

UNIVERSITY OF SURREY

**SCHOOL OF MANAGEMENT STUDIES
FOR THE SERVICE SECTOR**



**An investigation of the quality of meal
service in NHS Acute Trusts**

by

Li-Jen Jessica Hwang

黃莉真

A dissertation submitted in part-fulfilment of the requirements
for the award of the Degree of Doctor of Philosophy

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Li-jen Jessica Hwang

Abstract

The aim of this research was to investigate the discrepancies between in-patients and service providers (hospital caterers and ward staff) on perceptions of the quality of meal services in NHS acute Trusts. This aim was achieved through comprehensive secondary research into the implications of the NHS's continued reforms of hospital catering services, the complexity of patients' food consumption and the nutritional implications of consumption, and the importance of patients satisfaction linked with the models of service quality. After analysing the literature, a framework structured around service gap theory was adopted. Primary research using multi-methods and a modified SERVQUAL instrument was carried out on-site at four NHS Acute Trusts in three phases:

- *Phase I- in-patients questionnaire* (43.72% response rate, 662 valid returns);
- *Phase II- hospital staff questionnaire* (78.24% response rate, 283 valid returns); and
- *Phase III- face-to-face interviews with catering managers* (4 participants).

The results found that:

- Patients' expectations were higher than their perceptions on 17 meal service attributes;
- Through a path analysis, the best predictor of patient satisfaction was found to be the food properties dimension (of three meal service dimensions from factor analysis), and the regularity of finishing food was found to have a reciprocal interaction with patient satisfaction;
- The three gaps between the competing interests proposed in the theoretical framework were confirmed: the service gap between patients and service personnel, the quality assurance gap between patients and catering managers, and the managerial gap between service personnel and catering managers.

The study has evaluated and provided a greater understanding of meal service in a group of NHS hospitals. Hospital meal services need to review their policies on the provision of food to patients, which should be made more appropriate to the needs of the sick. Eight managerial implications are offered to aid future hospital caterers in understanding some of the underlying complexities of patient satisfaction toward the meal services. Through the development of industry-specific models, a platform has been constructed that can be used for further research into the gaps between the expectations and perceptions of patients, service staff and catering management. This study synthesises concepts from three distinct academic fields (Healthcare Management, Food Choice, and Service Quality) into a coherent instrument, and applies it to the acute hospital meal service field.

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List of Abbreviations

OECD – Organisation for Economic Co-operation and Development

GDP – Gross Domestic Product

NHS – National Health Services

SERVQUAL – Service Quality

SERVPERF – Service Performance

WGM – Weighted Gap Measures

HCA – Health Care Assistant

NA – Nursing Auxiliary

Acknowledgements

The author wishes to gratefully acknowledge:

The continuing expertise and patience of my supervisors -Dr Anita Eves and Dr Terry Desombre of the University of Surrey,

The unlimited encouragement and assistance of my fiancé -Greg (Reg) Duncan,

The moral and financial support of my parents, and

The participation of all the respondents from the various NHS acute hospitals.

Chapter One

Chapter One:

Introduction

1.1 Introduction

The subject of hospital catering operations in the UK has become increasingly sensitive in recent years. Patients continue to complain about the quality of food served in hospitals (DeSilver, 1993; Deluco and Cremer, 1990; Heyden,1993), hospital caterers debate the nutritional and financial merit of the meals offered and the NHS (National Health Service) financial department resists any increase in costs. These issues have increasingly entered the public debate. According to *the editor* supplement of the Guardian newspaper (November, 2000: 4), the cost of an average British hospital patient's meal (83p) was considerably lower than the cost of an average British prisoner's meal (£1.42). Yet hospital food is in effect the fuel for the patient's recovery, and from these indications the fuel quality may be less than ideal. This study will investigate the issues surrounding hospital meal service quality, as outlined by the research rationale, to fulfil the research objectives.

1.2 Rationale

There are five topics that have emerged that serve to emphasise the necessity of research into hospital meal service.

1.2.1 *The impact of healthcare system reforms on hospital catering*

Since 1974, the National Health Service has almost continually reformed the structure of UK health care service. In 1982, the Government opened up some health care

support services, including catering, to private companies. In 1990, this split of Purchasers and Providers resulted in an even more competitive market for catering services. The adoption of a concept of “internal markets” separated the funding and the provision of health services. As a result, some hospitals have gone on to use outside suppliers to manage their catering operations (Anon., 1996; Ashness, 1990). Contract catering in 1996 (£58,170,000) had increased to nearly four times the 1987 expenditure levels (£7,545,000) (Health and Social Service Statistics for England, 1996), and was thought to be 10% of the total NHS Catering market in 1995 (Insight Research, 1995), rising in later years. These initiatives have raised questions about the quality of service provided by these contractors and their commitment to nutrition.

1.2.2 *The importance of nutrition for hospital patients*

Food provides many needs, both physical and mental, to the human body. Physically, food provides energy and nutrients to help maintain normal bodily functions. It also aids in resisting infection and repairing bodily damage or injury. Mentally, food provides feelings of satisfaction and wellbeing when eating. In a hospital, where the return to good health is of paramount importance, nutrition is even more significant. In addition, the medical and financial benefits of food service include reducing waste and costs, shortening recovery times, and possibly extending and improving patients quality of life (Reilly *et al.*, 1988; Bernstein *et al.*, 1993; Dhoot *et al.*, 1994; Mears, 1996). Other considerations, including customer satisfaction (which is considered primarily a cognitive process involving the comparison of expectations with actual performance (Bélanger and Dubé, 1996)), are also involved. Hospital food has long been the target of scorn and derision for its lack of taste, but recently studies have begun to question how well it meets the nutritional needs of patients (*ibid.*).

1.2.3 *Financial implications of providing food*

The complexity of both patients' satisfaction with foodservice and competitive tendering concepts within internal markets has drawn more attention from hospital caterers in terms of cost-effectiveness issues and “value for money” concepts. In terms of expenditure, the NHS is the third largest purchaser of catering services in the UK, exceeded only by business and industry catering, and local authority education

catering (Insight Research, 1995). Consequently, issues of budgeting and cost effectiveness are crucial.

1.2.4 Acute patients need more attention

Acute care takes up the largest portion of NHS healthcare spending and it is still growing. According to the 1995/6 NHS handbook and NHS: a guide to the National Health Services in 1996, total acute care spending has risen from £6,699,000,000 in 1990/1 to £10,257,000,000 in 1993/4. Furthermore, acute care has a limited research base, resulting in an incomplete understanding of the future of acute care. Much of the previous work on health service catering has focused on particular client groups, (for example, a study of elderly mental health patients (Fenton *et al.*, 1995)), while its impact on the general acute hospital population is largely unknown. Harrison (1996) indicated that there are two dangers of this lack of research:

'Hospital managers have to cope with pressures, the nature of which they do not understand'; and

'the likely effects of different forms of policy response outside the acute hospital itself are not explored. In business jargon, the market is not understood.'

(Harrison, 1996: 202)

1.2.5 Applying service quality concepts to healthcare catering management

Hospital catering management can benefit from the adaptation of hospitality management and marketing techniques. Kolter (1987: 2) has stated that marketing in healthcare organisations is:

'the effective management by an organisation of its exchange relations with its various markets and publics' (Kolter, 1987: 2).

Marketing is now recognised as a necessary management function in a highly competitive, resource-constrained, and sometimes hostile environment (Kolter, 1987).

It is important to recognise quality concepts in hospital catering to meet the expectations of patients.

Utilising these five rationales, this empirical research focuses on a comprehensive, rather than narrowly focused, study of hospital catering in acute hospitals. The data measured using a quantitative approach will be complemented and sustained through qualitative interpretation to determine the areas where gaps occurred at the time of the study. Ideally, it will serve as to identify problem areas and achieve strategies or models to guide further research.

1.3 Aim of the study:

The overall aim of this study is to determine the issues that impact on the effectiveness of hospitality catering systems, and adapt strategies from hospitality management approaches in order to improve the quality of service (with particular reference to acute patients).

1.3.1 Research Question:

- Can the hospital caterer's needs and expectations for foodservice meet those of the patients' through applying quality concepts from the hospitality industry to healthcare catering management?

1.3.2 Objectives:

The objectives of this research are to be:

- To evaluate the impacts of health care reforms on the hospital catering management.
- To investigate the complexity of patient satisfaction with hospital food service (including multidimensional factors that may influence food intake).
- To examine the 'gaps' in hospital meal services operations by applying service quality models amongst patients, service personnel, and catering managers.

Figure 1.1 lists the diverging needs and expectations between patients and hospital caterers. Patients needs from meal services may differ from their expectations of the

catering staff, menu, service, or recreation during their stay in hospitals. Conversely, caterers may focus on meeting legislation, cost control, or maximising the productivity of the catering operation. Such discrete orientations between these two groups may generate 'gaps' on a number of levels.

