responsible for identifying gaps in patient information/communication at ward level, which a catering dietitian has a unique insight into because the role is exposed to all areas, whether it is ward level, supplier level, finance and governance. As well as catering supplier or department liaison, the catering dietitian can bridge the gap between nursing, estates, catering, supplier, and therapy departments.

The dietetic-catering link should be used at every opportunity, updating and working with the service to ensure consistent practice and understanding of food and beverage services by the rest of the dietetic team.

The Dietitian's Role

The Health Professions Council (HPC) Standards of Proficiency for Dietitians (HPC, 2007) provide expectations of the ways in which dietitians work in relation to the provision of food and beverage services, to:

- Develop and maintain good working relationships with staff at all levels
- Lead the multidisciplinary team in developing policy
- Be aware of standards and requirements, and working to meet or exceed them
- Engage in user consultation
- Be aware of practical constraints
- Use research evidence for service development
- Apply negotiating and problem-solving skills

Dietetic working in Partnership

Dietitians employed by commercial food suppliers and catering contractors should work together with dietitians in client service, in an atmosphere of mutual trust and respect. To manage the interface both need an awareness of the range and diversity of the populations served, and must endeavour to meet the needs and preferences of all groups, by:

- Developing submission bids as part of catering tenders to ensure that nutrition and dietetic needs are clarified and addressed (See Chapter 11)
- Providing information on food, recipe and menu analysis as part of the submission bid and contract management
- Collaborating on recipe and dish development to meet the needs of clinical dietetics, hospital nutrition and public health, as appropriate

- Developing training for food and beverage service staff
- Providing information on relevant legislation.

There may be more than one provider in the food service chain. All stakeholders need to develop and sustain good working relationships with all staff in the food chain, in order to negotiate change or work within constraints, and to promote continuing improvement in a manageable and realistic way.

Service planning and support

a. Staff training

Dietitians should ensure that all staff involved in the food chain have access to training so they can provide a patient-centred food service to promote good nutritional care, encourage appropriate patient choices and to manage therapeutic diets. This may involve dietitians in developing and delivering training packages, planning training in collaboration with others, and evaluating training to ensure it achieves objectives.

b. Menu planning

The NHS Plan (DH, 2000, para 4.17) underpinned the responsibility upon dietitians to set and monitor nutrition standards for hospital menus. They need to collaborate closely with catering managers to ensure incorporation of these standards into menu planning to meet the needs of their patients (See Chapter 6 on Menu planning). Dietitians must bring to the process a thorough knowledge of:

- The relevant evidence base and reports
- Nutritional analysis and therapeutic dietetics
- The population to be served, its complexities and diversity – including local cultural and religious needs
- The practicalities of large scale catering.

Planning hospital menus brings together many conflicting demands, and skills in both motivation and negotiation may be needed by everyone involved.

Service provision

a. Managing the eating environment

The multidisciplinary team and dietitians in particular, should work with ward staff including ward managers, nurses and housekeepers, to achieve the best possible eating experience for patients. They should promote improvement by providing evidence on the importance of the physical environment, appropriate equipment, and staff behaviour; by leading on the implementation and monitoring of protected meal times; red tray and red jug programmes, and by contributing to the planning and delivery of training. It is essential that dietitians are able to participate in protected mealtimes by being present to observe practical aspects of the foodservice and to measure adherence to policy.

b. Patient information

Patients and staff need comprehensive and up to date information about the food service to empower them to make the best use of it. Patients should be provided with relevant information in order to make informed choices. Dietitians should work with colleagues on the development of user-friendly and patient-centred information using a variety of media and formats, for example:

- Written and pictorial menus and information on the full range of foods and beverages available
- Information in the languages most familiar to users
- Electronic and interactive information and ordering
- Staff skilled in verbal communication, and who are knowledgeable about the food and beverages service and able to communicate with service users
- Guidance and information about appropriate food choice.

Further information can be found in the most recent Patient Environment Action Teams (PEAT) Assessments guidance documentation (NHS Information Centre, 2012).

Managing therapeutic diets

Dietitians must work closely with caterers to ensure that therapeutic diets (see Section 9)

- Meet the requirements of clinical treatment
- Meet appropriate nutritional standards
- Suit the preferences of the patient
- Are timely
- Are appetising and served appealingly
- Are safe (CQC, 2012).

As part of a multidisciplinary team, dietitians should be actively involved in developing service specifications that ensure best practice in planning, ordering and delivery systems for therapeutic diets. They should provide advice to caterers on menu planning, dish selection and products to be stocked to meet therapeutic diet needs. Dietitians will ensure that systems, such as diet manuals, are in place so that caterers are able to meet needs for therapeutic diets that may arise when there is no dietitian available to give advice.

Dietitian's role in monitoring and audit

- Food and beverage services and nutritional care need to be performance managed
- Dietitians should work with multidisciplinary monitoring teams to support the development of appropriate performance indicators and maintain formal structures for auditing them
- Patient representatives must be part of the team
- Dietitians should identify appropriate audit questions, and ensure audits are completed regularly and the findings acted upon
- Monitoring should include the staff involved, and users of the service
- There should be an effective procedure for reporting back on action taken in response to user and staff comments
- Formal reviews, undertaken at least 6 monthly, are essential to this process.
- Audits may not be comparable due to design and method variation. Results for internal audits may not reflect external audit results. Different audit times and questions create considerable variation. Dietitians must be able to interpret survey results to compare like for like.

The objectives are to:

- Drive continuing improvement
- Ensure standards are met
- Manage resources effectively
- Identify and solve problems quickly
- Prevent problems recurring
- Make adjustments as needed
- Report back promptly on action taken as a result of comments
- Identify and secure necessary resources
- Gather information for future service planning.

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Chapter 3 Nutrition and Hydration, Eating and Drinking

The nutritional value of food left uneaten is nil.

This statement underpins the importance of ensuring adequate nutrition and hydration through providing pleasurable and appropriate assistance for eating and drinking. This chapter includes why the appreciation of food waste is so important.

The BAPEN Nutrition Screening Week Report (2010) highlighted that malnutrition in the community is widespread. Screening for malnutrition should be completed on admission to hospitals and residential care to identify high risk individuals and ensure a nutritional care plan is in place. In the community Malnutrition Universal Screening Tool ('MUST') is also recommended to identify those at risk. Following early signs of eating difficulties or signs of weight loss, food first advice can be given and where appropriate referral to a dietitian can prevent admission to hospital (BAPEN, 2006). The Parenteral and Enteral Nutrition Group of the BDA have recently revised the Pocket Guide to Clinical Nutrition 4th edition which is a useful tool for clinical dietitians.

For an individual, the dietitian reviews him/her and has first-hand information about their medical history and condition, their dietary needs and an understanding of personal food likes and dislikes. Poor food consumption can be the result of a number of causes but often poor health *per se* leads to the loss of appetite and the subsequent risk of malnutrition. There is but a small window of opportunity to act swiftly and appropriately to prevent someone's physical decline due to decreased nutritional intake exacerbated by illness and associated clinical interventions - see figure 3.

Effects of Starvation

The following figure from Allison (1999) is based on data from the hunger strikers in Ireland. It shows that death occurs sooner when starvation is superimposed on trauma compared with starvation occurring without the presence of disease or trauma. Therefore intervention needs to be swift to take advantage of the small window of opportunity.

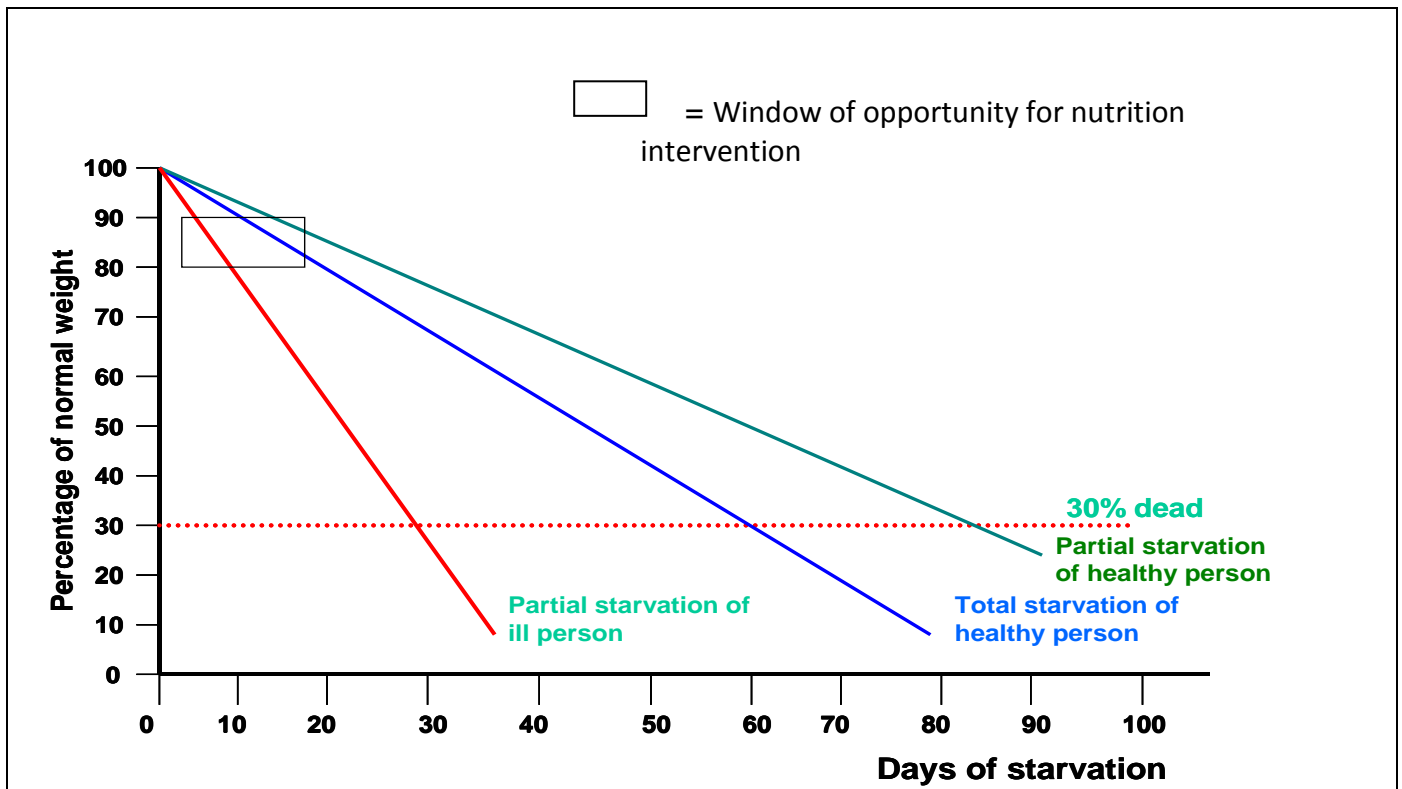


Figure 2: The Debilitating Effect of Poor Nutrition (Allison, 1999)

Hydration

'Water is fundamental for life and health. The human right to water is indispensable for leading a healthy life in human dignity. It is a pre-requisite to the realisation of all other human rights'

United Nations Committee on Economic, Cultural and Social Rights - 27 November 2002

Water is essential to health, and is one of the six basic nutrients, but is often overlooked. This can result in vulnerable individuals missing out on the support they need to help maintain a healthy level of hydration.

The medical evidence for good hydration shows that it can assist in preventing or treating ailments such as:

- Pressure ulcers
- Urinary infections and incontinence
- Heart disease
- Diabetes (management of)
- Dizziness and confusion leading to falls
- Skin conditions
- Constipation
- Kidney stones
- Low blood pressure
- Cognitive impairment
- Poor oral health

Hydration Best Practice toolkits, are available for both health and social care environments and provide further information on the medical evidence for good hydration (Water UK, 2007).

Within these documents it is quoted that "In a wholesome diet, water must be considered as one of the six basic nutrients.....It might properly be called the 'first nutrient', since all of the body's important chemical reactions – such as the production of energy – take place in it.....Chilled water should be available at ward level for patients throughout the 24 hour patient day".

It is a strong possibility that for many patients, a large quantity of fluid at mealtimes could potentially reduce the food consumption of some people. The key message is that for patients without fluid restrictions it is good practice to offer drinks with or after meals and still ensure that fresh water is available throughout the day.

This is also discussed in the Hospital Caterers Association's Good Practice Guide: Healthcare Food and Beverage Service Standards (2006).

Water UK: Working on behalf of the Water Industry for a sustainable future - Water UK

Improving hydration brings well-being, better quality of life and improved health outcomes for individuals. It can also reduce use of medication and prevent illness which will benefit all healthcare providers.

The National Patient Safety Agency (NPSA) and The Royal College of Nursing (RCN) believe that hydration is a fundamental aspect of care and that everyone in healthcare environments has a role to play, from the catering staff right through to the Chief Executive.

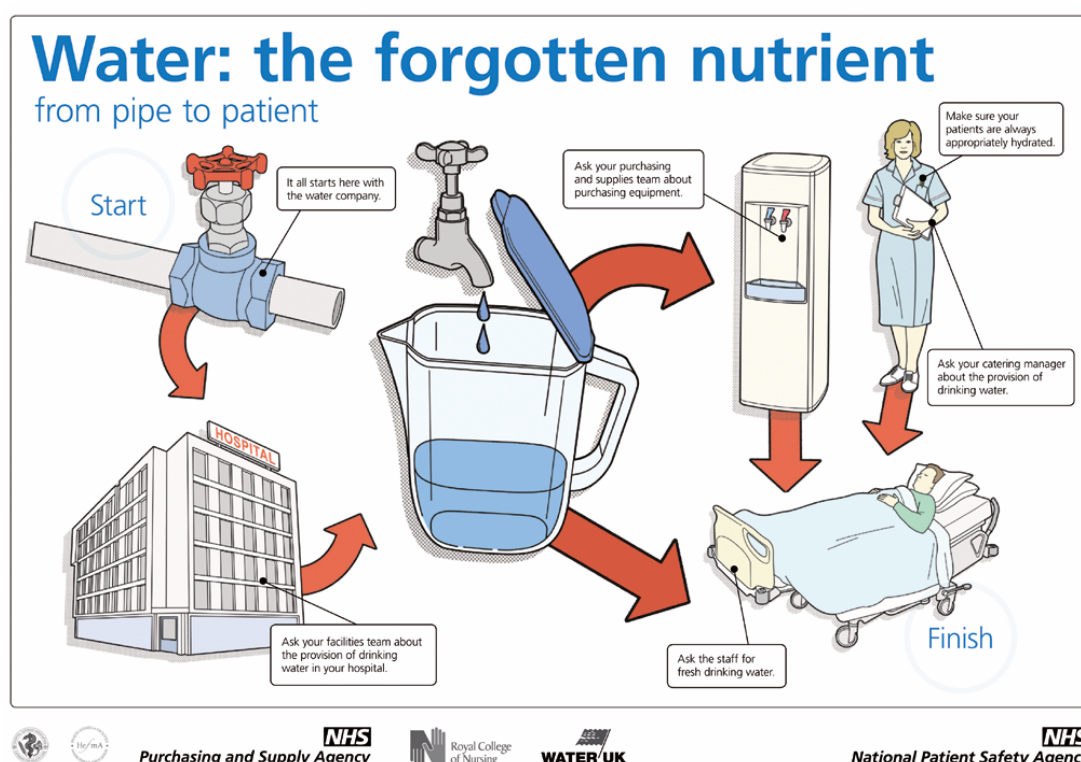


Figure 3: Water: the Forgotten Nutrient Source: National Patient Safety Agency

With grateful thanks to Caroline Lecko for her contribution to this section.

Food Waste

"Food waste is defined as food purchased, prepared, delivered and intended to be eaten by patients but that remains un-served or uneaten".

Managing Food Waste in the NHS, 2005

As dietitians we take care and pride in presenting menus, which meet nutritional targets and yet often we do not consider the nutritional content of the food which is not eaten! Malnutrition in hospitals is very prevalent; in the Nutrition Screening Week Survey undertaken by the BAPEN in January 2010, 34% of patients admitted to hospital

were found to be at risk of malnutrition, most of them at high risk. Working on the principle that food not eaten has no nutritional value, better nutritional intake means improved outcomes for many patients. Food waste, particularly plate waste is simply food which is not eaten.

Reasons for food waste are given in the document Managing Food Waste in the NHS (2005) and include:

- Inappropriate portion sizes
- Organisational challenges
- Reduced appetite due to illness
- Unnecessarily discarding unopened ambient individual portions packs
- Inefficient methods of oral nutritional supplement (ONS) distribution

Actions that organisations can take to manage food waste are also given and include:

- Documenting all food waste at all stages of the food chain
- Developing practices and policies such as Protected Mealtimes
- Considering all aspects of the meal service including timings and environment
- Ensuring that meals served reflect peoples' needs

All too often nutritious and appealing food is left uneaten. Nutritional requirements cannot be met when people fail to eat their meals as served. Although waste is unavoidable it is beneficial to all involved in the food chain if it can be measured.

For dietitians and other clinicians, monitoring food consumption has nutritional and health implications. Monitoring food waste is equally vital to the caterer, because of the cost implications. Waste is an issue at all levels, and should be carefully considered in any food service operation. Be aware that food intended for patients may also be inappropriately consumed by others for whom it is not intended.

Understanding the reasons for food waste on the ward is critical to understanding patients' food consumption. Table 4 summarises the reasons for food waste.

Un-served waste is waste that remains either on the tray line / the servery in the kitchen (plated meal services) or on the trolley at the ward (bulk meal services). It is food that is not served. This translates to a caterer's budgetary concerns and is one that should also concern the clinician, as money allocated to food is being unnecessarily eroded.

Plate waste is the uneaten food left on the plate after the meal is served. This information then translates to food consumption, which is a dietitian's prime concern.

Table 4: Food and Supplement Waste Management

Reasons for un-served waste	Reasons for plate waste / reduced food consumption
<ul style="list-style-type: none"> • Over-production in excess of the need to provide choice • Over-ordering of meals (such as ordering a meal for someone who is Nil By Mouth, just in case their dietary status changes) • Poor communication systems • Poor stock control • Poor yield management and portion control • Patient movements and discharges 	<ul style="list-style-type: none"> • Meal was not the person's choice (often the case with a new admission) • No suitable 'special or personal diet choice'. • Meal ordering too far in advance • Preference had changed • Person may not have been feeling well due to medications, environment or pain • No help given to a person unable to eat without assistance • Meal was unsuitable because it did not meet their dietary needs • People may require assistance with eating • The diet was restrictive and person did not like the food provided • Portion size was too large • Person was asleep, away from the bed, in an awkward position or interrupted • Unpleasant procedures/incidents taking place nearby
Supplements	
<p>Wastage of oral nutritional supplements should be given equal weighting to wastage of food. Provision systems and audit must consider:</p> <ul style="list-style-type: none"> • Effect of giving supplements too close to mealtime (s) • Personal acceptability due to flavour, sweetness, texture, temperature • People may only be able to manage small volumes • Whether they are being given as prescribed especially if there is no clinical procedure in place (as with drug charts). • Systems to ensure good stock control that track out of date items and those that never reach the patient or are inappropriately stored • Help with packaging and serving 	

Waste Policy

It is important that procedures are in place to ensure that money spent on hospital food and food products is delivering an adequate nutritional intake to patients. Measurement of plate waste is an important indicator of food consumption. High levels of plate waste indicate low levels of consumption and should be investigated. All hospital food and beverage services should implement a waste policy that is regularly reviewed with the aim of reducing waste at all levels.

Waste audits, both qualitative and quantitative are used to measure cost, food acceptability and nutritional intake. A standard audit tool should be utilised to ensure consistency and enable results to be compared (DH, 2005).

An auditor can actively weigh food or visually estimate portion sizes. An audit should include documented observations of the reasons for waste. Patients and patients' representatives should be involved in audits and in-

patients' opinions sought by asking routine questions about their food whilst in hospital. Agreed acceptable waste levels should be established locally. There should be regular patient satisfaction questionnaires on the quality of food as evidence for the Care Quality Commission (England) (CQC, 2012).

The aim for both the dietitian and the caterer is the same; that the patient consumes their food and gains nutritional benefit.

Managing Food Waste in the NHS (DH, 2005) set targets for England of

- 6% for un-served waste in plated meal services
- 12% for bulk trolley services
- 10% plate waste at ward level

The dietitian may use a food and drink record to monitor an individual's food consumption. When interpreting the results from food charts and nutrition screening, the dietitian acts as the link back to liaise with the catering team, highlighting the consequences of nutritional risk and instigating special meals, snacks or supplement products if appropriate. This may also include providing menus or recipes for a special diet.

It is critical that ward staff, both clinical and food service, understand their responsibility and that food not eaten is a wasted opportunity to improve food intakes. Patients and other service users have individual needs and although they may not feel like eating, adequate nutrition will help improve their recovery. Those screened as high risk of malnutrition should have a nutrition plan as part of their clinical treatment.

Protected Mealtimes: provision of a patient-focussed meal service

"Nothing shall be done on a ward whilst patients are having their meal"

Florence Nightingale (1859)

The patient experience is critical, involving all elements of care, and one important aspect of this is ensuring that protected meal times are nationally implemented. Protected mealtimes involve positively avoiding all interruptions, allowing patients time to enjoy the meals, which can contribute so much to their wellbeing. In this way, along with clinical staff, we can help ensure improved outcomes of patients (NPSA, 2007).

Meal Time Volunteers: Where possible, dietitians should assist the promotion and roll out of such nutritionally focussed hospital initiatives to ensure adequate training of volunteers. This is a scheme which should be seriously considered by all organisations, with dietitians integral to the initiative. Some caution may be needed to ensure the perception is not that hospitals are using volunteers in place of nurses.

A useful resource is the series of 10 factsheets produced by the NPSA based on each of the 10 key characteristics of **good nutritional care** in healthcare environments (NPSA, 2009). These originate from the Council of Europe (2003).

Communication between nurse, carer, caterer and any food service assistants at ward level is vital to ensure that people receive the appropriate meal. A mechanism should be in place which ensures privacy and dignity but it should not overwhelm patient safety. Bedside signs, as trialled by the NPSA are a useful way to ensure a consistent message is given but they are only as effective as the individuals managing their day to day usage.

In hospital, patient moves are inevitable. Whether it is from one bed to another in the same ward or from one part of the country to another, the principles should be the same. Relevant information and any dietary considerations must accompany them and are as important as their other treatment and medication. Food waste can be avoided if the food follows the patient as they move within the same establishment.

A recent approach to patient catering is to categorise the population into two groups; nutritionally well and nutritionally vulnerable. This is a critical difference in our approach to what is 'healthy'. People who are in the latter category need to be encouraged to eat and it may be better that they eat a small amount of something they like instead of nothing of something they should have. What is good for one may not be for all and all involved in the nutritional care of patients must consider this.

At mealtimes, all ward activity should focus on the meal service and there should be an awareness of key issues in the eating environment as highlighted by Burke (1997) and Age Concern (2006) and in the *Still Hungry to be Heard* (7 steps to end malnutrition in hospital) campaign (Age UK, 2010).

These include:

- Allowing people to access dining area and to be alerted to the pending mealtime
- Suitable and appropriate positioning
- Hand wipes available prior to meal service and after service or the facility to wash hands in hot soapy water
- Ask if a person requires assistance in eating or help with packages. This could be indicated by a tick box on a menu. "Do you need help with packaging?" A relative or carer could also complete.

Positive and encouraging behaviour when handling and serving food provides invaluable support which is instrumental in persuading many unwell and anxious people to eat. This important input from foodservice staff should be complemented by the same positive attitude to the food and beverage services from nursing and other clinical staff.

A sample protected mealtimes policy, developed in conjunction with the RCN, is available on the HCA website (HCA, 2004).

Training for Food Service Staff

In conjunction with the caterer, the dietitian has an important role in actively promoting training sessions that directly link nutrition to care. Topics should include:

- Basic nutrition, and the provision of a nutritionally balanced diet for people who are nutritionally well as well as for those at risk
- Allergy awareness
- Menu ordering for special diets
- Meeting religious, ethnic and cultural dietary choices
- Basic food hygiene and food safety
- Training in the use of equipment trolleys/probing/timings
- The timeliness of serving meals (to ensure the food is at an appropriate temperature)
- Portion control, taking into consideration people's individual needs
- Food presentation
- Helping patients e.g. with difficult packaging and cutting up food
- Communicating positive attitudes towards food and beverages
- The importance of good nutrition in the healing and recovery process
- Identifying people who require assistance with eating and drinking by using red or distinctive mats, trays, napkins and jugs. However, this should not be relied upon as plenty of people still need to be observing at mealtimes, taking responsibility and acting on what they observe.

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Chapter 4 Food Composition

“There are two schools of thought about food tables. One tends to regard the figures in them as having the accuracy of atomic weight determinations; the other dismisses them as valueless on the grounds that a foodstuff may be so modified by the soil, the season or its rate of growth that no figure can be a reliable guide to its composition. The truth, of course, lies somewhere between these two points of view.”

McCance & Widdowson, 1943

The procurement process must include a specification for foods, which is agreed with dietitians to ensure the menu requirements can be met. The cost of foods is often determined by world commodity prices and these have risen in recent years and are unlikely to reduce with the pressure to produce more food to feed a growing world population in a sustainable way. Dietitians should be aware that food is getting more expensive therefore commodities should provide good nutritional ‘value for money’.

