Llywodraeth Cymru
Welsh Government

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All Wales Nutrition and Catering Standards for Food and Fluid Provision for Hospital Inpatients

October 2011

ISBN 978 0 7504 6806 0

WG13745

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Preface

Hospital food is an essential part of inpatient care. Appetising food will encourage patients to eat well, and must contain the nutrients they need to recover from surgery or illness. Catering staff, dietitians, clinical staff, porters, nurses, speech and language therapists, healthcare support workers and other staff who contribute to the provision of food and fluid to hospital patients, all have an important role to play in the co-ordinated approach necessary to provide patients with a first class food service.

The *Free to Lead, Free to Care* report published in 2008 set out proposals which aimed to improve the patient's experience of hospital, including food provision and nutritional content. The Welsh Government, the Royal College of Nursing and Local Health Boards have been working in partnership to improve the patient experience of food provided in hospitals. The aim is to elevate the provision of food to the same importance as medication; raise awareness of nutrition in relation to patient safety; and to enable catering to be recognised as a clinical support service. The recent Wales Audit Office report *Hospital Catering and Patient Nutrition* concludes that catering arrangements and nutritional care provided to patients have generally improved since 2002, and patient satisfaction remains high, however, more still needs to be done to ensure recognised good practice is more widely implemented. The introduction of the All Wales Nutrition and Catering Standards for Food and Fluid Provision for Hospital Inpatients will support these ambitions.

We would like to thank the Scottish Executive for allowing us to adopt the Scottish Hospital Standards. We are grateful to those of you who have contributed to the development of the Standards, members of the Working Group and Steering Group and consultees. We now look forward to the successful implementation of the Standards.

Tony Jewell
Chief Medical Officer

Jean White
Chief Nursing Officer

Chapter 1: The need for Nutrition and Catering Standards for inpatients in hospital in Wales

1.1 Introduction

The recognition of the scale and impact of malnutrition, particularly undernutrition, in the UK healthcare system gained national attention in the early 1990s. Work on actions required to identify and treat malnutrition began in earnest and it became clear that the problem was on a Europe-wide scale.

McWhirter and Pennington (BMJ 1994)[1] quantified the incidence of malnutrition in hospitals. Public awareness was raised by the Kings Fund report, A Positive Approach to Nutrition as Treatment (1992)[2], and organisations such as Age Concern and Community Health Councils, which succeeded in putting this issue high on the political agenda through reports such as Hungry in Hospital (1997)[3] and more recently Still Hungry to Be Heard[4].

In 2007, the British Association of Parenteral and Enteral Nutrition (BAPEN) in conjunction with the Royal College of Nurses (RCN) and the British Dietetic Association (BDA) commenced the largest ever prospective national survey of the prevalence of malnutrition on admission to hospital and care in the UK[5]. In Wales, the risk of malnutrition in general acute hospitals in 2007 was over one in four adults (26%). In 2008, the data suggested Wales had the greatest prevalence of malnutrition in hospitals at 40% compared with the UK average of 28%[6]. Over the same years, 27 - 33% of patients admitted to care homes in Wales were found to be at risk.

Many patients who are ill in hospital or other health care settings will have poor appetites or a compromised ability to eat, thus potentially exacerbating a malnourished state. McWhirter and Pennington[1] found that 75% of hospital patients assessed to be undernourished on admission lost more weight during their stay. BAPEN reported in 2008 that a number of studies have demonstrated a 20-75% increased length of stay in malnourished compared to non-malnourished patients[6]. Malnourished patients have a three fold greater complication rate during surgery, they require more medication, and their mortality risk is higher than well nourished patients[7]. BAPEN estimate that 33.6% of hospital inpatients will be malnourished at any single time during their stay[5]. The cost of malnutrition to both patients and the Health Service cannot be over stated[7,8].

Data from BAPEN (2008 and 2009) [5,6] showed that the risk of malnutrition increases significantly with age. Older people are more likely to remain undernourished during their admission, and are more likely to have longer hospital stays.

This, along with public heath issues at the opposite end of the malnutrition spectrum such as obesity, highlighted the need for action and resulted in policy changes, audits and campaigns. The challenge has been meeting this diversity of needs within the logistical and resource limitations of hospital settings and the need for a whole system approach was recognised in the BAPEN Report Hospital Food as Treatment (1999) [9].

1.2 Scope of the Standards

This document is for use in hospital settings in Wales and provides technical guidance for caterers, dietitians and nursing staff responsible for meeting the nutritional needs of patients who are capable of eating and drinking.

Following an implementation period they will become mandatory and replace the Welsh Government Nutrition and Catering Framework of 2002.

The All Wales Catering and Nutrition Standards for Food and Fluid Provision for Hospital Inpatients, along with other guidelines and tools referenced in the document, are key to the delivery of the All Wales Hospital Nutrition Care pathway protocol and to meeting Standards for Health in Wales.

The guidance included in this document covers nutrient and food based standards which provide for the needs of a diverse hospital population of all ages, both nutritionally at risk and nutritionally well, and those with particular therapeutic and cultural requirements. It does not include detailed guidance on issues such as food safety and operation of local policy areas such as 'protected mealtimes'.

1.3 Policy background

The Welsh Government has clearly recognised the importance of nutrition and catering as an essential part of the care patients receive in hospitals and the summary below highlights the stages in the development of policy and guidance in this area.

2002 - **The Nutrition and Catering Framework for NHS hospitals in Wales 2002** [10] was published. It took the vision and proposals put forward in 'Improving Health in Wales' to start a process of improving patient nutrition and hospital catering services[11]. The core element of the framework was a revised Welsh Risk Pool Standard 23 which was supported by additional guidance, examples of best practice and reference information. *This has now been superseded.*

2005 - **The Healthcare Standards for Wales** were introduced, with Standard 9 focusing on the provision of hospital food and drink[12]. *This has now been superseded.*

2007 - **A Food in Hospital Task and Finish Group**, chaired by the Chief Nursing Officer for Wales, was established. The recommendations from the group have been delivered by sub groups of the Fundamentals of Care Working Group, as part of the implementation process of Free to Lead, Free to Care[13].

2009 - An All Wales Nutrition Care Pathway for hospitals was introduced, which details the pathway for the nutrition screening of patients on admission and the nutritional care throughout their hospital stay[14]. The pathway is supported by the new **All Wales Food Record Chart** and the **revised Daily and Weekly Intake and Output Charts**, with accompanying posters giving pictorial illustrations of various portion sizes to standardise record keeping in NHS hospitals across Wales[15]. These developments are supported by a **Nutrition Awareness Campaign**[16] for staff being

delivered by RCN Wales, aimed at raising the importance of food and hydration to the same level as that given to medication. An E-learning tool to train all ward staff in the use of the Nutritional Care Pathway and All Wales Food Record Chart is being implemented across Wales.

2010 - **Revised Healthcare Standards for Wales,** Doing Well Doing Better: Standards for Health Services in Wales were published[17]. The new standard for hospital food, Standard 14 and the accompanying guidance strengthened the requirements for meeting patients' nutritional needs and to implement the Nutrition Care Pathway.

2010 - **A review of the requirement for national nutrition standards for hospitals** in Wales was undertaken. The Review of 2010 reported a consensus amongst caterers and dietitians, supporting the need for Nutrition Standards for food provided for patients[18]. The Review highlighted in particular the NHS Quality Improvement Scotland (QIS) clinical standards for Food, Fluid and Nutritional Care in Hospitals (2003) [19] and the subsequent supporting document Food in Hospitals National Catering and Nutrition Specification for Food and Fluid Provision in Hospitals in Scotland[20]. These documents form the basis upon which the *All Wales Nutrition and Catering Standards* have been developed.

2011 - **The web based Nutrition and Catering Framework for NHS hospitals in Wales** launched superseding the 2002 Nutrition and Catering Framework for NHS hospitals in Wales. This web based Framework brings together all the policy and supporting tools into one place. It is available through HOWIS, the Physical Activity and Nutrition Network for Wales website and the Nursing Portal on every ward in every hospital in Wales.

2011 - **All Wales Nutrition and Catering Standards for Food and Fluid Provision for Hospital Inpatients** launched, aiming to address the risks of malnutrition in hospital patients as well as the needs of those considered to be "nutritionally well". It also reinforces the ethos behind the All Wales Nutrition Care Pathway for hospitals and becomes part of the new Nutrition and Catering Framework for NHS hospitals in Wales.

1.4 Overview of the Standards

The following chapters expand on these key areas:

- **Local assessment of the dietary needs of each hospital population.**
- **Identification of 'nutritionally at risk' patients.**
- **Menu planning.**
- **Need for standard recipes and nutritional analysis of menus.**
- **Menus that meet the nutritional requirements of the diverse patient population.**
- **Nutrient and food based standards for meals, snacks and fluid.**
- **Food service standards that promote the best possible eating experience for patients.**
- **Patients' choice.**
- **Ward provisions.**

1.5 Implementation and Monitoring

A separate detailed implementation plan has been issued detailing a phased approach with full compliance with these Standards required by all hospitals by April 2013. This will enable the collation of a shared set of nutritionally analysed recipes and menus to support hospitals to make the changes.

The All Wales Nutrition and Catering Standards for Food and Fluid Provision for Hospital Inpatients will be monitored via two existing mechanisms. Monitoring of compliance at ward and patient level will be through the introduction of an additional question within the Fundamentals of Care Audit Tool. Organisations will also be required to provide evidence of compliance with the All Wales Nutrition and Catering Standards for Food and Fluid Provision for Hospital Inpatients when they undertake their self-assessments against Doing Well Doing Better: Standards for Health Services in Wales in regards to Standard 14:Nutrition.

Chapter 2: Recognising and meeting the nutritional needs of the hospital patient

2.1 Introduction

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

This section lays out the nutrient requirements of a 'general' hospital population, which a hospital catering service is required to meet. Unlike food service in other institutions such as schools or prisons, the hospital population's nutritional and dietary needs are much more diverse. These will vary according to a number of factors, including individuals' age, physical condition and/or illness. Each age group of the population has different nutritional requirements, for example children have specific needs to facilitate growth and development whilst adult requirements are necessary to achieve or maintain good health. In terms of health, at one end of the scale, short-term admissions where an individual's normal diet is not interrupted, whilst at the other end of the scale long-term illness and or treatments that adversely affect a patient's food intake and have negative effects on their health are also commonplace.

This section also considers the way in which hospitals procure and serve food and drink to inpatients and how this can contribute to reducing the environmental costs of the food system, in particular through reducing food waste and strengthening Welsh food supply chains. The Welsh Government is one of a small number of governments worldwide to have sustainable development as one of the core principles within its establishing statute. Our food comes to us at great cost to the environment; accounting for 20% of Wales' ecological footprint. In Wales, it is estimated that people throw away 330,000 tonnes of food per year, worth £500m per year, or £420 per person. Taking sustainability into account at the menu planning stage will also contribute to Health Boards' and Velindre NHS Trust's work in implementing the NHS sustainable toolkit *Healthy Sustainable Wales: The NHS Contribution" - A tool-kit to help you embed Sustainable Development into your NHS Organisation.*

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

A large proportion of hospital patients, such as the acutely ill, undernourished or those with reduced appetite, require diets that are more energy and nutrient-dense.

This means that the same amount of energy (from fat and carbohydrate), protein, vitamins, minerals and trace elements must be provided in a smaller volume of food.

There are other patient groups whose appetites are good and have increased nutrient needs. They will require normal or large portion sizes e.g. trauma, orthopaedics and cystic fibrosis.

Many patients may require a therapeutic diet, for example patients with renal failure. The Dietitian is key to the dietary management of these patients.

Information should be provided to patients and their carers on what to expect to be available for meals and snacks in hospital

2.2 'Nutritionally at risk' hospital patients

Studies have shown that a significant proportion of patients admitted to hospital are undernourished and that many of these patients' nutritional needs go unrecognised leading to preventable complications and an increase in length of stay.