Figure 1.1: Different orientation of needs and expectations

Needs	<u>Patients</u> Expectations	<u>Hospital Caterers</u> Needs and Expectations	
Warmth,	<i>Catering Staff:</i>	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> G A P S </div>	Meet Legislation
Shelter	Smart/Pleasant/ Helpful/Friendly		-Health & Food Hygiene
Alleviate	Stimulating/ Personal contact		Productive and efficient workforce
-Stress			
-Fatigue			
-Boredom	<i>Menu:</i>		Control costs
	Good variety,		
Refreshment	Wide choice,		Competitive in internal market
&	Nutritionally balanced,		
Relaxation	Tasty, Attractive,		Good relations with patients
Stimulation	Neatly Presented	Mistakes kept to a minimum	
Energy-	<i>Service:</i>	-Ordering system	
food intake	Regular, Reliable, and Available when wanted.		
Good Health	Efficient, Quick, Convenient		
	<i>Recreation:</i>		
	Ability to regularly socialise		
	Ability to relax		
	Provide a break from mental concentration and medical schedule		

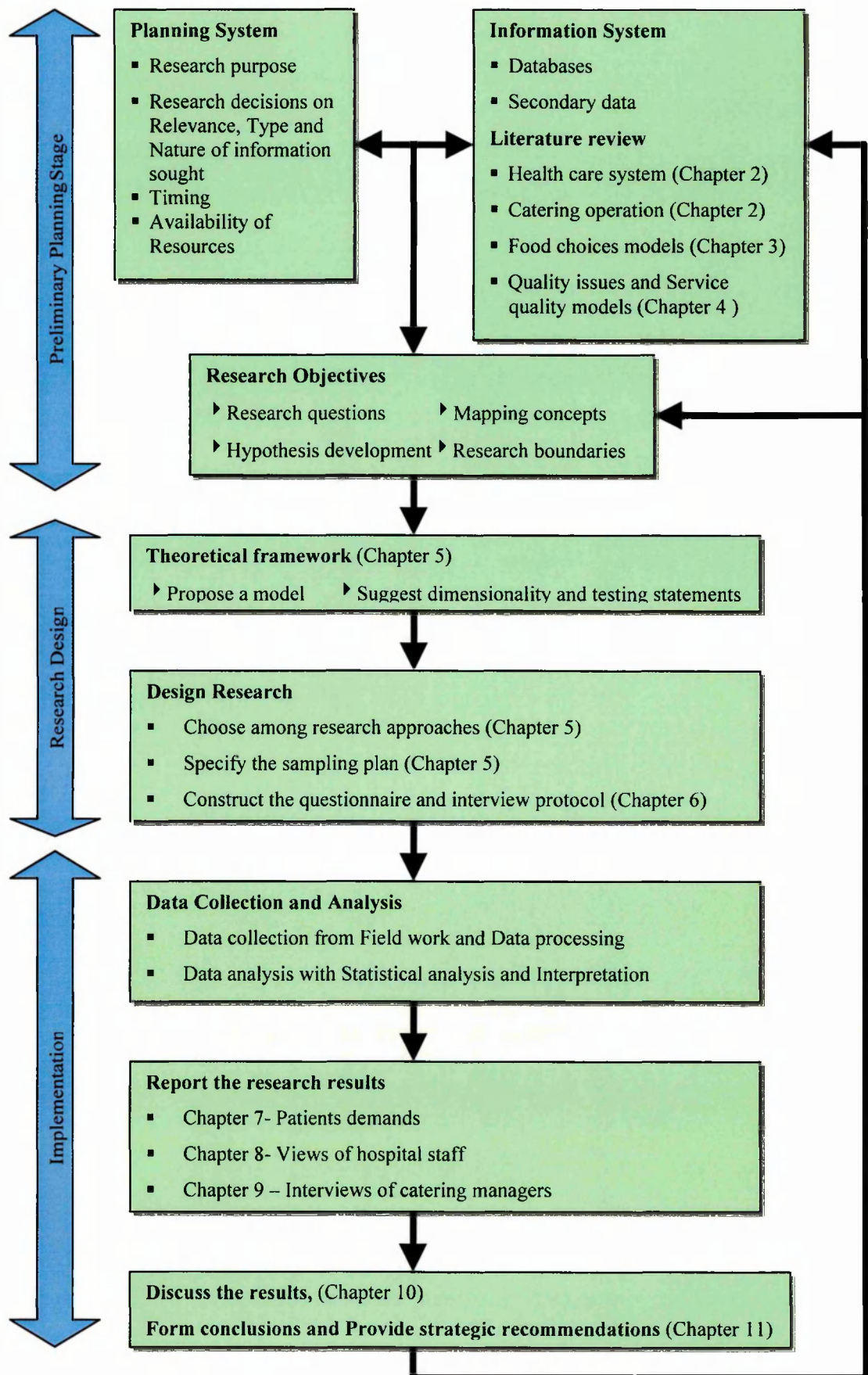
1.4 Study Structure

In line with these objectives, the thesis is organised to reflect three main parts of the study (Figure 1.2). The first stage, the *Preliminary planning stage*, concentrates on both planning and information systems. The information systems, consisting of three chapters, deals with the literature reviews and secondary data collection to provide the direction of the research. Chapter Two presents an overview of Health Care System reforms and their implications to the meal provisions in hospitals. Chapter Three explores the special factors involved in patients' food choices to guide measurement issues toward patient satisfaction. In discussing the models of service quality in Chapter Four, their application to the quality of meal services then bridges the divide between these two sides (Demand from patients and Supply from hospitals) with gap theory.

The second part of the research, *Research design*, is devoted exclusively to various aspects of establishing the research and collecting the data. Chapter Five proposes a theoretical framework for investigating the gaps among patients, service personnel, and catering managers. It continues to discuss the pros and cons of different fundamental methodology approaches and strategies and sampling methods. Following these blueprints, Chapter Six deals with the research instrument development of the three phases which utilises a qualitative approach supported by qualitative methods (two survey questionnaires and one standard interview protocol) with a series of piloting to test out their validity, reliability and feasibility.

Part three of the research, *Implementation*, enacts the research plan, collects the data, and analyses the results to interpret the findings of the three research phases: the patient views in Chapter Seven, the service personnel in Chapter Eight, and the catering managers in Chapter Nine. From these findings, Chapter Ten discusses the location of the gaps that exist among three parties. Finally, the thesis concludes with a summarisation of the significant outcomes of the research and suggestions for applications for further work in Chapter Eleven.

Figure 1.2: Research flow



Chapter Two

Chapter Two:

Overview of England's Health Care System and Hospital Catering

2.1 Introduction

Government regulation changes have made the provision of meals to health care operations a challenging and complex issue. As the overall structure of the health care system has evolved, its component parts have had to adjust to the new circumstances. With pressure increasing from a rising consumer population and escalating health costs, the National Health Service (NHS) is driving toward cost containment and primary-led service (Fitzgerald and Dufour, 1997). National Health Service reforms, such as competitive tendering for catering services, the Patient's Charter, and value for money standards, have made the market more competitive. These factors play a role in establishing how a health care system functions and define the parameters of each segment of the system.

A health care system is complex and diverse, involving many aspects including emergency treatment, disease prevention, and the management of facilities and staff. Irrespective of the reason for admission or the length of stay, people will require food to provide nutrients to support their body functions, and hopefully to shorten recovery times and combat disease. However, simply supplying appetising food will not guarantee good nutrition, as menus must also be designed to provide an adequate balance of essential nutrients.

The facilities and staff of a hospital are the tools used to deliver meal services. The catering department manages the feeding of hospital patients with co-operation from the rest of the medical staff. A large labour force is required to prepare, cook and deliver the meals, and collect the trays afterwards. Facilities including buildings, cafeterias, transportation, and equipment assist in the flow of food. This aspect of food provision will be explored more completely in Chapter 3 - Foodservices and Patients. The operational environment within a hospital plays a large role in the functioning of a hospital catering department, thus an understanding of the overall system is essential before any analysis of food provision can be carried out.

2.2 Health care system theory

Every country has developed its own distinctive national health system that reflects the history, economic development, and dominant political ideology of the nation. Roemer (1994) summarised the diverse inputs presented in many health systems according to an analysis of the five principal components of a medical scheme: resources, organisation, management, economic support, and delivery of services. Depending on the mix of the combined characteristics of these components and the degree of governmental market intervention in the process-supply, demand, competition, and price, each health care system can be classified into certain general types. From the system with the least government intervention to the one with the most, these health system types are:

- Entrepreneurial, with an emphasis on the private sector (USA);
- Welfare oriented, as many of the health systems of Western Europe (France, Belgium, The Netherlands, Austria, Germany), Canada, Japan, and Australia;
- Comprehensive (UK, Italy, Greece, Spain);
- Socialist (Russia, Poland, Hungary).

Using these guidelines, the UK system has been classified as a comprehensive, or government-sponsored, public health system, where:

'100% of the national population has become entitled to a complete health service, and the financial support has shifted almost entirely to general tax revenues.

Larger proportions of doctors and other health personnel have come to work in organised framework on salary. Almost all health facilities have come under the direct control of government' (Roemer, 1994: p.15).

Under this approach, it follows that hospital catering in England is also government provided or funded. Thus government policy and strategies toward health care have deep implications on the services that are provided, including hospital foodservice.

The advantages inherent in a comprehensive health care system such as the NHS can sometimes become a constraint on the day to day functioning of the system. With the ideal of health services available equally to everyone, the demand for these services appears to be higher, and both the human and physical resources required are relatively greater than is the case for other less universal systems. Inadequate resources fundamentally cause delays and long waiting lists for elective (non-emergency) surgery in hospitals (Roemer, 1994), although the NHS has broadened its guarantee time policy to cover all admissions to hospitals. Thus there is uncertainty over how well the NHS is coping with demand.