Nutritional content

The nutritional content of food must be known so that menus can be developed that:

- Meet Estimated Average Requirements (EARs) and Reference Nutrient Intakes (RNIs)
- Consider nutrition priorities in public health
- Consider the specific therapeutic dietary requirements of different patient groups
- Demonstrate that they meet contractual requirements
- Personal diet requirements such as religious or vegan

Food labelling regulations

All food labelling regulations have been reviewed by the EU and a new Food Information for Consumers Regulation (FIR) has been agreed and became law in December 2011 (Official Journal of the European Union, 2011). This amends or repeals all previous legislation related to food labelling. Food businesses will have 3 years to implement the changes. Nutrition labelling will be mandatory for all pre-packaged food so for the required nutrients they will always be available to dietitians (See chapter 1).

Full details of Regulation (EU) No 1169/2011 The Provision of Food Information to Consumers (FIR) can be accessed here:

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:304:0018:0063:EN:PDF>

Nutrition on labels shall be ‘averages’ or ‘typical’ which will be the figures which best represent the respective amounts of the nutrients which a given food contains, taking into account seasonal variability, patterns of consumption and any other factor which may cause the actual amount to vary. The manufacturer’s analysis of the food will be derived from chemical analysis, which is often used by the food industry for labelling purposes, when multiple samples are analysed to give a typical value; this requires regular confirmatory analysis (EuroFIR, 2012). It is also used by government bodies and in some research settings. It is an expensive procedure that must be undertaken by an accredited laboratory. A single analysis is only valid for that particular food item, grown, transported, stored, prepared and cooked under those specific conditions (EuroFIR, 2012).

Calculation for the nutritional values of recipes uses weights of ingredients used in the preparation of the food and could be generally established and accepted. This is done using generic and manufacturers’ data and is the mostly widely used and accepted method in industry, schools and healthcare settings. The nutritional data

commonly used for calculation in the UK software are from the Composition of Foods Integrated Dataset (CoF IDS). This is an extended data set, which includes all of McCance and Widdowson's *Composition of Foods* 6th Edition and supplements (Food Standards Agency, 2002a).

The range of nutrients available to dietitians is often inadequate. Recent reformulation may not be reflected in these data so for manufactured products, suppliers should be contacted for this information. These data may be calculated or derived by chemical analysis. If the source of data is not CoF IDS, it must be identified within the software dataset. Should an alternative database, such as USDA, be used to assess 'missing values', these must be clearly referenced (USDA, 2011).

Nutrition Information on Food Labels

In future, the nutritional information in Table 5 will be mandatory under FIR (2011). Currently, most food suppliers should be able to provide this information on request. This information includes the important nutrients needed for menu planning and analysis and the table shows the order in which the nutrients should be given.

Table 5: Significant Nutrients for Ingredient, Recipe and Menu Reviews, and their Values (can be expressed as per 100g or per portion).

Nutrient	Usual units	Values given as	Useful conversion factors
Energy	kJ/kcal	Whole Number	$kJ (P \times 17) + (CHO \times 17) + (F \times 37) + (fibre \times 8)$ $kcal (P \times 4) + (CHO \times 4) + (F \times 9) + (fibre \times 2)$ $kcal \times 4.2 = kJ$
Fats (F)	g	Whole Number	
of which Saturates	g	Whole Number	
of which Mono-unsaturates *	g	Whole Number	
of which Poly-unsaturates *	g	Whole Number	
Carbohydrate (CHO)	g	Whole Number	
of which sugars	g	Whole Number	
Fibre**	g	To one decimal place	
Protein (P)	g	Whole number	
Salt ***	g	To one decimal place	Sodium(g) x2.5

* Not mandatory unless a claim is made

** Fibre will no longer be required on the label but food companies will have this information as it is required for the calculation of energy for which the analysis method will be from the American Organisation of Analytical Chemists (AOAC) so this will generally be the method used by manufacturers. Fibre may be analysed in a number of different ways but DRVs are expressed for non-starch polysaccharides (NSP), and these are the values in standard tables (Englyst method). The method should be stated, if known.

*** Sodium values will not be permitted as salt will replace this, however as salt will be calculated from the analysed sodium; food companies will have these data.

Other nutrients to consider

Vitamin and mineral information is only required if making a nutrition claim or if added as fortification. For other foods some micronutrients may be available on request from food suppliers and manufacturers but there is no legal requirement to do so.

A full ingredient list will always be available from suppliers or provided on packaging (Official Journal of the European Union, 2011). This could be used to identify good or poor sources of micronutrients and this should be used as it is generally the basis of advice given to patients. Ingredient lists are in descending order and for key ingredients there will be a quantitative declaration giving the percentage in the recipe. The use of the ingredients for food-based guidance is important in care home and community settings.

Micronutrients

- Vitamin A - Good sources from liver and vegetable sources of carotene can be converted to Vitamin A from carrot and other red or yellow vegetables
- Folate - Heat labile but widely found in green leafy vegetables and meats
- Vitamin C - Heat labile but widely found in green leafy vegetables, citrus fruits and juices
- Vitamin D - No DRV as manufactured through the action of sunlight on skin. This means that people who are housebound or with low sun exposure due to clothing and sunscreen, need good sources such as oily fish, eggs, fortified breakfast cereals and margarines.
- Calcium - Required for teeth and bones; good sources are milk, cheese and other dairy products
- Iron - Required for production of haemoglobin; good sources include red meats and liver. Also, vegetable sources e.g. lentils and dark green leafy vegetables where the iron is required to be converted to haem iron
- Zinc - Important for healing and mainly found in meats

Nutrients associated with public health

- Partially Hydrogenated Vegetable Oils, source of artificial trans fats
- Artificial Trans Fats (Many food companies have committed to removing these ingredients as part the Public Health Responsibility Deal) (DH, 2012)
- Added sugar - this would only be available by calculation from the recipe
- NMES (non-milk extrinsic sugars). This is a value which cannot be analysed so must be calculated from the recipe using the FSA method which is $NMES = \text{Added Sugar} + (100\% \text{ of sugar in juice} + 50\% \text{ of sugar in cooked or canned fruit})$ (Kelly *et al.*, 2003).

Recipe analysis

In order to complete the recipe analysis the following information is required:

- The full list of recipe ingredients, including fluid
- Clearly define each ingredient in the recipe and ensure the corresponding ingredient from the dataset is selected e.g. milk either dried or fresh; whole; semi-skimmed, skimmed
- Dry mixes and ingredients need to be entered as dry weight with additional water in recipe or 'as served' weight, e.g. lentils, rice, pasta and soup powder
- The edible portion weight e.g. the drained weight for canned foods, fruit and vegetables after peeling

- Liquid content must be converted from volume to weight, based on individual specific gravities (FSA, 2002b).
- The nutrient composition should be given per 100g and also per portion. In traditional catering practice calculating per recipe or batch is likely to be the method used. Most nutritional analysis packages convert to 100g values but ensure that cooking losses and gains have been accounted for (see below)
- Each recipe must be given a unique identification, either a descriptive title e.g. poached haddock with cheddar cheese sauce, or a code number
- Ensure the portion size for the recipe is appealing and nutritionally appropriate and give feedback to the recipe owner if this is not the case
- The relationship between batch size and portion yield should be established by testing the recipe, or seeking advice from a knowledgeable chef. In a traditional kitchen, yields will vary slightly due to the natural variation in foods
- Each recipe component will need its own analysis (see Beef Lasagne Figure 4).

Methodological Limitations

Cooking losses and gains can be significant and difficult to calculate. An assessment of cooking losses/gains is given in McCance and Widdowson's (6th Edition) Appendix, section 4.3 (FSA, 2002a) and most analysis software programmes can account for these losses. It is important to take a pragmatic approach.

For the purposes of menu analysis, the loss may not be nutritionally significant. Examples of these are:

- Water loss during chill and frozen storage
- Water loss during reheating/regeneration

Where nutrient losses are significant this should be taken into account. Examples of these are:

- Fluid lost during baking of sponges or open cooking of meat or fish dishes. This results in a concentration of the nutrients and may affect the weight and portion size of the finished dish
- Fat and water lost during grilling of meats and meat products

Vitamin Losses

Vitamin loss may be significant for heat-labile vitamins such as vitamin C, folate and thiamine. These can be assessed manually or through nutritional analysis software. In practice, menus should be designed to provide reliable sources of these less heat stable vitamins - see Chapter 8.

One of the problems when considering vitamin retention in hospital food services is the lack of comprehensive published work since the Platt and Eddy Report (1963). There have been only two major review papers (Hunt, 1984; Williams, 1996) and few textbooks (Light and Walker, 1990) on chilled and frozen food preparation. This lack of information means that it is difficult to make any comparisons with conventional methods.

Vitamin losses in prepared meals have been investigated by Hunt (1984) and reviewed by Williams (1996). The authors conclude that there is a lack of comparable studies, and Williams concluded: "...that one must balance loss of nutrients against the other advantages that accrue from meal systems."

Cooking gains

When cooking in fat or water, these may be absorbed by the ingredient and any gains should be accounted for.

- Fat uptake during frying is very difficult to estimate. Fried values from CoF IDS should be used where necessary.
- Fat uptake for ingredients fried before incorporation into recipes needs to be included in the calculation for the final dish.
- Dry foods such as cereal, pasta, rice and pulses will absorb water. Cooked values can be used if cooked weight is known.

Recipe types

The approach to recipe calculation will differ depending on the type of dish. The following section provides a description of the methods used.

Simple recipe

1. Analyse recipe from given ingredients (to include water) using data for EITHER raw or cooked ingredients (state which) depending on the known weights in the recipe
2. Assess cooking losses or gains, either by test weighing the finished product before and after cooking or by using data as supplied by CoF IDS. It is important to realise that variations in finished weight are inherent in traditional catering practices

Composite Recipes

These are multi-layered dishes composed of more than one recipe combined to form a composite.

Calculate each part of the recipe as a simple recipe as described above and then create a recipe, which is the final make-up of the dish. An example of this is given for a beef lasagne recipe, see

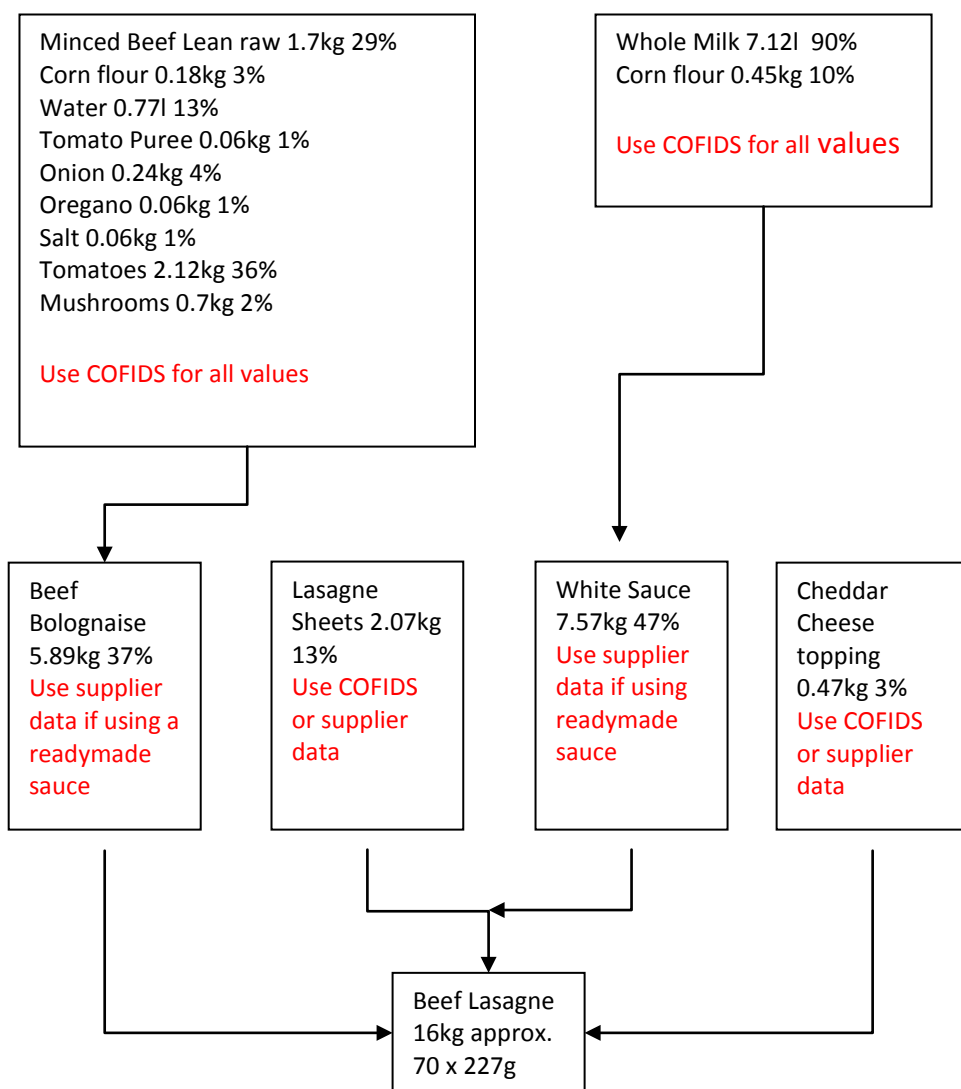


Figure 4: Example of Layered Dishes such as Beef Lasagne

Table 6: Nutritional Value of Beef Lasagne in new FIR order

Nutrients	Nutrition per 100g	Nutrition per 227g portion
Energy	101kcal/428kJ	229kcal/971kJ
Fat	20g	45g
Saturates	1g	2g
Carbohydrate	14g	32g
Sugars	4g	9g
Fibre	0.3g	0.7g
Protein	6g	14g
Salt	0.8g	1.7g

Accuracy

All calculations from standard tables include an element of error. Rounding should only be done at the end of the calculations.

Menu Analysis Software

It is essential that when choosing or using software, the methods and limitations for calculating the nutritional delivery of a multi-choice menu are assessed. Different methods produce different results. Dietitians need to ascertain the outputs of a menu analysis package, as applied to 'real life' menu choices and ability to replicate the above method.

Simple calculation packages allow the dietitian to assess the menu capacity for 'highest and lowest' values for calories and protein. This reflects the possible span of real-life choices from multi-choice menus and the capacity of the menu to deliver these. For details on how to do this manually see chapter 8.

Using software to calculate an individual's food from a documented intake is a different matter, and software is ideal for this. No dietitian would undertake a computer analysis at the expense of understanding motivation for food choices in a dietary intake history. The same applies to appreciating a menu structure and its content. There are a number of dietary analysis software packages available for calculating the nutritional content of recipes. Examples of these are given here. The list is not exhaustive and is in alphabetical order. We do not endorse any particular system.

- Downlees Systems (Microdiet)
- Forestfield Software (Dietplan)
- Fourth Hospitality (Starchef)
- Fretwell-Downing Hospitality (Saffron)
- Kelicomp (Crisp)
- Nutmeg
- Nutricalc
- Nutrition Systems (Compeat)
- Tinuviel Software (WISP)

Recipe and menu analysis should only be undertaken and/or supervised by experienced registered dietitians or registered nutritionists, who can appropriately interpret both the input data and the results, are aware of food regulations and the limitations of their software. To find dietitians able to do analysis, check one of the various freelance dietitian websites such as the BDA's Freelance Dietitians group (<http://www.freelancedietitians.org/>) and also the Health Professions Council (HPC) (www.hpc-uk.org/) to check that dietitians are registered. Table 7 shows a suitable person specification.

Table 7: – Person Specification for Nutritional Analysis

Essential criteria	Desirable criteria	Required evidence
A registered dietitian or registered nutritionist	<ul style="list-style-type: none"> • Member of the British Dietetic Association (BDA) • Member of the specialist group Food Counts, or Freelance Dietitians Group • The registered nutritionist is a member of The Nutrition Society 	<ul style="list-style-type: none"> • Registered dietitian, RD. Current Health Professions Council certificate of registration www.hpcheck.org • Registered nutritionist: RNutr Current certificate of registration with the Association for Nutrition (AfN)
Experienced working in catering	<ul style="list-style-type: none"> • Shows an understanding of catering logistics, kitchen facilities and staffing through prior experience. 	<ul style="list-style-type: none"> • Explanation / references
Calculates analysis of standardised recipes following a logical approach	<ul style="list-style-type: none"> • Understands pitfalls of recipe calculation e.g. differences between ingredients listed in database and foods actually used in the kitchen 	<ul style="list-style-type: none"> • Answers to questions regarding the process
Has undertaken continuing professional development (CPD) in catering	<ul style="list-style-type: none"> • Any relevant postgraduate training such as the Recipe Analysis course • CPD in catering, related to nutrient analysis 	<ul style="list-style-type: none"> • Certificate(s) of attendance or equivalent • Portfolio entries • Individual CPD record
Good Communicator	<ul style="list-style-type: none"> • Proven ability to communicate well • Proven ability to complete tasks on time and to the degree of accuracy required 	<ul style="list-style-type: none"> • Explanation / references

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Further reading

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School Food Trust (2008) Step by step guide to calculating the nutrient content of school lunch recipes. Available at www.schoolfoodtrust.org.uk/.../step_by_step_nutrient_calculation_guide.pdf [Last accessed 27/03/12]

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Chapter 5 Nutritional Standards; Day Parts Approach

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).

Standard menus should be capable of providing choice for patients from both the nutritionally well and nutritionally vulnerable groups.

The menu should be able to reflect current government public health messages tailored to the patient population; however, menu planners should be mindful that a diet promoting longer-term health may not be appropriate in times of acute illness. Dietitians are best placed to judge where the implementation of a healthier menu is a useful adjunct to patient treatment.

The balance of healthier and higher energy choices should reflect the needs of the patient population it will serve, for example wards or units where there are longer stay elderly patients may need more choice of higher energy dishes on the menu.

Nutritional Targets

The Nutrition Guidelines for Hospital Catering (DH, 1995) were developed based on the COMA Dietary Reference Values (DRVs) (DH, 1991). Although the 1995 nutritional standards were relevant at the time, this was before the inclusion of snacks on hospital menus and did not recognise the nutritional content of these or the complete mealtime offer. Due to this, The Nutrition Guidelines for Hospital Catering (DH, 1995) have been reviewed and the following nutrient standards for adults in care settings are now recommended.

Table 8: Nutrient Standards for Adults

Nutrient (/day)	Nutritionally Well	Nutritionally Vulnerable	Provided
Energy (kcal)	1810 – 2550	2250 – 2625	Daily
Protein (g)	56*	60-75	Daily

*For females of the same age bracket the RNI is 45g.

Rationale

The nationally recognised DRVs (DH, 1991) apply to groups of well people and BAPEN has suggested amendments to these to meet the needs of the unwell hospital population (Allison, 1999). Following this rationale and the eatwell plate model will ensure that micronutrients are adequately covered.

Nutritionally well

The **energy target** range for nutritionally well individuals is based on the Estimated Average Requirements (EARs) for energy from the Dietary Reference Values (DRVs) for Food Energy and Nutrients for the United Kingdom (DH,

1991) see Appendix. This target takes account of the lowest and highest energy requirements for adult men and women aged 19+ years, with the lowest target being women aged 75+ years at 1810kcal and the highest target being men aged 19-59 years at 2550kcal.

We do acknowledge that children's and adolescents' requirements may be outside of this range and may need to be catered for separately (1165kcal girls age 1-3yrs to 2755kcal boys aged 15-18yrs, respectively).

The **protein target** for nutritionally well individuals is based on the Reference Nutrient Intake (RNI) for men aged 19-50 years (DH, 1991). For females of the same age bracket the RNI is 45g see Appendix 1.

Nutritionally vulnerable

The **energy target** range for nutritionally vulnerable individuals is based on BAPEN's recommendations by Allison (1999). This recommends that the energy requirements are 1.3 to 1.5 times resting energy expenditure. This equates to 30-35kcal/kg body weight/day (1800-2100kcal/day for a 60kg individual and 2250-2625kcal/day for a 75kg individual) (Allison, 1999).

The **protein target** for nutritionally vulnerable individuals is based on BAPEN recommendations (Allison, 1999). This recommends 1g/kg body weight/day and is based on a 60-75kg individual (60-75g protein/day).

Obese individuals

Despite current high levels of obesity in the UK population, it is not current practice to increase the energy or protein standards as in obese individuals who are not metabolically stressed, a decrease in energy consumption and nitrogen requirement is recommended by BAPEN to accommodate for the additional body energy stores (PENG, 2011) (PENG Members only.) Those who are metabolically stressed are likely to require nutritional support and receive additional nutrition through the form of food fortification or prescribed supplementation.

Menu Capacity

When studying energy requirements, 80% of usual daily energy expenditure is used even if lying in bed (DH, 1995). If a patient menu meets the DRV requirements, there can be reasonable confidence that most patients will get sufficient nutrition from their food, provided they are able to make informed choices and consume complete servings of all meals.

It is likely that nutritionally vulnerable people requiring protein intakes greater than 1g/kg/day BAPEN recommendation (Allison, 1999) will need at least three meals and two higher energy snacks daily, and may need additional supplements. Menus should be capable of providing the nutrient standards for adults. However, there will be some people such as those requiring reduced calorie diets that may need less than this.

Day Parts approach to energy and protein content of meals

This is a model that divides the day into meal parts. It allows flexibility to divide the eating events of the day as appropriate for the individuals for who the menu is being assessed, e.g. having small frequent meals throughout the day or the inclusion of a cooked breakfast.

To enable the planning of balanced patient menus for the general hospital population, this revision proposes a structure that reflects the contribution of protein and kilocalories across all eating events of the day to provide an adequate overall intake for the whole day: **Day Parts**.

Day Parts uses the DRV RNI for protein as a reference point and the span of 1810-2625 kilocalories in order to cover the majority of the nutritional requirements for the general adult population. This approach is also used by the School Food Trust (SFT) in the Nutrient-based Standards for School Lunches, which are based on the report by Crawley (2005) (SFT, 2009). Individual needs should be assessed and addressed on an individual basis and are the responsibility of all involved in the care of individuals.

Screening tools, such as 'MUST' assessments, and approaches such as protected mealtimes and red tray initiatives are well recognised tools to address those at risk of malnutrition (See Chapter 3).

Using the 'Day Parts' model, the combination of choices at both of the day's complete meals should have the capacity to contribute adequate energy and protein for the population they are designed to meet (i.e. both midday and evening meal). Protein is an important proxy for other important vitamins and minerals. Kilocalories and protein are very unlikely to occur in the same 'best choices' when undertaking a menu capacity assessment. **As long as a suitable combination for meeting both protein and kilocalories can be identified, the menu is likely to be satisfactory.**

Energy Guidance

Whilst the span of 'healthier' to 'higher energy' choices should provide from 1810-2625kcal a day, achieving this does not have to rely solely on the main course meal. When assessing the capacity of a menu to provide this span of kilocalories, the contribution of the starter and the dessert should always be considered. Thus a complete meal that reaches a total of approximately **800kcal** from all its components (starter + main meal + dessert) provides for 'higher energy' needs and one that provides approximately **500kcal** provides for a 'healthier' choice.

Complete mealtime offer

Whether vegetarian or non-vegetarian, a complete mealtime offer must provide adequate energy and protein to meet the nutrient standards for the population it is designed to meet. This includes any starter, main meal and dessert that are on the menu at each mealtime.

Starters

Such as soup or fruit juice

Main Meals

This could include:

Main menu 'offer' or (composite meal +/- side dish) OR

Entrée + starch + vegetable (s) +/- sauce/gravy OR

Protein + green salad +/- side dish + starch OR

Sandwich +/-side dish

Desserts

Any hot or cold dessert with accompaniment if appropriate such as custard or ice-cream

Vegan menu choices

It is recognised that pulse-based vegetarian/vegan meals generally have much lower protein content per serving than dishes with high biological value proteins. Additionally, vegan dessert choices are unlikely to reach the protein content of non-vegan desserts, which are often milk-based or served with milk-based custard or ice-cream. Vegan dishes are hence outside of the standard menu choices and are best met by an à la carte menu for special dietary needs. Vegan diets are further considered under the Standard, Special and Therapeutic Diets section.

Ready prepared menu items e.g. sausage rolls, pasties, fish cakes

These well-liked dishes may be lower in protein than other entrees, therefore suitable high protein accompaniments e.g. mushy peas, peas, sweetcorn, baked beans, should be offered on the menu at that mealtime to ensure the capacity of the menu still offers adequate protein.