Latest data for Welsh hospitals states that the mean length of stay for all patients as 7.6 days[21].

Older adults in long-stay care have been shown to be at particular nutritional risk.

Patients can be 'nutritionally at risk' if they:

- Are admitted to hospital undernourished.
- Have preceding unexplained or unintentional weight loss.
- Have physical or psychological difficulty eating and/or drinking.
- Have acute or chronic illness affecting appetite and food intake.
- Have cognitive or communication difficulties.
- Have increased nutritional requirements (e.g. due to trauma, burns).
- Require the texture of food and/or fluid to be modified.

The dietary intakes of hospital patients have been found not to meet energy and nutrient requirements, even when the hospital menu in theory will meet individual requirements. These individuals' dietary needs are very much more focussed on the provision of tasty, energy and nutrient-dense foods that come in modest portion sizes. **Increasing the availability of suitable food choices and also the opportunities to eat will be critical in enabling patients achieve their needs.** For many of these patients it may not be appropriate for a healthy eating style diet to be provided at this time.

2.3 'Nutritionally well' hospital patients

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

It would be appropriate for these patients to be provided with a diet that is based on general healthy eating principles.

2.4 Delivering the Standards – everyone's responsibility

2.4.1 All Wales Hospital Nutrition Care Pathway Protocol states:

> 'Within 24 hours of admission to hospital all patients should be weighed and screened for malnutrition or risk of malnutrition using a validated nutritional screening tool.
>
> Patients identified with swallowing difficulties should be referred for formal assessment by a Speech and Language Therapist. A referral to a Dietitian should be made if advice on a textured modified diet or artificial nutritional support is required. In patients where enteral nutrition is contra-indicated total parenteral nutrition should be considered.
>
> When a nutrition risk score and weight has been established a multi-professional nutrition care plan should be implemented. The care plan developed will depend on the nutrition risk score[14],

In addition to the need for nutritional screening of all patients, an assessment of each patient's dietary needs should also form part of their individual nutrition care plan, such needs as:

- Eating and drinking likes and dislikes.
- Food intolerance / allergy.
- Need for therapeutic diet.
- Cultural/ethnic/religious requirements.
- Social/environmental mealtime requirements.
- Physical difficulties with eating and drinking.
- Lacking ability to communicate their food/fluid preferences.
- The need for equipment to help with eating and drinking.

A plan of how these needs will be met should be developed, implemented and monitored.

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

2.4.2 The role of Healthcare Professionals

The provision of food and fluid to hospital patients demands effective multidisciplinary team working throughout the whole of the food chain. The responsibilities of various Healthcare Professionals have been described in earlier documents[10/22]; the importance of others have been highlighted and added during this work

- ***Catering Manager:*** Producing and / or procuring meals, menu planning, management of the catering team, food safety and hygiene, training and development, waste monitoring and management, and patient satisfaction.

- ***Chief Executive:*** ensuring the implementation of these standards and monitoring performance against them; ensuring delivery of a safe and nutritious catering service, even when this service is contracted out.

- ***Dental hygienist*****:** help patients having surgery or complicated orthodontic treatment, or those with particular medical conditions to maintain a healthy mouth, thereby optimising ability to meet nutrition needs

- ***Dietitians***: Assessing patients' nutritional requirements, prescribing and advising on therapeutic diets, menu planning and procurement, training and development.

- ***Doctors:*** Recognising that appropriate nutritional care is fundamental to clinical practice, awareness of the impact of nutritional problems on the clinical outcome of disease process and how to manage it, leading specialist nutrition support teams.

- ***Executive Board Member:*** a single Board level Director leading for catering, nutrition and food hygiene, supporting implementation of these standards.

- ***Health Care Support Worker:*** Where trained, undertake nutrition risk training. Assist with food choice and serving. Assisting patient to eat and drink where required, monitoring food and fluid intake.

- ***Occupational Therapist:*** Ensures correct seating and positioning to support safe eating. They enable independence by helping patients to feed themselves, for example, by providing adapted eating utensils.

- ***Pharmacist:*** Member of specialist Nutrition Support Team, training and development.

- ***Physiotherapist:*** advises on appropriate and timely positioning for function, including the provision of suitable seating to enable the person to sit comfortably and with good posture for eating and swallowing

- ***Porters***: Delivering food to ward, removal of trolleys after mealtimes.

- ***Procurement and Supplies Officers:*** Liaise with MDT to ensure procurement of food and drinks from sustainable and safe sources which meet the diverse needs of hospital inpatients.

- ***Registered Nurses:*** Responsible for Nutrition Risk Screening and identification of dietary needs of patients, ensuring patients receive

appropriate food and assistance to eat where required, monitoring their food and fluid intake. When trained, to undertake basic swallow assessment. Protecting the mealtime and referring to specialists as required.

- ***Senior Nurse:*** Leading on nursing policy and operational procedures relevant to patient nutrition care plans. Monitoring performance at ward level against standards.

- ***Specialist Nurse***: Advising on nursing policy and operational procedure in regard to nutrition, member of specialist Nutrition Support Team and training and development.

- ***Speech and Language Therapist:*** Specialist swallow assessment and advice on patient need, training and development and menu planning for texture modification.

- ***Ward Level Caterer:*** safe delivery of patient meals and beverages; ensuring food is presented in an attractive and appealing manner.

- ***Ward Sister/Charge Nurse*** – Accountable for the management of the patients nutritional requirements through ensuring all patients receive Nutritional Risk Screening, identification of dietary needs of patients, ensuring patients receive appropriate, well-presented food and assistance to eat where required, implementing and managing protective mealtimes and referring to specialists as required.

2.5 Menu planning

Planning a menu effectively requires the collection of a wide range of information and input from numerous groups within a hospital. It is recommended that Health Boards plan their menus in line with recognised menu planning principles and must use a multi-disciplinary group to carry this out.

- The Multi Disciplinary Team Menu Planning Group will be responsible for implementing local protocol(s) for provision of food and fluid for patients. Core membership needs to include senior members of catering staff, a senior nurse, senior dietitians, other allied health professionals, a doctor and patient representative.

- The planning group is responsible for:

  - Assessment of needs of the local hospital population.
  - Menu structure, including the implementation of standard recipes.
  - A menu cycle that is appropriate to local groups, such as long-stay in patients.

- Involving procurement at an early stage of menu development to ensure appropriate and sustainable commodities can be sourced.
- Ensuring food and fluids meets the nutrient and food based standards in this document.
- Implementing local protocols for the provision of food and fluids to patients e.g. setting meal times appropriate for patient groups, enabling individual food choice, use of volunteers/family members to support at meal times.
- Consideration of resource implications.
- Audit of compliance against standards.
- Review menus in light of patient feedback and plate waste monitoring.

- Standard recipes must be used for all dishes. There must be a current nutritional analysis of the menus.

- All menus should be analysed for nutritional content by a Registered Dietitian at the planning stage. Minimum criteria are listed below, additional requirements reflecting local need will be decided by the Menu Planning Group. Further information on methodology for analysis can be found in Delivering Nutritional Care Through Food and Beverage Services, Toolkit for Dietitians (2006)[23].

Table 1. Minimum Nutrients for Menu Analysis	
Energy Protein Total fat Saturated fat Carbohydrate Non-starch polysaccharides (Fibre)	Sodium Potassium Calcium Iron Folate and Folic Acid Vitamin C

- The sustainability of the menu should be considered at the start of the planning process. (See Section 2.5.1 below.)

- Patient groups should be consulted about new menus before they are introduced.

2.5.1 Sustainability

The Welsh Government encourages all public sector premises that provide catering to identify opportunities to support and promote sustainable healthier foods where possible. By choosing sustainable foods and minimising wastage, hospitals in Wales can have a significant local and global environmental impact. Reduction of waste, particularly food waste, will become a key target for all public sector bodies in the near future. When ordering supplies or menu planning thought should be given to things such as the amount of water and energy required to make and transport the product and its ingredients, whether the ingredients are processed or altered, what the minimum quantity would be to meet demand while avoiding wastage from unsold items, capacity and type of storage required to prevent spoilage and how much packaging is used.

The Shared Services Partnership Procurement Service (previously Welsh Health Supplies) can provide further guidance. www.procurement.wales.nhs.uk

Chapter 3: Nutrient and Food Based Standards

3.1 Nutritional requirements of hospital patients

The Department of Health Committee on Medical Aspects of Food Policy (COMA) in 1991 published Report on Health and Social Subjects number 41, Dietary Reference Values for Food Energy and Nutrients for the United Kingdom[24]. This publication sets out recommended Dietary Reference Values (DRVs): the daily requirements for energy intake and all other nutrients for all age groups.

This document uses the DRVs and, in the case of salt, advice from the Scientific Advisory Committee on Nutrition (SACN)[25] as a **baseline guide** for the nutrient specifications for the general hospital population. However, these recommendations were developed specifically for use with healthy groups of the population. To illustrate, levels of salt are aspirational, but care should be taken not to compromise taste which will affect the intake of sufficient food to meet the energy needs of the vulnerable patient.

The British Association of Parenteral and Enteral Nutrition (BAPEN) have proposed amendments to the recommendations for energy and protein for the hospital patient with increased needs[9].

The nutrient specifications in this document endorse the recommendations provided by the British Dietetic Association document Delivering Nutrition Care through Food and Beverage Services and the BAPEN Hospital Food as Treatment Report[23,9].

Most patients will achieve adequate nutrition if they are able to make an informed choice from a menu that meets DRVs and they are able to consume all their meals.

It is **essential** that a hospital menu is capable of meeting the nutrient standards set out in table 2. It is unlikely that a free-living individual at home will meet the RNI for all nutrients on a daily basis, with most being met on average over a week. As noted, hospital menus must meet the nutritional requirements of diverse patient population groups. Two sets of nutrient standards have been specified in table 2. This is an acknowledgement of the extremes of the core nutritional requirements in the hospital setting outlined in chapter 2.

One set of standards is applicable to the needs of ‘nutritionally at risk’ patients; those with poor appetites, poor food intakes, undernourished. The other set of nutrient standards is in line with the requirements of the healthy balanced diet and thus are applicable to the needs of those patients who are considered to be ‘nutritionally well’. Provision of a menu that meets the nutritional requirements outlined for hospital patients, must also be a menu that provides **choices of dishes** that tempt patients to eat, and which they will enjoy.

3.2 Rationale for differences in nutrient standards set

Many of the nutrient standards that have been set in table 2 are common to both 'nutritionally well' and 'nutritionally at risk' patients. A healthy eating style of service is inappropriate for the 'nutritionally at risk' patient. The DRV for fat (<35% of total energy, and that for saturated fat <11% of total energy) and also that set for carbohydrate (and non-milk-extrinsic sugars – NMES) have therefore not been included as core nutrient standards for this population group. Given the levels of malnutrition in the hospital setting and also the poor appetites and poor food intakes of many patients, one of the key aims of the core food service should be to **provide food with concentrated energy and nutrients** in **small servings**. The very nature of providing a diet that is energy and nutrient-dense in small serving sizes may require the addition of extra fat, protein, or refined carbohydrate; or selection of food items that are perhaps considered 'less healthy'. This practice is incompatible with a standard that limits the percentage of energy from these macronutrients. More specific guidance about individual meals and components of the meal for the 'higher-energy' diet is provided in chapter 4.