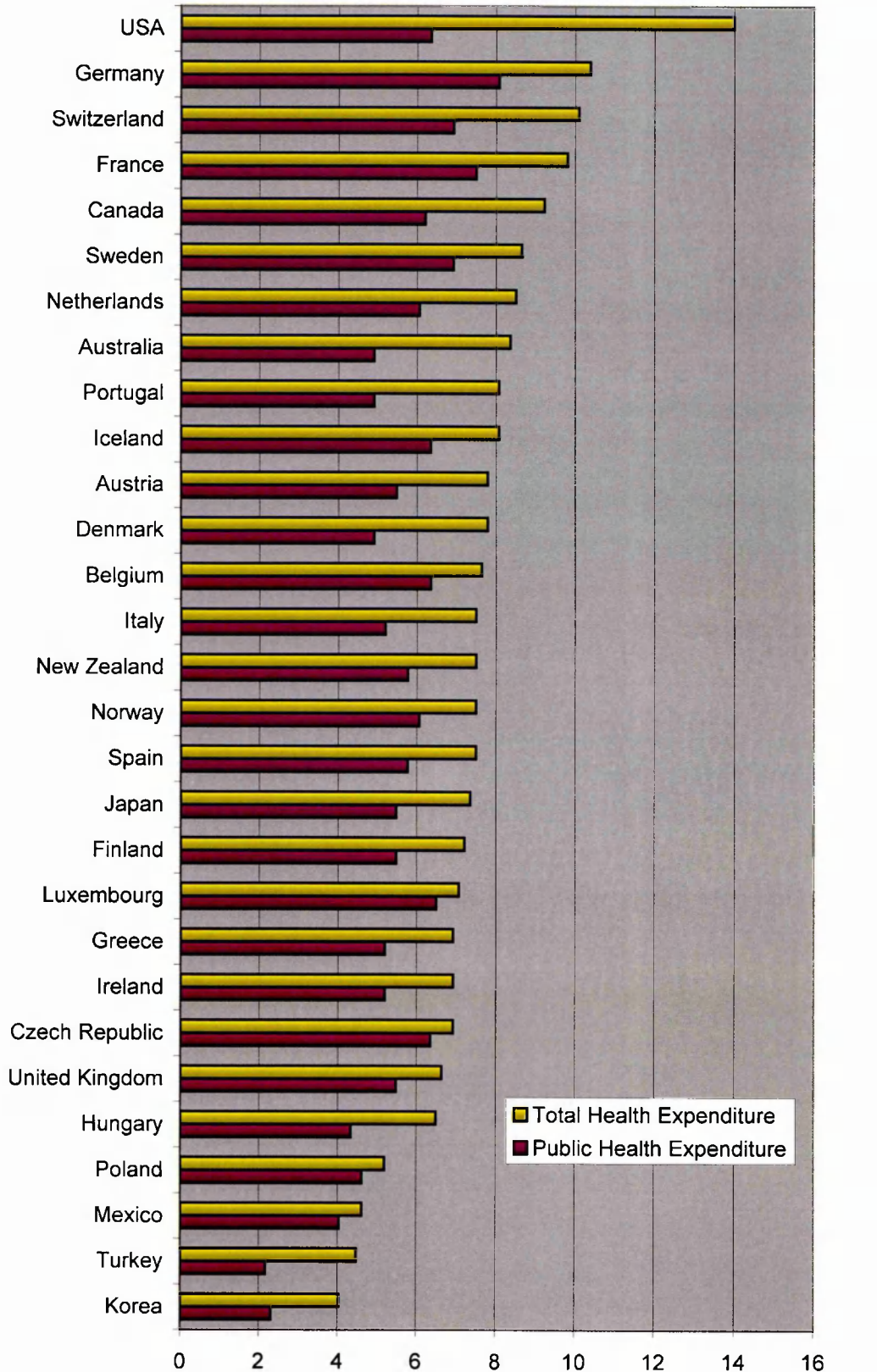
2.3 Spending on the total health care

In an international context, the proportion of the UK's total economic wealth (as measured as a percentage of the Gross Domestic Product-GDP) spent on total healthcare has been relatively low in terms of total health care spending (public and private) as compared with other major Organisation for Economic Co-operation and Development (OECD) countries from series of OECD Healthcare database.

- In 1989, the UK came 15th out of 23 OECD countries (Appleby, 1993: 45).
- In 1990, the UK came 19th out of 19 OECD countries (Appleby, 1995: 77).
- In 1991, the UK ranked 19th in percentage of GDP spent on total healthcare of the 22 wealthiest countries (Mayton, 1996: 107).
- In 1995, the UK came 22nd out of 27 OECD countries (Appleby, 1998: 73)
- In 1996, the UK managed to improve to 17th (Marsden, 1999: 51)
- In 1997, the UK dropped back down to 24th of the 29 OECD countries (Marsden, 2000: 116) (Figure 2.1)

The government has set itself the target of raising its level of spending to the European average of 8 percent rather than the 5.48% growth in Figure 2.1 of 1997 over a five-year period (Marsden, 2000). Moreover, considering the differences in the way healthcare is organised (the split between public and private provision), definitions of what actually constitutes health care, and culture differences concerning the definition of illness itself tend to make international comparisons of health care spending difficult to interpret (Appleby, 1993; Appleby, 1998; Marsden, 1999; Marsden, 2000). Nevertheless, two primary questions follow from these figures: how much scope is there for reducing these costs further through improved use of capital and labour, and what are the risks of cost escalation and reduced quality of health care? Hospital catering services are perhaps even more vulnerable to these risks than other departments because of existing preconceptions regarding the non-medical or non-critical nature of foodservice (Holmes, 1998; Allison, 1999).

Figure 2.1 : Total health expenditure and Public health expenditure among 29 OECD countries, 1997



(Marsden, 2000: 116 cited from OECD Health Database 1998)

% of GDP

A better understanding of the development of the Healthcare system in England will provide some plausible insights into the consequences of the NHS organisation on hospital foodservice.

2.4 The development of the Health Care System Reforms

The establishment of a National Health Service (NHS) to be accountable for public health provision took place in a number of waves. Since its inception a number of major reforms have restructured the nature of the relationship between both national and local authorities and service providers and users. These reforms, stemming from changes in the economic, social and political landscape, have had a profound influence on Health care and hospital foodservice across the nation.

2.4.1 The First Wave- establishing the National Health Services (NHS)

The initial concept of public responsibility for the health of individuals arose during the 1830's. Before then, parish workhouses were the only source of treatment for the sick or injured. However, the demand for healthcare treatment became greater than the workhouses could handle, and in the 1834 Poor Law Amendment Act, followed in 1848 by the Public Health Act, the UK acknowledged this increased demand by forming a General Board of Health. By the 1870s, workhouses, isolation hospitals, asylums, and voluntary hospitals were all offering medical services to the public. In 1911, with the passing of the National Health Insurance Act, lower-paid workers could be compulsorily insured for the services of a General practitioner at a fixed fee schedule for each treatment. (Levitt *et al.*, 1995)

A new Ministry of Health was established in 1919 after the First World War. Little attention was directed towards efforts in health care administration and support services, and hospital catering operations were not even mentioned. This situation persisted until 1941, when the Minister of Health announced that the Government had commissioned an independent inquiry into the state of all the country's hospitals and their ability to provide adequate facilities. The upshot of this, in 1948, was the formation of the National Health Service (NHS) by the British government to help

achieve greater administrative integration. Its mission was to place **all** health services for **everyone** under unified management. Their mandate was to:

'secure through the resources available the greatest possible improvement in the physical and mental health of the people of England by promoting health, preventing ill health, diagnosing and treating injury and disease and caring for those with long term illness and disability who require the services of the NHS (NHS Executive Communications Unit, 1996: 11).'

In this initial organisation, Catering managers were made responsible for providing food for patients requiring a normal hospital diet with Dieticians becoming responsible for dietetic advice in the management of disease and the provision of special diets (McGlone *et al.*, 1995)

2.4.2 The Second Wave- new arrangements between Trusts and Health Authorities

After the founding of the NHS, the demand for medical care rose rapidly and resources were often insufficient to meet the demand. As a result, a reform of the NHS was initiated in 1974. In the same year, District Catering, Domestic and Linen Service Management posts were created to improve the management of support services under the DHSS (Levitt *et al.*, 1995). The reorganisation introduced new arrangements for personal social services under local authorities and local government. Community Health Councils were created as independent non-political associations to represent the interests of the local population. Trusts, defined as:

'any self governing Provider Unit within the NHS that provides care or treatment to a client or patient groups' (Desombre, 1996:104),

and health authorities were required to consult with the councils on any major changes to the pattern or the provision of services to ensure accountability. Ninety Area Health Authorities were created in England to oversee both the management and the delivery of health care; while District Health Authorities (DHA) were concerned

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with day-to-day care. (Levitt *et al.*, 1995) The DHA's had an operational responsibility for the provision of services and received funding based on their resident population (Mullen, 1992).

2.4.3 The Third Wave- Introducing the concept of Internal Markets

Unfortunately, the 1974 reorganisation was not able to meet all of the new challenges. Failures were blamed on unrealistic theoretical assumptions about management, the ambiguities of the District/Area relationships and questions concerning their respective roles. Consequently, a second reorganisation was started in 1982, in which each Region was left to make its own arrangements to clarify these roles. The Government of the time was facing increasing pressure over the ever-escalating health services' bill, so health authorities were required to implement competitive tendering for some support services (such as domestic, laundry, and catering services) (Levitt *et al.*, 1995). These compulsory directives were to have important effects on policies governing food provision in hospitals, as private catering firms became involved in NHS food provision for the first time (The Insight Research Group, 1995).

In the late 1980's, a series of government White Papers further examined and refined the NHS's role in the provision of medical services. *Promoting Better Health* (1987) emphasised the importance of health promotion and consumer choice, while *Working for Patients* (1989) promoted the concept that money should, in effect, follow patients where they were treated. *Caring for People* (1989) attempted to distinguish more clearly between the responsibilities of local Social Service departments' social care and the NHS's health care (Levitt *et al.*, 1995).