Table 9: Example of Menu Day Parts Guidelines for Food and Beverages in Care Settings

Day Parts	% age of daily nutrition (approx.)	Nutritionally Well		Nutritionally Vulnerable	
		Energy (kcal)	Protein (g)	Energy (kcal)	Protein (g)
Breakfast Nutritionally Well <ul style="list-style-type: none"> Fruit juice Cereal and milk 1 x bread Preserve portion Butter or polyunsaturated unsaturated spread portion Nutritionally Vulnerable as above + extra slice of bread, spread and preserve and/or cooked breakfast		400	10	485	12
Snacks Minimum of two daily recommended Nutritionally Well Healthier Nutritionally Vulnerable Higher energy		150	2	300	4
Milk for beverages 400ml minimum Nutritionally Well Semi skimmed milk Nutritionally Vulnerable Whole milk		184	14	264	13
Total (Fixed)	40%	734	26	1049	29
Midday Meal <ul style="list-style-type: none"> Starter Main Meal (Entree + carbohydrate + vegetable (s) + sauce/gravy OR sandwich OR main salad) Dessert Nutritionally Well Nutritionally Vulnerable					
Total	30%	538	15	788	23
Evening Meal <ul style="list-style-type: none"> Starter Main Meal (Entree + carbohydrate + vegetable (s) + sauce/gravy OR sandwich OR main salad) Dessert Nutritionally Well Nutritionally Vulnerable					
Total	30%	538	15	788	23
Total (Variable)	60%	1076	30	1576	46
Total (Fixed + Variable)	100%	1810	56*	2625	75
This table indicates how a multi-choice menu can provide 1810 – 2625kcal and 56* – 75g protein as per DRV and BAPEN recommendations. *please note the higher RNI for protein has been used in this table.					

Minimum Capacity

1. Energy

Menus should demonstrate that an average complete meal (starter + main + dessert) comes to approximately 500kcal, whilst recognising practicalities and exceptions for the menu capacity to be outside this.

Meals may be less than 500kcal and this is acceptable due to the nature of a multi-choice menu covering a broad range of meal types, dietary eventualities and choices to cover personal tastes and the inherent nature of food. Therefore, on a multi-choice menu, patients will usually be able to select a lower energy combination of foods than may be desirable.

For example, a lower energy choice meal as included in a healthier choice on a standard menu may include:

- Soup (30kcal) + plain cooked roast meat (100-150kcal) + plain starch (boiled potato) (80kcal) + vegetables (20kcal) + fruit (50kcal) = approximately 300kcal for the meal.

Therefore considering minimum and maximum is part of the menu capacity analysis and is the 'gold standard'.

Please note the figures in table 9 are calculated from DRVs. For practical day to day use, please see table 10 below which are rounded figures for applying to patient menus.

Table 10: Energy Targets for Menu Planning

Energy Targets for Practical Meal Planning			
	Energy (kcal)	Energy(kcal)	Energy(kcal)
Midday Meal			
Minimum	300	500	800
Nutritionally Well			
Nutritionally Vulnerable			
Evening Meal			
Minimum	300	500	800
Nutritionally Well			
Nutritionally Vulnerable			

2. Protein

The minimum protein content for any main meal i.e. a starter, dessert and a main course that is based on meat, fish, eggs, cheese, pulses or other vegetarian ingredient, must reach 15g. On a menu where some desserts such as fruit or jelly may contribute negligible protein, the 15g minimum protein level will therefore need to be provided by the starter and main course.

In hot meal services, the judicious use of accompaniments such as dumplings and Yorkshire puddings, vegetables such as peas and sweetcorn and /or suitable sauces e.g. parsley or cheese sauce may be required to balance the protein element of the meal. For information about salad, sandwich or snack box meals please refer to the relevant sections in Chapter 7.

Dietitians must exercise judgement about the menu capacity for nutritionally vulnerable people to ensure that suitable higher energy and protein choices are available to provide targets of at least 23g protein and 800kcal for a complete meal. The day parts model should be applied to ensure the nutritional needs of your local population can be met through the whole menu. For example, if a lighter breakfast is routinely served, snacks and main meals should be adjusted accordingly. A maximum/minimum menu capacity calculation for both an à la carte and a cyclical menu is shown in Chapter 8.

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Chapter 6 Menu Design, Structure and Planning

Menu Design

Catering services must be capable of providing food and beverages suitable for all patients in their care. Patient needs and type of menu are two of the first considerations in menu design.

Patient Needs

There are several local differences in hospitals and care settings in terms of patient population. Firstly, dietary needs for the patient group must be assessed in terms of:

- Age
- Gender
- Nutritional requirements (see menu planning for more detail)
- Physical needs – specialist eating equipment
- Food preferences
- Length of stay – acute (generally short stay), long stay e.g. community hospitals, mental health settings
- Clinical needs

Then groups of patients and their different needs and routines will need to be considered separately, for example:

- Children
- Elderly
- Maternity
- Mental Health
- Learning difficulties

Then the requirements of medical specialities need to be assessed, for example:

- Renal
- Oncology
- Cystic Fibrosis

A la carte Menus

A la carte menus are often used in healthcare settings and are particularly helpful for the comparatively small but important groups of people who require meals that cannot be integrated into the standard menu such as allergy, dysphagia or menus for religious and cultural requirements.

Such menus are usually based on a complete meal (chilled or frozen) and should include enough choice to provide for the client group. The menu usually utilises plated meal solutions. The number of choices will often depend on the healthcare setting and how often that menu is required. For example in some settings an allergy menu is likely to be used much less than a dysphagia menu.

Advantages of à la carte menus include:

- Greater choice of dishes available daily
- Seasonally refreshed (assumption)
- Greater likelihood of patient receiving a dish they like
- Hence greater likelihood of positive patient satisfaction
- Good for short stay patients

Cyclical Menus

Traditionally, cyclical menus have been used in healthcare settings with a likely turnover time of two to four weeks.

Advantages of cyclical menus include:

- Adjustable portion size (if multi-portion rather than plated)
- More choice over meal accompaniments
- Perception of greater choice, therefore better for long stay patients

Whichever approach is chosen, it is crucial that the menu design meets the dietary needs of the population for whom it is intended in order to optimise its overall success. The longer the length of patient stay the more important food becomes (Miller, 2005) hence menus for longer stay and residential settings should reflect the need for appealing food choices with seasonal variation. Risk of menu fatigue may be reduced if à la carte is used to enhance cyclical where this is possible. Using the Day Parts approach may broaden the choices of snacks and breakfasts to help meet needs of nutritionally vulnerable. In some hospitals patients may be able to visit the onsite restaurant as a means of varying their eating experience.

Menu Structure

Menu structure will vary between healthcare settings. The NHS Plan, Better Hospital Food (BHF) Programme (2001) required patients to be served:

- Breakfast, lunch and evening meal
- Snacks at least twice a day
- Regular hot and cold drinks (at least 7 beverages a day and access to chilled water 24 hours a day)
- Flexibility to accommodate small and frequent meal patterns

Although BHF is now non-enforceable the minimum standards set still form the basic menu structure. It is expected that menus for nutritionally well should also be based on *The eatwell plate* that reflects the Government's healthier eating guidelines (NHS Choices, 2011).

When planning menus:

- Consider the structure of the patient day and meal timings e.g. a maternity unit might like to be more flexible in meal choice and service whereas an elderly unit may prefer a cooked breakfast and a mental health unit may like a later dinner service
- Provide adequate choice to cover the majority of patients including higher energy and healthier eating choices.
- Provide a meal replacement if a meal is missed

- Meet the standards set out in the Good Practice Guide Healthcare Food and Beverage Service Standards (HCA, 2006). These are currently under review and are expected during 2012
- Reflect the local contract requirements set out in the Catering Service Specification or hospital Nutrition Policy.

Standard Menu Structure

A sample format for both **standard** cyclical and **standard** à la carte menus is suggested below.

Table 11: Standard Menu Structure

	Cyclical Menu	à la carte Menu
Early morning	Beverage Tea, coffee, squash, drinking water	Beverage Tea, coffee, squash, drinking water
Breakfast	Fruit juice Cereal (lower fibre and higher fibre varieties) e.g. Cornflakes, bran flakes Porridge or instant oat cereal Cooked breakfast where served Bread/bread roll/toast (a choice of white and wholemeal) Butter/unsaturated spread portion Preserve portion Beverage	Fruit juice Cereal (lower fibre and higher fibre varieties) e.g. Cornflakes, bran flakes Porridge or instant oat cereal Bread/bread roll/toast (a choice of white and wholemeal) Butter/unsaturated spread portion Preserve portion Beverage
Mid-morning	Beverage +/- snack	Beverage +/- snack
Midday & evening meal	A minimum of two courses must be provided Starter Fruit juice/soup Roll/bread with butter/unsaturated spread portion Main course 1 (meat or fish based) Main course 2 (composite dish e.g. Cottage pie, lasagne) Main course 3 (vegetarian) Salad (meat/fish/vegetarian) Sandwich (meat/fish/vegetarian) Potato Carbohydrate alternative e.g. Rice Vegetables Hot dessert and custard e.g. Fruit crumble and custard Cold dessert e.g. yoghurt, mousse Fresh fruit Cheese & biscuits Beverage	A minimum of two courses must be provided Starter Fruit juice/soup Roll/bread with butter/unsaturated spread portion A minimum of 15 hot meals provided* *hot meal = meat, fish or vegetarian based entrée+ potato/carbohydrate alternative e.g. Rice, pasta,+ vegetable (s) or composite dish e.g. Cottage pie, lasagne A minimum of 5 sandwiches (meat/fish and vegetarian filling choices) A minimum of 5 salads (meat/fish and vegetarian choices) Selection of hot desserts e.g. fruit crumble and custard Selection of cold desserts e.g. yoghurt, mousse, fresh fruit, cheese and biscuits Beverage
Mid-afternoon & late evening	Beverage +/-snack e.g. Biscuits, cake, fruit and additional sweet and savoury items	Beverage +/-snack e.g. Biscuits, cake, fruit and additional sweet and savoury items

Exceptions to Standard Menu Structure

A la carte menus such as those used for special and therapeutic diets and/or day units do not need to meet the above standards. These menus can often be very infrequently used and/or used in a population of high turnover. Type of meal provided, food storage and ordering procedures need to be carefully considered in these situations. Particular care should be taken to ensure that these menus are designed to provide an appropriate range of options and at all times should be sufficient to avoid menu fatigue.

Menu Planning

Menu planning is the multidisciplinary process of combining menu design and structure to produce a menu. It is recognised that menu planners must achieve the often difficult task of meeting the key dietary requirements of the end users whilst working within the resources available to them. Beginning the process with a multidisciplinary menu planning team should ensure that all key factors are considered from the outset. However, menus need to be deliverable and enticing. There is no nutritional value to meals put on a menu to reduce cost or repetition that are unappealing and unappetising. Focus on nutritious and popular choices that deliver nutrition and patient satisfaction within budgetary constraints.

Key dietary requirements of the population to consider:

- Proportion of nutritionally well vs. nutritionally vulnerable
- Main meal preference at lunch, supper or both
- Need for snacks and type
- Therapeutic diets
- Religious, cultural and personal needs e.g. Halal, vegan
- Common allergies
- Modified texture diets

There should be a local catering and nutrition policy document available.

Operational issues to consider:

- Availability of kitchen space and food storage facilities
- Delivery to site
- Existing staff levels and rosters
- Financial resources
- Food production methods
- Food service equipment
- Kitchen and cost of related equipment (central, satellite and ward)
- Method of distribution and style of service
- Procurement of food
- Service specifications
- Site logistics
- Staff resources
- Staff skill level
- Sustainability
- Total budget per patient meal/day/week
- Type of unit

The Process of Menu Planning

The steps in the menu planning process below are general in nature and remain based on the Guidelines for Hospital Catering (DH, 1995); however they give a good general overview of the steps required and the reasons why menu planning should be a multi-disciplinary process. Food service dietitians continue to use this indispensable and valuable document despite its age.

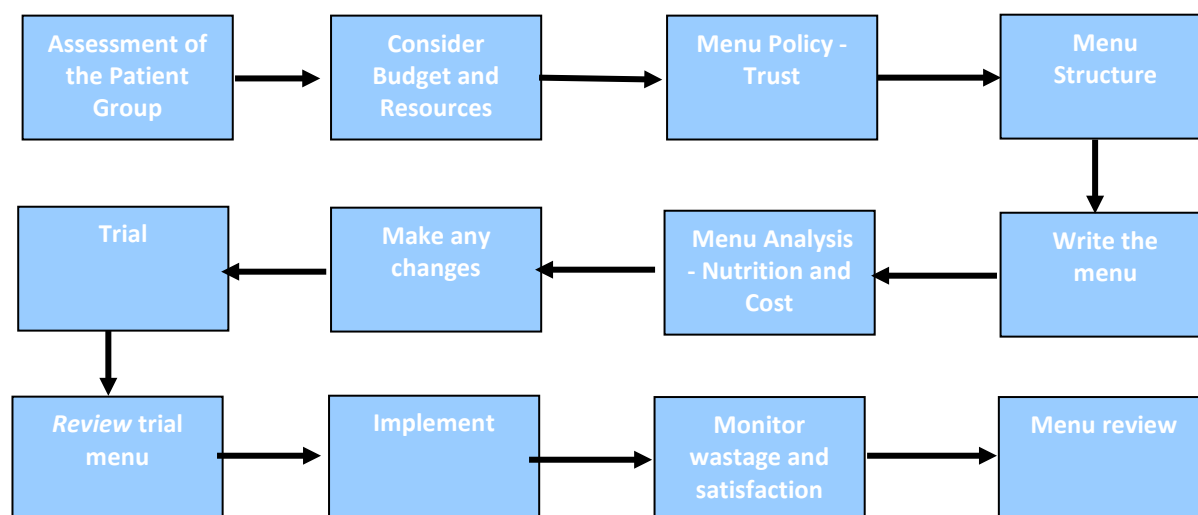


Figure 5: The Process of Menu Planning

Menu planning should involve all those responsible for food provision and its safe delivery. It should start with the Catering Manager and should include an extensive multi-disciplinary team. A team approach will ensure that all stakeholders are involved from the beginning and that all client requirements are met, see figure 6.

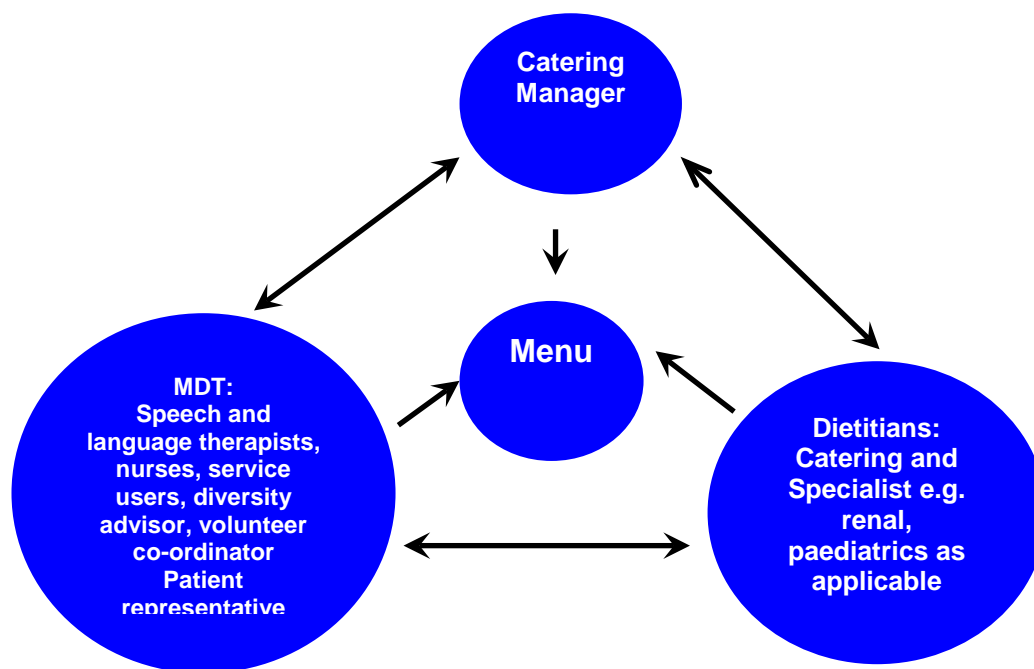


Figure 6: The Menu Planning Multidisciplinary Team

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NHS Choices (2011) The eatwell plate. Available at www.nhs.uk/Livewell/Goodfood/Pages/eatwell-plate.aspx [Last accessed 27/03/12]

Further reading

Food in Hospitals: National Catering and Nutrition Specification for Food and Fluid Provision in Hospitals in Scotland (2008) (Available at <http://www.scotland.gov.uk/Publications/2008/06/24145312/5>) [Last accessed 24/06/12]

Chapter 7 Menu Content

“At least 85% of hospital patients can safely consume most foods”

(Ellia 2005)

Food Based Guidance

Menus should be based on *The eatwell plate* (NHS Choices, 2011). This model is widely recognised and used in many healthcare and educational (health promotion) settings throughout the UK. Using it can provide scope for describing and teaching to a considerable depth, but equally, it can be successfully used by those with only basic training in catering or nutrition. It can accommodate menus designed to meet the needs of the nutritionally well as well as the nutritionally vulnerable and adapted for minority groups. Following the plate model approach will ensure that all nutrients are included to an appropriate level and simplify the task of menu planning.



Figure 7: The eatwell plate

As a **minimum** and in order to ensure that requirements for protein, minerals and micronutrients are met, menus should be able to provide the following each day:

- Fruit and Vegetables 5 servings
- Bread, rice, potatoes and starchy food 5 servings
- Milk and Dairy 3 servings
- Meat, Fish and alternatives 2 servings
- Foods with a high fat or sugar content may be offered but the emphasis will be different depending on individual needs. Choices providing important nutrients should always be given priority. However in the case of the nutritionally vulnerable group, fat and sugar may make a useful contribution to the overall requirements and this should be considered.
- Portion size should be determined locally to meet local standards.

The document Food in Hospitals provides practical food based guidance and support to those responsible for planning menus for any patient or client group (The Scottish Government, 2008).

Menu Based Guidance

The following menu based guidance should support the decisions on actual menu content in relation to food(s) and beverages.

Breakfast

Breakfast is generally a continental style choice to start the day and as a minimum the standard breakfast should offer:

Fruit juice - a range of juices should be offered either as a daily choice or a rotating choice on the menu e.g. pineapple, orange and apple. A cuplet (an 85ml individual serving portion) provides $\frac{1}{2}$ of one portion of the 5 A DAY (two 85ml cuplets in one day would be one portion).

Cereals - a range of cold cereals e.g. cornflakes, rice krispies, branflakes and wheat biscuits, and one hot cereal choice should be offered as a daily choice.

Bread/Toast - the provision of white and wholemeal sliced bread or rolls is set as the minimum standard. Where it is operationally feasible and where quality can be assured, bread should be offered to patients toasted. Patients may choose to have more than one slice of bread.

Unsaturated spread and butter - both to be offered as a daily choice.

Preserves - assorted jam and marmalade, both to be offered as a daily choice.

Nutritionally Well Breakfast

The minimum breakfast menu should provide on average 400kcal and 10g protein, which can be seen in **Table 12: Average Nutritional Content of a Minimum Breakfast**. This is assuming a choice of fruit juice, cereal and milk, bread (one slice), spread and preserve as can be seen in **Table 13 Minimum Breakfast Assumptions**.

Nutritionally Vulnerable Breakfast

A breakfast for a nutritionally vulnerable patient with increased nutritional needs can be supplemented with an extra slice of bread, spread and preserve to exceed targets as outlined in **Table 9: Menu Day Parts for Food and Beverages in Care Settings**. However, not all patients would be able to eat normal or extra quantities so for those with a poor appetite, energy and protein intake could be enhanced by offering pastries or a cooked breakfast as appropriate to the individual patient needs and/or care setting. Food fortification methods such as adding cream, skimmed milk powder to milk, full fat yoghurt, extra sugar, butter or preserves to breakfast choices may also be useful. Food fortification examples can be seen in Chapter 9.

Table 12: Average Nutritional Content of Minimum Breakfast

	Portion size	Portion Kcal	Portion Protein (g)	Average Kcal	Average Protein (g)
Branflakes*	30g	100	3.1		
Cornflakes *	30g	114	2.4		
Rice krispies *	30g	116	1.8		
Weetabix – 2 biscuits **	37.5g	134	4.3		
Ready Brek **	30g	112	3.5	115	3.0
Semi skimmed milk *	100ml	46	3.4		
Whole milk *	100ml	66	3.3	56	3.4
White Bread *	36g	79	2.8		
Wholemeal Bread *	36g	78	3.4	79	3.1
Polyunsaturated spread *	10g	75	0.0		
Butter *	7g	52	0.0	64	0.0
Jam**	20g	50	0.1		
Marmalade**	20g	51	0.1	51	0.1
Fruit juice cuplet **	85ml	35	0.4	35	0.4
Nutritional content of minimum breakfast				400kcal	10g
Food Composition data based on: * McCance & Widdowson The Composition of Foods, 6th edition (FSA, 2002) ** Supplier Data 20 October 2011					

Table 13: Minimum Breakfast Assumptions

Fruit Juice Cuplet	Based on supplier data, average of apple, pineapple and orange juice 85ml cuplet
Cereal	Based on average of each of the above cereals Weetabix = 2 each (37.5g serving)
Milk	Based on average serving of whole and semi skimmed milk
One (1) Slice of Bread	Based on average of 1 x medium slice wholemeal bread and 1 x medium slice white bread
Unsaturated spread/ Butter	1 packet per slice bread/toast
Jam/Marmalade	1 packet per slice bread/toast

Meal Starters

The nutritional delivery of different meal starters will need to be considered at menu planning stage. Menu planners need to meet targets as outlined in **Table 9 Menu Day Parts for Food and Beverages in Care Settings**.

Fruit juice offers a refreshing starter and an 85ml cuplet portion counts towards ½ of one portion of the 5 A DAY (two in one day would therefore be one portion).

Soup is comforting and can stimulate the appetite when served in small portions at an agreeable temperature. For ill people, soup should not be relied upon to deliver significant nutrition, unless it is specifically fortified or is designed as a 'nourishing soup' i.e. one that offers a level of nutrition over and above a standard 'packet soup'. Such a soup will have cost implications. For a soup to be considered 'nourishing' it should provide over 3g protein and 100kcal per serving. Menu planners need to make sure that the general soup choice does not satiate patients who have small appetites. The **following Table 14 Meal Starters Nutrition** provides information for menu planners.

Table 14: Meal Starters Nutrition

	Energy	Protein	Notes
Soup or Fruit Juice	<100kcal	<3g	Minimal protein and calories likely to be a packet soup.
Nourishing Soup	>100kcal	>3g	Designed to provide an adequate source of protein and calories likely to be a chilled, canned or frozen soup but not intended to replace a main course,
Fortified Soup	> 200kcal	7g	Specialist fortified soup mixes for individual patients identified as needing enhanced nutrition

Sandwiches

Sandwiches may be selected as a main meal. The nutritional value therefore should be adequate to meet either a **healthier** choice or a **higher energy** choice, based on the complete meal nutrient standards. A sandwich menu option may require the addition of a side dish e.g. coleslaw, potato salad or crisps, to boost the nutritional value of the meal.

Considerations

Where sandwiches are sourced from a supplier, they need to conform to the British Sandwich Association (BSA) Code of Practice and Minimum Standards (BSA, 2007). The minimum specifications are set out for sandwiches where the BSA 'Mark of Quality' symbol is used. There are no nutritional standards for bought-in sandwiches, these are based on minimum bread and fill weights and do not include any spread. Hence the nutritional content can be surprisingly low (see below). The amount of spread used is likely to be minimal as it functions as a very thin 'seal' between the bread and filling. Depending on the weight of bread and fillings levels of nutrients will vary widely. Based on BSA minimum Standards for bread and filling the following average figures apply:

- Protein: 12g (range 10g – 16g)
- Kilocalories: 225kcal (188 – 289kcal) (does not include spread)
- Average weight: 100g

It is important therefore to consider the fillings and breads to ensure popular and nutritious choices.

Exceptions for Clinical Needs

Sandwiches such as plain ham, chicken or cheese are often required for softer choices; special groups such as older people, children or those on special diets such as light/low residue therefore they will still need to feature on a menu. They therefore need to be considered as exceptions in terms of menu capacity analysis.

Soup and Sandwiches as a Single Meal Option

‘Soup and sandwiches’ may be seen as a cost-effective single meal option and may be used in very limited settings such as day patient units. While this may be a reasonable choice for someone who is nutritionally well, it is difficult to meet the nutritional requirements of nutritionally vulnerable hospital patients and is therefore **strongly discouraged** as a sole choice.

A soup and sandwich single meal option should meet the same locally agreed complete meal targets for both ‘healthier’ and ‘higher energy’ needs but catering services will also still need to provide for specific menu solutions. For example, for those needing various texture modifications, some people on frequently modified intakes such as can occur with some renal diets, for those needing gluten free meals and for the cultural populations served. The cost of incorporating and providing suitable ‘one-off’ items may then become disproportionately high and operationally difficult due to staff shift savings (when rosters are changed to reduce staff costs). There are likely to be both groups of patients and individuals for whom this is not a suitable option, so alternative provision will be required for them, which may further undermine cost-effectiveness.

To provide adequate nutrition, menu choices should include:

- Suitable items for softer, healthier, higher energy and vegetarian choices
- A soup that provides the nutritional levels of a ‘nourishing’ soup, i.e. a minimum of 3g protein and 100kcal per portion
- Sandwich accompaniments to boost the nutritional delivery to the level of a meal, such as crisps and /or mayonnaise-based ‘pot salads’ e.g. coleslaw and potato salad, especially when plain-filled sandwiches are served and where higher energy choices are needed
- The availability of suitable items (or à la carte menus) for people who require texture modification, cultural meals or therapeutic diet choices to meet gluten free, allergy and renal requirements etc.
- For ‘healthier’ choices a green salad accompaniment should be available
- Sandwich choices must be appealing and easily unpackaged to be welcomed and eaten by those to whom the meal is served - some of whom are likely to have poor appetites
- For the overall meal to reach nutritional recommendations, a substantial dessert choice will need to be offered e.g. starchy item such as a fruit pie, served with custard or ice cream /evaporated milk.