Non-starch polysaccharide (NSP) or fibre provides bulk to the diet. A diet high in NSP is beneficial for individuals whose needs are in line with the healthy diet; it is important in preventing constipation, it gives a feeling of fullness and thus individuals are less likely to want to eat as frequently. As such, a diet that is very high in NSP is not advocated for individuals with a poor appetite where the aim is to ensure maximum food and thus energy and nutrient intakes. Diets of 'nutritionally well' adults should contain 18g NSP/day, with a range 12-18g NSP/day for the 'nutritionally at risk' depending on individual circumstances**.**

Where a menu must meet the needs of the 'nutritionally well' and the 'nutritionally at risk', then ensuring that both 'healthy choices' and 'higher energy and nutrient dense' choices are available at each eating occasion should enable all patients to choose a diet that meets their nutritional requirements. Menus should be nutritionally analysed to ensure that they have the capacity to meet the nutrient standards set for the 'nutritionally at risk' patient and enable individuals to choose a healthy balanced diet through selection of healthy choices.

Many patients will have changes in their nutritional and dietary requirements during their stay in hospital. Regular nutrition risk screening of patients, especially those who are most vulnerable, should ensure that changing needs can be met.

In situations when a menu is being planned solely for a defined patient group, for example children, it would be considered good practise to aim for the RNIs for nutrients for that particular age group. In practice, the patients' choice of different portion sizes of food should account somewhat for meeting different energy and nutrient requirements.

3.3 Table 2 Nutrient specifications for hospital menus for adults

Nutrient (/day)	'Nutritionally at risk' hospital patients	'Nutritionally well' hospital patients	Provided
Energy (kcal)	Adults 2250 – 2625 [a]	Adults 1900 – 2550 [b]	Daily
Protein (g)	60 – 90 [c]	Minimum 55 [d]	Daily
Total fat (% food energy)	Not specified	≤ 35	Averaged over a week
Saturated fat (% food energy)	Not specified	≤ 11	Averaged over a week
Carbohydrate (% food energy)	Not specified	≥ 50	Averaged over a week
Non-milk extrinsic sugars (NMES) (% food energy)	Not specified	≤ 10	Averaged over a week
Non-starch polysaccharides (fibre) (g)	12-18	18	Daily
Sodium (mg)	< 2400	< 2400	Daily (max)
Salt equivalents (g)	< 6	< 6	Daily (max)
Vitamin A (µg)	700	700	Averaged over a week
Vitamin D (µg)	10 [e]	10 [e]	
Calcium (mg)	≥ 700	≥ 700	Averaged over a week
Potassium (mg)	3500	3500	Averaged over a week
Magnesium (mg)	300	300	Averaged over a week
Iron (mg)	≥ 14.8 [f]	≥ 14.8 [f]	Averaged over a week
Vitamin B12	≥ 1.5	≥ 1.5	Averaged over a week
Folate and Folic Acid (µg)	≥ 200	≥ 200	Averaged over a week
Vitamin C (mg)	≥ 40	≥ 40	Daily
Zinc (mg)	≥ 9.5	≥ 9.5	Averaged over a week
Fluid (litres) ≥	≥ 1.5	≥ 1.5	Daily

Criteria used in nutrient specification for hospital menus for adults in Table 2

a BAPEN (1999) recommendations for the energy requirements for the 'unwell' hospital patient are 1.3 to 1.5 times resting energy expenditure; as per BAPEN and NICE (2006), this), this equates to approximately 30-35 kcal/kg/day (1800-21002100 kcal/day for a 60kg individual, and 2250-2625 for a 75kg individual). Recommendations are based on reference weights used for DRVs.

b Estimated Average Requirement (EAR) for males and females 19+ years.

c BAPEN (1999) recommendations for protein requirements for the 'unwell' or 'nutritionally at risk' hospital patient are 1g/kg/day, while NICE (2006) recommend a range of 0.8 – 1.5g/kg for the 'nutritionally well' to the 'at risk'. Recommendations in this document are based on reference weights used for DRVs, and will enable the needs of a broad range of patients to be met. Most importantly, this intake **must** be accompanied by an adequate energy intake if optimal protein utilisation is to be achieved. Some patients may require more protein than recommended herein; those patients with an altered metabolic state should be identified by screening procedures and referred for dietetic assessment.

d Provision must be made for the increased requirements of pregnant and lactating females.

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

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

3.4 Nutrient and food based Standards

Hospital menus must be able to meet the nutrient specification for adults in table 2 and provide the following nutrient and food based standards **daily** through meals, snacks and on-ward milk allowance:

Table 3 Nutrient and food based Standards

1900 - 2625Kcal energy and 55 - 90g protein to meet the needs of the nutritionally well and nutritionally vulnerable adult[9,24]. (the majority of hospital populations are of mixed age and need so will demand a menu which meets the higher range)
Fibre (NSP): 18g/day for nutritionally well adults; a range of 12-18g for the 'nutritionally at risk'[24]
Breakfast: minimum of 380kcal energy and 8g protein[23]. In addition a fortified / high protein, high calorie option for the nutritionally at-risk
Mid day and evening meal menus that include the following:[9,23,26] • A main course providing a minimum of 300 kcal, 18g protein (12g for vegetarian option). • To achieve this the main protein part of the meal should contain 12 -14 g protein or 9 – 10g for vegetarian dishes. • A fortified or high protein high calorie main course option to provide a minimum of 500kcal and 18g protein.
At least one fortified, or high protein and high calorie dessert, min 300 kcal and 5g protein at mid day and evening meals[23,26]
Snacks within the standard menu of a minimum of 100 kcal energy and 1.5g protein
An evening snack for all patients
Snacks of a higher energy and protein density must be offered to those identified as at moderate and high risk of malnutrition from Nutrition Risk Screening[14] to meet a minimum of **200 kcal and 2.5g protein** each.
500ml milk per patient for cereals and drinks (on-ward allowance)
Meal and snack options that meet healthy eating principles: (see guidance in Chapter 4)
Vegetarian options: at each meal
Soup (where served) of a minimum of 150kcals and 4g protein: in a 175ml serving and offered with bread and spread. If offered as a hot main course accompaniments must be served to meet the total 300-500kcals and 18g protein.
Mid day and evening meal: 3 courses at each meal comprising the following: ▪ 2 first course items. ▪ 3 main course items, as a minimum 2 of which should be hot. ▪ 3 dessert course items, 1 of which should be hot (sauce alone e.g. custard, is not adequate as one hot option).
Fruit juice: should be offered to all patients as a first course item on 2 occasions in order to meet the **minimum Vitamin C specification of 40 mg**[20]
A combination and balance of foods from all of the five food groups with a variety of cooking methods used: ▪ Bread, cereals, potatoes and other starchy foods. ▪ Fruit and vegetables. ▪ Milk and dairy foods. ▪ Meat, fish and alternatives. ▪ Foods high in fat, foods high in sugar.
Codes for healthier eating, fortified /high protein and high calorie, and vegetarian dishes as a minimum to guide staff and patients. Too many codes on the menu can be confusing[20].
Fluid – there should be 7-8 beverage periods throughout the day offering both hot and cold drinks[31]. This will provide approximately 1500mls fluid[27]. The beverages at lunch and evening meal should be served immediately after the meal has been completed[10].

3.5 Food service standards:

"Meals and refreshments should be delivered in an environment conducive to their consumption, and at times that are flexible and sensitive to specific care groups needs and preferences. The food should be presentable and palatable: thus cold food should be served as soon as possible after removable from refrigerated storage, and hot foods maintained at above 63 degrees C prior to serving"
(Nutrition and Catering Framework May 2002)[10].

- Food is more likely to be eaten and nutritional requirements more likely to be met when patients are given the opportunity to choose their own food from a varied menu where choice is maximised[20].

- The immediate environment should be prepared in order for patients to be able to enjoy their food in a dignified manner. Consideration should be given to washing hands, positioning, dental needs and any special aids required. Interruption of patients' mealtimes should be minimised through by operating a Protected Mealtime Policy[29,31].

- A choice of portion sizes should be offered for all main meals to meet a range of patient's appetites, energy and nutrient requirements and to look appealing on the plates[10].

- Services should be flexible with recognised procedures that provide for the dietary and nutritional needs of patients who cannot achieve their energy and protein requirements from the hospital menu or who miss a meal at normal service time[10].

- A missed meal service must be provided for all patients who did not have the opportunity to have a meal at the normal meal time and must provide a minimum 300 kcal and 18 g protein per main course[20].

- Main meals should be available every 4 to 6 hours during the day[29]. The maximum period between the last main meal at night and the following breakfast should not exceed 14 hours[10,29].

- Assistance to eat must be given to all those who require it[10,30].

- All staff involved in serving food to patients should be trained in how to do so properly and in food hygiene[10,29].

3.6 Ward provisions

Ward provisions will be available to ensure patients have access to a range of different snacks and beverages during periods when the hospital kitchen may be closed [22]. Consideration should be given to needs of specific client groups e.g. dysphagia. Policy surrounding ward ordering and management of provisions must be developed at a local level. Food and beverage items considered as a minimum are listed below:

- Biscuits (pre packed) sweet and savoury (for cheese).
- Bread and spread/butter.
- Preserves, e.g. jam, marmalade.
- Salt, pepper, vinegar and other condiments.
- Tea.
- Coffee.
- Sugar/sugar-free sweetener.
- Hot chocolate/malted milk.
- Milk (full-fat and/or semi-skimmed depending on local need).
- Fruit squash or cordial (regular and no added sugar).
- Cereal.

Chapter 4: Practical guidance for menu planners

4.1 Introduction

Food provision should be planned in order to be responsive to patients' needs and should be managed as an integral component of clinical care as outlined in Chapter 2, rather than a 'hotel' function.

Good menu planning and design can assist in maximising a patient's nutritional intake. Choice, familiar dishes, use of quality ingredients and service of meals in an attractive and appetising manner will enhance a patient's meal experience. The inclusion of different textures and colours can assist in making meals more appealing and should be considered during the menu planning process.

It is important to remember a menu is a live document and as such should be reviewed and updated regularly in order to continue to meet the nutritional needs of a potentially changing hospital population.

This section gives practical guidance for menu planning which includes:

- Achieving a combination and balance of foods from the five food groups:
  - Starchy carbohydrate foods (table 4).
  - Fruit and vegetables (table 5).
  - Meat, fish, eggs, beans and other non-dairy sources of protein (table 6).
  - Milk and dairy foods (table 7).
  - Foods containing fats, foods and drinks containing sugar (table 8).
- Provision of fluids.
- Meeting protein and energy standards for the diverse hospital population:
  - Example energy and protein profile of a typical day for nutritionally well adult patient (table 9).
  - Example high energy and protein profile of a typical day for nutritionally at risk adult patient (table 10).
- Soups and soup with sandwich of nutrient profile specified in the Nutrient and Food based standards (3.4).
- Snacks of nutrient profile specified in the Nutrient and Food based standards (3.4).
- Food fortification ideas.

- Healthy eating principles.
- Foods suitable for pregnant women.

4.2. Achieving a combination and balance of foods from the five food groups

Table 4 Starchy carbohydrate foods	
Standards	A selection of extra breads, including brown and wholemeal, must be available as an accompaniment to all meals. In addition to other cereals, at least 2 wholegrain breakfast cereals must be available at breakfast time, (containing fibre/NSP >3g/100g). At least one of the available cereals should be fortified with folic acid. Bran **must not** be added to foods to increase fibre content.
Foods	All bread – white, wholemeal, granary, bagels, chapattis, naan, pitta bread and tortilla.
	Potatoes and sweet potato.
	Breakfast cereals, including wholegrain varieties (NSP >3g/100g) and porridge.
	Rice, couscous, semolina.
	Noodles and pasta (including wholegrain varieties).
Menu planning guidance	A variety and choice of foods from this group including bread, potato, sweet potato, rice and pasta should be offered across the menu cycle (meals and snacks). Offer cereal based desserts such as rice / sago pudding.