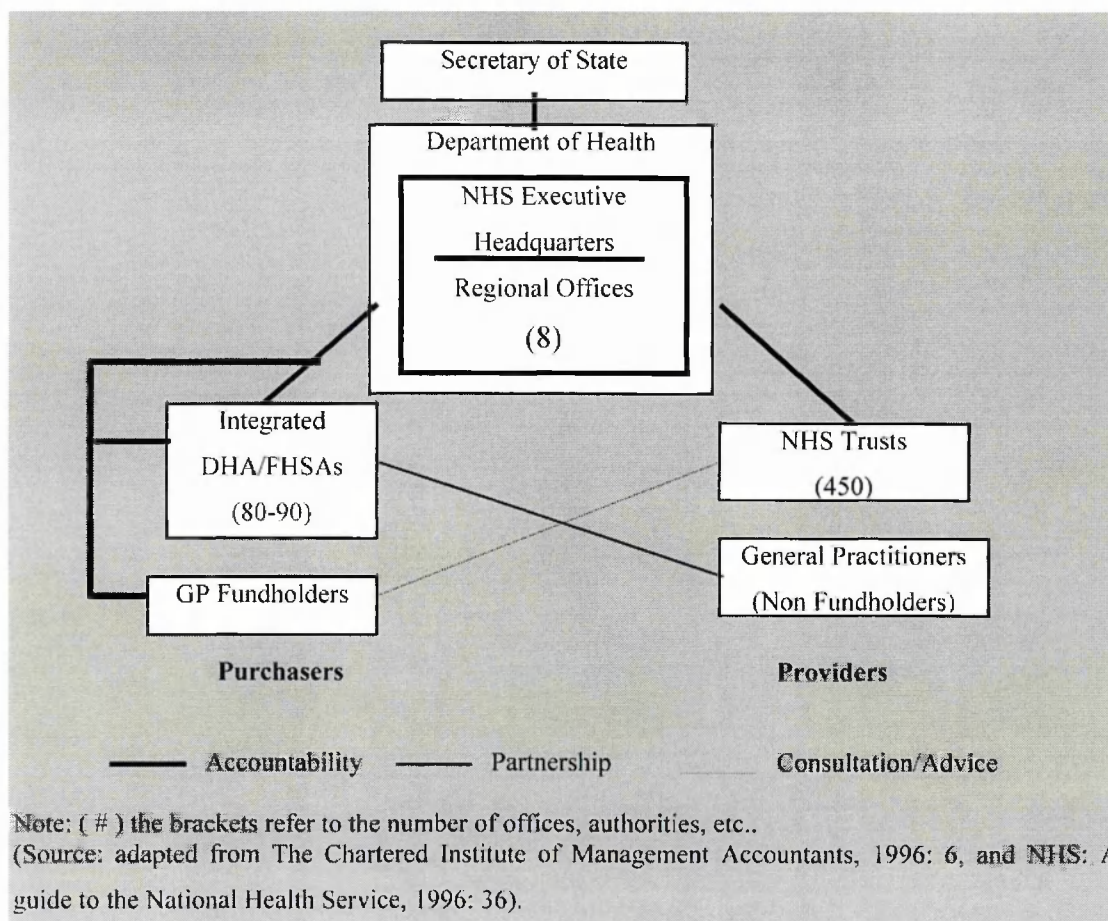
These three papers prompted the introduction, in the 1990 National Health Services and Community Care Act, of an **internal market** separating the funding and the provision of health services, initiating the Purchaser/Provider concept of health care (The Chartered Institute of Management Accountants, 1996). In its new role as purchaser, the NHS has attempted to make the best and most economical use of its purchasing power for both catering and other hospital supplies in the selection of its own suppliers (Insight Research Group, 1995). With the switch to a competitive

Li-jen Jessica Hwang Chapter 2: Overview of England's Health Care System and Hospital Catering market, the pressure to examine cheaper alternatives to in-house ancillary staff, including catering staff, has grown.

2.4.3.1 The structure and Fund Flow of the National Health Service (NHS)

These initiatives combined to constitute a new NHS structure, and while the history of the development of the NHS illuminates its principles and philosophy, a further understanding of the function of the operation and the funding flow in the health care system provides a more practical overview of the system. The overall structure of the NHS, as of 1 April 1996, is displayed in Figure 2.2.

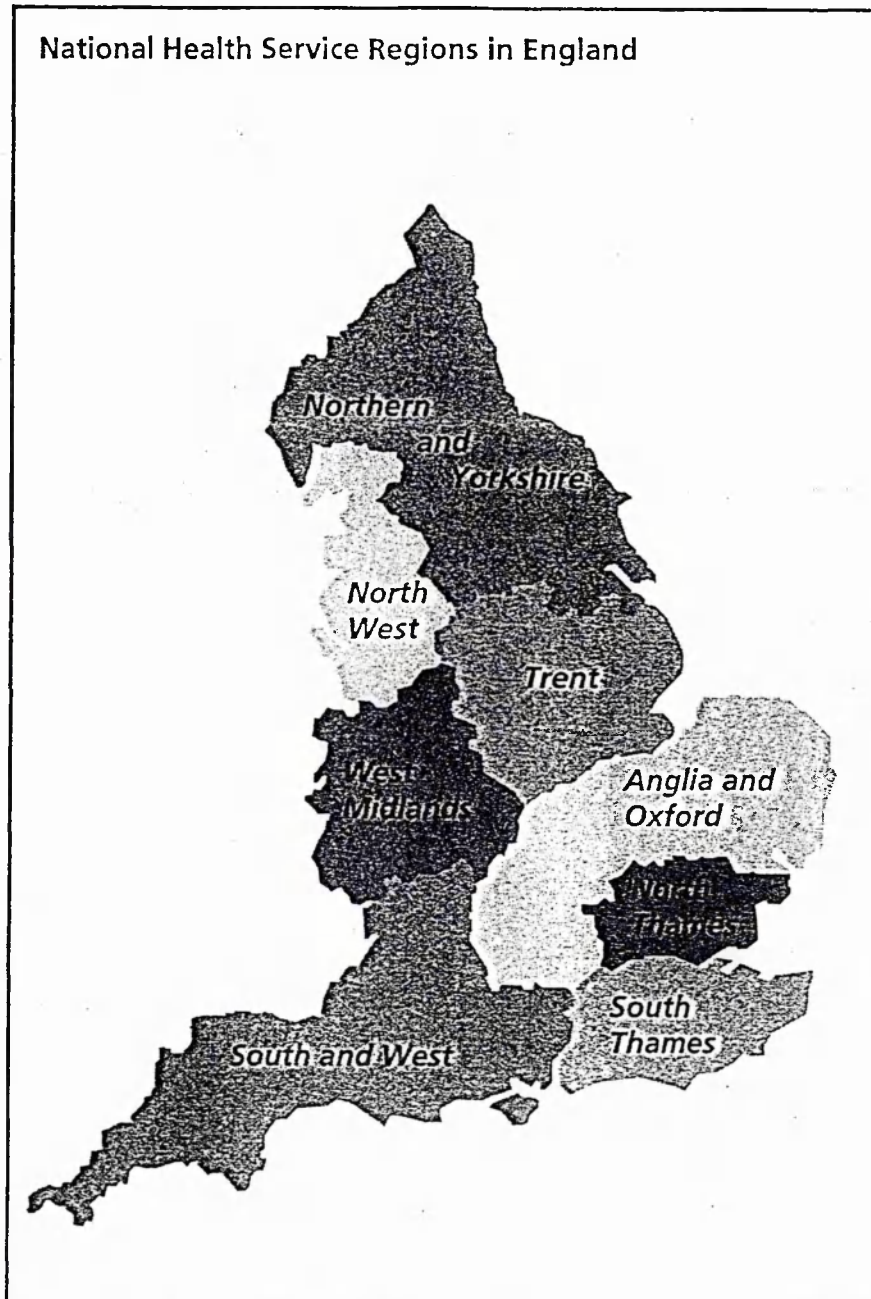
Figure 2. 2: The NHS Structure (England) 1996.



At the head of the NHS is the Secretary of State for Health. The Secretary chairs the NHS Policy Board, which is responsible for setting the strategic direction and finances for the NHS. The board is accountable to the House of Commons

(Parliament) and answers to a number of Parliamentary Committees. Under the Secretary, the NHS Executive (part of the Department of Health with a headquarters and eight regional offices) is responsible for NHS policy setting, strategic implementation and operations. (The Chartered Institute of Management Accountants, 1996) Eight Regional Offices (formerly Regional Health Authorities) have the responsibility of implementing the Government's NHS policies and providing support and advice to the ministers. Figure 2.3 shows the location of these Regional Offices. Their tasks include: managing the performance of purchasers and providers (described below); ensuring compliance with the regulatory framework of the internal market; arbitrating in contractual disputes between purchasers and providers; approving GP fundholder applications and budgets; developing the role of purchasers; and contributing to the NHS headquarters' work on policy and resources (Levitt *et al.*, 1995).