Salads

A salad meal is a welcome addition to a menu, especially in summer months. By its very nature a salad may be lower in calories and considered a **healthier eating choice** e.g. tuna or chicken salad, so offering a range of oil-dressed or mayonnaise-based salad accompaniments e.g. coleslaw, potato salad should be considered. Conversely, the salad can provide for a **higher energy** choice if it is based on items such as Cheddar Cheese, Quiche or Scotch egg.

A suitable starchy accompaniment should be offered with all salads e.g. pasta salad, potato and/or bread roll, as a directed choice on the menu. The nutritional value of a main salad meal (protein + green salad +/- side dish + starch) should therefore be adequate to meet either a **healthier** choice or a **higher energy** choice, based on the complete meal nutrient standards.

Vegetables

It is recommended that a choice of two different vegetables should be offered at each mealtime to ensure nutritional variety and choice. Most menu planners plan vegetables at each meal by different colour and texture i.e. one green, one orange/yellow and also one of these as a soft choice (as defined in the standard, special and therapeutic diets chapter) e.g. carrots (soft) and peas or broccoli (soft) and sweetcorn. The minimum portion size for a vegetable serving is 80g (NHS Choices, 2012).

To entice and encourage vegetable consumption, popular varieties should be routinely planned into menus. Higher protein vegetables such as peas and sweetcorn should be planned into cyclical menus when lower protein main courses are a choice as it will improve the overall meal protein value.

Starchy Foods

Starchy carbohydrate accompaniments should complement the main entrée component(s) and this should be considered at menu planning stages. Starchy accompaniments are different densities depending on recipe so it is the overall nutritional delivery of the starchy item that is the most important.

Sauces /Gravy

Sauces and gravy should complement and improve the overall palatability of a meal. They should not be relied on to improve nutritional delivery but more to support people's choices, likes, medical needs and/or overall meal acceptability. For example, offering a slice of lemon and tartare sauce with fish and chips, offering stuffing or Yorkshire pudding with a roast dinner, apple sauce with pork or mint sauce with lamb or extra gravy or sauce to improve the softness of a dish. Be aware that some people do not like sauces of any kind and plainer meals without sauce should also be offered.

Desserts

The nutritional value and eating enjoyment contributed by desserts on a menu is significant. Desserts that offer over 300kcal and 5g protein when served with either custard or ice-cream are very important especially for those individuals who are nutritionally vulnerable. Menus should offer dessert choices that span the scope of **healthier eating** such as fresh fruit, tinned fruit, custard, yoghurt or ice-cream to **higher energy** such as fruit crumble, sponge with chocolate or jam, trifle or crème caramel.

Desserts that make little nutritional contribution such as jelly or sugar free jelly need to be considered within the context of the overall menu choice. They may have a use as part of some special diets but will contribute little to the calorie and protein intake.

Alcohol as a recipe ingredient

Dietitians and caterers are well aware of the adage that alcohol is evaporated during cooking processes. Alcohol is typically an ingredient that enriches the flavour and eating perception of a dish, as well as the enticement of the dish title. However, when alcohol is used in recipes intended for health and care settings, there are some issues to consider.

To ensure that the needs of all people are met, it is good practice to always include the alcohol ingredient in the dish name. That way, there is no uncertainty about whether alcohol has been included as a dish ingredient. Some people, for example, those in liver disease treatment centres or maternity and paediatric units or individuals

whose religious or cultural beliefs prohibit alcohol, will appreciate such transparency and it enables Hospitals which have alcohol-free policies to confidently plan menus suitable for all their clients.

Snacks

At least two (2) snacks a day should be provided, either mid-morning or afternoon and one in the evening. A choice should be offered and they should be suitable for a range of diets spanning from healthier eating to higher energy including modified texture, gluten free and groups such as children and renal. Minimum values for **higher energy** provision for two snacks a day are 300kcal and 4g protein in total. It is important to note that some snacks for those that are nutritionally well will contain a lot less calories than those that are recommended for individuals that are nutritionally vulnerable. This is particularly important for those who are eating normally and would benefit from a **healthier eating choice**. For example, healthier eating choices may include fruit, plain biscuits or plain sponge cake, whereas those for higher energy choices may include muffins, cakes, flapjacks, custard pots, fortified soup or cheese and crackers.

It is desirable to provide a range of snacks that meet all nutritional needs. Where snacks are not routinely provided, the menu will have to be reliable as the sole source of nutritional delivery.

24 hour meal services: snack boxes

The concept of a 24 hour meal service was introduced to the NHS by the Better Hospital Food program in 2001. Hospitals typically offer boxes containing chilled and ambient products with selections from individual wrapped items suited to their round-the-clock food and beverage service arrangements.

As they are a meal replacement, snack boxes should be capable of providing the same level of nutrition as a main meal i.e. a minimum of 15g protein and 300kcal. A suitable higher energy target is c.500kcal. A range of specially designed snack boxes or complete meals should also be available to meet the more common dietary needs e.g. gluten free, renal (as in Chapter 9) and modified textures. These could be in the form of frozen microwavable meals and desserts. For nutritionally vulnerable people, the nutritional value of their 24 hour meal service solution should reflect their increased needs.

Beverages

The HCA's Good Practice Guide (HCA, 2006) recommends offering as a minimum seven beverages over the day. In addition to tea and coffee, squash, cordial, milk-based hot drinks and water must also be readily available. Best practice would be indicated by hot and cold drinks being available at all times.

400ml of milk as a minimum should be allowed for beverages. This excludes milk for breakfast where approximately 100ml should be allocated. Where patients are nutritionally vulnerable whole milk should be provided as standard. Children under the age of 2 years should not be given skimmed or semi skimmed milks.

Menu Assessment Checklist

The following qualitative menu assessment checklist can be used as a practical tool to assess the menu prior to analysing nutritional capacity. It was initially adapted by Sadaf Saied and Anne Donelan for a Workshop; "Menus Fit for Purpose: Developing and Capturing Measurable Outcomes Day"; BDAC 2011

Table 15: Qualitative Menu Assessment Checklist

1	Starches and Carbohydrates	Yes	Identify/highlight/ comment
a	Is there a choice of higher fibre cereals at breakfast?		
b	Is there a choice of lower fibre cereals at breakfast?		
c	Is there a selection of breads available to accompany all mealtimes? e.g. white, wholemeal and/or wholegrain		
d	Is there a healthier plain starchy carbohydrate at each main meal? e.g. boiled potato, rice		
e	Is there a higher energy (i.e. added fat) starchy carbohydrate at each main meal? e.g. chips, roast or creamed potatoes		
f	Is there a softer (easy to chew) starchy carbohydrate at each main meal? e.g. mashed potatoes, soft boiled potato or rice		
g	Are there good sources of fibre available on the daily menu? e.g. wholemeal and wholegrain bread, higher fibre breakfast cereals, a bean or pulse dish, 5 A DAY choices		
2	Fruit and Vegetables	Yes	Identify/highlight/ comment
a	Is the menu capable of providing at least 5 servings of fruit and vegetables throughout the day? This can include composite dishes e.g. lasagne or part portions e.g. fruit juice cuplet.		
b	Are there good/fresh sources of vitamin C available throughout the day e.g. salad, fresh fruit?		
c	Is there a healthier plain cooked vegetable at each main meal? e.g. carrots, cabbage		
d	Is there a higher energy vegetable at each main meal? e.g. baked beans or buttered cabbage		
e	Is there a softer (easy to chew) vegetable at each main meal? e.g. carrots, swede, broccoli		
f	Is there a soft or puree fruit at each main meal? e. g. tinned or stewed		
3	Meat, Fish, Eggs, Beans and other sources of protein	Yes	Identify/highlight/ comment
a	Is a cooked breakfast available for patients on dietetic referral?		
b	Are foods rich in iron offered at least twice per week?		
c	Is the menu capable of meeting government recommendations of 2 portions of fish every week, one of which should be oily?		
d	Are specific sources of Vitamin D included in the weekly menu?		
4	Milk and Dairy Foods	Yes	Identify/highlight/ comment
a	Is 400mls milk for beverages allocated per day?		
b	Is semi skimmed milk available for beverages?		
c	Is whole milk available for beverages?		
d	Is semi skimmed milk available for breakfast?		
e	Is whole milk available for breakfast?		
f	Are milk-based desserts available at each main meal?		

5	Fats and Sugars	Yes	Identify/highlight/ comment
a	Is butter available?		
b	Is unsaturated spread available?		
c	Are standard preserves available?		
d	Are fruit based desserts available at each main meal?		
6	Overall Choice Standard Menu	Yes	Identify/highlight/ comment
a	Is there a higher energy choice available on the menu at each main meal?		
b	Are pastry products available no more than once per course per mealtime?		
c	Is there a healthier eating choice available at each main meal?		
d	Is there a softer (easy to chew) choice available at each main meal?		
e	Is there a hot vegetarian choice available at each main meal?		
f	Are there vegetarian options available, other than cheese and egg-based ones?		
g	Is there significant repetition on the menu during the cycle?		
h	Is the menu capable of meeting the food preferences of the end users?		
7	Other Menus	Yes	Identify/highlight/ comment
a	Are arrangements in place for meeting dietary needs that cannot be provided from the standard menu?		
b	Is there a menu capable of catering for different religious or cultural groups? If not, how are these meals provided?		
c	Is there a menu (s) capable of meeting the needs of specific groups identified through menu consultation?		
8	24 Hour Provision	Yes	Identify/highlight/c omment
a	Is there an out of hours menu?		
b	Is there sufficient provision of fluid and beverages to meet people's hydration requirements?		
c	Are there appropriate snacks provided in-between meals to meet dietary and special needs?		
9	Service Provision	Yes	Identify/highlight/ comment
a	Is there a range of condiments available to complement all meal services? e.g. tomato sauce, brown sauce, vinegar, mustard, salad cream and pepper?		
b	Is suitable gravy/sauce available at all meal services?		
10	Catering Department and Service Information	Yes	Identify/highlight/ comment
a	Is appropriate ingredient information available at point of service?		
b	Is appropriate allergen information available at point of service?		
c	Is appropriate nutrition information available per portion at point of service?		

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Chapter 8 Analysing Menu Capacity

Menu analysis requires an understanding of menu design, structure, planning and content. It is not all about number crunching; both qualitative and quantitative aspects of menus are equally important.

This section illustrates two worked examples based on multi choice standard menus to meet the individuals' needs covering the nutritionally well to the nutritionally vulnerable. Both examples illustrate how the Minimum/Maximum method of menu analysis is used to achieve this.

Table 16 depicts a sample day from a 2 week cyclical menu.

Table 17 depicts a sample à la carte menu.

Dietitians can apply the method used in these examples to evaluate the range and capacity of their menus. Analysing menu capacity helps to provide satisfactory evidence that the menu is capable of delivering the menu day parts recommended percentage for the major nutrient markers i.e. energy (e) and protein. (See chapter 5)

Methodology

- 1 A minimum choice for the nutritionally well may be calculated in the following way:
 - Breakfast: Select the appropriate energy and protein from Table 9 (Chapter 5) and insert under breakfast
 - Snacks and beverages: Select the appropriate energy and protein from Table 9
 - 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 In table 16, a starter + main meal (entrée, carbohydrates, vegetables) + cold dessert / fruit at lunch and a hot main meal (entrée, carbohydrates, vegetables) + cold dessert has been chosen as the possible lowest kcal choices replicating a possible realistic choice (see Table 16a).
- 4 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 9
 - 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
- 5 Analysing 3 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 option remain the same. The worked examples illustrate the day parts approach. They can be adjusted to suit different circumstances.
- 6 When analysing menus for a healthcare setting it may be beneficial to analyse 3 lowest and 3 highest meal choices for minimum/maximum examples to give a more realistic span replicating the average length of stay in an acute care setting. This figure is intended as a guideline and would need to be agreed with the menu review team.

- 7 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 (Bingham, 1987).

The following worked examples show how this process of menu capacity analysis can be applied to a cyclical and an à la carte menu. The choices shown provide the highest possible kcal combination illustrating one possible realistic choice (see Table 16a).

Table 16 shows a worked example of a day to demonstrate menu capacity for energy and protein from a cook freeze production cycle menu (menu A).

Table 16: Worked Example from Cyclical Menu - Menu A

Menu structure	Menu items	Portion Size	Energy (kcal) / portion	Protein (g)	E	♥	V	S
Breakfast								
	Breakfast for Nutritionally Well (Table 9)	Varies	400	10	E			
	Breakfast for Nutritionally Vulnerable (Table 9)	Varies	485	12				
Lunch								
Starter	Fruit juice**	85ml	40	0.4	E	♥	V	S
	Nourishing Cream of leek & potato soup**	140g	165	6				
	Tomato Soup**	142g	70	2	E		V	S
	Bread Roll White*	45g	121	4				
	Butter Portion*	7g	52	0	E			S
Main meat	Lancashire hotpot**	216g	311	16	E			
Main vegetarian	Spinach & ricotta ravioli in cheese sauce**	167g	241	10				
Sandwich 1	Egg mayo sandwich (wholemeal) ***	140g	351	13	E	♥	V	S
Sandwich 2	Salmon & cucumber sandwich (white) ***	150g	331	15				
Gravy	Gravy **	71ml	27	0	S			
Carbohydrates	Sauté potatoes**	113g	145	3	E		V	
	Creamed potato**	113g	121	3				V
Vegetables	Sliced carrots**	113g	21	1	E	♥	V	S
	Sweet corn**	113g	126	5		♥	V	
Cold desserts	Strawberry cheesecake**	90g	223	3	E		V	
Ice cream	Clotted cream vanilla ice-cream**	85g	134	3				
Yoghurt	Low fat yoghurt**	100g	89	5				S
Fresh seasonal fruit	Average selection (banana, apple, pear, orange) *	100 - 120g	55	1				♥
Cheese & biscuits	Crackers (12g) + butter portion (7g) + cheese* portion (20g)	41g	198	6			V	
Supper								
Main meat	Potato & tuna bake**	233g	255	15	E	♥		S
Main meat	Hungarian beef goulash and dumplings**	186g	214	16				
Main vegetarian	Harvest vegetable pie**	251g	372	11			V	
Main salad	Ham salad (protein+ coleslaw+ fresh salad) *	240g	307	14				
Main salad	Vegetarian quiche salad (quiche+ coleslaw+ fresh salad) *	405g	434	10			V	
Carbohydrates	Creamed potato**	113g	121	3	E		V	S
	Potato Wedges**	113g	182	4				V
	Bread roll with butter portion*	45g +7g	173	4			V	
Vegetables	Peas**	113g	78	7	E	♥	V	
	Broccoli**	113g	35	4	E	♥	V	S
	Side Salad*	85g	13	0		♥	V	
Gravy	Gravy**	71ml	27	0	S			

Desserts						
Hot dessert	Jam & coconut sponge**	100g	337	5	E	V
Custard	Custard**	113g	101	2	E	V S
Hot pudding	Rice pudding**	156g	176	4	♥	V S
Yoghurt	Full fat yoghurt**	110g	130	5		V S
Cold dessert	Chocolate mousse*	110g	113	3		S
Fruit in natural juice	Fruit in natural juice*	113g	55	0	♥	V
Other menu day parts						
2 snacks	Snacks for nutritionally well	Varies	150	2	E	
	Snacks for nutritionally vulnerable	Varies	300	4		
7 Beverages (semi-skimmed)	400 ml milk for drinks including evening milky drink	400ml	184	14	E	
7 Beverages (full fat)	400 ml milk for drinks including evening milky drink	400ml	264	13		

Data source:

* In house items + cold items /drinks calculated by Wisp nutritional analysis software v3 based on McCance & Widdowson

**Tillery Valley Foods Real Time Technical CD-Rom v.2011.1

***Sandwich & salads: third party food supplier data - chilled production

E = Higher Energy ♥= healthier V = vegetarian S = softer

NW = nutritionally well NV = nutritionally vulnerable

Table 16a: Nutritional Breakdown Minimum/ Maximum Choice Menu A

Daily Minimum Nutrition Choice	Total energy (kcal)	Total protein (g)
<p>Non vegetarian, nutritionally well</p> <p>Fixed = Breakfast (400; 10) +snacks (150; 2) + beverages (semi skimmed) (184; 14) (734; 26) 42 % of daily E based on menu day parts</p> <p>Daily variable lunch = starter (fruit juice) + main entrée (Spinach and ricotta ravioli in cheese sauce) + carbohydrate (Creamed potato) + vegetables (sliced carrots) + gravy (optional) + fruit (505; 15) 29 % of daily E based on menu day parts</p> <p>Daily variable supper = main meal (Hungarian beef goulash and dumplings) + carbohydrate (Creamed potato) + vegetables (Broccoli) + gravy + cold dessert (Chocolate mousse) (510; 26) 29 % of daily E based on menu day parts</p>	1749	67
Daily Maximum Nutrition Choice In Table 16	Total energy (kcal)	Total protein (g)
<p>Non vegetarian, nutritionally vulnerable</p> <p>Fixed=Breakfast (485; 12) + snacks (300; 4) + beverages (264; 13) (1049; 29) 33 % of daily E based on menu day parts</p> <p>Daily variable lunch=starter (Nourishing Cream of leek and potato soup) (bread roll) (butter portion) + main entrée (Lancashire hotpot) + carbohydrate (Sauté potatoes) +vegetables (Sweetcorn) +gravy +dessert (Strawberry cheesecake) (1170; 37) 36 % of daily E based on menu day parts</p> <p>Daily variable supper = main meal (Potato & tuna bake) + carbohydrate (Potato Wedges) + vegetables (Peas) + gravy + hot dessert (Jam & coconut sponge) + custard (980; 33) 31 % of daily E based on menu day parts</p>	3199	99
Daily average nutrition menu capacity	2474	83
<p>Daily lighter cold choice indicated in table 16</p> <p>Fixed = NW Breakfast (400; 10) +Snacks (150; 2) + beverages (184; 14) (734; 26) 39 % of daily E based on menu day parts</p> <p>Daily Variable Lunch</p> <p>Nourishing Soup (Nourishing Cream of leek and potato soup) + sandwich (Egg mayo sandwich) + dessert (cheese & crackers) (714; 25) 38 % of daily E based on menu day parts</p> <p>Daily Variable Supper</p> <p>Salad (Ham Salad) + dessert (full fat Yoghurt) (437; 19) 23 % of daily E based on menu day parts</p>	1885	70

Table 17: Worked Example from à la carte Menu - Menu B

Menu structure	Menu Items	Portion Size	Energy (kcal) / Portion	Protein (g)	E	♥	V	S
Breakfast								
	Breakfast for Nutritionally Well (Table 9)	Varies	400	10				
	Breakfast for Nutritionally Vulnerable (Table 9)	Varies	485	12	E			
Lunch & supper								
Starter	Fruit Juice *	85ml	40	0.4		♥	V	S
Soup	Leek & Potato Soup **	130g	102	3	E		V	S
Soup	Minestrone Soup **	140g	46	1		♥	V	
Bread roll	Bread Roll White *	45g	121	4			V	S
	Unsaturated spread or butter Portion*	7g	52	0	E			S
Main meals								
Meat 1	Beef Lasagne served with Broccoli florets **	350g	552	38	E			
Meat 2	Spaghetti Bolognese with ricotta cheese **	340g	463	26		♥		
Meat 3	Shepherds Pie with baton carrots and peas **	330g	328	22		♥		
Meat 4	Lancashire Hotpot served with steamed cabbage **	320g	386	26		♥		
Meat 5	Pork & Herb Meatloaf with ratatouille, roast potatoes, green beans **	425g	501	20	E			
Meat 6	All day breakfast with potatoes and baked beans **	360g	509	26	E			
Meat 7	Roast Chicken with stuffing, roast potatoes and broccoli**	385g	421	35		♥		
Meat 8	Chicken and mushroom pie served with creamy mash and green peas **	336g	548	18	E			
Fish 9	Fish and chips served with mushy peas **	320g	511	20	E			S
Fish 10	Fish in parsley sauce with creamed potato, carrots and diced swede **	390g	525	25	E	♥		S
Fish - oily 11	Salmon in cheese sauce with mashed potatoes and broccoli **	370g	511	40	E			S
Vegetarian 12	Cheese omelette with parmentier potatoes and green peas **	360g	504	22	E			
Vegetarian 13	Vegetable Curry with rice, onion bhaji and mango chutney **	380g	535	13	E	♥	V	
Vegetarian 14	Jacket Potato with cheese and beans **	310g	341	14		♥	V	
Vegetarian 15	Macaroni cheese **	300g	530	24	E		V	S
Vegetarian 16	Vegetable Casserole with potatoes dumpling and vegetable medley **	410g	321	12			V	

Cold options		Sandwiches available on both white and wholemeal bread							
Sandwich 1	Beef Sandwich ***	138g	212	15	Av 292kcal 15g P				
Sandwich 2	Chicken Mayo ***	129g	332	18					
Sandwich 3	Turkey Salad ***	194g	255	16					
Sandwich 4	Cheese & tomato ***	140g	340	15					
Sandwich 5	Egg Mayo Sandwich ***	160g	321	11					
Salad 1	Ham Salad (protein+ coleslaw + fresh salad) *	240g	307	14	Av: 331kcal 16g P				
Salad 2	Tuna Salad (protein + rice salad +fresh salad) *	245g	213	18					
Salad 3	Vegetarian Quiche salad (Quiche+ coleslaw + fresh salad) *	405g	434	10					
Salad 4	Cheddar cheese salad (protein + potato + fresh salad) *	230g	462	17					
Salad 5	Chicken salad + (protein + pasta+ fresh salad) *	245g	239	21					
Gravy	Gravy*	71ml	27	0					S
Desserts									
Hot dessert 1	Apple Crumble **	130g	279	3	E		V		
Hot dessert 2	Bread & butter pudding **	130g	309	8	E		V		
Hot dessert 3	Lemon sponge **	100g	287	3	E		V		S
Hot dessert 4	Sticky Toffee Pudding **	115g	488	5	E		V		S
Hot dessert 5	Jam Sponge **	100g	282	3	E		V		S
Hot dessert 6	Chocolate sponge with chocolate sauce **	100g	274	6	E		V		S
Hot dessert 7	Syrup sponge **	100g	320	3	E		V		S
Custard	Custard *	110g	83	2			V		S
Cold dessert 1	Rice Pudding (Hot or Cold) **	160g	167	5		♥	V		S
Cold dessert 2	Plain Jelly *	120g	60	2					S
Yoghurt	Full Fat Yoghurt**	110g	130	5			V		S
Fresh fruit	Selection of fruit (banana) *	100g	95	1		♥	V		S
Fruit in natural juice	Selection of fruit cocktail, pears, peaches and pineapple in natural juice *	120g	41	0		♥	V		
Cheese & biscuits	Crackers (12g) + butter portion (7g) + cheese portion (20g) *	41g	198	6			V		
2 snacks	Snacks for Nutritionally Well	Varies	150	2					
	Snacks for nutritionally Vulnerable	Varies	300	4	E				
7 Beverages (semi-skim)	400ml milk for drinks including evening milky drink	400ml	184	14					
7 Beverages (full fat)	400ml milk for drinks including evening milky drink	400ml	264	13	E				

Data Source:

* In house items / cold items /drinks calculated by WISP nutritional analysis software V3 based on McCance & Widdowson

** Anglia Crown "Crown Cuisine range" nutrition analysis October 2011

***Sandwich & Salads: Third party food supplier data.

E = Higher Energy

♥= healthier

V = vegetarian

S = softer

NW = nutritionally well

NV = nutritionally vulnerable

Table 17a: Nutritional Breakdown Minimum/ Maximum Choice Menu B

Daily Minimum Nutrition Choice in Table 17	Total energy (kcal)	Total protein (g)
<p>Fixed = Nutritionally Well Breakfast (400; 10) +Snacks (150; 2) + beverages (184; 14) (734; 26) 42 % of daily E based on menu day parts</p> <p>Daily Variable Lunch = Starter (fruit Juice) + Complete Meal (Shepherd's Pie with baton carrots and peas) + Gravy + Fresh Fruit (banana) (490; 23) 28 % of daily E based on menu day parts</p> <p>Daily Variable Supper = Starter (Minestrone Soup + roll) + Complete Meal (Vegetable casserole with potatoes dumpling and vegetable medley) + Fruit in natural juice (529; 17) 30 % of daily E based on menu day parts</p>	1753	66
Daily Maximum Nutrition Choice in Table 17	Total energy (kcal)	Total protein (g)
<p>Fixed= Nutritionally Vulnerable Breakfast (485; 12) + Snacks (300; 4) + Beverages (264; 13) (1049; 29) 30 % of daily E based on menu day parts</p> <p>Daily Variable Lunch=Starter (Leek & Potato Soup + roll + butter) + Complete Meal (Beef Lasagne served with Broccoli florets) + Gravy + Hot dessert (Sticky Toffee Pudding) + Custard (1425; 52) 41 % of daily E based on menu day parts</p> <p>Daily Variable Supper = Complete Meal (Chicken and mushroom pie served with creamy mash and green peas) Gravy + Hot Dessert (Syrup sponge) + Custard (978; 23) 29 % of daily E based on menu day parts</p>	3452	104
Daily Average Nutrition Menu Capacity	2647	85
Daily Lighter Cold Choice Indicated in Table 17	Total energy (kcal)	Total protein (g)
<p>Fixed = NW Breakfast (400; 10) +Snacks (150; 2) + beverages (184; 14) (734; 26) 41 % of daily E based on menu day parts</p> <p>Daily Variable Lunch Nourishing Soup (Leek & Potato Soup) + Av sandwich + dessert (rice pudding) (561; 23) 31 % of daily E based on menu day parts</p> <p>Daily Variable Supper Fruit Juice + Average Salad + cold dessert choice (yoghurt) Note: Salad Dressing can enhance the energy /nutrition of salads 501) 28 % of daily E based on menu day parts</p>	1796	70
<p>Daily Vegetarian Choice</p> <p>Fixed = NW Breakfast (400; 10) +Snacks (150; 2) + beverages (184; 14) (734; 26) 31 % of daily E based on menu day parts</p> <p>Daily Variable Lunch = Starter (fruit juice) + Lighter choice (Jacket Potato with cheese and beans) + Vegetarian hot dessert (bread and butter pudding) + custard (773; 24) 33 % of daily E based on menu day parts</p> <p>Daily Variable Supper = Starter (Minestrone soup + butter + roll) + hot complete meal (Vegetable Curry with rice, onion bhaji and mango chutney) + cold dessert (fruit) (849; 19) 36 % of daily E based on menu day parts</p>	2356	69

- Table 17 shows a sample average calculation of various combinations achievable through menu analysis depicting the capacity of à la carte style menu. It shows that it meets the nutrient targets target per day spanning from 1810- 2625kcal and 56-75g Protein adopting the day parts approach
- The sample calculation shown in Table 17 is one of the minimum / maximum choices possible illustrating the values for the extremes of the menu and the rest of the menu choices are based on the assumption that the values of kcal and protein would lie in-between these 2 extremes replicating potential choices.
- The sample menu in Table 17 demonstrates that an average complete meal reached the approximate minimum target of 500kcal and a maximum of 800kcal at lunch and supper through (starter, main meal, gravy and a dessert option). While choosing healthier options like fresh fruit may decrease the calorie and protein capacity of the menu, it may replicate the choice of a nutritionally well person who is on a healthier diet plan.