Table 5 Fruit and vegetables	
Standards	The menu must provide the opportunity for patients to choose at least **5 servings** of fruit and vegetables (minimum 400g uncooked weight) across each day, including as wide a variety as possible. To meet this standard, it may be necessary to allow patients to choose 2 vegetables at each main meal. 150ml of 100% fruit juice may count for one serving in this group. At least one fresh fruit portion should be offered daily.
Foods	Fresh, frozen, tinned and dried fruit. Fresh, frozen and tinned vegetables. Pure fruit and vegetable juices.
Menu planning guidance	Guidance on portion sizes for a range of fruit and vegetables (5 a day portion information) is available at http://www.nhs.uk/LiveWell/5ADAY. Provide unsweetened, 100% fruit juice daily. Fruit based desserts can act as a food portion. Use steam cooking in preference to boiling for vegetables if facilities and production allows. If boiling do not add bicarbonate of soda to the water. Fruit in syrup may be helpful to support energy dense choices Cook or regenerate vegetables in batches to minimise nutrient loss as production allows. Cook vegetables as close to service as practical. Don't cook, chill, store, transport, or reheat for unnecessary lengths of times. Keep hot-holding to a minimum to ensure maximum vitamin retention. Don't hot-hold for more than 90 minutes.

Table 6 Meat, fish, eggs, beans and other non-dairy sources of protein	
Standards	The menu must provide a choice of meat or meat alternative at both midday and evening meals. Meat quality to comply with Welsh Health Supplies and Hybu Cig Cymru - Meat Promotion Wales (May 2005), *Welsh Health Supplies Specification for the Supply of Fresh and Frozen Meat.* The menu must provide a choice of fish a minimum of twice per week, one choice of which should be an oily fish.
Foods	Meat – all cuts of beef, lamb, pork and meat products such as bacon, ham, corned beef and sausages.
	Poultry – all cuts of chicken and chicken products.
	Fish – fresh, frozen or tinned products may be used.
	Frozen fish products such as fish cakes and fish fingers.
	Oily fish includes tinned, fresh or frozen salmon, sardines, mackerel and herring, or fresh or frozen tuna.
	Eggs are a useful protein source. Scrambled eggs may provide a suitable option of a cooked breakfast for a range of patients if required.
	Beans and pulses – baked beans, butter beans, kidney beans, chickpeas and lentils.
	Nuts – includes: almond, hazel, walnut, pecan, Brazil nuts and peanuts (Note: caution required regarding the potential for allergenic reactions in some patients).
	Vegetarian products such as burgers, sausages.
	Textured soy proteins such as tofu and textured vegetable protein (TVP).
Menu planning guidance	A variety of red meat, poultry and pork in different cuts should be provided across the menu cycle. Meat alternatives for vegetarian dishes should offer a variety of foods from this group. Use eggs and beans as a base for vegetarian meals **regularly** throughout the menu cycle.

Table 7 Milk and dairy foods	
Food Standards	There must be a provision for a minimum of 500ml of milk for each patient every day **at ward level**. This is to be used for breakfast cereals and drinks. A choice of whole milk and semi-skimmed milk must be available at every meal.
Foods	Milk – whole and semi-skimmed milk and dried milk powder; soy milk must be fortified with calcium.
	Cheese.
	Yoghurt or fromage frais.
	Sauces and desserts made from milk, e.g. custard, rice pudding.
Menu planning guidance	A hospital menu should offer the opportunity to choose 2 – 3 servings of this group across the day (can include snacks). Vegetarian cheese can be used as a protein source for vegetarian meals during a menu cycle; however it should not be used in excess. Provide yoghurt, both low fat and full fat, including thick and creamy varieties, as a snack or meal accompaniment. Provide whole milk desserts. Provide hot milky drinks.

Table 8 Foods containing fats, foods and drinks containing sugar	
Standards	Offer a choice of butter and spreads rich in MUFA or PUFA, at all meals where a spreading fat is offered. Only butter or spreads and oils that are rich in polyunsaturated and/or monounsaturated fats should be used in cooking. ***Provision of additional spreading fats including butter at mealtimes can increase the energy density and palatability of the diet, which can help those with poor appetites and also those with increased energy requirements.***
Foods	***Fat containing foods*** – butter, spreads, cooking oils, salad dressings, mayonnaise, cream, chocolate, crisps, biscuits, pastry-based items, cakes, puddings, ice-creams, rich sauces and gravies.
	Foods containing sugar – soft drinks, sweets, jam and foods such as ice cream, chocolate, cakes and biscuits.
Menu planning guidance	Oils rich in monounsaturated and/or polyunsaturated fats include: for example olive, rapeseed (Canola), safflower, sunflower or corn for cooking. Fat spreads that are rich in monounsaturated or polyunsaturated fats include those containing rapeseed, olive and sunflower oils. Use spreads fortified with folic acid and vitamin D where possible, especially with elderly or those patients hospitalised for a long period of time. Don't over heat deep frying oil or over use before replacing. Make extra butter/spread portions available at ward level for adding to vegetables where the need exists with "nutritionally at-risk" patients. Sugar should be freely available at ward level.

4.3 Provision of fluids

The following drinks are considered acceptable for fluids provision: water, milk, pure unsweetened fruit juice, squash or cordial, tea and coffee (including all milk coffee), malted drinks and hot chocolate.

Standards

- There must be provision to ensure patients are able to access a minimum of 1.5 litres of fluid per day.
- Water must be available at all times throughout the 24 hours; preferably this should be chilled mains water.
- Water jugs should be changed three times per day [28].
- 7-8 beverages should be offered in any 24 hour period[10].

Menu planning guidance

- Patients should be provided with access to a range of drinks throughout the day.
- Fluids from food (such as from soup or ice cream) are not considered a part of a general patient's fluid intake.
- There should be a wide selection of beverages provided over a 24-hour period, including thickened fluids where required.
- It is recommended that beverages are served **following** the lunch and evening meals, so as not to "fill-up" those patients with small appetites. Beverages can be served with breakfast.
- It is recommended that water jugs are covered to minimise contamination.

4.4 Meeting protein and energy standards for the diverse hospital population

Table 9 demonstrates a typical day's menu for patients who are nutritionally well and have a normal appetite. Patients who have increased nutritional needs with normal appetite will require the addition of snacks of higher energy and protein density 2-3 times a day in order to achieve the upper nutrient specification (Appendix 2). It is essential that the needs of the local hospital population are identified in order to determine the nutritional profile of the menu.

Table 10 demonstrates a typical day's high protein high energy menu which is nutrient dense and is aimed at patients who are nutritionally at risk and have a

smaller appetite. For this reason the menu is based on smaller portions, high energy high protein choices, fortified foods and snacks of a higher energy and protein density.

The analysis is based on products available via Welsh Health Supplies (WHS) Food Commodity Contracts at the time of publication. If items are sourced external to the WHS Contract the nutritional specification of these should be reviewed by a dietitian to ensure compliance with nutrition standards before purchase.

Recipes for soup, fortified porridge, fortified custard and fortified rice pudding used in Table 10 can be found in Appendix 1.

Table 9 Example energy & protein profile of a typical day for a nutritionally well adult patient

Menu	Portion sizes	Nutrient Content		Nutrient content total
		Protein (g)	Energy (Kcal)	
Breakfast				
Pure unsweetened fruit juice containing vitamin C	100ml-small glass	0.5	36	
Cereal e.g. bran flakes	Medium bowl 40g	4.1	13	
Milk for cereal	From daily allowance			
Bread – e.g.1 slice medium wholemeal or toast (a choice of white and wholemeal)	38g	3.5	83	**8.3g Protein 355 KKcal**
Butter spread/ PUFA spread	10g spread portion / 7g butter portion	Tr	52	
Preserves – jam portion	20g	0.2	52	
Lunch				
Unsweetened fruit juice	100ml-small glass	0.5	36	
Main course – hot e.g. roast beef Gravy made with mix	 70g 70mls	 19.9 0.6	 166 25	
2 vegetables e.g. green beans carrots	 45g 45g	 Tr 0.2	 81	**29.1g Protein 653 Kcal**
2 x 45g scoops of mashed potato	90g	1.6	93	
Hot dessert e.g. Apple & blackberry crumble with custard	 100g 100 mls	 2.4 4.0	 219 95	
Mid afternoon				
Fresh fruit e.g. small banana	100g	1.2	95	**1.2g Protein 95 Kcal**
Supper				
Soup Bread roll	170mls 40g	4 3.7	150 102	
Main course – hot e.g. breaded fish	 120	 14.0	 154	
Vegetables e.g. Peas	 70g	 4.2	 48	**31.9g Protein 843 Kcal**
Chips frozen fried	100g	4.1	273	
Cold dessert e.g. fruit cocktail served with ice-cream	 100g 80 ml	 0.4 1.5	 46 70	
Bed time snack				
Flapjack	40g	2.0	162	**2.0g Protein 162 KKcal**
Milk allowance				
Milk for 7 beverages per day (semi skimmed) includes milky drink at bedtime & milk for cereal	500mls	17	230	**17g Protein 230 KKcal**
Total nutrients available from above menu	**Meals** **Snacks** **Milk Allowance**	**69.3g Protein** **3.2g Protein** **17.0g Protein**		**1850 Kcal** **257 Kcal** **230 Kcal**
Grand total		**89.5g Protein**		**2338 Kcal**

Table 10: Example energy & protein profile of a typical day for nutritionally at risk patient

Menu	Portion sizes	Nutrient content		Nutrient content total
		Protein (g)	Energy (Kcal)	
Breakfast				
Pure unsweetened fruit juice	100ml-small glass	0.5	36	
Fortified porridge	160g	10.6	231	
Scrambled egg	100g	12.6	148	**27.22g Protein 550 Kcal**
Bread medium slice – toasted	38g	3.5	83	
Butter spread/PUFA spread	10g spread portion / 7g butter portion	Tr	52	
Mid morning snack				
Mini pack of bourbon biscuits	40g	2.4	201	**2.4g Protein 201 Kcal**
Lunch				
Pure unsweetened fruit juice	100ml- small glass	0.5	36	
Main course-hot Chicken & ham pie	 75g	 23.5	 259	
2 vegetables peas 1 small scoop carrots 1 small scoop	 45g 45g	 2.7 0.2	 31 10	
Mashed potato -2 x 45g scoops butter	90g 7g	1.6 tr	93 52	**34.3gProtein 778 Kcal**
Hot dessert Apple & blackberry crumble with fortified custard see recipe appendix 1	 90g 80ml	 2.2 3.6	 197 100.6	
Mid afternoon				
Double chocolate muffin (small)	50g	2.7	209	**2.7g Protein 209 Kcal**
Supper				
Soup	175ml	4	150	
Sandwich - ham & tomato	140g	16.8	234	**31g Protein 666Kcal**
Fortified rice pudding (see recipe in appendix 1)	150g	10.2	282	
Bed time snack				
Milky drink from allowance	200ml			
Cheese & biscuits Butter	20g cheese & 2 crackers 7g	6.4	192	**6.44g Protein 192 Kcal**
Daily full fat milk allowance - for 7 beverages	500ml	16.5	330	**16.5g Protein 330 Kcal**
Total nutrients available from above menu	**Meals** **Snacks** **Milk allowance**	**92.5 g Protein** **11.5g Protein** **16.5g Protein**		**1994.6 Kcal** **602 Kcal** **330 Kcal**
Grand Total		**120.55g Protein**		**2926 Kcal**

4.6 Soups and soup and sandwiches

Soup is a comforting food and is easy to eat. For soup to be considered nourishing, it should make a significant contribution of both protein and energy.