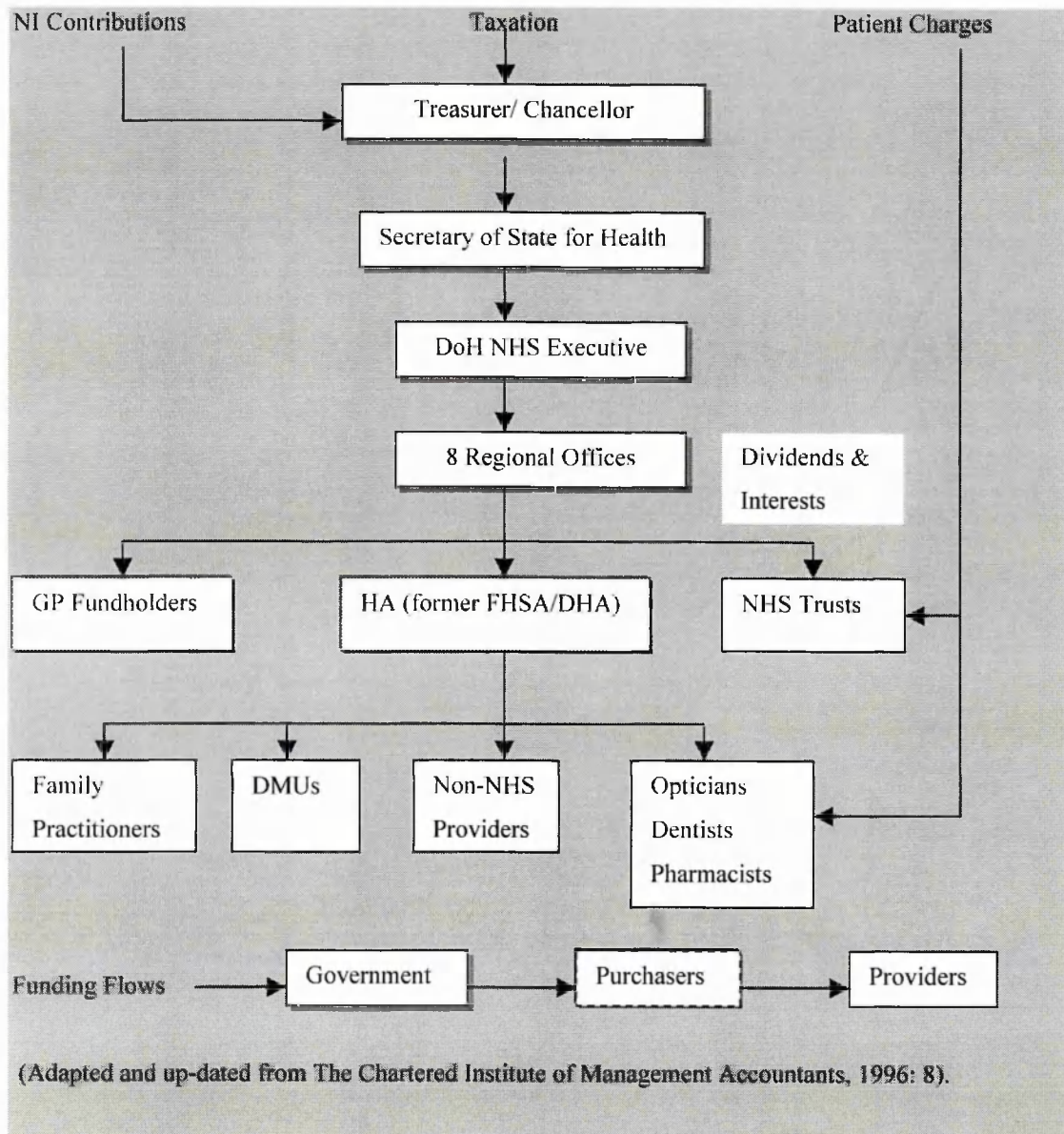
Figure 2.3: The Boundaries for Eight NHS Regions (1996)



The Chartered Institute of Management Accountants (1996) indicated that the management and funding of the NHS is generally organised on the principle of separating the “purchasers” of care from the “providers” of care from the district level down. Purchasers include local Health Authorities (HA), [a merging of the former District Health Authorities (DHA) and the Family Health Service Authorities (FHSA)], and General Practitioner fundholders (GP fundholders). The HA’s are responsible for assessing the health care needs of the local population and developing integrated strategies for meeting those needs in partnership with GPs and in consultation with the public, the hospitals, and others. The GPs act as **gatekeepers** with regard to hospital referrals. GP fundholders are free to purchase the best service to meet their patients’ needs and can manage their own budgets, which cover certain secondary and community services as well as drugs and nursing staff costs under HA (formerly FHSA) monitoring (NHS, 1996). Normally, the fundholders negotiate with providers through contracts.

The Providers, such as hospitals, community services and ambulance companies, have the freedom to manage their own resources, including catering, so as to provide the most effective care. The function of NHS Trusts is to provide hospital and community services on a contractual basis to health purchasers. Under the structure illustrated in Figure 2.4, funding became very important to the delivery services and supplying facilities. The funding flow is initiated by the Government’s allocation of Taxation and National Insurance contributions to the NHS.

Figure 2.4: Funding Flow in the NHS, 1997



The allocation of funding throughout the UK is directed by government policy and is implemented by the NHS Management Executive Headquarters. The Executive allocates funds to the HAs (former DHA/FHSA's) according to a Resident/Capitation based funding formula. This formula is based on the local population's assessed needs, including adjustments for elements of social deprivation and relative death rates.

The methodological and practical difficulties of output measurement in health care requires difficult resource allocation decisions to be made by either the hospital director, who may be unaware of the benefits of non-medical treatment, or the catering manager, whose training emphasises monetary-oriented goals. Several techniques of economic analysis have attempted to assign a monetary value to the effectiveness of health care service. Financial appraisal, cost-minimisation, cost-effectiveness, cost-benefit, and cost-utility (summarised in Table 2.1) have all received some attention; however, each technique has the limitation of putting a price on intangible outputs such as the quality of life and well-being. Occasionally measures of morbidity are used, such as complication rates from surgery, but little attention has been paid to how these relate to restrictions in functioning or to the value individuals place on improvements in health, or with regards to the feeding of patients. (Drummond, 1994)

Table 2. 1: Techniques of economic analysis

Financial appraisal	<ul style="list-style-type: none"> • Cost measured by direct financial cost in £s. • Outcomes measured in physical units reflecting service delivery (e.g. numbers using service). • Measures only the financial costs that appear on the accounts sheet; no opportunity cost is used.
Cost-minimisation	<ul style="list-style-type: none"> • Costs measured by opportunity cost in £s. • Outcomes measured in quantitative units (e.g. life years gained). • Effectiveness of options are similar. • Information is provided on which option is found to have the lowest cost for the same outcome.
Cost-effectiveness	<ul style="list-style-type: none"> • Costs measured by opportunity cost in £s/\$s. • Outcomes measured in quantitative units (e.g. life years gained). • Effectiveness of options differ. • Clarifies the costs and effects of achieving specific objectives for a fixed cost.
Cost-benefit	<ul style="list-style-type: none"> • Costs measured by opportunity cost in £s. • Outcomes measured in £s. • Assesses which produces the greatest net benefit by value-for-money comparison.
Cost-utility	<ul style="list-style-type: none"> • Costs measured by opportunity cost in £s. • Outcomes measured using health utility scales-eg. QALYs (quality adjusted life years). (For example, one extra year of healthy life expectancy and quality of life is counted as 1 QALY, while death is regarded as zero life value.)

(Tolley and Rowland, 1995: 24)

In these times of fiscal restraint, choosing how to allocate resources in a cost-effective manner becomes increasingly important. All of methods in Table 2.1 attempt to quantify intangibles. This opens up a number of ethical issues. When resources are

limited, choices must be made as to who is to receive treatment. Each of these methods attempt to guide the decision makers by offering an unemotional basis for their decisions, but ignores ethical considerations such as differentiating between treatments that prolong as opposed to improve the quality of life. However, if each person is to have equal claim to the resources of the nation, then no individual should have his/her life valued above any other (Tolley & Rowland, 1995). Hospital catering and nutrition face additional obstacles, as the benefits received from their services are not easily seen or measured.

2.4.3.2 Health Promotion

A fourth White Paper- *The Health of the Nation* (1992) was to provide a new national strategy focused on health rather than health care. Its main aim was to promote good health and prevent ill-health by:

- concentrating on the major health problems in five key areas: coronary heart disease and stroke, cancers, mental illness, accidents, and HIV/AIDS and sexual health,
- focusing on promoting good health and preventing disease as much as on care and treatment, and
- accepting that everyone has to work together in order to achieve this goal.(Department of Health, 1992)

Levitt *et al.* (1995) stated that:

'The Health of the Nation represented significant recognition of the role of preventive medicine and health promotion, and with its emphasis on "healthy alliances", an important step towards cross-sectional work between government department, local authorities, the independent sector and individuals themselves.'
(p. 31)

With this change in focus, the publication of Nutrition Guidelines for Hospital Catering (Department of Health, 1995a) and Guidance notes: a checklist for audit (Department of Health, 1995b) provided general standards and standards for specific patient groups for both caterers and dieticians. Certain catering processes were

highlighted to illustrate to caterers how they could play an important part in maintaining nutritional content throughout the delivery chain to the patients. It also emphasised that:

'the hospital catering service should consistently provide good quality, tasty food; thus promoting the enjoyment of food and encouraging patients to eat [...] (as it explained) that food can help increase the effectiveness of medical treatments and aid patients' recovery, and has to be seen as essential in creating patient comfort and wellbeing' (Department of Health, 1995a: 6).

The Health of the Nation signalled an acknowledgement of the importance of what we eat to our state of health.

Drawn from the conclusions of the forty-ninth report of the National Health Service: Hospital Catering in England (Committee of Public Accounts, 1994), the *Patient's Charter* (1995) was launched to ensure patients' rights and enforce standards throughout the NHS in areas such as access to services, respect for personal considerations, and providing information. Pertaining to the catering services of the NHS, the patients are expected to be given a written explanation of the hospital's food, nutrition, and health policies in line with the Department of Health's healthy eating guidelines. During their stay in hospital, the standards of catering service should include:

- Having a choice of dishes, including meals suitable for all dietary needs,
- Ordering no more than the next two meals in advance,
- Having a choice of portion sizes,
- Being given the name of the catering manager,
- Receiving help to use the catering services, for example, menus printed in other languages or in large print. (Citizen's Charter Unit, 1995; 1999)

However, the effects of the *Patients' Charter* as a tool for quality improvement were dubious as evidenced by the results of Farrell's (1999) five stage in-depth research of patients and carer organisations. He found that both groups surveyed felt that the *Patients' Charter* was a political move and made little impact on a patient's experience with the NHS, largely because of organisational ignorance. To some

extent, staff were unwilling to let people to know about the Charter because it would only encourage them to complain. Moreover, lack of clarity and the confusion about what was a standard and what was a right made the monitoring much more difficult.