Menu Analysis Handy Hints

- It is important when performing menu analysis that the source, method and limitations are clearly explained as menu analysis figures provide documentary evidence of compliance to nutritional standards and targets, such as CQC's Outcome 5: Meeting Nutritional Needs (CQC, 2010) (England).
- Different methods can yield different results
- Menu software packages exist which can link into central Hospital healthcare databases and help calculate the patient intake for the day from the uptake of menu choices along with the wastage figures
- Whether this exercise is done by hand or a sophisticated menu analysis software package is used, these need to reflect possible real life choices

Useful documentation

The following documentary evidence can be used to demonstrate compliance with standards, service agreements and local/national targets:

- Copies of written menu cycle for standard and à la carte menus in a healthcare setting. Provide evidence that the menu structure is capable of meeting peoples' diverse needs
- The menu checklist (See Chapter 7) may provide documentary evidence that the menu has been assessed for micronutrients
- The menu analysis figures provide evidence that the menu is nutritionally balanced.

References

Bingham, S. (1987) The dietary assessment of individuals; methods, accuracy, new techniques and recommendations. *Nutrition Abstract Reviews*; **57**:705-742

CQC (2010) Essential Standards of Quality and Safety. Available at http://www.cqc.org.uk/sites/default/files/media/documents/essential_standards_of_quality_and_safety_march_2010_final_0.pdf [Last accessed 27/03/12]

Further reading

Biro, G., Hulshof, K., Ovesen, L., and Amorim Cruz, J. (EF-COSUM group) (2002) Selection of methodology to assess food intake. *European Journal of Clinical Nutrition*; **56**: S25-S32

Chapter 9 Standard, Texture Modified, Cultural and Therapeutic Diets

“All special diets should be based upon the normal requirements of the individual.... If one food substance must be restricted, the diet must in all other respects be adequate”

Rose Simmonds, Handbook of Diets (1937)

Food and Beverage Dietary Descriptors

At least 85% of hospital patients can safely consume most foods (Elia, 2005). The standard menu should meet the nutritional needs of the majority of the population. Other menus for special or therapeutic diets and for special patient groups can be met generally by an à la carte menu or a cyclical menu.

Table 18: Food and Beverage Dietary Descriptors

Standard Diets	Meet the nutritional needs of the majority of the population spanning nutritionally vulnerable and nutritionally well.
Modified Texture Diets	Modifications to the types and textures of foods needed by individuals who have oro-pharyngeal dysphagia and meet the Dysphagia Diet Food Descriptors (NPSA, 2012).
Religious Cultural and Vegan	Cultural or religious including vegan and meeting reasonable personal preferences.
Therapeutic Diets	Modifications as a prescribed part of the treatment of a medical condition.
Test or Investigation Diets	Temporary diets.
Specific Patient Groups	Nutritional requirements will vary from the standards specified.

Standard Diets

The following standard diets must be met by the standard menu. See chapter 10 for further information.

Healthier Eating

Healthier eating is particularly important to maintain good general nutrition and meet DRVs. Healthier eating is for people who are eating normally and for the dietary management of metabolic syndrome, diabetes mellitus, dyslipidaemia, cardiovascular risk, overweight and obesity and hypertension. Such choices on the standard menu are also important as they serve as educational tools for health promotion (BDA, 2006; Scottish Government, 2008). Further details to support the clinical and dietary management of the above conditions are given below.

Cardiovascular Disease and Hypertension

Not all hospital episodes of care will have an impact on nutritional requirements. Clinical management for conditions including cardiovascular disease and hypertension has an essential dietary dimension, which can contribute to preventing further co-morbidities. These requirements should be supported by the standard menu since recommendations for each of the above conditions are in line with healthier eating advice to the normal population.

Where food intake may be reduced below normal due to the nature of the current illness or admission to a hospital or care facility, maximizing food intake takes priority over the nutritional content of food eaten. With this in mind, it is important that people are offered menu choices that are higher in fat and/or sugar than they would usually be encouraged to eat.

Diabetes

The coding of menus suitable for people with diabetes needs some consideration. This should be agreed at a local level involving the diabetes services for both children and adults. With modern day treatments and education programmes for diabetes it is no longer appropriate to talk about a 'diabetic diet' as dietary advice and meal patterns should be tailored towards the individual.

Historically health and social care providers may have coded their menus with a **D = Suitable for people with Diabetes** and some providers may still use this code. This code normally represents items on the menu which are restricted in fat content, saturated fat, added sugar, sodium / salt and possibly energy and this is suitable for the majority of people who have diabetes and are advised to follow the type of healthy balanced diet recommended for the general population (NHS Choices, 2011). However for some people in hospital who have diabetes this type of diet, which may be restricted in energy would not be appropriate, particularly if they have been identified as being 'at higher nutritional risk' and so following such a diet may add to their level of nutritional risk. The assessment of individual patients on admission to hospital and at regular intervals is important to ensure that a Dietary Code on the menu is used appropriately.

Diabetic foods are no longer needed as part of a diabetic diet, however added sugar and carbohydrate content should be considered when assessing suitability of desserts for individual people. Ice cream, for example, can be a contentious subject. Plain ice cream may be eaten as a dessert although it would contribute little value (nutritionally) containing no fruit or fibre benefits apart from some gum type stabilisers, and milk does not feature prominently in the list of ingredients. Despite this, the usual portion sizes of most ice creams used in the care and healthcare sectors would be sufficiently low in sugars, fats and sodium to enable them to be coded 'healthier eating' in terms of the cut-offs (DAFNE, 2012).

The aim of the treatment and management of diabetes is to ensure that people with diabetes are empowered to enhance their personal control over the day-to-day management of their diabetes in a way that enables them to experience the best possible quality of life. This along with the development of new technologies which support the treatment of diabetes (insulin pump therapy, multiple injections, new insulins and other medications) has led to the development of education programmes for people with diabetes (for example, DAFNE, DESMOND, X-PERT) (2012), which support empowerment and greater self-management of their condition by the individuals themselves (NICE, 2008). Some people with diabetes are 'Carbohydrate Aware' and adjust their medication according to the amount and type of carbohydrate they eat. A 'Diabetes Code' on the hospital menu would be inappropriate for these patients who need to adjust their medication according to the food they have chosen to eat.

Service providers therefore need to consider and agree the best approach to this with their local diabetes teams to ensure that the coding on the menus is consistent with the methods used locally in education for both adults and children with diabetes so that there is continuity of care during a hospital stay. A suggested approach would be to ensure that menu information on the carbohydrate content of items on the hospital menu is readily available for people with diabetes who are 'carbohydrate aware', so they can continue to self-manage their diabetes. This could also be supported by the national Think Glucose Campaign, which aims to support hospital hospitals to deliver a clinical pathway that improves the management of patients with diabetes as a secondary diagnosis. It is also a useful route for supporting and promoting any patient information resources produced by dietitians or mobile phone applications that provide details of carbohydrate and energy content of various foods.

An example of how this is to be applied to the hospital menu for adults is at Leeds Teaching Hospitals NHS Trust and can be seen in Chapter 10: Dietary Coding.

We are grateful to Diane Spalding and colleagues at Leeds Teaching Hospitals NHS Trust for their contribution to this section.

Obesity

Given the increasing prevalence of obesity among children and adults, it is likely that many people will be overweight or obese. Whilst the needs of individuals may vary, some general principles apply.

The most preferable menu option for most obese people will be the healthier eating choice. However, people cannot be forced to choose it, although they should be made aware that it is the most appropriate option. For some obese people, it is likely that eating from the hospital menu will result in lower energy intake than is usual for them.

Sensitive guidance about suitable snack foods and drinks should also be given to overweight and obese individuals and their visitors, to minimise the possibility that high calorie food and drink snacks will be given to them.

Those who are overweight or obese are likely to have at least one co-morbidity, which may affect their nutritional requirements.

The nutritional status of all overweight and obese individuals should be regularly monitored, in line with the accepted practice recommended by the tool used to assess nutritional status. The principle that it is possible to be undernourished with regard to vital nutrients, while carrying excess body fat, applies. Likewise, it is possible that an overweight person may already have lost or be losing substantial body weight, and still be classified as overweight.

Bariatric patients will be covered under the specific guidance of the bariatric unit, with the advice and guidance of the bariatric team including the dietitian; this group falls outside of the scope of this guidance.

With overweight children, the general principle of ensuring the availability of familiar foods, whilst avoiding encouraging unhealthy habits, should be applied. For children over the age of 5 years, general healthy eating principles apply, although any special dietary requirements resulting from medical conditions will take priority.

We are grateful to the Hilda Mulrooney and BDA Dietitians in Obesity Management (DOM UK) Specialist Group for their contribution to this section.

Higher Energy

Higher energy diets are particularly important to improve general nutrition and exceed DRVs based on the British Association of Parenteral and Enteral Nutrition (BAPEN) suggested amendments (Allison, 1999). Higher energy choices should promote energy intake for people with small or poor appetites and for those with higher requirements. (BDA, 2006) Foods can be fortified with prescribable products which are used on the advice of the dietitian. Food items such as cream and butter can also be used to fortify and a list of suggestions can be found in Appendix 3.

Vegetarian

Vegetarian choices for those following a lacto-ovo vegetarian diet must be available on the standard menu. A lacto-ovo vegetarian diet excludes all meat, poultry, fish and ingredients or products derived from these e.g. gelatine and rennet. Eggs, milk and dairy products are suitable. (BDA, 2006; The Scottish Government, 2008).

Softer choices

Softer choices must be available on the standard menu. Anyone in the hospital population may like to choose items that are more easily managed and providing such choices on the menu is important for those with simple chewing difficulties or problems with conveying food from plate to mouth, where the swallow is normal and there are no neurological or other problems that adversely affect the ability to swallow safely.

For example, people who:

- Have difficulty coping with firm foods, due to problems such as no teeth, poor teeth, badly fitting dentures or sore mouths
- Tire easily
- Have related physical problems or other disabilities that affect their ability to easily manage food.

The softer choice is applied from a catering perspective, and not from a clinical perspective. The softer code should be used to indicate suitable dishes for people who want to choose foods that can be readily managed and eaten.

Softer meal codes do not indicate dishes appropriate for clinically at risk dysphagic people, for whom suitable items should be determined by the Hospital dysphagia management multidisciplinary/clinical care team and in line with the Hospital food and nutrition policy where applicable.

Softer coding refers to items that are typically soft or moist and /or in bite-sized pieces and /or that can be mashed with the back of a fork i.e. they have **some** of the attributes of fork-mashable Texture E (see Modified Texture Diets below for more information). When serving a meal, care should be taken to ensure that the patient is offered the most easily eaten part of the dish, suitable for their individual needs, and which is best served with a gravy or sauce to moisten.

Finger Foods

When planning menus for children or certain groups, offering finger food choices that can be easily eaten with dignity but without cutlery, using the hands instead, can improve food intake. Hand hygiene is an essential part of preparing a finger food meal or snack. As some may also have chewing or swallowing difficulties, items must be safe for their capability. Some people are content to take a long time over eating finger foods, and this can be accommodated by serving foods picnic-style in appropriate containers.

Cold items such as sandwiches, cakes, sausages rolls and chopped prepared fruit are obvious examples of finger foods and especially useful for between meal snacks. Although at mealtimes dry foods are obvious choices, they may lack the moistness and flavour of products cooked and served in gravy or sauce. Moist products need to be served carefully, e.g. fruit cocktail drained of juice, meatballs drained of sauce. Some enjoyable items require vigilant hand care if they are sticky or coloured e.g. tomato and cheese pizza slices or quiche fingers. Drained roast meats are best served rolled, and some other items are better cut into smaller pieces e.g. bacon, chicken or fish goujons, omelette strips, fish cakes, jacket and boiled potatoes. Care should be taken to serve hot finger foods at a comfortable/suitable temperature e.g. chips, sausages, cooked carrot fingers, Bakewell tart.

Modified Texture Diets

The standard terminology to be used by all health professionals and food providers in care settings is given in the Dysphagia Diet Food Descriptors (NPSA, 2012). These were developed under the auspices of the National Patient Safety Agency as a result of clinical incident reporting. This was done by a cross-professional Dysphagia Expert Reference Group in association with Cardiff and Vale University Health Board. As the scientific evidence in this field is limited, they are based on the best available current evidence on texture descriptors produced internationally and are a consensus of expert opinion. The Descriptors are endorsed by the BDA, Royal College of Speech and Language Therapists (RCSLT), HCA and National Nurses Nutrition Group (NNNG) and are the gold standard for all those providing texture modified foods in health and care settings.

The Descriptors define the types and textures of foods needed by individuals who have oro-pharyngeal dysphagia (swallowing difficulties) or who are at risk of choking or aspiration (food or liquid going into the airway). There are specific standards for each texture B, C, D and E and Audit checklists to measure food against the standards for each texture are provided (NPSA, 2012).

Some people may require specific modification, which should be prescribed on an individual basis by a Speech and Language Therapist (SLT), following an individual assessment.

In general terms, it is expected that all care settings will have two available textures:

- C (thick puree dysphagia diet)
- E (fork mashable dysphagia diet)

These are best provided by specially designed à la carte menus that complement the main menu choices. People who are clinically at risk should be provided with a suitable menu after their assessment by a SLT. It is the role of the dietitian to ensure that suitable choices are available, including snacks, to provide the necessary daily nutrition within budget and planned in liaison with the catering and care staff.

Unless the resulting product is highly processed or sieved, texture modification may not be uniform due to the natural variability of foods, the method of processing and the temperature at which the food is served. Consistency of texture modified foods varies due to the base components, e.g. the texture of carrots and macaroni cheese will modify more smoothly than fish (muscle fibres) and peas (husks). When prepared from fresh ingredients texture modified products, in common with all foods, can differ slightly according to batch, variety and season.

Dietitians, speech and language therapists, nurses and caterers should work closely to ensure that people have the most appropriate and safe texture suitable for their swallowing abilities.

Cultural and Personal Diets

The following special diets are typically met by separate à la carte menus.

Cultural and Religious

Food is an important element of many religious faiths and cultural practices. The role of food and drink is complex and varies among individuals and communities. Seeking the guidance of a local religious or cultural advisor is strongly recommended. Be mindful that food practices and preferences are highly individual choices that can vary enormously between people of the same faith, especially those developed within families who have

adapted to living in western societies. There is no 'one size fits all' solution. A wide variety of sound information is accessible online.

In any care setting, menus must meet the diversity and equality needs of the population and must be understandable.

CQC (2012) Regulation 14 (England) requires that all religious, cultural and nutritional needs are to be met, hence the same nutritional standards apply to dishes and menus based on out-sourced specialist cultural menus. It is usual for these to be offered through an à la carte menu. There are a wide diversity of dishes and ingredients to be considered, which may pose unexpected challenges when composing menus, e.g. some vegetable-based dishes can be below protein and calorie minimum levels whereas some individual meal portions may be unexpectedly large; 'all-purpose seasoning' used in Caribbean cuisine is high in sodium.

The application of the terms KOSHER and HALAL can only be applied to permitted animal products or their dishes that have been correctly handled throughout the food chain. When serving cultural meals, staff must be trained to food service standards akin to those applied to 'allergy meals' so as to avoid unacceptable cross-contamination. Many people with dietary concerns can be suspicious of the food served in hospital (or of any food they have not prepared themselves). Hence appropriate labelling of hospital food is vital to help them feel safe and secure that whatever they are choosing does not contain any 'forbidden' ingredients.

The term 'Halal' cannot be applied to any foods that may contain gelatine or other ingredients derived from pork and non-Halal meats, e.g. mousses, jellies, trifles, cheesecakes etc., as these products would not qualify as Halal. However, it is unlikely that any menu items would be labelled as 'Halal vegetarian' - although vegetarian and vegan dishes may provide an acceptable alternative for a Muslim choice.

Labelling issues and cultural meals

Labelling that informs and respects differing views on animal slaughter is currently under discussion by the European Parliament (2011). The core issue is one of animal welfare and whether humane stunning takes place prior to slaughter. However, for both Jewish and Muslim faiths the slaughter is only viable if undertaken using correct slaughter rituals which include prayer, such as practiced by Jewish Shechita and Muslim Sharia law.

The majority of Halal meat available for purchase in the UK is stunned before slaughter. Prior stunning, as long as the animal is not killed, does not necessarily make the meat unacceptable to all members of the Muslim faith. However, there has been a recent rise in demand for Halal meat which is not stunned prior to slaughter. There are differences between members of the Sikh community as to whether the consumption of meat is permissible. Baptised Sikhs follow lacto-vegetarian eating habits whilst others may or may not eat meat. For the meat-eating population, most will avoid eating beef, but there are varying views as to acceptable slaughter methods. Some Sikhs prefer not to eat Halal meat as the principles of killing the animal does not agree with the principles of the Jutkha method of killing, which simply means 'quick killing' - as fast as possible so the animal suffers the least pain. Many westerners have similar moral concerns about humane butchery issues.

There are an increasing number of different bodies of various sizes and powers that provide monitoring of the different slaughter methods. This is why it is so important to seek out local expert knowledge and to be conversant with local practice.

Vegan

Vegan diets exclude all forms of meat, poultry and fish as well as any ingredients or products derived from these i.e. milk, eggs, cheese, sometimes honey, and animal based food additives such as lecithin or whey. Pulses, nuts,

tofu, fruit and vegetables, cereals and fortified soya milk are suitable. Being vegan is usually a personal choice, often due to religious, ethical or cultural reasons. Cruelty on farms is also cited as a reason. Vegan diets must be catered for on a separate à la carte menu or personalised and planned to meet the needs of the individual patient (BDA, 2006; Scottish Government, 2008).

Therapeutic Diets

The details here are given so that any changes to the general standards can be considered and incorporated at the menu planning stage. The following therapeutic diets are typically met by separate à la carte menus.

Renal

There is no single 'Renal Diet' but at different stages of kidney disease different dietary modifications may be necessary.

Although healthier eating options should be available, when introducing restricted diets it is imperative that the overall energy and protein content of the meal is not compromised. Many of these patients will be in the nutritionally vulnerable group due to the nature of their illness and compounded by the renal-specific dietary restrictions they 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.

Patients on renal dietary restrictions 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. Some patients will require a lower potassium diet and details on this are given below.

Reaching the desired protein intake when combined with a potassium restriction may be outside the capacity of the standard menu and may best be met by an à la carte approach, which will also help avoid menu fatigue among long stay patients (BDA, 2011).

These patients' needs may vary between units depending on local demographics and the renal treatment they are on. It is important to take into account the age of the patient, ethnicity, length of stay, dialysis modality and the numbers of nutritionally compromised patients.

Input from a specialist renal dietitian who has a good understanding of these patients' dietary needs is essential.

Patients with renal disease

Patients with renal disease may need to follow diets that modify any or all of the following:

- Protein
- Potassium
- Phosphate
- Salt
- Fluids

Menus should be designed to enable them to achieve a nutritionally complete diet within these constraints. Close working and agreement between caterers and renal dietitians are needed to ensure the needs of this challenging group of patients can be met.

Nutritional Targets for Renal Patients

Energy

Desirable targets for renal patients are from 2250-2625kcal per day and a range of 300-800kcal per meal with an average of 500kcal.

Protein requirements

The protein requirement for patients is based on their Ideal Body Weight (IBW) and will be a minimum of 1.0g protein per kg IBW. For patients on renal replacement therapies requirements are in keeping with the nutritionally vulnerable group. Reaching the desired intake when combined with a potassium restriction may be outside the capacity of the standard menu and will best be met by an à la carte menu.

Potassium restricted menu

Some patients will require a lower potassium diet. This will usually be 60-80mmols per day, based on their IBW. Generally the allowance is 1mmol potassium per kg IBW, but practice does vary. Some vegetable and potato products may not be suitable depending on cooking methods. In general, cooking methods should leach rather than conserve potassium when preparing and cooking potatoes, fruits and vegetables. These items should be boiled before being offered to patients on a lower potassium diet. Local renal dietitians will advise on suitable low potassium cooking methods and dishes.

Where poor appetite and potassium restrictions combine to make meeting requirements difficult, an à la carte menu allowing individualised choices may prove very helpful.

Restriction issues for protein and potassium

40% of the protein requirements of the nutritionally vulnerable group are typically met by breakfast, snacks and milk (approximately 1 pint or 550mls in total = 20g protein). However in a potassium restricted diet only ½ pint milk or 275mls 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.

Hence the protein content of the main course of the meal gains importance, as 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, 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 19: Potassium and Protein Allowances

Meal Element	Minimum Portion Size	Average Protein Content	Potassium Content
Entree		18g	< 12mmols
Starchy food	115g	> 3g	< 10mmols
Vegetables	80 – 160g	> 2-4g	< 8mmols
Dessert		5g	< 8mmols
Total Meal		28g	Will vary depending on patient choices, as controlled by offering suitable dishes.

Snack boxes

Low potassium snack boxes should be available. Suggested items for inclusion could be:

- Sandwich (with suitable filling)
- Fruit: apple /pear
- Fromage frais
- Cake /biscuit
- Corn crisps

Phosphate restricted menu

Alternative choices need to be provided when the following foods are on the menu: Hard and soft cheese, offal, kidney, liver, mackerel, sardines, pilchards, salmon, chocolate, malted milk drinks, nuts, foods containing baking powder, yogurts and milk puddings.

Oily fish can be included in a menu, as some patients may continue to eat this and their phosphate be well controlled with medication. However as long as alternatives are available the patient can choose using the information a dietitian has given them.

Salt intake

Less than 6 g day - in line with general guidance for salt intakes. If a higher salt option is on the menu, e.g. meat pies, sausage, ham or other processed items, it should be balanced by also offering menu choices lower in salt.

Additional guidelines written in 2011 are available for adults on haemodialysis and peritoneal dialysis. These can be found on the BDA website (BDA, 2011).

We are grateful to the BDA Renal Nutrition Specialist Group for their contribution to this section.

Liver Disease

Malnutrition is extremely common in people with liver disease occurring in up to 60% of those with advanced disease (Saunders *et al.*, 2010). It is therefore important that the menu provides sufficient protein (1.2-1.5g per kg body weight/day), high energy meals and snacks in order to meet their elevated requirements. People should be provided with a snack between meals and should have a snack/ drink containing 50g carbohydrate in the evening. Those reviewed by a dietitian should be advised on suitable choices although any liver patient with protein - calorie malnutrition would benefit from an evening snack. Fasting is nutritionally detrimental and these snacks prevent long periods of fasting and improve utilisation of nitrogen (Swart, 1989).

The restriction of individual nutrients has significantly altered over the last 10 years and the need to meet higher energy and protein requirements is paramount. Fat or protein restriction is no longer advocated in most situations. Where these are required a dietitian can use healthier eating choices from the menu or advise the patient on the number of protein portions per day from the standard menu.

People with diabetes mellitus should choose from the standard menu with the addition of snacks and evening 50g carbohydrate snack. Diabetic medication should be adjusted to maintain normoglycaemia if nutritional support advocated if necessary.