Soup (where served) should provide a minimum of **150 kcals and 4 grams of protein in a 175 ml serving.** Bread or roll with spread should be offered with it. Sample recipes can be found in Appendix 1

Where Soup is offered as a main course alternative, it must be served with accompaniments to meet the standard for a main course i.e. 18g protein (12grams if vegetarian option) and 300 kilocalories or 500 kilocalories for a fortified high protein, high calorie main course option

Table 11 Examples of soup + accompaniments as a main course alternative

Main Course Alternative Soup and Sandwiches		Soup	Bread / crackers	Spread	Filling	Totals
Soup and chicken sandwiches (2 slices medium sliced wholemeal bread, thinly spread margarine (14g), 40g chicken	Calories Protein	150 4g	156 6g	103 0	71 12g	480 kcal 22g protein
Soup and tuna sandwiches (2 slices medium sliced wholemeal bread, thinly spread margarine (14g), 35g tuna in oil + 5g mayonnaise)	Calories Protein	150 4g	156 6.7g	103 0	66 + 35 (mayonnaise) =98 9g	510 kcal 19.7g protein
Soup and cheese sandwich (2 slices large thin white bread, thinly spread margarine (14g), 35g Cheddar cheese	Calories Protein	150 4g	135 5 g	103 0	144 9g	532 kcal 18g protein
Soup, soft white roll (45g), spread portion (10g) and cheddar cheese (40g)	Calories Protein	150 4g	114 4g	74 0	164 10 g	502 kcal 18g protein
Soup, 4 cream crackers, spread portion (10g) edam cheese (50g)	Calories Protein	150 4g	116 2.6g	74 0	166 13	506 kcal 19.6g protein

4.7 Between meal snacks

Between meal snacks are essential in order to provide protein and energy for patients who are identified as medium or high nutritional risk using nutrition risk screening and are unable to meet their nutritional needs from the standard hospital menu. Whilst maximising eating opportunities, snacks also provide flexibility, interest and variety.

In line with the national public health agenda the provision of fruit as a snack can help patients achieve the 5 a day target and can be included as one of the options. However it should be noted that fruit is a low energy but nutritious snack.

The type of snacks provided should meet the needs of the hospital population and cater to their specific dietary needs. It is essential that policies and procedures are developed at a local level on how snack availability is communicated to patients, how snacks are delivered to the ward, stored and then how it is ensured that the correct snack reaches the patient.

- Some patients will need to be offered snacks at **least twice a day** to ensure maximum food intake. Snacks must be capable of providing a minimum of **100 kcal and 1.5g protein** and a selection should be offered. The exception will be those patients who would benefit from a healthy option such as fruit.

- For those individuals with small appetites and those requiring a more energy and nutrient-dense diet, the provision of snacks **three times per day** can assist them in meeting their energy and nutrient requirements. Snacks for patients who are nutritionally at risk must be capable of providing a minimum of **200kcal and 2.5g protein** and a selection should be offered.

- All patients should be offered an evening snack as the gap between the evening meal and breakfast is long.

- Fruit should be readily available for those who wish to have fruit as a healthy option snack.

- Snacks where required should be offered **at least one hour prior** to the next meal so as to maximise food intake. The frequency and timing of snacks and nourishing drinks should be appropriate to the patients' day. Hospitals may wish to offer a snack where the period between meals is more than 4 hours.

A list of suggested snack items suitable for a range of different patient groups, detailing energy and protein content are detailed in Appendix 2.

4.8 Food fortification

Some simple techniques can be used to maximise patients' nutritional intake; for example: offering encouragement and assistance at meal times to those requiring support, and providing tasty and attractive meals in as pleasant an environment as possible.

Despite best intentions, many hospital patients remain at risk of developing malnutrition due to a reduced appetite, which commonly presents in illness. In such patients, the aim is to increase the energy and protein density of the diet, without increasing dietary bulk. Making it possible for patients to:

- Consume 500ml (1 pint) of full fat milk daily.
- Have access to nourishing drinks such as milky coffee, hot chocolate, malted drinks, milkshakes, fruit juice and full-sugar squash.
- Eat small quantities, frequently, in the form of 3 small meals and 3 nourishing snacks can be helpful in achieving this aim.

In addition, a range of foods, as seen in the table below can be used to fortify meals and drinks, while maintaining the diet's palatability.

Table 12 Foods which may be used to fortify dishes

Food	Portion size	Energy (kcal)	Protein (g)
Butter	10g	74	-
Oil	3g (1 teaspoon) 11g (1 tablespoon)	27 99	-
Hard cheese (e.g. Cheddar)	30g (matchbox size)	120	8
Semi skimmed milk	568ml (1 pint)	269	19
Full fat milk	568ml (1 pint)	386	19
Skimmed milk powder	60g (4 heaped tablespoons)	209	22
Single cream	15g (1 tablespoon)	29	0.5
Double cream	15g (1 tablespoon)	74	0.2
Evaporated milk	15g (1 tablespoon)	23	1.3
Condensed milk	20g (1 tablespoon)	67	1.7
Sugar	5g (1 level teaspoon) 20g (1 tablespoon)	20 79	-
Honey	5g (1 level teaspoon) 20g (1 tablespoon)	14 58	-
Jam	5g (1 level teaspoon) 20g (1 tablespoon)	13 52	-
Ice cream	60g (1 scoop)	116	2

Examples of the contribution fortification can make to nutritional content of dishes

Porridge with full fat milk instead of water:

- 160g serving of porridge made with water, contains **74kcal and 2.2g protein**
- Made with full fat milk and skimmed milk powder, 160g porridge contains **231kcal and 10.6g protein**
- **Offer sugar or honey with breakfast to encourage extra calories.**

Milk sauces with full fat milk instead of semi-skimmed milk:

- 100ml serving of custard made with semi skimmed milk contains **95kcal and 4g protein**
- Made with full fat milk and skimmed milk powder, 100ml custard contains **126kcal and 4.4g protein**
- **Add 1 tablespoon of cream to a custard portion to add 74kcal.**

Addition of 60g (4 tablespoons) of dried milk powder to 500ml of full fat milk:

- 500ml of full fat milk = **330kcal and 16.5g protein**
- With 60g skimmed milk powder = **539kcal and 38.5g protein**
- **This milk can be used to further enrich fortified recipes and can be offered in drinks.**

Full fat instead of low calorie yoghurts:

- 150g low calorie yoghurt = **62kcal and 6g protein**
- 150g standard fruit yoghurt = **158kcal and 8g protein.**

Fruit canned in syrup instead of in juice:

- 100g fruit cocktail canned in juice = 29kcal
- 100g fruit cocktail canned in syrup = 57kcal
- **Serve with 45ml (3 tablespoons) of evaporated milk to add 69kcal**
- **Serve with 60g (1 scoop) of ice cream to add 116kcal**
- **Serve with 45ml (3 tablespoons) of double cream to add 222kcal.**

Other suggestions:

- Use of butter and jam with bread, teacakes and scones.
- Addition of 10g of spread/butter to vegetables or jacket potatoes will add 74 kcal.
- Addition of 5-10g of spread/butter and 15ml (1 tablespoon) of double cream to mashed potatoes will add 111 - 148kcal.
- Addition of 6g (2 teaspoons) of oil to rice or pasta will add 54kcal.

4.9 Healthier eating menu

4.9.1 Introduction

Some patient's nutritional requirements, appetites, food intake and nutritional status are not affected by their illness or treatment. While the NHS has a responsibility to promote education in healthy eating, it should be remembered that this will represent only a sub section of the hospital population for a relatively short period of time.

A healthy diet for people with diabetes, dyslipidaemia, hypertension or cardiovascular disease is considered an essential part of treatment and maybe beneficial in preventing further co-morbidities.

The healthier eating menu must make provision that maintains a normal nutritional status and meets the target nutrient specification for the hospital menu. It will support the clinical management of relevant patient groups and is invaluable in maintaining normal bowel function.

4.9.2 Practical applications

Healthier breakfast items include:

- High-fibre breakfast cereals >3g per 100g e.g. porridge, wheat biscuits, shredded wheat, bran flakes.
- Scrambled eggs, tomatoes, baked beans (ideally lower salt varieties), grilled sausages.

Use a variety of low fat or no-added fat cooking methods as often as practical:

- Discard poultry skin and trim visible fat from meat.
- Drain visible fat from cooked meat dishes as production allows.
- Use thick-cut chips when deep-frying.
- Strong cheese adds flavour to cheese dishes and sauces in smaller amounts.
- Don't add butter or spread to vegetables before service.

Use appropriate low-fat options in place of standard products where palatable, for example:

- Tomato-based sauces for pasta dishes.

- Yoghurt, milk.
- Bakery products e.g. tea breads, plain/fruit scones, oatcakes.
- Low fat mayonnaise and salad dressings.

Healthier sandwiches should consist of:

- Lower-fat filling and high fibre bread and/or salad or vegetables.

Use salt sparingly:

- Where stock or bouillon is used do not add salt.
- Try to source lower salt content bouillon.

Offer a higher proportion of fruit-based puddings to jam/syrup-based puddings.

Artificial sweeteners must be available at ward level for those patients choosing to use them.

Provide healthy eating snacks for patients as requested:

- Fresh and dried fruit
- Low-fat yoghurts
- Fruit bread, malt loaf, oatcakes, crumpets.

4.10 Pregnancy / Lactation

Pregnancy

Some additional considerations are required in menu planning for pregnancy. It is important to ensure the diet provides enough energy and nutrients to support the changing needs of both the mother and developing baby, while remaining mindful of potential health risks associated with some foods.

In general, a pregnant woman's energy and protein needs can be met using the same recommendations discussed in this document. Some pregnant women find it difficult to eat 3 large main meals, highlighting the importance of making available a range of small meals and snacks between meals. A 400 microgram folic acid supplement will be required in the first 12 weeks of pregnancy for all women, and a 10 microgram Vitamin D supplement will be required throughout pregnancy for all women. Some may require iron supplementation. Note that pregnant women must not be given supplements containing Vitamin A. The following factors are also important in menu planning.

Table 13 Menu planning for pregnant / lactating women

Food type	Recommendation	Risk to foetal development
Fish	***Limit:*** Should have no more than 4 cans of tuna per week (drained weight of 140g).	Possible high levels of mercury.
	Limit: Should have no more than 2 portions of **oily fish** per week (excluding tinned tuna).	Possible risk from contaminants such as dioxins and polychlorinated biphenyls.
Caffeine	***Limit:*** Should have no more than 2200mg of caffeine daily; (e.g.: 2 mugs of instant coffee or 3 mugs of tea). It is **desirable** to have decaffeinated tea and coffee available.	Having more than 2200mg daily can lead to low birth-weight or miscarriage.
Cheese	***Avoid:*** all ripened cheese such as blue veined cheeses and soft cheeses with rinds such as Camembert, Brie or soft goat's cheese.	Can contain high levels of listeria (whether pasteurised or unpasteurised).
Liver	***Avoid:*** liver and all products made from it.	All liver and its products contain large quantities of vitamin A.
Paté	***Avoid:*** All (including vegetable paté).	Paté can contain high levels of listeria.
Egg	***Avoid:*** raw or undercooked egg, or egg-products which are raw, or contain partially cooked eggs.	Eggs may contain salmonella; cooking thoroughly minimises risk.

For further information see:

- http://www.nhs.uk/planners/pregnancycareplanner/pages/Vitaminsmineralsdiets.aspx
- http://www.dh.gov.uk/en/Publichealth/Nutrition/Nutritionpregnancyearlyyears/index.htm
- http://www.nhs.uk/planners/pregnancycareplanner/pages/Carewithfood.aspx

Lactation

Lactating women can have a greater demand for energy and therefore continued nutrition screening and care planning is required to ensure these needs are met. Most lactating women's energy needs can be met using the upper end recommendations of 2625kcal/day discussed in this document.

Breastfeeding women are recommended to take 10 micrograms (mcg) of vitamin D each day. If the lactating patient is able to consume a varied balanced diet then all other vitamins and minerals can be achieved.

http://www.nhs.uk/Planners/breastfeeding/Pages/breastfeeding-diet.aspx

Chapter 5: Nutrient and Food Standards for children

5.1 Introduction

Sound nutrition is fundamental for proper growth and development in childhood and essential for good health and well-being in later life[31]. Excess energy intakes combined with low physical activity levels can lead to obesity whilst poor energy intakes can lead to poor growth and development. Children become nutritionally compromised more quickly than adults as they have less nutrient stores initially and this can result in decreased immune function leading to infections and increased length of stay.