To reflect the catering standards in the *Patients' Charter*, the NHS Executive (1997) published an action handbook - *Hospital catering: Delivering a quality service*. This guide elaborated on what hospital catering units *must do* and what they *should do* to achieve high standards of food hygiene and safety, nutrition, meal quality and service, catering cost control and asset management. Supported by several guidance formats, it outlined specific methods for catering performance evaluation. For example, the patient catering satisfaction questionnaire (see Appendix 2.1) can be used to provide an overall assessment of catering service.

Later, another White paper- "*A Service with Ambitions*" (1996) more clearly delineated the role and functions of the NHS Management Executive and the UK Department of Health (Department of Health, 1996). Those principles are represented in the foundations of the NHS's ambition, which is to be:

'A high-quality, integrated health service which is organised and run around the health needs of individual patients, rather than the convenience of the system or institution. An NHS which, where appropriate, brings services to people, balancing, for each individual, the desire to provide care at home or in the local community with the need to provide care which is safe, high-quality and cost-effective.'
(Department of Health, 1996)

Interpreting this claim, hospital catering practice should endeavour to improve the food service system and food quality to fulfil individual patient's needs both in terms of acceptability and nutrition requirements rather than simply functioning for the convenience of the system.

2.4.3.3 Issues associated with the third wave health care reform

Many studies have investigated the impacts of the reforms, raising many issues, including:

- the conflicts between managerialism and professionalism in analyses of health care policy (Mohan, 1996),
- the problems with the use of 'consumerism' (Mohan, 1996),
- the emergence of welfare pluralism, which is concerned with competition between different groups involved in making decisions, perhaps leading to a residualised, decentralised and privatised system (Mohan, 1996; Lawton and Rose, 1994),
- the growth of a two-tier health care system, with differential access to hospital care between patients of fundholding and of non-fundholding practices (Robinson, 1996; Mohan, 1996),
- the ambiguous role of GP fundholders as both purchasers and providers (Lawton and Rose, 1994),
- the problem of inequality among GP fundholders (Appleby, 1994), and
- the risk of conflicting goals between multi-disciplinary client group-based planning teams and alternative client group-focused planning mechanisms in NHS planning (Mullen, 1992).
- questions about the quality of service that can actually be delivered under the pressures of forcing competition so heavily on the hospital market (Kelliher, 1996).

Harrison (1996) questioned the changes in the structure of the NHS, which when coupled with a lack of guidance and a poor understanding of the relationships between where care begins and ends outside of the hospital, could add to the difficulties of co-operation within the system. Moreover, communication, or the lack of it, has created problems throughout NHS hospitals (McKenna, 1990). Sheldon (1993) has shown that patients often feel uninformed because no one has responsibility for communication. More importantly, what he terms the "Unsound Barrier" causes ethnic minorities greater difficulties in access to GP's and other health services. This "Unsound Barrier" can exist partly because of language barriers, and partly because of cultural differences in attitude towards health concerns such as diet, physical activity, and smoking habits (Carr-Hill and Rudat, 1995).

Baker (1998) has perhaps pinpointed a critical area where the internal market has failed to deliver the benefits expected, such as reduced costs, sensitivity to patient needs and higher quality of care. The Hospital service has more beds than it can afford but not enough to meet demand.

2.4.4 The Fourth wave

In order to address what was perceived as a continuing health service crisis, which the third wave of health care reform had attempted to ameliorate, several official papers were published by the Labour Government, which was victorious in the general election of May 1997.

A white paper - *The New NHS: modern, dependable* (Department of Health, 1997) began a process of modernisation with the aim of improving standards of performance across the NHS and delivering a fairer provision of services, higher quality, improved value for money, greater responsiveness and thereby better health. It also replaced the internal market with integrated care, or as Baker (1999) interpreted, it represented a conversion from commercialism to collectivism.

A consultant paper - *The New NHS: modern, dependable: A new framework for assessing performance* (Department of Health, 1998a) focused on six areas in order to provide a framework for making a rounded assessment of whether or not the new NHS is performing in line with the expectations set out in the White Paper. The six areas, with a brief explanation of what they cover, are listed in Table 2.2.

Table 2.2: A new framework for assessing performance

Areas	Definition
I Health Improvement	<ul style="list-style-type: none"> to reflect the overarching aim of improving the general health of the population, which is influenced by many factors, reaching well beyond the NHS
II Fair access	<ul style="list-style-type: none"> to recognise that the NHS's contribution must begin by offering fair access to health services in relation to people's needs, irrespective of geography, socio-economic group, ethnicity, age or sex
III Effective delivery of appropriate healthcare	<ul style="list-style-type: none"> - to recognise that there must be fair access to care that is effective, appropriate and timely, and complies with agreed standards
IV Efficiency	<ul style="list-style-type: none"> the way in which the NHS uses its resources to achieve value for money
V Patient/carer experience	<ul style="list-style-type: none"> - the way in which patients and their carers view the quality of the treatment and care that they receive, ensuring the NHS is sensitive to individual needs
VI Health outcomes of NHS care	<ul style="list-style-type: none"> and finally, through assessing the direct contribution of NHS care to improvements in overall health, completing the circle back to the overarching goal of improved health

(NHS Executive, 1999:8)

Baker (1998) expressed some concerns about the effectiveness of the assessment for monitoring performance against things that have never been measured and data that have never been collected, particularly since quality was described in these broad terms:

'doing the right things, at the right time, for the right people and doing them right first time' (Department of Health, 1997; Baker, 1998: 35).

Another follow-up consultation paper - *A First Class Service: Quality in the new NHS* (Department of Health, 1998b) provides a more detailed framework for quality improvement and fair access in the NHS. Its three main elements are:

- Clear national standards for services and treatments, through National Service Frameworks and a new National Institute for Clinical Excellence (NICE)
- Local delivery of high quality health care, through clinical governance underpinned by modernised professional self-regulation and extended lifelong learning

- Effective monitoring of progress through a new Commission for Health Improvement, a Framework for Assessing Performance in the NHS and a new national survey of patient and user experience.

Maryon-Davis and Bristow (1999) opined that *A First Class Service* would be an important opportunity to gain proper recognition for nutrition in hospital. They explained that the growing acceptance of 'food as therapy' allowed catering issues to be properly regarded as a legitimate part of clinical management, and thus an appropriate element to be embedded in the developing performance assessment and clinical governance frameworks. They also suggest some areas for centrally agreed standards of nutritional care that particularly involved hospital caterers and dieticians together, such as:

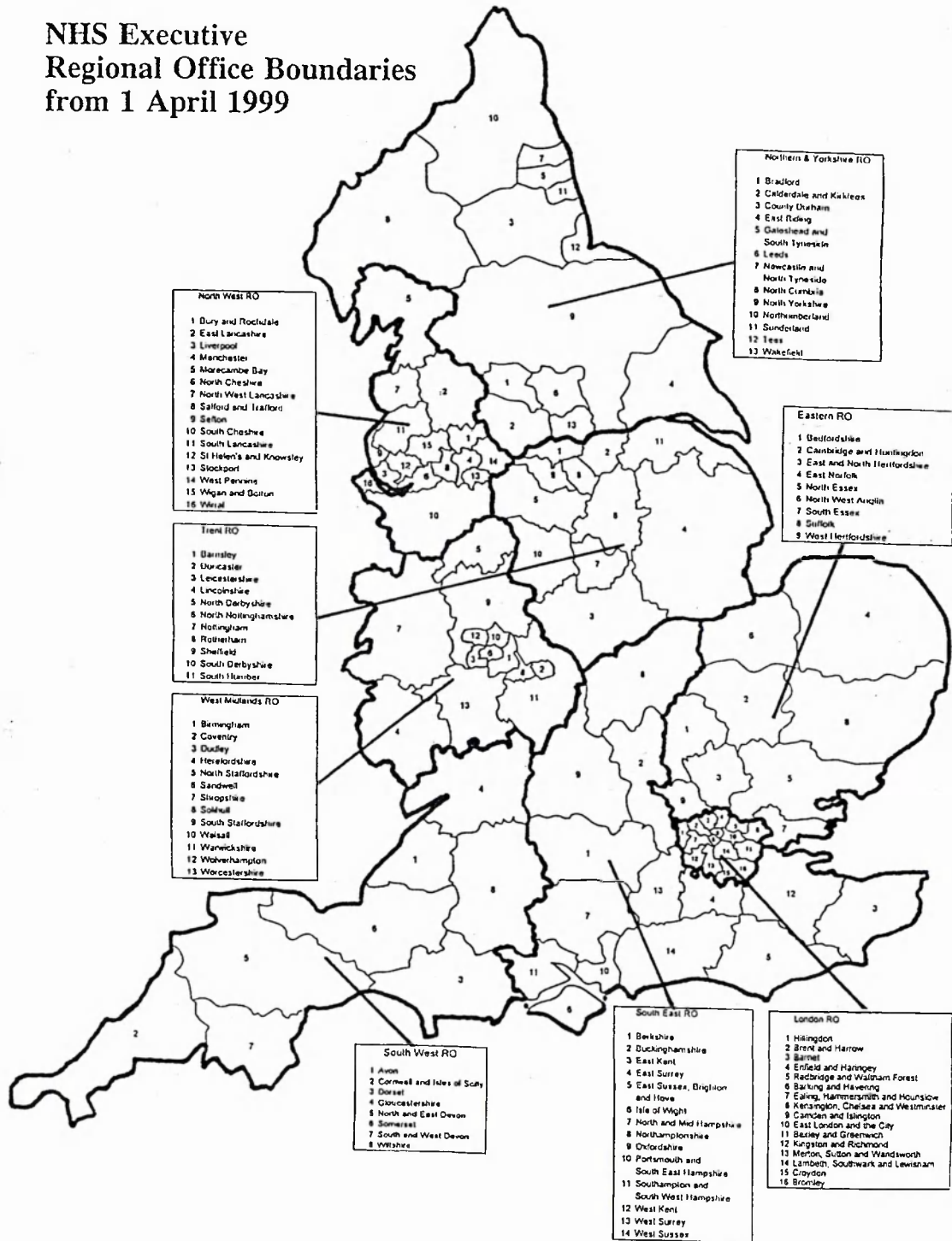
- Nutritional quality and palatability of hospital meals,
- Preparation, distribution and serving of meals
- Feeding practices
- Nutritional screening, assessment and monitoring,
- Nutrition information protocols (e.g. numbers of screened, food consumption/wastage)
- Audit protocols
- Nutrition education and training of relevant staff
- Resources for the provision of food, help with feeding and nutritional support
- Performance assessment, performance management and clinical governance with regard to food and nutrition