Some people will need to restrict their sodium intake. If necessary sodium should not be restricted lower than 80mmol sodium per day (1840mg sodium or 4.6g salt) whilst meeting higher energy and protein requirements. For people with liver and renal disease the renal guidelines for diets will also be required.

We are grateful to Julie Leaper and Susie Hamlin (Clinical Liver Leads for the BDA Gastroenterology Specialist Group) for their contribution to this section.

Food Allergy (hypersensitivity)

It is vital that a system is implemented to ensure that information relating to peoples' food allergies is collected as early as possible and that this information is communicated quickly and effectively to hospital caterers, ward staff and hospital dietitians. Most healthcare settings will have an allergy policy in place.

Catering staff should be trained in allergen management, including the provision of allergen information, the risks of cross-contamination and cleaning methods. Some general tips for caterers include:

- Keep and refer to as necessary up-to-date ingredient lists from suppliers
- If major allergens are included in a dish, the name of the dish should reflect this
- Major allergens should not be used where you would not expect to find them. For example, cashew nuts should not be used in pesto sauce or peanut flour in korma
- Warnings that food "may contain" traces of major allergen should only be used as a last resource, if the risk of cross-contamination cannot be eliminated or managed safely. They should not be used as a substitute for good allergen management practices.

We are grateful to The Anaphylaxis Campaign for their contribution to this section.

Gluten Free

The introduction of a law on the use of the term gluten-free EC41/2009 with effect from the 1st January 2012, means that menu items which are labelled as Gluten Free (GF), must contain 20ppm gluten or less (FSA, 2010). For people with coeliac disease or dermatitis herpetiformis in a care or healthcare setting where their personal choice is restricted, the following three options should be considered.

As a minimum standard number 1 below is required. Options 2 and 3 may offer additional flexibility and choice. Whichever solution or combination of solutions is used, it is important that front line food service assistants, catering and nursing staff are aware of the different nomenclature used on menus and should receive training to enable their complete understanding of the subject.

1. A menu with Gluten Free (GF) choices must be made available. This may involve a complete meal solution from a specialist dietary meals supplier or meals from regular suppliers who have the capability to test meals to be at acceptable **legal** levels. These GF meals would need to be 20ppm or less. Producers of GF meals **must** be able to test their meals to ensure that they are at legal gluten free levels. This also applies to all items on a menu such as cereals, soups, yoghurts, desserts and biscuits for example.

2. Production of meals in a diet preparation area would require training of staff and separation of processes, equipment and ingredients as well as certification from ingredient suppliers about gluten levels. If meals made in a diet bay are likely to be higher than the 20ppm maximum for them to be classified as gluten free, then they **should not be labelled gluten-free**. Meals can be produced with acceptable gluten levels of around 20ppm when conditions and procedures are standardised to control cross contamination (Coeliac UK research, 2011 unpublished). Most hospitals will not know the level of gluten in the food they produce and will not have the funding, knowledge or equipment to test so therefore **cannot make the legal** claim. Also ingredient suppliers will know if a food contains or does not contain gluten as a deliberate ingredient but not the level of gluten contamination unless they are making a gluten free claim. Frozen vegetables, meat, fish etc. will not be tested but suppliers will know with which other allergens they may have had contact.
3. It is also acceptable to denote on menus, in menu folders or on patient literature where dishes do not contain any gluten containing ingredients and where controls are in place to avoid cross contamination with gluten containing ingredients. These can be identified as No Gluten Containing Ingredients (NGCI) or No Gluten Ingredients (NGI). This may be acceptable for some patients and would increase choice but should not be used exclusively. It is recommended to ensure coding clarity and consistency either NGCI or NGI is used on patient menus. It is best practice that the phrase used to explain the code is “No Gluten Containing Ingredients” (FSA, 2010).

Allergen Policy for Gluten

Healthcare establishments must have a written allergen policy for dealing with gluten. This should cover patient education and meals or items available from catering and whether they are **gluten free** or **a mixture of gluten free and NGCI/NGI**.

They also need to ensure a policy is in place to cover training for all staff involved in providing meals i.e. front line food service assistants, catering and nursing.

Written materials must be provided for patients that help support informed choices and reflect what catering staff have been trained on and are able to provide.

Coeliac UK- Frequently Asked Questions

1. How do we train staff on complete separation of ingredients?
For further information on catering training refer to Coeliac UK website (Coeliac UK, 2012).
2. What about food items that are naturally gluten free and prior to the change in legislation could be classified as gluten free e.g. fruit, vegetables, meat, fish, eggs, milk?
Only foods that have been tested can carry the name Gluten Free. Therefore, these foods listed i.e. fruit, vegetables, meat, fish, eggs and milk etc. can be called naturally gluten-free. For example, a cold meat salad with potatoes OR a jacket potato meal could be coded as NGCI provided that all steps have been taken to avoid cross contamination.
3. Is gluten free bread able to be labelled gluten free on a menu once toasted?
Gluten free bread is GF and as best practice toaster bags should be used to toast gluten free bread due to the risk of cross contamination. If contamination is controlled in this way, the toast may be labelled as GF.
4. Do NGCI meals need to be served first e.g. in a bulk multi-portion scenario?
What do we need to do then in terms of utensils and prevention of cross contamination etc?
In a catering environment where bulk multi-portions are used, if the meals were coded NGCI from the supplier then they could be served with care taken to avoid cross contamination with gluten containing ingredients and utensils. This relies on training and implementation to be clear and concise. Food service assistants would need to know that a patient requires a NGCI meal before they start service.
5. Is an individual NGCI meal in a sealed situation e.g. steam or microwave meal different to bulk multi-portion NGCI meals?
Yes, when a meal is served sealed, the risk of contamination is eliminated. However the meal can still only be called NGCI.

We are grateful to Norma McGough and Coeliac UK for their contribution to this section.

Test or Investigation Diets

Some diets are temporary and are not necessarily nutritionally adequate. They are usually required for a test or investigation such as food or fluid items for a swallow assessment, a laxative treatment or a 'fluids only' diet pre or post-surgery.

Specific Patient Groups

There are a number of special groups within the general hospital population whose nutritional requirements may vary from the standards already specified. These include but are not limited to children, acute elderly, maternity, long stay, orthopaedic patients (HoN, 1995) and those most vulnerable or high risk such as those highlighted through nutritional screening (BAPEN, 2003). Menus need to be planned or additional options offered to take varying requirements into consideration. Operational and cost issues need to be considered in these cases.

Children

It is recommended that when planning a paediatric menu, the specific dietary needs of this group be identified. Input from a specialist paediatric dietitian with a good understanding of this population group's dietary needs is recommended. These needs may vary from hospital to hospital depending on local demographics and whether the unit has a medical speciality.

Key factors to consider:

- Proportion of nutritionally well vs. nutritionally vulnerable patients
- Typical age range
- Ethnicity
- Average length of stay

It is important to ensure menu options in line with current healthy eating messages are available. Simultaneously, however, it should be recognised that where a large proportion of admissions are short in duration and where food intake may be suboptimal due to the nature of the admission, maximising food intake takes priority over the nutritional content of the food eaten. For this reason, nutritional standards that may be appropriate for long-term nutritional provision to children in other institutions are not relevant for catering to sick children in healthcare settings.

We are grateful to the BDA Paediatric Specialist Group for their contribution to this section.

Oncology and Haematology

People with cancer are at high risk of weight loss and under-nutrition because of both the physical and psychological effects of the disease and the treatment of it. Common side effects include loss of appetite, tiredness, nausea and vomiting, sore/dry mouth, sore throat, taste changes, diarrhoea, constipation and weight loss.

Side effects vary from person to person but the benefits of good nutrition throughout the phases of treatment and recovery must not be underestimated. The food a patient with cancer may require will change over time and it is important to adapt food intake to cope with the body's changing needs. Good nutrition helps wounds and damaged tissues heal better, improve the body's immune function and helps people maintain an optimum nutritional status. Even if there are no nutritional problems identified, the importance of good nutrition by means of a healthy, well balanced diet cannot be overlooked and should be reflected in the patient menu.

It is important that the catering department is flexible, such as offering smaller portioned main meals and making available appropriate high calorie, high protein foods, extra snacks and nourishing drinks e.g. Build-up, Complan or full fat milk. Many oncology patients may experience difficulties swallowing either due to the cancer itself obstructing their swallow or due to the treatment they are receiving causing side effects such as dry or sore mouths. Therefore it is also important that a good selection of soft and moist meals is available with extra sauces or gravy and dessert sauces, such as custard. For patients with severe swallowing difficulties a texture modified meal may be required.

Some patients believe in alternative or complementary diets in treating cancer. A complementary diet uses specific foods or practices as part of the usual dietary intake. Examples include organic foods or higher fibre foods. Alternative diets are a form of diet that is used instead of the standard dietary recommendations. Such alternative diets may claim to cure cancer and as such may have possible harmful effects because they are often so restrictive that it is impossible to obtain adequate nutrition. Examples include, Gerson therapy, Macrobiotic diets or those that cut out food groups e.g. meat and dairy.

There is no scientific evidence for such diets. It would be important to work with the hospital Dietitian and act on any specific dietetic instruction in a responsible manner. For some patients the wish to follow an alternate diet may be as much about nurturing hope as health.

Haematological malignancies and Bone Marrow Transplant patients

Haematopoietic stem cell transplantation, sometimes phrased as 'bone marrow transplant', is a complex procedure involving high dose chemotherapy conditioning which in some cases may include total body irradiation (TBI). This is then followed by the administration of stem cells. It is used in the treatment of leukaemia, lymphomas, some solid tumours and other haematological conditions such as severe aplastic anaemia, and in autoimmune or hereditary immune disorders.

Following transplantation patients will experience a period of neutropenia (low neutrophil count) and will be advised to follow a neutropenic (clean/low microbial) diet. Some haematological malignancies such as acute leukaemia require intensive high dose chemotherapy regimes. During these treatment regimens patients will also experience a period of neutropenia and will be advised to follow the neutropenic diet.

These patient groups are frequently in-patients for prolonged periods and may have regular readmissions for treatment so menu fatigue can occur. Where possible these patients should be offered the widest choice with a variety of menus and food service styles to combat menu fatigue and altered taste perception.

Neutropenic Diet

A neutropenic diet is sometimes referred to as a 'clean diet' or 'low microbial diet'. It is used for patients who are immuno-suppressed and therefore at an increased risk of infection. Dietary restrictions are recommended to reduce the risk of infection but nutrition must not be compromised. Patients requiring such a diet may include some cancer patients, haematology patients, bone marrow transplant and organ transplant patients and those with Acquired Immunodeficiency Syndrome (AIDS).

Practical Information

You need to take particular care to protect neutropenic (immuno-compromised) patients from pathogenic bacteria and the risk of food poisoning:

- Catering/serving staff may require additional training regarding the specific needs of patients with neutropenia
- Wash hands thoroughly prior to serving neutropenic patients
- Make sure trays and cutlery are scrupulously clean. They should preferably have been through a dishwasher rather than hand washed in order to reach temperatures high enough to kill harmful bacteria
- Always serve these patients first to ensure their meals are as hot as possible
- Any hot food served should be thoroughly cooked, reaching a temperature of **at least 75°C**
- Check all foods and drinks served are within their use by/best before dates
- Do not use damaged packets or dented tins
- Do not use food from overloaded fridges and freezers as it may not be cold enough
- Even chilled items should be eaten soon after purchase as Listeria can multiply at low temperatures in refrigerators
- All foods should be used within 'best before' and 'use by' dates.

Food practices vary widely and below are some of the most common precautions:

Table 20: Food Classification for Neutropenic Diets

Avoid	Alternatives
Soft ripened cheese e.g. Brie, Camembert, goats cheese, paneer and labnah	Processed cheese e.g. Dairy Lea, Kraft, Philadelphia, mesh and halloumi
Blue veined cheese e.g. Danish blue and Stilton	Vacuum - packed pasteurised and hard cheese 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; smoked items e.g. salmon or Parma ham, salami, caviar and oysters	Well cooked meat, poultry and fish; vacuum - packed cold meats such as turkey and ham; tinned meat and fish
Raw eggs or undercooked eggs e.g. homemade mayonnaise, homemade ice cream, mousse, eggnog, meringue and hollandaise sauce	Hard boiled eggs: shop bought mayonnaise, ice cream and other products made with pasteurised egg
Probiotics, live or bio products e.g. live yoghurts, supplements and drinks containing probiotics	Pasteurised plain, fruit yoghurts e.g. thick and creamy or Greek yoghurts or yoghurt products e.g. lassi
Pâté	Pasteurised pâté and paste in tins or jars that do not need to be refrigerated.
All unpasteurised dairy products e.g. unpasteurised cheese such as parmesan or milk sold from local farms	Any pasteurised milk, soya milk, jersey milk, UHT milk and cheese products

Stricter guidelines for patients with profound neutropenia

These guidelines are particularly strict and are only relevant for patients with a severely compromised immune system. These should be followed in addition to the guidance above. You will need to be aware of local policy guidelines.

Table 21: Food Classification for Stricter Neutropenic Diets

Avoid	Alternatives
Raw unpeeled fruit and vegetables including salad items, damaged or over-ripe fruit and vegetables	Good quality fruit and vegetables that are well cooked and peeled; tinned fruit.
Unpasteurised or freshly squeezed fruit or vegetable juice or smoothies	UHT or long-life fruit juices - in cartons or jars; pasteurised smoothies
Raw dried fruit - products containing these e.g. muesli, Bombay mix, confectionery	Cooked dried fruit e.g. fruitcake, flapjacks or cereal bars
Uncooked herbs, spices and pepper	Cooked herbs, spices and pepper
Unpasteurised or 'farm fresh' honey and honeycomb	Pasteurised or heat-treated honey
Unnecessarily large packets of food items from pick and mix, universal /shared jars; 'deli counter' foods e.g. olives, houmous, shawarma and baklava	Ideally packets should be for personal use only e.g. butter, sweets, pickles, small packets of food, houmous and baklava

Notes:

- Some hospitals request that only disposable cutlery and plates are used
- Some hospitals may require the staff to wear a fresh apron and gloves when serving these patients. Neutropenic patients are usually accommodated in isolation rooms. Other hospitals will only allow nursing staff to enter the room of neutropenic patients
- Some hospitals may allow microwave-cooked meals for patients as long as the local Hazard Analysis Critical Control Point (HACCP) (see Chapter 12 for further HACCP information) is followed and core temperature has been carefully checked and noted, and they are cooked strictly to manufacturer's guidelines
- Check with your hospital for their policy regarding foods brought in by visitors
- Check your hospital's supplier of ice cream.

Drinking Water

Due to contamination of bottled mineral water by coliforms and *Listeria* freshly run tap water is recommended for neutropenic patients. Commercial quality water filtration is recommended where institutional tap water is at risk of contamination from *Legionella*. There is no evidence that sterilised water would be of benefit to immunocompromised patients. You should liaise with your hospital Microbiology Department with regards to local guidelines.

Further advice can be found in *Dietary Advice for Patients with Neutropenia* (London Haematology Dietitians Group, 2012)

We are grateful to the BDA Oncology Specialist Group (Haematology Sub Group) for their contribution to this section.

Mental Health

Mental health services provide food and beverages for people who most often fall into either of two groups: those who are either generally undernourished, or at high risk of under-nutrition; or those who are overweight, obese or at risk of unhealthy weight gain (NICE, 2012). For this reason, different standard menus may be provided for these two different types of unit. Where these people are treated on the same unit, menus must provide appropriate choices, and clients should be supported to choose options which best meet their needs.

Nutrients that have a specific function in supporting mental health, cognitive function and physical health should be well represented in the food provision. These include omega-3 fatty acids (specifically EPA and DHA), vitamin D and folic acid (Amminger *et al.*, 2010 and Pearce, 2010). To best meet peoples' needs, some services may limit availability of food; they should have written guidance on this.

People with mental health needs are more vulnerable to developing diet responsive conditions such as obesity, diabetes, dyslipidaemias and metabolic syndrome. Therefore suitable menu options should be clearly identified on menus and often the Healthier eating option will be suitable.

Timing of meals and snacks should be carefully considered as patients may rise late, missing breakfast and retire in the early hours, becoming hungry during the evening. Medications used in the treatment of many mental health conditions are associated with increased thirst and hunger, therefore lower calorie snacks should be provided and low calorie sweeteners, cordials and preserves should be readily available.

If patients become hungry, they are more likely to snack on energy dense snacks such as those from vending machines, retail outlets or to order take away meals. Large volumes of sugar containing drinks may also be consumed. The dietitian may be well placed to advise on suitable stock for vending machines, ward stocks and other areas under the organisations' control.

Older people with mental health needs, such as dementia, where weight loss is a concern, may benefit from a menu that includes softer high energy options and the provision of finger food snacks between meals.

Dysphagia may be relatively common in the mental health in-patient setting, which may require a modified texture diet on a long term basis.

As patients may be long stay, especially in secure forensic units, menu fatigue can be problematic and menus should offer at least a 4 week cycle with as many choices as can be practicably achieved. There are high rates of smoking in mental health populations which may increase the need for nutrients such as vitamin C. Poor condition of teeth and gums may reduce consumption of fruits and vegetables; therefore the provision of vitamin C containing juices is an important consideration.

Medication may adversely affect bowel function; a higher fibre intake may be helpful and encouragement towards physical activity, ensuring adequate fluids, low calorie if indicated. On occasion, for the treatment of patients with obesity, weight loss medication may be prescribed where a low fat diet may be indicated.

Within long stay mental health services, there may be high demand for religious and cultural diets and there may be a predominance of male patients, which can impact upon nutritional planning. Service users may wish to be involved in menu and food service design; some service users may also wish to be involved in food preparation which can be explored within the organisation.

Vitamin D is associated with better mental and physical health; however it is difficult to obtain adequate vitamin D from dietary intake alone. Although sunlight facilitates synthesis of vitamin D in the skin, medications used to treat mental health conditions can increase sun sensitivity, which may reduce exposure to inadequate levels. Long stay patients may be particularly at risk due to hospitalisation. There is new guidance from the Department of

Health advising vitamin D supplementation for those with low sun exposure and other at risk groups. Check that your patients have access to medical advice and vitamin D supplements, if required (DH, 2012).

We are grateful to the BDA Mental Health Specialist Group and Alison Sullivan for their contribution to this section.

High Risk of Malnutrition

People identified as being at high risk of malnutrition may not be fully supported by the standard menu. These people should be identified through a malnutrition screening programme and may require referral to a dietitian for specialist advice. Some individuals may have reduced appetites due to underlying illnesses and food fortification offers a way of enhancing protein and energy intake. The aim should be to use simple techniques to increase the energy density of the diet without increasing the bulk.

Some practical food examples for caterers are given in Appendix 3; these would help fortify meals without affecting the palatability of the diet. Cost of extra items will need to be considered but could be listed in a separate dietetic “specials list” subject to referral by a dietitian and can accompany standard meal choices.

There are also nourishing drinks (Oral Nutrition Supplements or ONS) available on prescription in a variety of styles and flavours. Dietitians prescribing supplements for people unable to meet their nutritional requirements from food alone are required to monitor and review these. These can be used to supplement the diet of those who are nutritionally vulnerable; however, the emphasis should be on a food first approach (BDAC Debate, 2010). Further practical examples can be found in All Wales Catering and Nutrition Standards for Food and Fluid Provision for Hospital In-patients (Welsh Assembly Government, 2011). BAPEN /BDA ONS-Food First guidance is being determined by an expert group, and is ‘in press’.

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Further reading

The Vegetarian Society (www.vegsoc.org)

National Nurses Nutrition Group (<http://www.nnng.org.uk/>)

Halal Monitoring Committee UK (<http://www.halalmc.net>)

Vegan Society (<http://www.vegansociety.com>)

Anaphylaxis UK (<http://www.anaphylaxis.org.uk/catering-for-allergy/>)

Food Standards Agency (<http://www.food.gov.uk/multimedia/pdfs/loosefoodsguidance.pdf>)

Food Standards Agency (<http://www.food.gov.uk/safereating/allergyintol/guide/caterers/>)

Allergy Training (<http://www.allergytraining.com/>)

Coeliac UK (<http://www.coeliac.org.uk/>)

Chapter 10 Dietary Coding Guidance

Guidance on the use of dietary coding for hospital inpatient menus

Traditionally diet codes have been used on hospital in-patient menus for guidance as to the suitability of dishes that together provide for a suitable daily therapeutic diet. Patients, their relatives and carers, and hospital staff, nurses, housekeepers, caterers and chefs, very much appreciate a source of sound information and practical reassurance. However, coding remains a controversial issue for a number of reasons:

- The primary consideration is to ensure that the daily nutritional needs of patients are met in a proper and safe way, by striking a balance between managing the therapeutic aspects of the diet, and maintaining or improving overall nutrition
- The suitability of an individual dish may vary from one patient to another or from one occasion to another
- The suitability of an individual dish needs to be considered in the context of making appropriate complementary choices at the meal events across a day
- Adequate coding should be provided to enable patients to make informed choices, whilst keeping the menu straightforward and user-friendly
- Menus can become overloaded with codes which may be irrelevant for most people, and make the overall menu difficult to read and /or understand
- Too much reliance is placed on the main menu to be 'all things to all men': special, therapeutic and modified texture dietary choices are best met through tailored à la carte menus.

The Digest recommends keeping dietary codings on standard menus to a minimum'. The guidance that follows addresses the codes that could be used on standard menus designed for hospital in-patient services. Where dietary codes are used, their meaning must be clear to the end users. Avoid over-long and confusing 'strings' of dietary codes e.g. consider the use of techniques such as reverse codings, in which the diets that a dish is NOT suitable is indicated by a slash through the dietary code. All members of staff concerned with food and beverage services must understand the locally used dietary codes and their meanings and dietitians should be involved in designing and delivering associated training events as described in Chapter 2.

The two key diet codings that should be identified on standard inpatient menus are to support nutritionally well and nutritionally vulnerable service users

"HEALTHIER EATING (H or ♥)" and "HIGHER ENERGY (E or ↑)

It is also helpful for many service users if the standard menu indicates those dishes that are

- **easily chewed (S)**
- **suitable for lacto-ovo vegetarians (V)**

Dietary codes highlight individual dishes, bringing their possible dietary applications to the menu reader's attention. A multi-choice menu can therefore be planned to meet the dietary needs of an individual if codes are spread across the items on offer. When the same codes are chosen together over a day, the overall menu is suitable for the main menu needs, as in the categories above. Hence in a multi-choice menu, the various entrée dishes and menu components (such as starches, vegetables, sauces) are coded to best describe the dietary purpose they serve as the menu compilers know the nutrition and dietetic attributes of the items.

Some individual dishes may meet the local criteria recommended for the healthier eating code, but not support standard public health messages on healthier eating. Dietitians should always use their discretion when coding standard menus as best fits local needs. Less usual special, therapeutic and modified texture diets are more easily delivered to individual patients through à la carte choice menus.

Dietary Coding - Example of Good Practice

Menu Information - Dietary Coding

If you have been advised to follow a specific diet, look for the symbol on the menu against the dish which may help you choose suitable items:

H Healthier Eating choices are lower in fat, salt and sugar and are suitable choices if you have been advised to follow a 'healthier diet' for example for your diabetes or for your heart health or if you are trying to lose weight.

E Higher Energy items are suitable if you have a small appetite or require food high in energy due to your illness, weight loss or surgery.

S Soft items are easily eaten and easy to chew

V Vegetarian items are free from meat, poultry, fish, and gelatine.

GF Gluten free options if you follow a gluten free diet. Gluten free bread is also available.

If you have diabetes and are "Carbohydrate Aware", the ward staff will be able to give you some information on the CHO content of the menu.

Figure 8: Example of dietary coding practically applied to the multi-choice hospital menu for adults at Leeds Teaching Hospitals NHS Trust 2011

We are grateful to Diane Spalding and colleagues at Leeds Teaching Hospitals NHS Trust for their contribution to this section.

Nutrition and Health Claims - Compliance Issues

Dietary coding terms for in-patients must be interpreted within the compliance guidance given by DH (England) on EC Regulation 1924/2006 for Nutrition and Health Claims on menus for hospital in-patients (Official Journal of the European Union, 2011).

The dietary code terms in the preceding 'Toolkit' are referenced by the DH (England), and remain the same in this Digest. The DH guidance needs interpretation at local level and dietitians are ideally placed to be pro-active in ensuring that local policy is sound.

In-house catering services

(i.e. a hospital's own catering services, in which chefs prepare their own food and staff serve this directly to in-patients). Any menu dietary coding falls outside of the EC Health Claims regulation, except where brand names are used on the menu or patients pay for their food services. This document provides guidance on these codes.

Externally supplied food and beverage services

Where a hospital has a relationship with a provider catering company, whether as a food supplier or provider of food services (contractor), this is potentially viewed as commercial and should therefore fall within the scope of the EC regulation. However, the hospital's relationship with the patient is not commercial.

Section 2.4 of the DH guidance allows for providing dietary coding information that enables consumer benefit where there is no financial benefit to the service supplier/s. Hence in 2.8, the guidance elaborates that hospital dietary codings can be used for the health benefit of in-patients as recipients of the food, as on an inpatient menu.