The objective therefore, must be to ensure that children are able to eat sufficient food to meet their nutritional requirements as soon as possible after admission, and particularly following surgical procedures or during treatment, since these are the times when they are most vulnerable.

For most children, the average length of hospital stay is two days. Most children and adolescent patients will benefit from eating a diet that follows healthy eating principles during their hospitalisation. However, attempting to impose a “healthy” diet upon a sick child can be counter-productive.

Guidance has been provided for hospital catering services for children and young adults[31]. However, a diet low in fat and high in fibre-rich carbohydrate may be too bulky and low in energy to satisfy a young child’s (< 5 years) nutritional requirements.

Diets must be tailored to suit young children's nutritional and energy needs and also their stage of development. Guidance has been produced for early years childcare settings that includes a variety of menus[32]. It is best to provide young children with smaller, more frequent meals. Snacks such as bread, fruit, sandwiches, and yoghurts are preferred to those high in fat, sugar and salt. The provision of foods high in sugar should be kept to a minimum, especially between meals and the use of highly salted foods and addition of salt to foods should be discouraged.

If food is to have any nutritional value it must be eaten and children should be presented with a variety of foods and fluids that are tempting and familiar to them. In some cases this may mean foods such as fish fingers, chicken goujons, baked beans, burgers, fries or ice-cream. Emphasis should be placed on the provision of popular and familiar foods [31].

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

Menu Planning Groups and hospitals should consider producing a specially designed menu for children and allow them to make their food choice as close to the point of service as possible. In a general hospital it would be good practice to have a separate children's menu with child friendly familiar dishes as well as access to the main hospital menu for those who wish to have more choice (particularly for older children).

5.2 Nutrient Requirements for Children

The nutritional requirements of children are diverse due to the wide range of ages that can present on an acute ward. For this reason careful menu planning and portion provision are crucial in order to meet requirements for toddlers up to 18 year old males.

Table 14 represents the broad requirements for macronutrients. Additional information in Appendices 3-7 highlight further Dietary Reference Values that are pertinent to menu planning and meeting requirements of the age ranges.

Table 14 Nutrient specification for hospital menus for children

Nutrient (/day)	'Nutritionally at risk' hospital patients	'Nutritionally well' hospital patients	Provided
Energy (kcal)	1200-2800 (Requirements based on Kcal/Kg for age may be considered)	1200-2800	Daily
*Protein (g)	14.5-55.5 (Requirements based on g/Kg for age may be considered)	14.5-55.5 (see appendix)	Daily
Total fat (% food energy)	Not specified	≤ 35	Averaged over a week
Saturated fat (% food energy)	Not specified	≤ 11	Averaged over a week
Carbohydrate (% food energy)	Not specified	≥ 50	Averaged over a week
Non-milk extrinsic sugars (NMES) (% food energy)	Not specified	≤ 10	Averaged over a week
Non-starch polysaccharides (g)	Not specified but excess should be avoided at the expense of calorie intake	Avoid excess fibre < 2 years of age 15g (5-10 years)[33]	Daily
Salt (SACN guidelines)		1-3 years ≤ 2 g salt/day 4-6 years ≤ 3g salt /day 7-10 years ≤ 5g salt/d 11+ years ≤ 6g salt/day	Daily

*** Protein requirements can vary quite significantly across the age ranges for children and according to nutritionally at risk, so individual needs may be higher than the ranges stipulated above.**

Micronutrients

Reference Nutrient Intakes (RNI's) should be used for the micronutrient recommendations of children, as these will vary dependent on the age and sex of the child (see Appendices 3-7).

As the requirement for nutrients varies so significantly according to age it is recommended that nutritional analysis forms part of the process when planning menus for children.

In addition, portion sizes for children will vary significantly. Therefore menus need to account for the needs of older adolescents as a minimum. Suitable alterations can then be made to the portion size to account for differing needs. It may be worth considering the use of adult menus (by request) with older children as the range and type of food may be more in keeping with their food choices.

5.3 Achieving a combination and balance of foods from the five food groups

The following guidance must be read in conjunction with the adult guidelines; they detail specific requirements which should be considered when providing a menu for children.

For infants who require weaning, suitable provision should be made to account for the stages of weaning. Food safety must form part of the decision regarding the most appropriate choice provided.

Starchy Carbohydrate Foods

- This food group should form the base of a children's menu.
- Provide a choice of a variety of different cereals (at least 4) at breakfast, one of which should be a popular children's cereal.
- Provide a choice of **at least two** carbohydrate options at each main meal.
- Bread and cereals can be offered as snacks, including scones, buns, muffins, crackers, cereal bars.
- **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. Be cautious with products containing bran in this age group due to the potential to affect nutrient absorption, e.g. calcium and iron.

Meat, fish, eggs, beans and other non-dairy sources of protein

- Offer the choice of **a variety** of meat or meat alternative options at each main meal.
- Include familiar and palatable choices.
- 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. It may be better to avoid serving foods containing nuts completely however, due to the risk of allergy and cross contamination.

Fruit and vegetables

- The opportunity to choose **at least five servings** per day of fruit and vegetables must be available.
- Fruit and vegetables should be offered in appropriate portion sizes for children.
- A mixture of smaller fruits and large fruits should be offered, e.g. plums and satsumas in addition to pears and apples.
- Chopped fruit or fruit bags should be considered, with carers supporting the provision of this.
- Pure unsweetened fruit juice should be available (100% fruit juice)[31] (150mls of fruit juice only counts as 1 portion of the 5-a-day).
- Fresh or canned fruit should be offered at breakfast.
- Fresh fruit or fruit in juice can be offered as a snack.
- A choice of **popular** vegetables should be available at each main meal, e.g. peas, carrots, sweet corn, broccoli, tomatoes, cucumber and baked beans (reduced sugar/salt versions).
- Tinned spaghetti or pasta shapes are not vegetables and should not be counted as portions.

Milk and dairy foods

- **Provide 500mls of whole milk or equivalent** for each child daily.
- **Semi-skimmed milk must be available** only **on request for children 2 years** and older.
- Use whole milk for all milk-based dishes.
- Offer milk/mousse-type desserts for snacks.
- Whole milk fruit yogurt/fromage frais that are low in sugar should be offered, with higher sugar options reserved for children with additional calorie requirements. Dental hygiene is important with higher sugar options.
- Milkshake may be offered as an alternative depending upon the child but can be high in sugar so should not routinely be used.

Foods containing fats, foods and drinks containing sugar

- Honey must not be added to foods prepared for infants <12 months old.

- Use reduced sugar or sugar-free fluids as an alternative to water.
- Ice-cream is a familiar and popular dessert which may be an appealing and important comfort food for children whilst in hospital.
- Age-specific nutrient standard for salt should be used.

5.4 Provision of Fluids

- A **minimum of seven to eight beverages** must be offered throughout the day.
- Children should be provided with access to a range of drinks throughout the day including milk and water.
- Water must be available at all times throughout the 24 hours: preferably this should be chilled mains water.
- Water jugs should be changed three times per day[28].
- Ensure fluid is available in the appropriate drinking cups for each stage of development.
- Offer a choice of warm and cold drinks at each meal and snack, including no-added sugar varieties.

5.5 Suitable snacks

Careful consideration of the timing of snacks should be identified to avoid suppression of appetite at meals; therefore constant grazing should be discouraged unless there is a specific reason for this, e.g. inability to eat normal meals due to illness and reduced appetite.

It is also important to ensure snacks and drinks are provided at specific times so that children do not become “over” hungry or thirsty, which can lead to behavioural problems.

A range of suitable snacks including high-calorie snacks and drinks should be provided between each meal:

- Cereals
- Tea cakes
- Cakes/scones/muffins
- cheese dippers
- Yogurt/mousse style dessert
- Ice cream
- Biscuits;
- Fresh fruit or fruit canned in juice
- Milk/milkshake/smoothies
- Fruit juice/fruit squash
- Malt loaf
- Muesli/cereal bar
- Crumpets/fruit loaf
- Dried fruit
- *Crisps**
- *Fun size chocolate bars*.*

** These snacks may be reserved for children with additional calorie needs due to their fat and sugar content.*

5.6 Menu planning guidance for children

The Better Hospital Food guideline (2003) gives specific guidance on the number of meals and desserts that should be provided at each meal, including the content of specific foods as part of that meal[31].

Each hospital will have a different approach to this, therefore the detail below is provided just as a guide:

- Hot meal choices at each meal including four main courses (with two additional choices from starchy carbohydrate foods), and a variety of vegetables.

- Minimum of 3 desserts.

- A range of condiments including ketchup, salad cream, mayo, brown sauce pepper and vinegar.

5.7 24 hour provision

Ward kitchens should have the provision to provide popular foods that are nourishing outside of normal mealtime service hours:

- Toast
- Cereal
- Cheese and crackers
- Soup
- Tinned beans/ravioli/spaghetti
- Sandwiches
- Milk shakes
- Fruit smoothies.

5.8 Special considerations

Some children will have additional needs from a nutritional perspective depending upon their presenting condition, e.g. cystic fibrosis, and therefore a variety of options should be available. In addition, some children may have allergies that need to be accounted for; examples include:

- Provision of additional high calorie snacks.
- Option for cooked breakfast.
- Access to adult ward menus or staff canteen menus.
- Suitable gluten/milk free foods.

Further information is provided in appendices 3 to 7. This information has been taken from “The Caroline Walker Trust: Eating Well at School” (2005) guideline[34], which specifically looks at meal provision in school, whilst relating it to meals taken across the whole day. However, the principles of meal provision in hospital will be very similar for most children, hence their inclusion as a useful way of assessing menu provision against specific requirements.

Chapter 6: Therapeutic diet provision

6.1 Introduction

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

When planning therapeutic diet menus it is essential to have accurate knowledge of the nutrient and ingredient composition of all dishes to determine their suitability. This makes the use of standardised, analysed recipes crucial in the delivery of appropriate food. The involvement of dietetic expertise is essential in this process.

6.2 Criteria

- There must be a hospital protocol for the provision of all therapeutic diets.
- Patients must be given **choice** for all food and fluid options provided, including therapeutic and/or texture modified diets.
- Hospitals whose populations require certain therapeutic diets irregularly and in minimal numbers must include in their policy a formal contingency for the provision of these diets in the event they are required, for example by using an a la carte menu.
- Therapeutic diets must meet the requirements of the clinical treatment and appropriate nutritional standards. Caterers must work with dietitians in developing systems for planning, ordering and delivery of therapeutic diets which are appetising and suit the preferences of the patient[23].
- Where relevant, catering service contracts must be sufficiently detailed and cover the provision of both therapeutic and special diets.

6.3 Menu coding

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

- There must be an up-to-date nutritional and content analysis of the menu item.
- A standard recipe is followed each time the dish is made.
- Too many letters/codes on a menu can appear confusing to a patient, and can be irrelevant to the majority of the hospital population.

- Nutrition education for nursing and catering staff must accompany dietetic codes so that patients receive consistent messages.
- Suitability of any one particular dish needs to be considered in the context of the whole diet.

This specification endorses the BDA recommendation that dietary codes should be kept to a minimum on hospital menus[23]. The key dietetic codes displayed on a hospital menu should be **healthier eating** and **fortified / high protein and high calorie**. **Vegetarian options** should also be coded. Dietitians may deem it appropriate for other therapeutic diets to be coded on the hospital menu: this needs to be determined at the local level with consideration of the above points noted. An a la carte menu can be useful in the effective delivery of any additional therapeutic diets required by a hospital, as it will enable caterers to provide patients with more choice. Not all dishes will necessarily be coded.