A further green paper – *Saving Lives: Our Healthier Nation* (Department of Health, 1998c) was intended to provide the front end for all health strategies and it set the scene for Health Action Zones, and addressed the role and purpose of the NHS and the accountability of health authorities. It functions as an action plan to tackle the problem of poor health and aims towards a comprehensive health care system for everyone to take the opportunity of better health - now, and for the future (Department of Health, 1999).

During this fourth wave of healthcare reform, the white and green papers were intended to make the assessment of the performance of the NHS trusts more accountable to the public. The most recent (April 1998) reconfiguration of NHS Trusts (see the new regional office boundaries in Figure 2.5) might give rise to many uncertainties for the NHS. Baker (1998) pointed out that the total number of NHS trusts may fall from over 450 at the beginning of 1998 to approximately 200 over the four subsequent years. As a result, each NHS hospital trust would be expected to cover twice the current population. The drive for greater efficiency in the hospital service is likely to continue to put pressure on hospital bed numbers. Baker predicted that only the bigger hospitals would have the flexibility to survive, casting further shadows over the future of hospital catering.

Figure 2.5: The new boundaries of eight regional offices in England

**NHS Executive
Regional Office Boundaries
from 1 April 1999**



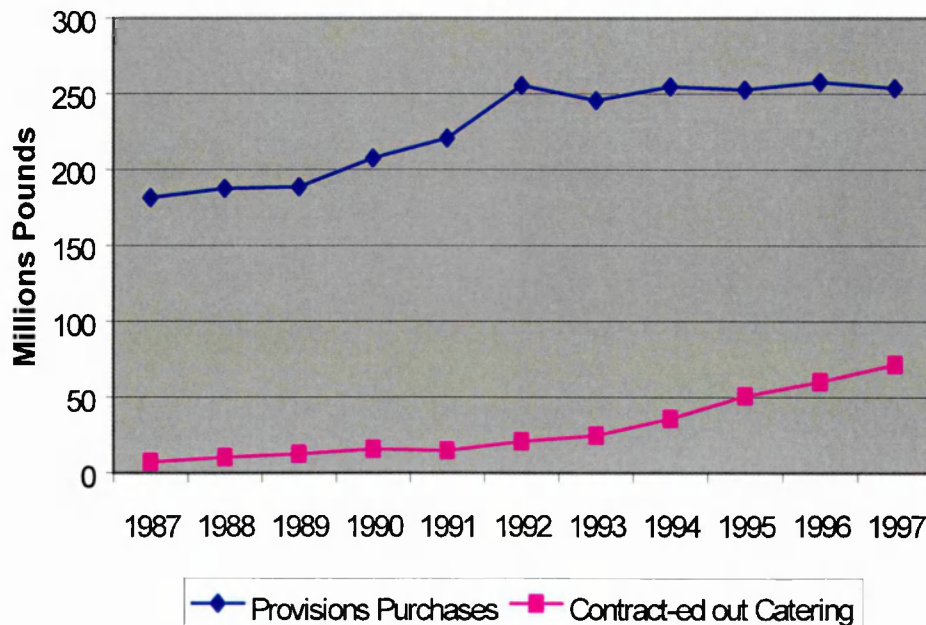
2.5 Increased demands on hospital catering provision

Within a hospital, resource allocation is a vital issue in the effective functioning of a healthcare unit, with the Catering division playing an important role. Aside from medical staff, the continued increased demands on hospital catering and its financial impact cannot be ignored, as evidenced by these following statistics. The Insight Research Group (1995) indicated that the NHS spent some £491 million in 1991-2 on catering in England (excluding water, energy, and capital costs), and in fact the NHS was the third largest purchaser of catering services in the United Kingdom, behind only business and industry, and local education authorities (National Audit Office, 1994). Most health service catering is undertaken in hospitals and in England, as indicated in the 1995/6 NHS Handbook (1995), more than two million meals are served every 24 hours. Some three years later both Millar (1998) and Friend (1998) determined that the NHS served three million meals a day, more than any other organisation in the UK. Perhaps due to differing measurement criteria, the *1999/2000 NHS handbook* puts the number much lower, stating that the NHS provided around 300 million meals and snacks each year to patients, staff, and the public at a net annual cost of over £500 million. Regardless, a typical NHS trust might spend two or three percent of its budget on catering, employing chefs, kitchen assistants, and other staff to maintain the service.

Under the concept of internal markets and with promotion from the health authorities, with the ideal of testing the cost of hospital support services and of obtaining better value for money (McKenna, 1990), contract catering has received a dramatic increase in attention over the last ten years. The expenditure for contracted-out catering in 1997 was nine times the amount spent in 1987 (Figure 2.6). Unfortunately, it is not possible to determine how much was specifically spent on In-house catering because of the way the accounts are categorised in the NHS financial system. The trend toward contract catering could continue, as Ervin and Edwards (1995) have predicted that opportunities for external contractors to win contracts would be increased because contractors were more likely to offer the facilities to cook on demand at ward level, have set quality and nutritional standards, conduct frequent patient satisfaction

measurement exercises, offer a wide range of special diets to patients and have less time between ordering and service of food.

Figure 2.6: The NHS expenditure on catering service 1987-1997



Note:

1. It is not possible to present In-house catering expenditure separately because the figures on provision purchases also include items such as, Laundry, Hardware and Crockery, Maintenance of Machinery, and utility services including, Gas, Electricity and Water and Sewerage payments.
2. Data for 1998 and 1999 were not comparable to previous years as contract hotel services for 1998 and 1999 included both contract catering and external laundry contracts, which was not the case in prior years.

(Health and Personal Social Services Statistic for England, 1992: 27; 1996: 113; Memo from NHS headquarters, 1997; 2000)

The Forty-ninth report on NHS' hospital catering in England (1994) concluded that the average cost of meals varied between hospitals from less than £2 to more than £15 per patient per day. Since the results of quality assurance studies demonstrated no link between the cost of food and its quality, they suggested that perfectly good meals

should be produced within the recommended benchmark range of £5 to £6.50 per patient per day, and any excessive meal costs were seen as a waste of NHS resources and a risk of fraud and theft. (Committee of Public Accounts, 1994). However, Ervin and Edwards (1995) argued those figures were too high, as compared with their results of their mail survey of 243 NHS catering managers in 1994. They found that hospitals spent an average of £1.66 per patient per day using a conventional catering system, £2.12 using a cook-chill system, and £1.32 using a cook-freeze system, excluding overheads. The highest figure for food was a hospital with between 501 and 600 beds operating a cook-chill catering unit, which spent between £4.51 and £5 per patient per day (Ervin and Edwards, 1995: 13).

2.6 Catering system diversification

To feed such a high volume of patients while maintaining good nutritional value and dealing with special diets and running an efficient catering operation on a commercial, business-like, competitive capitalist basis, management has needed to regain and tighten their control over both the work-force and the catering operation (McKenna, 1990). In practice, hospital catering services have had to diversify their systems on both the production line and the delivery chain.

2.6.1 Production line

Under pressure to produce three meals and seven drinks per day in large quantities, some advanced food production technology has been developed in three areas - batch cooking (conventional), cook-chill, and cook-freeze. The decision on which method to use can have an impact on the efficiency and effectiveness of provision of the meal service, and affect the quality of the food itself.

2.6.1.1 Batch Cooking (Conventional)

Batch cooking (also known as conventional cooking) is perhaps the most traditional way to provide patients with an inviting and delicious meal. It is defined as:

'A catering system where foods, particularly vegetables, are cooked in small quantities to meet, for example, meal service demands, rather than one large

quantity which is kept hot until service is finished.' (Department of Health, 1995a:58)

Batch cooking with a minimum hot holding system can provide freshly cooked food, preserving the most appropriate texture, colour, and flavour of the food and minimises nutrients losses, since it involves cooking smaller quantities of food immediately before it is served from specially designed equipment. Food costs might be more easily controlled as output and patients' demand is closely matched, reducing wastage. However, large numbers of staff might be required to meet the demand, especially with the additional pressure of controlling the timing of the food delivery and service during the three main meal times. (Department of Health, 1995a)

2.6.1.2 Cook-chill

With the cook-chill method, food is ideally regenerated at ward level by using either forced convection ovens or specifically designed heated trolleys before meal service. It is defined as:

'A catering system based on the full cooking of food followed by fast chilling and storage in controlled low temperature conditions between 0 to +3 degrees Centigrade, for a maximum period of 5 days including the days of preparation and consumption, with subsequent reheating as close to the consumer as possible.'
(Department of Health, 1995a:58)

These rapid chilling and chilled storage techniques simplify handling to such an extent that fluctuation in daily workloads could practically be removed while offering the following potential benefits:

- A divorce of production from service and consumption, allowing better usage of equipment and labour with higher efficiency (Johns, 1995).
- Meals are prepared in advance of requirements and production can be scheduled to gain the best use of equipment, space, and staff (Hyde and Green, 1993; Johns, 1995).