A hospital can request (e.g. through a tender specification) a company to provide them with nutritional information - including dietary code applications. However, it is the hospital that must decide how such information is used for their in-patients. Hospitals should have policies that enable them to be satisfied that none of the information is being used for any kind of commercial advantage. If there are any hospital concerns about commerciality, then the local 'Enforcement Authority' (Trading Standards) should be consulted to assist with decision-making.

- Hospitals need to interpret the best practice guidance (p.17) and decide local policy as to whether they are comfortable with a food contractor or supplier logo (s) on their patient menus
- A menu will be deemed commercial if any product brand names are used on it (e.g. Dairy Lea, Muller, Heinz) and EC health claims regulations then apply to the whole menu
- There must be no financial advantage (e.g. in terms of dish choice) to any dietary coding applied
- Dietary codes must be applied consistently across menus.

Staff and visitor food and beverage services

Factual nutritional information can be given without any health or nutritional claims attached, unless such claims falls within the EU regulations. For example, if it is decided to advertise a dish as 'low fat' it must fall within the EU list of authorised nutrition claims and comply with set criteria, e.g. contain $\leq 3\text{g}$ fat per 100g. If using a symbol (e.g. 'healthy heart') the compliant nutritional profiles and definitions must be explicit.

- Dietitians and caterers need to work closely together to make sure that any labelling of dishes or 'healthy eating' projects aimed at staff and visitors are clearly in line with EC Health Claims. Hospital dietitians may not routinely be conversant with these regulations and will need to understand the requirements for underpinning nutritional data and applying the correct terminology when agreeing to take part in such initiatives
- Social care settings e.g. meals on wheels, luncheon clubs, residential care, are not covered by this guidance.

For those who wish to use dietary codes, simple criteria are defined on the following tables. For more details please cross-reference to Chapter 9.

Table 22: Criteria for Healthier Eating and Higher Energy Codes for Inpatient Hospital Menus

Healthier Eating Recommended inpatient menu code 'H' for Healthier or ♥ Suitable for people who are Nutritionally Well		
Aim of Diet	Criteria for Coding	
<ul style="list-style-type: none"> To maintain good general nutrition and meet DRVs To support public health messages on eating to protect and promote health To support the clinical management of people with metabolic syndrome, diabetes mellitus, dyslipidaemias and cardiac risk, overweight and obesity, hypertension 	<p>Fat</p> <ul style="list-style-type: none"> Entrée should contain no more than 15g total fat, and no more than 5g saturated fat Desserts should contain no more than 5g total fat, and no more than 2g saturated fat Dishes containing oily fish. Menus should offer fish dishes prepared with minimal additional fat at least twice weekly, and oily fish at least once weekly (NHS Choices, 2011a) Dishes containing partially hydrogenated oils (a major source of trans-fatty acids) to be avoided. <p>Sugar</p> <ul style="list-style-type: none"> To be of suitable nutritional quality, desserts should be based on reduced fat milk or fruit. See notes Recipes for desserts should be designed to have no more than 15g of added sugar per portion as served (including accompaniment) providing a realistic upper limit for controlling sugar content <p>Salt</p> <ul style="list-style-type: none"> Main courses should contain no more than 1.5g salt, with an aim to achieve relevant government guidance (SACN, 2003). <p>Fruits and Vegetables</p> <p>Menus should provide at least 5 servings of fruit and vegetables daily and a variety of sources of dietary fibre. This should include raw fruit and salad daily (NHS Choices, 2011b).</p>	<ul style="list-style-type: none"> The eatwell plate provides the menu model (NHS Choices, 2011b) Overall, total fat, salt and added sugar should be low Where practical, fats should be unsaturated rather than saturated Carbohydrate sources of lower glycaemic index should be incorporated on a menu Wholegrain or higher fibre starchy foods should be offered daily The total figure of 15g added sugar should include the equivalent in jam, syrup, honey etc. Diabetes UK Nutritional Guidance (2011) advises that people with diabetes do not require a specialised diet and should eat a balanced diet in line with population advice People with diabetes follow a variety of personalised management plans, relevant nutrition and dietary information must be available to accommodate patient requests (see Leeds sample menu) Restricted calories ('reducing') Starter plus entrée courses ≤300 kcal and desserts ≤75kcal; allowances must be made for this when assessing standard menu capacity Restricted fat diets for clinical use may fall to ≤8g fat entrée; no added fat to potatoes, vegetables and sauces; use of skimmed milk and lower fat products ≤5g total per dessert.

Higher Energy
Recommended inpatient menu code 'E' for Energy or ↑
Suitable for people who are Nutritionally Vulnerable

Aim of Diet	Criteria for Coding																
<ul style="list-style-type: none"> • To improve general nutrition and meet or exceed DRVs • To promote energy intake in those patients with small appetites • To provide a high intake of protein, vitamins, minerals and other essential nutrients • To provide a diet which can meet increased nutritional requirements in modest portions sizes and presentations which are appealing and easy to eat. 	<ul style="list-style-type: none"> • Together the starter (if provided) and main course at the both the mid-day and evening meals should provide c.450 - 500 calories so that at least 800kcal are provided by the starter, main dish and dessert when eaten together. This should also enable the menu to provide ≥ 70g protein per day and supports meeting the recommendation for people who are nutritionally vulnerable (see Chapter 5). • In terms of balance, a starter plus main course should provide ≥ 500kcal and desserts should provide ≥300 calories, including accompaniments such as custard or other sauces as in the example scenarios for calorie provision shown below: <table border="1" data-bbox="562 568 1606 754"> <thead> <tr> <th>Starter + main course</th><th>Dessert</th><th>Total for whole meal</th></tr> </thead> <tbody> <tr> <td>350</td><td>450</td><td>800</td></tr> <tr> <td>400</td><td>400</td><td>800</td></tr> <tr> <td>450</td><td>350</td><td>800</td></tr> <tr> <td>500</td><td>300</td><td>800</td></tr> </tbody> </table> • Snacks of ≥150kcal should be provided twice daily; nutritionally vulnerable patients may require double this energy intake through suitable calorie-dense drinks and snacks • 400ml whole milk should be provided daily for drinks across the day (for those who like it) in addition to milk for breakfast cereals and snacks • Five servings daily of fruit and vegetables should be provided in presentations which are easy to eat and nutrient dense. <p>Government salt targets are common to everyone. Primarily food must be appetising so as to encourage a good appetite. Recipes may need added interest to achieve appealing flavours. Some end users may need added salt and /or sauces to suit their personal tastes and to encourage or improve their food intake.</p>	Starter + main course	Dessert	Total for whole meal	350	450	800	400	400	800	450	350	800	500	300	800	<ul style="list-style-type: none"> • Energy density should be high, to promote adequate energy intake in small portion sizes. This may require the use of foods cooked with, or fortified with, added fat and sugar • Care should be taken to ensure dishes are appealing to people with small appetites • Patients who miss meals should be provided with a suitable alternative • Appropriate foods should be available for 24 hour services • For people who have diabetes and are unwell, it can be more important to have increased energy intake than to abide by any usual dietary concerns. • Snacks providing > 150kcal include some creamy yoghurts, cheese and crackers or two cream-filled biscuits
Starter + main course	Dessert	Total for whole meal															
350	450	800															
400	400	800															
450	350	800															
500	300	800															

Table 23: Other General Menu and Special Menu Codes

Standard Menu Codes	Rationale	Notes
Softer Recommended menu code 'S'	To help people identify those dishes that can be readily managed and eaten i.e. are easy to chew and manage physically.	This is not a menu criterion for dysphagia management, for which the choice of suitable menus /dishes should be determined in liaison with clinical colleagues.
Vegetarian (lacto-ovo) Recommended menu code 'V'	No meat, fish, poultry or products, no gelatine.	Eggs, milk and their products are suitable. Foods identified as suitable for vegetarians should follow DH guidelines.
Special Menu Codes Best met by complementary à la carte menus	Rationale	Notes
Restricted fibre	Low insoluble fibre	Avoid pips, skins, husks, pith, seeds, wholegrains, wholemeal/wheat, bran, nuts, beans, pulses, dried fruits and nuts, berries.
Gluten content	A Gluten Free menu must be available	As per the 2012 legislation gluten free meals or menu items need to have a guaranteed gluten content of 20ppm or less (Chapter 9). The term 'no gluten containing ingredients' (NGCI or NGI) can be applied to naturally gluten free food and beverage items provided cross contamination measures are in place.
Restricted potassium	Some patients will require a restricted potassium (K) diet e.g. for the management of renal disease	60-80mmols (2340 - 120mg) K per day. Maximum mmols for main meal dishes entrée ≤12; starch ≤10; ≤vegetables ≤8; dessert ≤8. See Chapter 9 for further information.
Contains milk	All sources must be identified	Avoid milk proteins and milk sugars.
Contains egg	All sources must be identified	Includes dried egg, egg albumin and egg lecithin.
Contains nuts	All sources must be identified	Nuts and nut derivatives such as oils. Integrity of food chain covers food service as well. It may be necessary to state that products are not prepared in a nut free environment.
Mono Amine Oxidase Inhibitor (MAOI)	No cheese or hydrolysed animal and vegetable protein	Foods to avoid include most gravy, sauce, soup, stock mixes, meat and vegetable extracts, Soya sauce, Quorn, cured and fermented products. Cottage and curd cheese are suitable (Merriman, 1999).

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NHS Choices (2011b) Eatwell Plate. Available at <http://www.nhs.uk/Livewell/Goodfood/Pages/eatwell-plate.aspx> [Last accessed 24/06/12]

Official Journal of the European Union (2011) Regulation (EU) No 1169/2011 of the European Parliament and of the Council of 25 October 2011 on the provision of food information to consumers. Available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:304:0018:0063:EN:PDF> [Last accessed 27/03/12]

Scientific Advisory Committee on Nutrition (SACN) (2003) Salt and Health. Available at <http://www.sacn.gov.uk/> [Last accessed 27/03/12]

Chapter 11 Catering Specifications and Contracts

Barriers to Best Practice

Efficiency gains are often required of food services through tight budgetary control, often paired with rigid contractual conditions. The downside to this is reduced flexibility and often limited, if any, funding available to support developments; this is unacceptable and a potential barrier to best practice. It is essential that dietitians take a pro-active role jointly with catering colleagues, to ensure that acceptable standards for food and beverage services are not jeopardised, and that the budget is adequate to provide the nutritional needs of the individual.

Catering Specifications

Every care setting requires a nutrition specification; a foodservice specification defines how that is delivered. Whether catering is in-house or contracted out, dietitians must have executive input before a specification is issued and not just advisory influence. The contents of the Digest form a minimum framework of requirement for nutritional standards for hospital food, and as such can be incorporated into the specification for any contract or service level agreement.

The clearer specifications are, then the easier it is to ensure that all requirements will be met. Dietitians must ensure the specification explicitly calls for the provision of food and beverage services appropriate for the client group including special cultural and religious or allergen-labelled meals which may cost more, together with a full breakdown of the menu items to enable complete nutritional analyses. Some specifications are written as open specifications, e.g. “provide our patients three meals a day”; and some are much more detailed. In worst case scenarios, with an open specification there could be protracted arguments about what is and what is not provided in the contract.

Bids to meet specifications may be on a ‘cost per patient’ basis, or on a ‘fixed price’ contract. With ‘cost per patient’, dietitians will have to take account of what is included and whether this will be adequate, and understand the cost implications of requesting changes to the contract specification for individual patients (and who pays). With ‘fixed price’ contracts, again what is included must be clearly understood. Additional funding may be needed if there are service developments. Dietitians will use the specification as a basis for continually monitoring and auditing. The dietitian must have the right to be informed of any changes that the supplier wishes to make in the future.

Catering Contracts

For NHS hospitals, Local Authority and other publicly funded organisations the first step of the tendering process is to publish an invitation to tender in the OJEU - the Official Journal of the European Union (<http://www.ojeu.eu/>). Catering consultants are often engaged to assist organisations to develop foodservice contracts, this can include writing specifications, overseeing the tendering, appointing the caterer and monitoring contracts for compliance.

Pre-qualification questionnaires (PQs) with objective criteria and parameters are used to determine which operators will be invited to tender. Operators then submit a full competitive tender against a specification. A further reduction in the field of tenderers can occur during the negotiation or any competitive dialogue process.

Short-listed tenderers are then invited to make a presentation to the key decision-makers to show their understanding of all aspects of the bid. Price should become a factor in the contract award only after ensuring that the tenderers have satisfactorily met all the nutritional and other service requirements in the contract specification. Contracts are then awarded to the most economically advantageous in terms of the criteria stated in the specifications and there are procedures for appeal. Contracts are time-limited but many have potential for extensions as a variation to the contract. In certain cases it is possible to outsource services from an existing service provider who can provide the best value.

Further reading

Official Journal of the European Union (2012) Available at <http://www.ojeu.eu/> [Last accessed 27/03/12]

Pro 5 (2012) Available at www.pro5.org/en/contracts/788/contracts-contract-704 [Last accessed 27/03/12]

Chapter 12 Food Service Systems, Food Hygiene and Safety

At a local level, it is essential that dietitians and caterers value and make time to talk to one another, to discuss issues, gaps in services, potential requirements and joint strategies in a timely way. In this way both may plan their patients' food and beverage services with any site constraints taken into account. Guidelines and standards for food service are readily available in other documents (see further reading), but the true benefits to patients' health will only be realised by dietitians and caterers working closely together (Food Standards Agency, 2012).

Where there is a need to improve or expand the service, dietitians can help caterers by generating a case of need to support any bid for additional funding requirement. This will maximise the service availability, and ensure that what is offered to the patient by the dietitian is actually feasible and, more importantly, is delivered.

Food Service Systems

Over the years, the drive to improve efficiency has resulted in reductions in staff numbers involved in the catering service, along with the centralisation of skills and equipment to produce economies of scale.

Catering services have now evolved, and the image of 'home cooked' meals, made from basic locally sourced ingredients 'fresh on the day' in the hospital kitchen are no longer the norm. There are now many possible variations in the food service, which can be managed by either an in-house operator or a contract operator.

The following are very simplified overviews of the differences in the available systems, although every hospital will have its own variation, according to local circumstances. The food could be produced on site (using conventional/traditional methods).

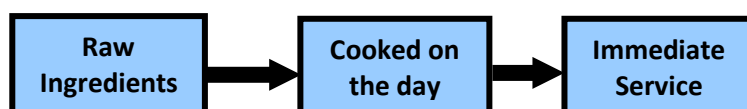


Figure 9: Illustration of Simplified Traditional System

It can also be produced at a Central Production Unit (CPU) on or offsite, by a cook-chill or cook-freeze in-house team or manufacturer (total delivered meals) and delivered to a Receipt and Distribution Unit (RDU) for picking and packing, or delivered directly to the ward for re-heating and service.

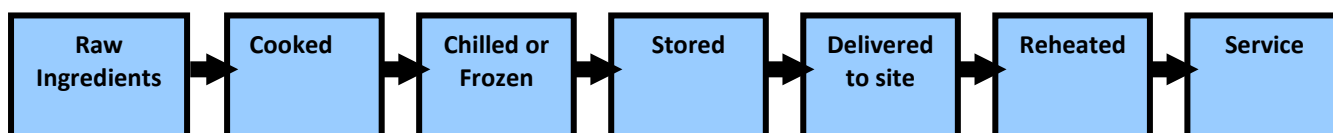


Figure 10: Illustration of Simplified Delivered Meal System

Some systems retain elements of cook-serve as part of a hybrid system, producing a menu, which also uses pre-made ingredients, (mixes and sauces etc.) combined with readymade frozen and chilled products to produce the menu.

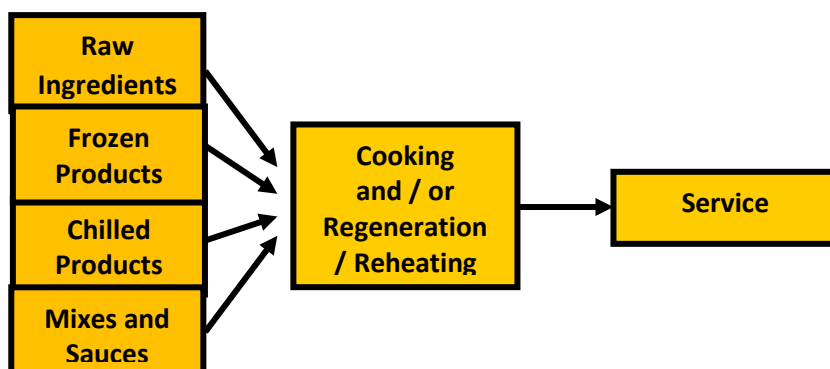


Figure 11: Illustration of Simplified Plated Steam Meal System

New Generation Plated Meals

A relatively new approach to catering is the use of pre-assembled microwavable plated meals, some of which use steam and pressure technology. These meals often use chilled products although frozen versions are also available.

Some use a combination of fresh/raw food, (particularly raw fish and vegetables) or partially / fully cooked ingredients make up the meal. These systems keep the food moist; flavour and goodness are retained during the cooking process. Where the vegetables are raw before being microwaved, Vitamin C and folic acid retention is greater than with other catering systems (Hall, 2007).

The meals are cooked in a microwave oven. In systems where the bespoke packaging includes film with a valve, perforations or vent, this controls the steam pressure. The meals cook very quickly and conveniently - between 3 and 5 minutes on or near the wards. In some of the systems, steam builds up in the bespoke packaging during the cooking process.

This system works best with à la carte menus, giving more choice and variety each day but menu fatigue can be a problem in longer stay units. However, this type of system offers greater flexibility at ward level. Meals can be cooked throughout the meal service which benefits all patients as they receive a hot, freshly cooked meal as well as for newly admitted patients or those absent at mealtimes. See figure 11

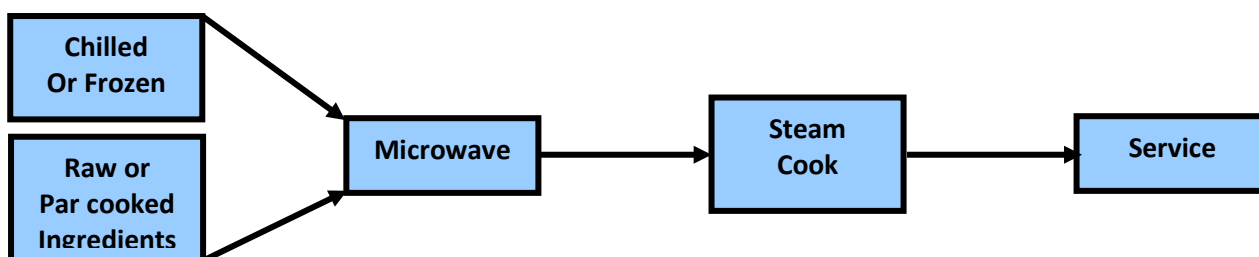


Figure 12: Illustration of Steam Microwavable Meal Process

It is increasingly common for new hospital units to be planned without kitchen or cooking facilities, saving the cost of setting up and managing prime cooking facilities, and releasing more space for clinical activity. In these circumstances, availability from the caterer may be limited to what is available from their suppliers, and there may be a lead-time between ordering and delivery, causing potential problems for special requests. In this situation, the dietitian and caterer must plan to hold a restricted stock of frozen food to cover most of the anticipated therapeutic diet requirements in the short term. It may be prudent to plan for an on-site facility for the preparation of special meals for those patients that are not easily served by prepared meal arrangements; staff restaurant 'on call' catering can be utilised if the cooks have adequate training. Dietitians should be prepared to advise and support such an initiative if it benefits the needs of their patient population.

It is essential that the food service system in place is capable of providing for the nutritional needs of the individuals served. If it does not then it should be changed. Changing an entire food service system is an expensive and resource-intensive process, not to be undertaken lightly. However, over time the needs of particular establishments can change and it is extremely difficult to meet the needs of the patient group if the underlying food service system is not fit for purpose.

Meal Distribution and Service

Within the food service options, there are also a range of methods of distribution and service of food. The two most common forms are plated meal services and bulk meal services. Plated meals are served in the kitchen and either plated hot for immediate service, or cold for heating on the ward just prior to service. Similarly, with the bulk system food may be delivered hot to the wards for immediate serving, or delivered cold for regeneration at ward level.

Control of the service

It is important to understand that in many cases nowadays the catering manager may not have direct control of the staff involved in serving the food, and may be located many miles away. This can result in the caterer being distanced from the patient, and the dietitians' message not being translated into action at the service point. This poor communication model creates a situation that is unsatisfactory for all, as is shown here in figure 12.

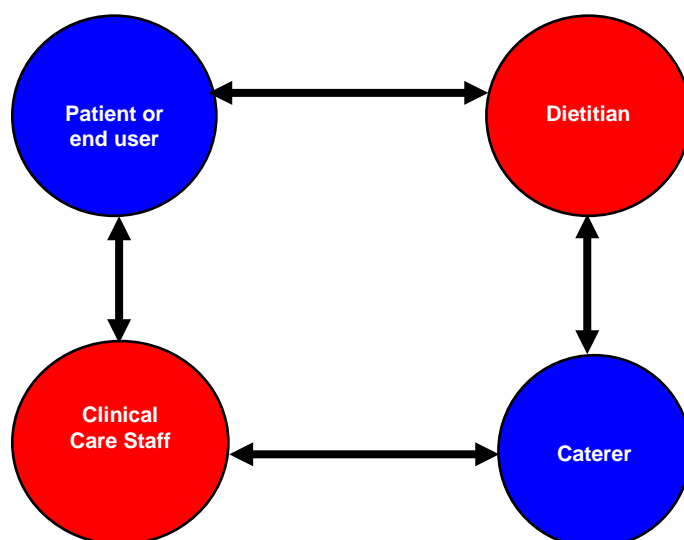


Figure 13: Illustration of a Poor Communication Food Service Model

Throughout the hospitality industry there are fewer qualified and experienced caterers, and the NHS is no exception. Dietitians may be able to influence management arrangements, particularly by being proactive in setting contract specifications before the contract is tendered. This should improve the situation, so that the patient becomes the focus point as shown in figure 13, with full two-way communication channels, with the dietitian in a pivotal position having professional access to both the caterer and the clinical care staff.

Many staff involved in food service may not speak English as their first language. There may be a need for instructions and training to be produced in a form, which can be easily understood and used to prevent delays and misunderstandings. In any training situation, from Universities and Catering College to ward staff training, dietitians have the skills to seize opportunities to promote food and beverage services in the way most appropriate to their audience to realise the patient-focus shown below in figure 13.

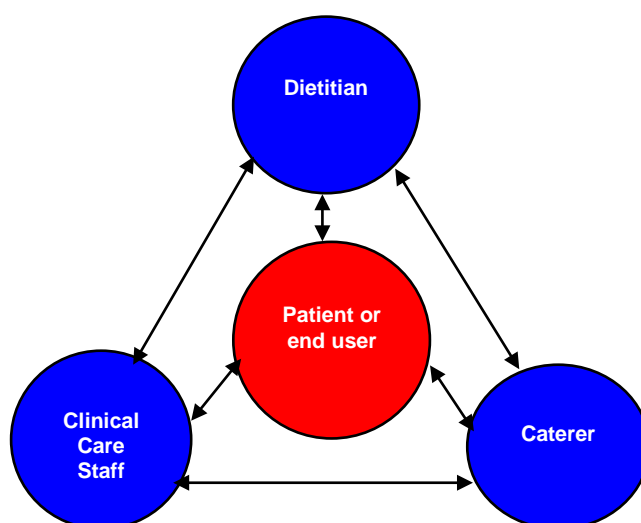


Figure 14: Illustration of a Patient Centred Food Service Model

Working Together

Dietitians and caterers working together have other benefits, such as avoiding duplication of effort, and increasing the 'power of persuasion'.

Examples of co-operative working include:

- Joint monitoring and publishing monitoring results, and audits of trends
- Food focus groups
- Theme days
- Collaboration on preparing and presenting Board reports
- Shared staff induction and work shadowing
- Joint presentations on healthy eating
- Joint poster presentations for conferences
- National events and campaigns run by relevant organisations such as BDA, Hospital Caterers Association and National Association of Care Caterers etc. For example, BAPEN Nutrition and Hydration Week (See BAPEN website <http://www.bapen.org.uk/>)
- Media promotion of fun food events

- Hospital open days
- Setting up joint databases and libraries to manage the technical information available from a variety of suppliers etc.
- Partnership working with government organisations and initiatives.

Food Hygiene and Safety

Many patients are extremely ill and/or immuno-compromised whilst they are in hospital, and as such are unable to fight off the effects of food poisoning. The caterer is responsible for ensuring that the food is safe and that food safety is not compromised (See Chapter 9 on Neutropenic Diets).

Anyone involved in handling food should receive Food Safety training. Depending on the level of risk this can be either at a local level or by a course accredited by an organisation such as the Chartered Institute of Environmental Health (CIEH) or Royal Society of Public Health (RSPH).

All caterers are legally required to carry out a full risk assessment of their food production and service procedures and practices, and to put in place management systems and control measures to reduce the major risks in food manufacture. These set out what is, and what is not, permissible, and will take account of issues such as staffing and equipment availability in each individual unit.

This management system is known as **Hazard Analysis and Critical Control Point (HACCP)**.

HACCP identifies and prioritises controls to eliminate the potential risks wherever possible, or to reduce them and maintain them at safe levels. Checks are concentrated at certain points that are critical to the safety of the food.