6.4 Kitchen space and equipment

When planning any facilities and purchasing contracts, health facilities and catering departments should consider the provision of any therapeutic diets and set targets to ensure the environment allows them to be met[35]. Therapeutic diets may require additional preparation, storage or distribution space and equipment, especially if isolation from production of other diets is required, e.g. in the case of allergen-free diets and risk of cross-contamination of food items.

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

6.5 Therapeutic diet overview and reference material

The following therapeutic diets will need consideration; references for further information are included.

6.5.1 “Healthier eating” diet

The healthy balanced diet is recommended for the general, healthy population. It is also recommended for the dietary management of a number of medical conditions and in such situations is interpreted as a therapeutic diet, for example for:

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

Comprehensive information about the principles of healthy eating and specific guidance to support catering practices is available from the Food Standards Agency[36].

Note that in some instances the use of a "healthy diet" may be inappropriate for individuals with co-morbidities which affect their nutritional requirements. An assessment of patients' dietary needs should be made on the first day of admission, and regularly thereafter, in order to ensure that these individuals needs are appropriately identified and met.

6.5.2 Allergen free diets

True food allergy is an immune reaction to food that triggers the release of histamines and other substances into the tissues. Food allergies can be caused by different foods or additives, and severe, potentially life-threatening symptoms can be caused by even tiny amounts.

European guidance requires that 14 allergens be included in food labelling and ingredient lists; these include cereals containing gluten, milk, eggs, beans, soybeans, fish, crustaceans, celery, peanuts, nuts, mustard, sesame seeds, molluscs, lupin, sulphur dioxides and sulphites. Local Health Board risk management procedures should address food allergy and safe systems developed for minimising the risk of harm to patient. Food allergies identified in hospital patients must be catered for in the hospital menu.

Guidance notes have been produced with the aim of providing informal non-statutory guidance on these regulations that apply to pre-packed and non pre-packed foods. These can be accessed through the following websites:
http://www.food.gov.uk/foodindustry/guidancenotes/labelregsguidance/allergenlabelguide2009
and:
http://www.food.gov.uk/foodindustry/guidancenotes/labelregsguidance/nonprepacked

For further guidance, please see:

- Food Standards Agency's *Guidance on Allergen Management and consumer information* at http://www.food.gov.uk/multimedia/pdfs/maycontainguide.pdf
- *advice for caterers on Allergy and Intolerance* at http://www.food.gov.uk/safereating/allergyintol/guide/caterers/
- *Allergy Catering Manual* available from www.allergycaterinmanual.com
- *Catering for Allergy* at http://www.cateringforallergy.org/
- Allergy UK at www.allergyuk.co.uk
- British Society for Allergy and Clinical Immunology at www.bsaci.org
- The Anaphylaxis Campaign at www.anaphylaxis.org.uk/.

6.5.3 Gluten free diet

Coeliac disease is caused by an auto-immune reaction to a component of gluten, a protein found in certain cereals, namely wheat, barley and rye. Some individuals with coeliac disease are also sensitive to oats. A gluten free diet is the sole treatment for coeliac disease and for the skin condition dermatitis herpetiformis. Consumption of even a minute quantity of gluten by someone with coeliac disease can result in malabsorption, gastro-intestinal symptoms and fatigue.

Regulations define gluten-containing cereals as wheat, rye, barley, oats, spelt, kamut or their hybridised strains. It is found in a wide range of manufactured and processed foods, and imposes considerable restriction of food choice and variety.

A menu should never claim to be gluten free unless this has been confirmed, and, as manufacturing processes can change, **the menu must be continually monitored to ensure it remains free of gluten**. For full guidance to ensure safe food transport, storage, preparation, production and provision, refer to Food Standard Agency and Coeliac UK Resources [37,38].

6.5.4 Texture-modified diets

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

There are significant, potentially fatal risks associated with the provision of incorrect food and fluid textures to an individual who has been assessed unsafe for a normal hospital diet. Furthermore, patients on texture-modified diets have been shown to have a lower intake of energy and protein than those consuming a normal hospital diet, and therefore the menu for patients requiring such a diet must be able to meet all the nutrient specifications detailed in this document. Dietitians and Caterers must work together to develop and adapt suitable recipes, or to choose appropriate texture-modified foods from a specialist supplier, which meet nutrient needs and National Descriptors[39]. As all patients with chewing or swallowing difficulties are nutritionally at risk, they should have their food intake closely monitored.

6.5.5 Renal disease diets

Patients with renal failure are at risk of malnutrition as a result of associated symptoms and treatments. In addition sodium, phosphate, potassium and/or fluid intakes sometimes require restriction. As disease progression can be managed by dietary change it plays a crucial therapeutic role. Accordingly, menus must be able to meet energy and protein requirements, and/or to support electrolyte and fluid restrictions in accordance with individual patient needs. Caterers must work with dietitians to provide and maintain a nutritionally-balanced menu which meets local patient needs [40,41].

6.5.6 Clean diet

A clean (‘neutropenic’) diet is one with a low microbial content; it is sometimes used for patients who are immuno-suppressed for a prolonged period of time, and who may be at increased risk of infection from food-borne pathogens. Good food safety and food handling practices in accordance with Food Standards Agency and Hospital Caterers Association recommendations, which are supported by local food safety policies are imperative.

6.5.7 Monoamine oxidase inhibitors diet

Monoamine oxidase inhibitors (MAOIs) are a set of drugs used in the management of chronic depression and phobic patients. These drugs compromise the body's metabolism of tyramine, a substance found in a number of foods. High levels of tyramine in the blood can cause dangerously high blood pressure, and thus patients on such medications must be provided with a tyramine-restricted diet[42].

Chapter 7: Special and Personal Diets

Minority groups within the local population must be considered at the menu planning stage. There is a requirement to have policies and procedures in place to ensure that these patient groups can meet their nutritional needs through the provision of appropriate and familiar foods. **Special diets** refer to cultural or religious needs such as halal or kosher diets. **Personal Diets** refer to meeting personal preferences e.g. vegetarian, vegan diets.

Whilst general guidance is given in table 15 for foods that are permitted and prohibited for different groups this list is not exhaustive and dietary practices between and within different cultural groups can be diverse. It is recommended that menu planning groups consult patients, local communities and their representatives to confirm their needs. It is also important to ask individual patients of their personal requirements. Religious festivals may require fasting or special foods and it would be prudent for catering services to be aware of when these dates fall, which will vary from year to year. The use of a la carte style menus may best serve the needs of these groups.

Vegetarian and Vegan Diets

People adopt these diets for reasons of religion, culture, moral or ethical beliefs or health and environmental concerns.

The standard hospital menu (chapter 4) will meet the needs of the lacto – ovo vegetarian who eats cheese, eggs and milk. Variants of this diet will need planning for individual patient need.

Further information at www.vegsoc.org www.vegansociety.com

Halal

Halal diets are followed by people of the Muslim faith. Halal food is food that is 'lawful' or 'permitted' under Islamic dietary guidelines, as gathered from the Qur'an. Forbidden foods and ingredients are called 'haram'. Meat must be slaughtered by halal methods.

Fasting is observed from sunrise to sunset during the month of Ramadan, although some groups are exempt including those who are unwell.
Further information at www.halalfoodauthority.co.uk

Kosher

Kosher food is that which is 'fit' for consumption by those Jewish consumers who observe Kashrut dietary laws. Maintenance of health and food hygiene under-lie these laws. Apart from the exclusion of certain foods, including pig and pork products, laws include the prohibition of mixing meat and milk products during both cooking and consumption).
Further information at www.jewfaq.org.uk

Hindu

Restrictions depend on the degree of orthodoxy of the individual. Most Hindus are lacto vegetarian and some may eat meat (though not usually beef) and fish. Further information at www.faithandfood.com/hinduism

Table15 Menu planning for special and personal diets

Food	Lacto – Ovo Vegetarian	Lacto Vegetarian	Vegan	Halal	Kosher	Hindu
Cow's milk	Yes	Yes	Soya or Rice milk – should be fortified with Calcium	Yes	Yes	Yes
Yoghurt	Yes	Yes	Soya	Yes	Yes	Yes
Cheese	Yes	Yes	No	Possibly, depending on type of rennet used –cannot be made from pig / non halal source	Yes but rennet must not come from non kosher animal	Possibly unless very strict
Eggs	Yes	No	No	Yes	Yes	Possibly unless very strict
Fish	No	No	No	Yes except for shellfish and seafood without scales and fins.	Yes. All fish with scales and fins (not shark, monkfish or shell fish)	Probably not
Meat and poultry	No	No	No	No pork or pork by products Other meats must be slaughtered by Halal methods	No pork or pork by products. Other meats (beef, goat, sheep, deer and poultry must be slaughtered by Jewish method.	No Beef Other meats may be eaten unless very strict
Butter	Yes	Yes	Soya margarine	Yes	Yes	Yes including ghee
Processed food	No foods containing animal products e.g. gelatine, animal fats (lard/ suet)	NO foods containing eggs and other animal products e.g. gelatine, animal fats (lard/ suet)	No animal products, derived ingredients and additives	Animal products must come from halal source	Processed foods, incl cakes and bread should have a kosher label or be certified	Animal derived fats (lard . suet etc) not acceptable
Other			May not eat honey	No Alcohol No blood / it's by products	Length of time between eating meat and milk products is variable but is usually i3hrs	

Appendix 1

Nutritional analysis (energy and protein) for recipes used in Table 10

Recipes for Soups

The quantities for soups below are for approximately 80 servings. The energy and protein analysis is per 175ml serving. Nutritional analysis may vary depending on brand of mix and liquid cream alternative used.

Packet Cream of Mushroom

945g mushroom soup packet mix
12 litres full cream milk
400g butter
186kcal 6.4g protein

Packet Cream of Vegetable

957g vegetable soup mix
12 litres full cream milk
1 litre liquid cream alternative
182kcal 5.3g protein

Potato and Leek – homemade

1000g leeks
12 litres full cream milk
500g potatoes
2 litres liquid cream alternative
170kcal 5.3g protein

Recipe for Fortified Porridge (100 servings)

1800g oats
2000g skimmed milk powder with added vegetable fat
10 litres full cream milk
11 litres water
Per serving: 231kcal 10.57g protein

Recipe for Fortified Custard (100 servings)

500g custard powder
500g sugar
500g skimmed milk powder with added vegetable fat
10 litres full cream milk
Per 100ml : 126kcal 4.5g protein

Recipe for Fortified Rice Pudding (24 servings)

400g rice
200g sugar
400g skimmed milk powder with added vegetable fat
4 litres full cream milk
Per serving: 282kcal 10.2g protein

Appendix 2

Examples of snacks of specified nutritional value

N.B. All the examples shown are from items currently purchased via the WHS contract or local contracts and are only examples of what can be included as snacks. It is important that an up to date ingredient list and nutritional analysis for all snacks is obtained and checked by a dietitian to ascertain compliance with therapeutic dietary needs and nutritional standards for snacks.

Routine snacks 100 kcal 1.5g protein

Snack items	Portion sizes	Energy (approx)	Protein (approx)
Slice of toast and butter	27g +7g butter portion	143	3
Malt loaf	64g	189	5
Mini flapjacks e.g sultana chocolate	40g	162 (168)	2.0(2.1)
Thick & Creamy yoghurt	110g	129	5.6
Rice snack pots	95	103	3.6 (3)
Ice cream	60g	108	2.3
Strawberry cheese cake	90g	191	2.5
Strawberry Trifle	105g	180	2.9
Fruit Cocktail trifle	105g	166	2.6
Finger muffin Carrot + orange	50g	159	2.2
Cereal Bars	40g	180	3.4
Snack size cakes Chocolate, Madeira, Genoa	30-35g	124 (126)137	1.3(1.1)
Crisps- variety	25g	133	1.6
Pineapple fruit pots	113g	66.6	0.2
Mandarin	113g	70	0.3
Dried fruit	50g	80	2
Fruit Yoghurt (Whole milk)	150g	160	7
Thick ‘n’ creamy yoghurt	175g	190	7
Yoghurt (low fat milk, fruit)	125g	98	5

High energy snacks - 200 kcal 2.5g protein

Snack items	Portion sizes	Energy (approx)	Protein (approx)
Scone plain or sultana with butter & jam portion	One (61g)	200	4
Crumpet with spread	2 x 40g + 7g Butter	240	5
Cheese & crackers + butter	20g cheese & 2 crackers 7g Butter	225	8
Currant tea cake + butter	68g	244	5.6
Mini pack of biscuits e.g. Bourbon	40g	201	2.4
Large Muffin	90g	354	5.4
Cake (carrot; fruit)*	50-60g	210-225	6-7
Choc Coconut macaroon	70g	341	2.5
Finger muffin double chocolate	50g	209	2.7
Finger muffin toffee apple	50g	199	1.9
Blackcurrant cheese cake	90g	203	2.8
Yoghurt thick and creamy	115g	195	6.9
Large rice pots +/- Fruit	200g	203-211	5.7-6.1
Flavoured Milk	500mls	320	18

Puree snacks

Snack items	Portion sizes	Energy (approx)	Protein (approx)	Please Note
Smooth creamy Yoghurt	150g	195	6.9	These items need to be checked for texture descriptor accuracy by a Speech and Language Therapist
Thick and creamy smooth yoghurt	110g	129	5.6	

Appendix 3

Proportion of nutrients children and young people should receive if they take breakfast and lunch at school

Meal provision

The table below summarises the proportion of nutrients that children and young people should receive if they have breakfast and lunch at school. The figures are for the recommended nutrient content of an average breakfast and lunch provided for children and young people over a one-week period.

	Breakfast	**Lunch**	**Main meal**
Energy % EAR	20	30	50
Fat, saturated fat, total carbohydrate, non-milk extrinsic sugars % food energy	20	30	50
Fibre % of the calculated reference value*	20	30	50
Protein % of the RNI	20	30	50
Iron, zinc, calcium, vitamin A, vitamin C, folate % of the RNI	20	40	40
Sodium % of the SACN recommendation	20	30	50
Fruit and vegetables portions	1	2	2+
Oily fish	On the menu at least once a week		
Fried or processed potato products	Not on the menu more than once a week		

* For details of the calculated reference value for fibre, see Appendix 6 and 7.

Appendix 4

Nutrient-based standards for primary school children aged 5–11 years, for breakfast, lunch and after-school care

This table provides figures for the recommended nutrient content of an average day's food and drink over a period of one week or more.

			Breakfast	Lunch	After-school	After-school snack meal
Energy		Kcals	371	557	186	371
Fat	MAX	G	14.4	21.6	7.2	14.4
Saturated Fat	MAX	G	4.5	6.8	2.3	4.5
Total Carbohydrate	MIN	G	49.5	74.2	24.7	49.5
Non-milk extrinsic sugars	MAX	G	10.9	16.3	5.4	10.9
Fibre	MIN	G	3	4.5	1.5	3
Protein	MIN	G	5.7	8.5	2.8	5.7
Iron	MIN	Mg	1.7	3.5	0.9	1.7
Zinc	MIN	Mg	1.4	2.8	0.7	1.4
Calcium	MIN	Mg	110	220	60	110
Vitamin A	MIN	Ug	100	200	50	100
Vitamin C	MIN	Mg	6	12	3	6
Folate	MIN	Ug	30	60	15	30
Sodium	MAX	Mg	400	600	200	400
Fruit and Vegetables	MIN	portions	1	2	1	1
Oily fish	On the menu at least once a week					
Fried or processed potato products	Not on the menu more than once a week					

Appendix 5

Nutrient-based standards for secondary school children aged 11–18 years, for breakfast and lunch

This table provides figures for the recommended nutrient content of an average day's breakfast and lunch over a period of one week or more.

	ALL PUPILS 11-18 years		**BOYS ONLY 11-18 years**		**GIRLS ONLY 11-18 years**	
	Breakfast	**Lunch**	**Breakfast**	**Lunch**	**Breakfast**	**Lunch**
Energy (Kcals)	430	646	476	714	385	578
Fat (Max - g)	16.8	25.2	18.5	27.8	15.0	22.5
Saturated Fat (Max - g)	5.3	7.9	5.8	8.7	4.7	7.1
Total Carbohydrate (Min – g)	57.4	86.1	63.5	95.2	51.3	77.0
Non-milk extrinsic sugars (Max - g)	12.6	18.9	14.0	20.9	11.3	16.9
Fibre (min - g)	3.5	5.2	3.8	5.7	3.1	4.6
Protein (min - g)	8.8	13.3	9.2	13.8	8.5	12.7
Iron (min - mg)	3.0	5.9	2.3	4.5	3.0	5.9
Zinc (min - mg)	1.8	3.7	1.8	3.7	1.7	3.4
Calcium (min - mg)	200	400	200	400	160	320
Vitamin A (min - ug)	130	250	130	250	120	240
Vitamin C (min - mg)	7.3	14.6	7.3	14.6	7.3	14.6
Folate (min – ug)	40	80	40	80	40	80
Sodium (max - mg)	470	710	470	710	470	710
Fruit and Veg (min portion)	1	2	1	2	1	2
Oily fish	On the menu at least once a week					
Fried or processed potato products	Not on the menu more than once a week					

Appendix 6

Dietary reference values and derived amounts for nutrients per day: Boys

	Dietary reference value (DRV)	4-6 years	7-10 years	11-14 years	15-18 years
Energy	EAR kcals	1,715	1,970	2,220	2,755
Fat	DRV: average 35% of food energy*	66.7	76.6	86.3	107.1
Saturated fat	DRV: average 11% of food energy*	21.0	24.1	27.1	33.7
Total carbohydrate	DRV: average 50% of food energy*	228.7	262.7	296.0	367.3
Non milk extrinsic sugars	DRV: average of food energy	50.3	57.8	65.1	80.8
Fibre	Proportion of DRV for adults (18g)/CRV**	13.7	15.8	17.8	22.1
Protein	RNI	19.7	28.3	42.1	55.2
Iron	RNI	6.1	8.7	11.3	11.3
Zinc	RNI	6.5	7.0	9.0	9.5
Calcium	RNI	450	550	1000	1000
Vitamin A	RNI	500	500	600	700
Vitamin C (min)	RNI	30	30	35	40
Folate	RNI	100	150	200	200
Sodium	SACN recommendation	1177	1961	2353	2353

*As there is no absolute requirement for sugars or fats (except essential fatty acids), these values represent a maximum.

** The calculated NSP guideline has been calculated as a percentage of energy recommendation in the absence of clear guidelines, i.e. 8g per 1,000 Kcal

Appendix 7

Dietary reference values and derived amounts for nutrients per day: Girls

	Dietary reference value (DRV)	4-6 years	7-10 years	11-14 years	15-18 years
Energy	EAR kcals	1,545	1,740	1,845	2,110
Fat	DRV: average 35% of food energy*	60.1	67.7	71.8	82.1
Saturated fat	DRV: average 11% of food energy*	18.9	21.3	22.6	25.8
Total carbohydrate	DRV: average 50% of food energy*	206.0	232.0	246.0	281.3
Non milk extrinsic sugars	DRV: average of food energy	45.3	51.0	54.1	61.9
Fibre	Proportion of DRV for adults (18g)/CRV**	12.4	14.0	14.8	16.9
Protein	RNI	19.7	28.3	42.1	55.2
Iron	RNI	6.1	8.7	14.8	16.9
Zinc	RNI	6.5	7.0	9.0	7.0
Calcium	RNI	450	550	800	800
Vitamin A	RNI	500	500	600	600
Vitamin C (min)	RNI	30	30	35	40
Folate	RNI	100	150	200	200
Sodium	SACN recommendation	1177	1961	2353	2353

*As there is no absolute requirement for sugars or fats (except essential fatty acids), these values represent a maximum.
** The calculated NSP guideline has been calculated as a percentage of energy recommendation in the absence of clear guidelines, i.e. 8g per 1,000 Kcal

Glossary of terms

BDA	British Dietetic Association. The professional association for dietitians in the UK.
BAPEN	British Association for Parenteral and Enteral Nutrition.
DRVs	Dietary Reference Values for food energy and nutrients for the United Kingdom, published by the Department of Health Committee on Medical Aspects of Food Policy (COMA).
Dietitian	A person who is specially trained in the nutritional needs/care of patients. A dietitian will assess a person in order that the food/fluid given to the person is nutritionally balanced and meets their therapeutic needs.
EAR	Estimated Average Requirement (COMA).
Food chain	The processes involved in obtaining, preparing, delivering and serving food.
Hospital Caterers	National organisation with aims and objectives for the Association (HCA) promotion and improvement of the standards of catering in hospitals and healthcare establishments in Great Britain, Northern Ireland and elsewhere.
Malnutrition	A state of nutrition in which a deficiency, excess or imbalance of energy, protein or other nutrients, including minerals and vitamins, causes measurable adverse effects on body function and clinical outcome.
Nutrient Specification	A document which states the food and nutritional requirements that a catering establishment must meet.
Nutrition Assessment	The process of assessing the specific dietary needs of individual patients; this can include: likes and dislikes; food allergies and need for therapeutic diet; cultural/ethnic/religious requirements; physical difficulties with eating and drinking and whether specialised equipment or support is needed when eating and drinking. The findings of the assessment should inform the patient's nutrition care plan.
Nutrition Screening	Nutrition screening allows for the early detection of actual or potential nutritional risk, and identifies those who may benefit from nutritional intervention. As described by BAPEN (2003): "It is a rapid, simple and general procedure used by nursing, medical, or other staff on first contact with the subject so that clear guidelines for action can be implemented".
'Nutritionally at risk'	Individuals who have normal nutritional requirements but with poor appetite and/or unable to eat normal quantities at mealtimes; or who have increased nutritional needs.

'Nutritionally well'	Individuals who have normal nutritional requirements and normal appetite or those with a condition requiring a diet that follows healthier eating principles.
RNI	Reference Nutrient Intake (COMA).
Risk Screening Tool	A nutrition risk screening tool is an aid to assess a patient's nutritional risk of poor nutritional status.
SACN	Scientific Advisory Committee on Nutrition.
Speech and Language Therapist	A speech and language therapist (SLT) assesses and treats speech, language and communication problems; many also work with people who have eating and swallowing problems.
Standard Recipe	A recipe where the quantities and ingredients are set and defined, and should not be deviated from. A standard recipe should give a consistent quality product.

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Acknowledgments

These Standards are based on work led by the Scottish Executive, in particular the NHS Quality Improvement Scotland (QIS) clinical standards for Food, Fluid and Nutritional Care in Hospitals (2003) and the subsequent supporting document Food in Hospitals National Catering and Nutrition Specification for Food and Fluid Provision in Hospitals in Scotland

Working Group

Sue Brierley-Hobson
Nutrition Support Specialist Dietitian
Bwrdd Iechyd Prifysgol Betsi Cadwaladr University LHB

Lyn Clark
Catering Liaison Dietitian, Aneurin Bevan LHB

Steve Grayston
Head of Nutrition and Dietetic Services
Bwrdd Iechyd Prifysgol Betsi Cadwaladr University LHB (Central)

Caroline Hawkes
Nutrition & Dietetic Manager Catering Lead
Cardiff and Vale UHB

Julie Nedin
Manager Swansea Nutrition & Dietetic Services
Bwrdd Iechyd Prifysgol Abertawe Bro Morgannwg UHB

Steering Group

Julie Nedin (Chair)

Mark David for Commodity Advisory Group of Welsh Health Supplies

Maureen Howell for Welsh Government, Health Improvement Division

Keir Warner for Welsh Health Supplies Procurement

Christine Williams for Chief Nursing Officer, Nutrition Coordinator

David Wiseman for Hospital Caterers Association

Members of the Working Group