All points of potential risk, from the selection of suppliers and product specification, through all the preparation, cooking, storage and delivery processes, right up to the point of service to the patient would have been assessed. The local Environmental Health Officer (EHO) will have been involved and approved the HACCP system. HACCP not only deals with all food safety risks but also risks due to food allergens.

The dietitian has a role to play in the assessment team, by providing specialised advice to the caterer about the vulnerability of specific patient groups. Foods that by their nature contain bacteria, such as probiotic drinks and yoghurts, may be unacceptable for immuno-compromised and other groups of vulnerable patients. Organically produced foods carry higher levels of organisms due to the use of manure as a fertiliser. If used they will need thorough processing to ensure food safety, and they should not be eaten raw.

HACCP at ward level

The caterer conducting HACCP can only take account of, and assess risks that he/she is aware of at the time the analysis is carried out. What is possible to do in one unit might not be safe to do in another, due to differing systems. The procedure manuals and staff training will all be based on the original hazard analysis, and the assumption that the control systems remain unchanged at ward level.

The cooking process does not kill all food poisoning bacteria spores, and those that do survive are then controlled by the rigid time and temperature controls imposed by the HACCP procedures, so that their potential for growth is kept within safe limits. To maintain these rigorous standards, the ward service team must not be asked to make any changes to their routine or further process food, such as putting it through a blender, without first discussing it with the caterer who is in charge of the HACCP for the unit/ward.

Changes to the way that food is processed, may undermine risk control; thus making a product unsafe. At worst, this could result in the death of a patient and the prosecution of the Hospital, the caterer and other staff involved.

The caterer will always do his best to respond to any requests, within limits. For example, there are stringent regulations around the use of shell/fresh eggs for hospital patients, or for any use within a hospital kitchen, so a request for soft-boiled eggs may be denied, but scrambled eggs or omelettes made from pasteurised egg may be available.

In summary food should do no harm but it should also do well, as in the safe provision of nutrients and promotion of wellbeing.

Legislation

- The Food Safety Act (1990) (Available at <http://www.legislation.gov.uk/ukpga/1990/16/contents> [Last accessed 24/06/12])
- The Food Safety (General Food Hygiene) Regulations (1995) Available at <http://www.legislation.gov.uk/uksi/1995/1763/contents/made> [Last accessed 24/06/12]
- General Food Law Regulations (EC) 178/2002 (Available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2002:031:0001:0024:EN:PDF>) [Last accessed 24/06/12]
- Guidance on General Food Law Regulations (EG) 178/2002 (Available at <http://www.food.gov.uk/multimedia/pdfs/fsa1782002guidance.pdf> [Last accessed 24/06/12])
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Further reading

Chartered Institute of Environmental Health. Available at <http://www.cieh.org/training.html> [Last accessed 24/06/12]

NHS Executive (1996) Management of Food Hygiene and Food Services in the National Health Service Department of Health, London

Royal Society of Public Health Available at <http://www.rsph.org.uk/en/qualifications/index.cfm> [Last accessed 24/06/12]

Glossary

Service User – this terminology, used throughout refers to patients in hospital, residents, clients or service users in care settings and even people in their own homes.

Bed Bases – This term used in chapter 1 refers to hospitals, wards, care centres or other locations where people are cared for and services are provided such as food provision.

Acknowledgements

Thanks go to Ingrid Darnley, Policy Officer for Clinical Quality, British Dietetic Association whose guidance and support throughout this review have been critical to its success.

I also wish to acknowledge the contribution of other members of the Food Counts Committee who have assisted in the background. By selflessly abstaining from their involvement in the TRWG due to geography, we have managed to avoid higher travel costs.

I cannot ignore the superb IT help given by my husband Alan Cartz who assisted greatly with the layout, tables and IT aspects as well as proof reading the document.

I would also like to thank the following for hosting our meetings and sponsoring our lunches.

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- **Tillery Valley** for sponsoring lunch at our meeting in February
- **Anglia Crown** for sponsoring lunch at our meeting in March
- **G4S** for sponsoring lunch at our meeting in June
- **Medirest** for sponsoring lunch at our meeting in August
- **Aramark** for sponsoring lunch at our meeting in October
- **Food Counts** and **ISS** for sponsoring lunch at our meeting in November
- **Frimley Park Hospital** for hosting lunch and sponsoring lunch at our meeting in December
- **ISS** for hosting and sponsoring lunch at various sub-group meetings
- **Frimley Park Hospital** for hosting and sponsoring lunch at various sub-group meetings

Members of the Working Group

Without doubt, it is the membership of any team which drives its direction and shapes its end result; the members of the Toolkit Revision Working Group have worked tirelessly to make this document what it is. This team of experts have given of their expertise in order to produce a document that the rest of the dietetic and catering profession can be proud of. In addition, we have been supported by dietetic representatives from the home countries and our various stakeholder groups.

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Conflicts of Interest; sourcing of funding and authorship

The work of the Toolkit Revision Working Group (TRWG) to produce this Digest was self-funded. Any costs incurred by the group were minimal. I would like to thank all the team for giving their time, and also thank their employers for allowing them to attend meetings and, in many cases funding the cost of travel to these meetings.

Any remaining costs were borne by Food Counts but we managed to keep these to a minimum thanks to financial 'ownership' by all the team members.

All members of the working group signed conflicts of interest forms during the development of these guidelines. Signed copies are retained by the Chair of the working group and can be inspected by any interested party.

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Peer Review

This was sought through several mechanisms: Firstly, there was consultation with BDA and Food Counts members.

There were 2 Food Counts study Days at which all those present had the opportunity to review the document and after which there was an additional feedback period.

There was also consultation with other dietitians with catering knowledge who were critical readers.

Comments were taken into consideration and modifications made from consultation feedback. As a final quality control check, the guidelines were ratified as BDA guidance on behalf of the BDA Professional Practice Board in May 2012.

Stakeholder Groups and Organisations

Thanks go to the following groups and organisations and the individuals who represented them.

Age UK	BDA MNG	NACC
Anaphylaxis Campaign	BDA Oncology Group	NAGE
BDA DHIVA	BDA Paediatric Group	NHS Supply Chain
BDA DOM	BDA Renal Group	PENG/BAPEN
BDA Liver and GI Group	Coeliac UK	Royal College of Nursing
BDA MHG	Hospital Caterers Association	WRVS

Endorsements

1. *The Royal College of Nursing welcomes the introduction of the 'The Nutrition and Hydration Digest: Improving Outcomes through Food and Beverage Services' and were delighted to have collaborated with the British Dietetic Association, and key stakeholders, in the development of this valuable resource. If nutrition and hydration is to be given the priority required, this multi-professional collaborative approach needs to be taken forward and reflected into practice. 'The Nutrition and Hydration Digest' will help to equip frontline staff to improve patient outcomes and their experiences. We believe that it will play an important role in increasing awareness amongst nurses and other members of the healthcare team for the need for good nutrition and hydration.*

Steve Jamieson

Head of Nursing Royal College of Nursing

2. *The Hospital Caterers Association is delighted to have been part of 'The Nutrition and Hydration Digest: Improving Outcomes through Food and Beverage Services'.*

The HCA continues to work closely with the BDA on a number of initiatives, which aim to improve nutritional care and food service to our patients at ward level, with the ethos that 'food is the simplest form of medicine'.

The Digest continues to focus on the importance of multi-disciplinary working and the 'catering liaison' dietetic role. In addition, it continues to promote the fundamental need for the dietitian to develop good team-working relationships with everyone involved in the nutritional care of patients, which includes caterers and nurses.

The Digest has the potential to really make a difference to the nutritional status of our patients in hospital. This will ensure that patient meal service and meal experience is regarded as one of the basic essences of life and given priority as we all know food is only nutritious if it is consumed.

Janice Gillan

National Chairman Hospital Caterers Association

3. *The Patients Association welcomes 'The Nutrition and Hydration Digest: Improving Outcomes through Food and Beverage Services'. In the modern NHS it is deeply troubling that malnutrition continues to affect millions of patients every year. We know from our own work on malnutrition that many patients are left hungry or thirsty affecting their comfort and their ability to get better. Only last month it was reported that 4 people die every day from malnourishment or dehydration in our hospitals. This is unacceptable. Nurses, doctors and all healthcare professionals must understand that they all have responsibilities to their patients to ensure they are fed and given enough to drink. The Digest will, we hope, provide real and practical solutions to ensuring that all patients receive adequate nutrition and hydration when they are in hospital.*

Katherine Murphy

Chief Executive Patients Association

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Appendix: 1 Dietary Reference Values

Energy Requirements for Males and Females

Age	EARS mJ/day (kcal/day)	
	Males	Females
0-3 months	2.28 (545)	2.16 (515)
4-6 months	2.89 (690)	2.69 (645)
7-9 months	3.44 (825)	3.20 (765)
10-12 months	3.85 (920)	3.61 (865)
1-3 years	5.15 (1,230)	4.86 (1,165)
4-6 years	7.16 (1,715)	6.46 (1,545)
7-10 years	8.24 (1,970)	7.28 (1,740)
11-14 years	9.27 (2,220)	7.92 (1,845)
15-18 years	11.51 (2,755)	8.83 (2,110)
19-49 years	10.60 (2,550)	8.10 (1,940)
50-59 years	10.60 (2,550)	8.00 (1,900)
60-64 years	9.93 (2,380)	7.99 (1,900)
65-74 years	9.71 (2,330)	7.96 (1,900)
75 + years	8.77 (2,100)	7.61 (1,810)
Pregnancy		+0.80* (200)
Lactation:		
0 -1 month		+1.90 (450)
1- 2 months		+2.20 (530)
2- 3 months		+2.40 (570)
<i>Group 1**</i>		
4-6 months		+2.00 (480)
> 6 months		+1.00 (240)
<i>Group 2***</i>		
4 - 6 months		+2.40 (570)
>6 months		+2.30 (550)

* Last trimester only

** Group 1 mother whose breast milk supplies all or most of the infant's food only for the first 3 months.

*** Group 2 mothers who supply all or nearly all the infant's energy and nutrient needs for 6 months or more.

Reference Nutrient Intakes for Protein

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
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.

Appendix: 2 Menu Planning Guidance

National Catering and Nutrition Specification for Food and Fluid Provision in Hospitals in Scotland (The Scottish Government, 2008)

Bread, Rice, Potatoes, Pasta and Other Starchy Cereals

Standards	A selection of extra breads, including brown and 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 will assist patients meet their overall energy and nutrient requirements and can also assist in prevention of constipation.
Food Options	<ol style="list-style-type: none"> 1. All bread - white, wholemeal, granary, bagels, chapattis, naan, pitta bread and tortilla 2. Potatoes and sweet potato 3. Breakfast cereals, including wholegrain varieties (NSP>3g/100g). 4. Porridge 5. Rice, couscous and semolina 6. Noodles and pasta (including wholegrain varieties)
Menu planning guidance	<ol style="list-style-type: none"> 1. 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). 2. Provide a choice of at least two bread/cereal/starch items at each meal - breakfast cereals, bread, rice, pasta, noodles and potatoes. 3. 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. 4. Benchmark manufactured products against the Food Standard Agency's Target Nutrient Specifications for manufactured products paying particular attention to salt targets for bread for example. <p>A variety of breakfast cereals should be provided at breakfast time including, at least two wholegrain choices, for example, Branflakes, Weetabix, Shredded Wheat (Fibre >3g/100g or at least 3g in a reasonable expected daily intake) and at least one choice fortified with folic acid.</p> <ol style="list-style-type: none"> 5. Introduce alternative sources of bread and cereals such as couscous, tortillas and pitta bread. 6. Consider adding grains such as barley, rice and pasta to homemade soups throughout the menu cycle. 7. Offer cereal based desserts such as rice pudding or semolina. 8. Provide small sandwiches, crackers, oatcakes, muffins, tea breads, plain or fruit scones or pancakes as snacks appropriate for the patient group. 9. Bran must not be added to foods to increase fibre content - it inhibits the absorption of some minerals.

Children 1-16 years	<ol style="list-style-type: none"> 1. This food group should form the base of a children's menu. 2. Provide a choice of a variety of different cereals at breakfast, one of which should be a popular children's cereal. 3. Provide a choice of at least two carbohydrate options at each main meal. 4. Bread and cereals can be offered as snacks, including scones, buns, muffins, crackers, cereal bars. 5. Wholegrain or wholemeal variety bread and cereals must be offered as a choice, not the only choice and not at the expense of more energy-dense foods for children <5 years old.
----------------------------	--

Fruit and Vegetables

Standards	A hospital menu must offer the opportunity to choose at least five servings (minimum 400g uncooked) of this group across a day including as wide a variety as possible (can include snacks).
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	<ol style="list-style-type: none"> 1. Fresh, frozen, tinned and dried fruit. 2. Fresh, frozen and tinned vegetables. 3. Pure fruit and vegetable juices.
Menu planning guidance	<ol style="list-style-type: none"> 1. Guidance on portion sizes for a range of fruits and vegetables is available at DH - 5 A Day. 2. Provide a fruit option on the menu at least three times per day, e.g. fresh fruit, fruit crumble. 3. Provide fresh fruit as a choice at least once every day. 4. Provide pure unsweetened fruit juice daily (100% juice). 5. Provide at least two vegetable choices at the main meal each day. 6. Provide at least one vegetable choice at the lighter meal in each day. 7. Add vegetables to soups and to other appropriate dishes, e.g. casseroles. 8. Use steam cooking in preference to boiling for vegetables if facilities and production allows. 9. <i>Always ensure a low fat alternative to roast or fried vegetables is available.</i> 10. Provide a choice of fresh, uncooked vegetables, e.g. salads at mealtimes (see below). 11. Fresh, stewed or canned fruit could be provided as an accompaniment at breakfast and for dessert. 12. <i>Fruit in syrup should be provided for energy-dense choices, fruit in juice for healthier eating options.</i> 13. Provide soft, easy to eat fruit or prepared fruit salad for elderly patients. 14. Cook or regenerate vegetables in batches to minimise nutrient loss as production allows. 15. Cook vegetables as close to service as practical. 16. 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. 17. Don't hot-hold for more than 90 minutes to ensure maximal vitamin retention.

Children 1-16 years	<ol style="list-style-type: none"> 1. The opportunity to choose at least five servings per day of fruit and vegetables must be available. 2. Fruit and vegetables should be offered in appropriate portion sizes for children. 3. A mixture of smaller fruits and large fruits should be offered, e.g. plums and satsuma in addition to pears and apples. 4. Pure unsweetened fruit juice should be available (100% fruit juice). 5. Fresh or canned fruit should be offered at breakfast. 6. Fresh fruit or fruit in juice can be offered as a snack. 7. A choice of popular vegetables should be available at each main meal, e.g. peas, carrots, sweet corn, broccoli, tomatoes, cucumber and baked beans.
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Meat, fish, eggs, beans and other non-dairy sources of protein

Standards	<p>A hospital menu must offer the opportunity to choose a meat or meat alternative at both the midday and evening meal.</p> <p>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</p>
Rationale	<p>This group provides a good source of energy, protein, haem iron, vitamin B12 and zinc. Oily fish contributes to omega-3 intakes, while pulses, nuts and seeds contribute to protein, non-haem iron, zinc and fibre intakes.</p>
Food options	<ol style="list-style-type: none"> 1. Meat - all cuts of beef, lamb, pork and meat products such as bacon, ham, corned beef and sausages. 2. Poultry - all cuts of chicken and chicken products. 3. Fish - fresh, frozen, tinned and fish products such as fish cakes and fish fingers. 4. Oily fish includes fresh tuna, salmon, sardines, mackerel and herring. 5. 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. 6. Beans and pulses - baked beans, butter beans, kidney beans, chickpeas and lentils. 7. Nuts - includes, almond, hazel, walnut, cashew, pecan, Brazil, pistachio, macadamia and Queensland. 8. Vegetarian products such as burgers, sausages. 9. Textured soy proteins such as tofu, and Quorn (mycoprotein).
Menu planning guidance	<ol style="list-style-type: none"> 1. A variety of red meat, poultry and pork in different cuts should be provided across the menu cycle. 2. When offering meat, poultry and fish products try to procure leaner cuts. 3. Choose meat products with a higher meat content. 4. Benchmark manufactured products against the Food Standard Agency's Target Nutrient Specifications for manufactured products paying particular attention to salt targets. 5. Always include a protein alternative to meat for vegetarian meals such as kidney beans, chickpeas and texture-modified proteins. NB. Cheese can also be used. 6. Meat alternatives for vegetarian dishes should offer a variety of foods from this group. 7. Use eggs as a base for vegetarian meals regularly throughout the menu cycle. 8. Try to procure canned beans and pulses with no added salt and sugar.

	<p>9. Use pulse-based soups at least once per week throughout the menu cycle.</p> <p>10. <i>Always offer an alternative to fried or roasted meats.</i></p> <p>11. <i>Always offer an alternative choice to deep fried fish.</i></p> <p>12. For elderly or those requiring a softer texture due to chewing difficulties, offer soft lean cuts of meat or fish, minced meat or served with a sauce.</p> <p>13. It is recommend that pregnant and breast-feeding females should not consume oily fish more than twice a week.</p>
Children 1-16 years	<p>1. Offer the choice of a variety of meat or meat alternative options at each main meal.</p> <p>2. Include familiar and palatable choices.</p> <p>3. NB. It is recommended that children with a parent or sibling with atopic disease should not have peanuts or food containing peanuts until at least 3 years of age.</p>

Milk and Dairy Foods

Standards	There must be provision for patients to access a minimum of 600mls of milk for each patient every day (which may include milk used in the cooking process, and teas and coffees). A choice of <i>whole milk</i> and <i>lower fat milk (semi-skimmed)</i> must be available at every meal.
Rationale	This food group is a good source of protein, calcium and vitamin B12.
Foods	<p>1. Milk - cows, goats, sheep, soy, rice and dried milk powder.</p> <p>2. Cheese - can include cottage, soft, cheddar, brie, feta, edam, parmesan, stilton and low-fat varieties.</p> <p>3. Yoghurt or fromage frais.</p> <p>4. Sauces and desserts made from milk, e.g. custard, rice pudding.</p>
Menu planning guidance	<p>1. A hospital menu should offer the opportunity to choose two to three servings of this group across the day (can include snacks).</p> <p>2. Use cheese as a base for some vegetarian meals during a menu cycle, with awareness for 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.)</p> <p>3. <i>Ensure that there is provision of low fat cheeses for individuals requiring a healthy balanced diet.</i></p> <p>4. Provide yoghurt, both <i>low fat</i> and full fat, including thick and creamy varieties, as a snack or accompaniment.</p> <p>5. Provide milk-based desserts as part of a menu cycle, as appropriate for patient group (whole milk and <i>semi-skimmed milk</i>).</p> <p>6. Provide 'smooth' yoghurt for texture modified dietary choices as appropriate.</p> <p>7. Promote the use of hot milky drinks.</p>
Children 1-16 years	<p>1. Provide 350-500ml of whole milk for each child daily.</p> <p>2. Semi-skimmed milk must be available only on request for children 2 years and older.</p> <p>3. Use whole milk for all milk-based dishes.</p> <p>4. Offer milk/mousse-type desserts for snacks.</p>

Foods and/or Drinks High In Fat and/or Sugar (and Foods High In Salt)

Standards	<ol style="list-style-type: none"> 1. Hospital menu must offer a choice of butter and spreads that are rich in PUFA or MUFA including those low in fat, at all meals where a spreading fat is offered. 2. Butter or oils and spreads rich in polyunsaturated and monounsaturated fats should be used in cooking. 3. Nutrient standard for salt <6g/day.
Rationale	<p>This food-group increases the palatability of foods. Fats, <i>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 targets.</i></p>
Foods	<ol style="list-style-type: none"> 1. Fat containing foods - butter, unsaturated spread, spreads, cooking oils, salad dressings, mayonnaise, <i>cream, chocolate, crisps, biscuits, pastry-based items, cakes, puddings, ice-cream, rich sauces and gravies.</i> 2. Foods containing sugar - <i>soft drinks, sweets, jam and foods such as ice-cream, chocolate, cakes and biscuits.</i> 3. Foods containing salt - soy sauce, gravy mix, bouillon, salt and foods purchased ready-made, e.g. vegetarian products.
Menu planning guidance	<p><i>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.</i></p> <ol style="list-style-type: none"> 1. Benchmark manufactured products against the Food Standard Agency's Target Nutrient Specifications for manufactured products paying particular attention to salt targets. (FSA, 2012) 2. Specify a <i>measured</i> amount of salt to be used in a recipe. 3. Introduce alternative flavourings in place of salt/bouillon such as garlic, herbs/ spices. 4. Don't over rely on convenience foods that may contain large quantities of added salt, e.g. packet soups (and minimal nutrition content). 5. 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.) 6. Offer low fat/low sugar items such as yoghurt or crème fraiche <i>as alternatives to cream and ice-cream with desserts.</i> 7. Offer an alternative choice to cream-based sauces, for example tomato or vegetable-based sauces. 8. Offer an alternative choice to cream soups or use milk in place of cream. 9. 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. 10. Fat spreads that are rich in monounsaturated or polyunsaturated fats are likely to include rapeseed, olive oil, sunflower, soy oil. 11. Use spreads fortified with folic acid and vitamin D where possible, especially with elderly or those patients hospitalised for a long period of time. 12. Don't over heat deep frying oil or over use before replacing. 13. Make extra unsaturated spread portions available at ward level for adding to vegetables where the need exists with 'nutritionally vulnerable' patients.

	<p>14. Sugar should be freely available at ward level for patients requiring it to supplement their energy intake.</p> <p>15. Don't replace sugar in baking with an artificial sweetener.</p>
Children 1-16 years	<p>1. Honey must not be added to foods prepared for infants <12 months old.</p> <p>2. Use reduced sugar or sugar-free fluids as an alternative to water.</p> <p>3. Ice-cream is a familiar and popular dessert which may be an appealing and important comfort food for children whilst in hospital.</p> <p>4. Age-specific nutrient standard for salt should be used.</p>

Fluids

Standards	<p>There must be provision to ensure patients are able to access a minimum of 1.5 litres of fluid per day.</p> <p>Water must be available at all times throughout the 24 hours, preferably this should be chilled mains water, not from stored water tanks.</p>
Rationale	<p>Fluid and water is a basic nutrient of the human body and is critical to human life. Dehydration is a common problem in hospital patients.</p>
Fluids	<ol style="list-style-type: none"> 1. Water 2. Milk (both plain and flavoured) 3. Pure, unsweetened fruit juice 4. Squash or cordial (choice should include 'no added sugar' variety) 5. Tea, coffee (including all milk coffee) 6. Malted drinks and hot chocolate.
Menu planning guidance	<ol style="list-style-type: none"> 1. A catering service should provide patients with free access to a range of drinks throughout the day. 2. Provide a minimum of seven to eight beverages throughout the day (number depends on volume of beverage). (The suggested menu structure shows how this can be achieved - table 11.) 3. Fluid foods are not included as part of a general patients' fluid intake. 4. Provide a wide selection of beverages over a 24-hour period and serve at the acceptable temperature, in suitable and appealing cups, glasses or mugs. 5. Beverages can be served with breakfast but it is recommended they be served following the lunch and evening meal so not to 'fill-up' those patients with small appetites. 6. Water jugs should be changed regularly (it is recommended that a minimum of three times per day). 7. It is recommended that water jugs are covered with lids to minimise foreign debris and bacteria contaminating the water. 8. Fluids need to be provided at the correct temperature and texture, and in an appropriate drinking vessel to meet individual needs. 9. Practical tips for encouraging water consumption are provided in 'Water for Health: Hydration Best Practice Toolkit for Hospitals and Healthcare.' (Water UK, 2007)

Children 1-16 years	<ol style="list-style-type: none"> 1. A minimum of seven to eight beverages must be offered throughout the day. 2. Ensure fluid is available in the appropriate drinking cups for each stage of development. 3. Offer a choice of hot and cold drinks at each meal and snack, including no-added sugar varieties.
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References

Food Standards Agency (2012) Salt targets 2010/2012. Available at www.food.gov.uk/multimedia/spreadsheets/saltpoints20102012.xls [Last accessed 24/06/2012]

Water UK (2007) Hydration Toolkit for Hospitals and Healthcare. Available at <http://www.water.org.uk/home/water-for-health/healthcare-toolkit> [Last accessed 27/03/12]

Appendix 3 Using Food as Fortification Agents

- Extra skimmed milk powder in liquid milk, milk puddings, soups and sauces
- Additional fillings in sandwiches e.g. cheese and ham plus coleslaw with full fat mayonnaise
- Cream added to puddings and porridge
- Sauces added to ice cream
- Additional fat by deep frying, e.g. pineapple fritters
- Pureed chicken added to cream of chicken soup
- Single /double cream portions for adding to breakfast cereals, hot drinks and soups
- Butter or unsaturated spread portions to add to vegetables and potatoes
- Grated cheese portions to add to mashed potato, soups and to sprinkle over main dishes
- Sugar sachets to add to fruit juice, desserts and cereals
- Condiments such as mayonnaise and salad cream sachets for adding to salads or jacket potatoes
- Switching individual diet plans to full fat yoghurt and full fat milk for all food and beverages allowances
- Serving fruit in syrup instead of fruit in natural juice. Offer with cream for an even greater impact.
- Honey or jam for addition to desserts.



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