- Lower food costs based on bulk buying through centralised purchasing and supply to one production unit (Johns, 1995).
- Control and efficiency that not only reduced expenditure in total, but also increase managerial control through its very design (McKenna, 1990)

Nevertheless, some limitations may apply to the cook-chill system if not applied correctly. For example, if the control of temperature is improper (the food cooked badly or stored at eat-ready storage temperature for a long time), the food could pose health hazards or the nutritional value might suffer (Kipps and Middleton, 1990; Johns, 1995).

2.6.1.3 Cook-freeze

If done properly, a Cook-freeze system can store food for up to five months without affecting the nutritional value, and is defined as:

"A catering system based on full cooking followed by fast freezing and storage at controlled low temperatures, at least -18 degrees Centigrade, with subsequent thorough re-heating as close to the consumer as possible." (Department of Health, 1995a:58)

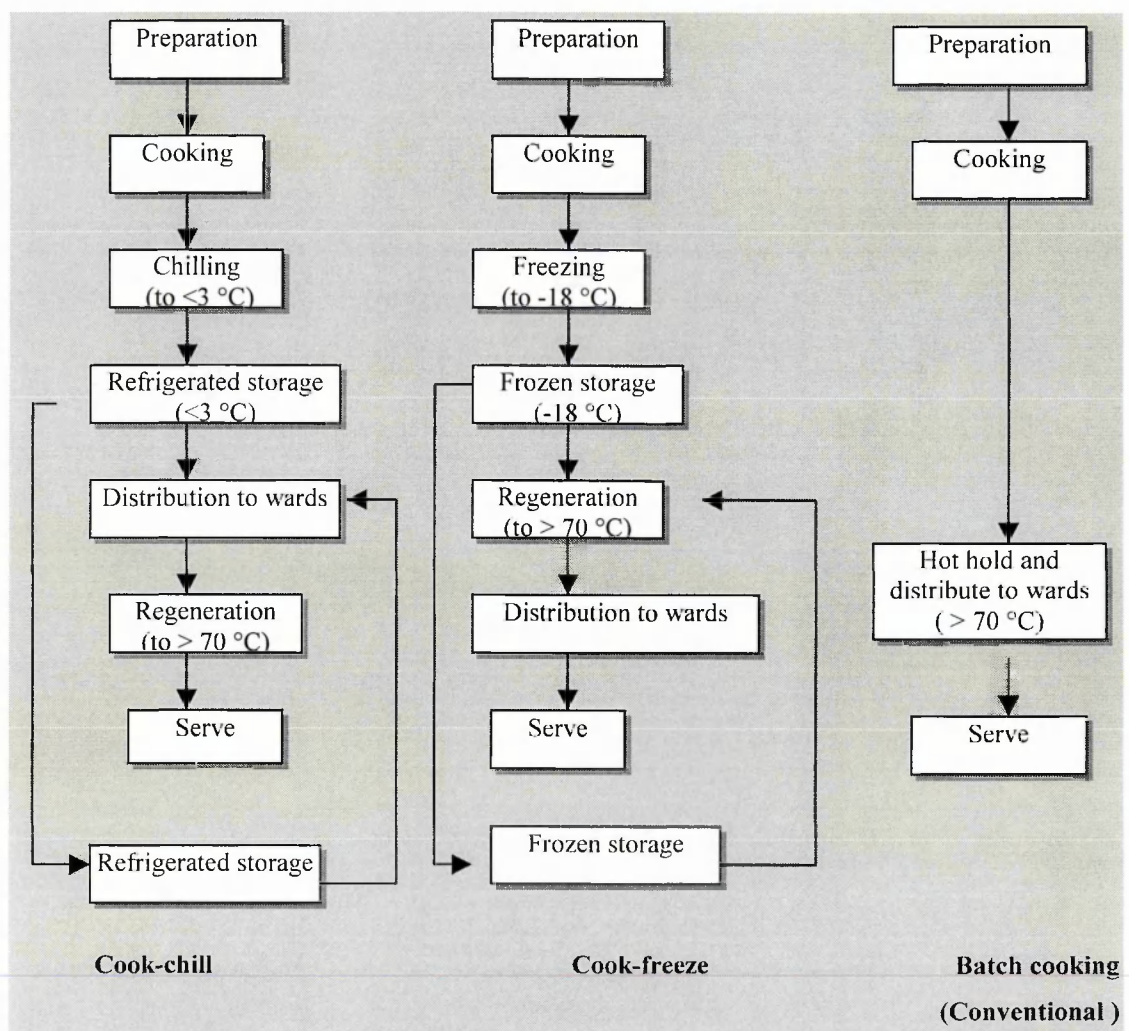
However, a disadvantage of using the cook-freeze system is a loss of texture due to the freeze/thaw process, and the subsequent regeneration and distribution to the wards. As with cook-chill, proper temperature control is key to the concept of cook-freeze. If the temperature is not controlled, the food may easily become dehydrated. Therefore, skilled staff need to be trained and the cost of this type of the production is three times that of the cook-chill system (Johns, 1995).

In order to avoid food-borne infection, the re-heating of chilled or thawed food should commence less than 30 minutes after the food has been removed from refrigeration, and the food should be served within 15 minutes of re-heating, which is usually done near the ward areas rather than in the main kitchen (Barrie, 1996). The time constraints incurred by the use of these methods put additional pressures on meal service. Barrie (1996) emphasised that a system of quality assurance on temperature

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 control and staff hygiene training should be in place, particular for premises using cook-chill and cook-freeze processes.

In summary, since all of these production systems have their pros and cons with regards to the quality of food, the flow of the meal service, and financial concerns, it is important to discern which methods are in use in today's hospital catering system (Nettles *et al.*, 1997). The different types of foodservice systems are graphically illustrated in Figure 2.7.

Figure 2.7: Food handling processes used in hospitals- Cook-chill, Cook-freeze, and Batch cooking



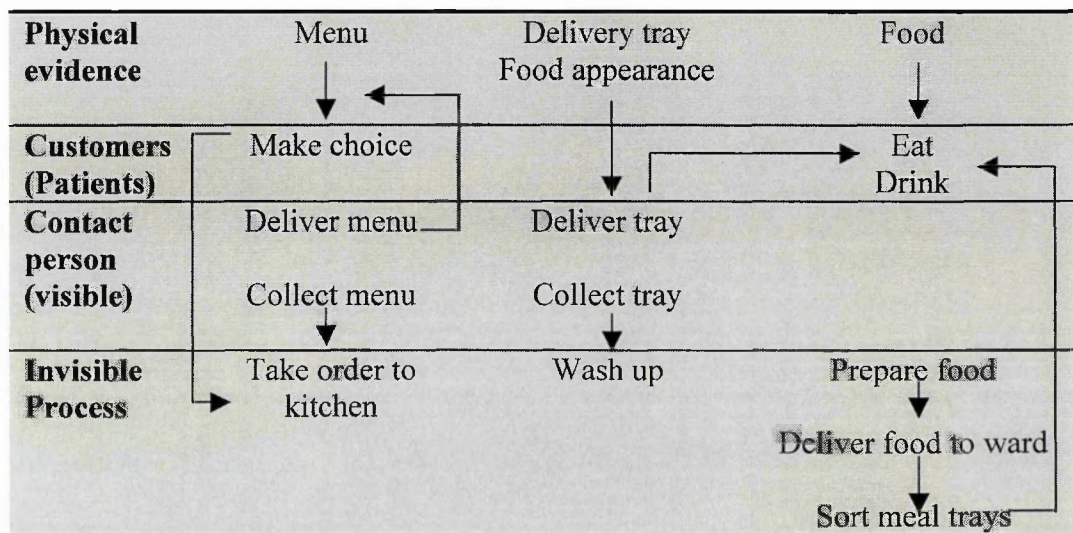
(Adapted from Kipps and Middleton (1990: 77) and William (1996: 491))

According to a survey by Ervin and Edwards (1995), Conventional catering systems remained in use in a majority (67.9%) of NHS hospitals, while 24.8% used a Cook-chill system, and only 4.1% used the cook-freeze system. Hwang *et al.* (1999) in a study of NHS acute hospitals found similar proportions of catering systems at 67.7% for conventional catering, 20.3% for Cook-chill, and 12.0% for Cook-freeze.

2.6.2 Distribution Chain

Food distribution is a critical part of the food chain. In order to maintain the nutritional content, temperature, and quality of the meals, food needs to be distributed to wards and served as quickly as possible. Randall and Senior (1994) designed a model to better explain the meal service process, particularly in hospitals (Figure 2.8). By separating the sections of the processes, the diagram may be read either horizontally (from left to right) to represent the actions or steps which can be performed by either the customer or the contact employees, or vertically, to help understand the structural relationships which exist to support the actions of the customers and employees.

Figure 2.8: Hospital meal service process



(Randall and Senior, 1994:72)

The method chosen as most suitable for both local circumstances and special patient groups will have consequences that may influence what can be offered on menus and can have a direct effect on ward routine.

2.6.2.1 Delivery method

Historically, nurses were assigned to serve in the bulk style, where food was distributed from the main kitchen to the wards by simple insulated unheated containers. Food presented professionally in this way could make the meal a more pleasurable experience than with a pre-plated meal system. Table 2.3 summarises the advantages and disadvantages of bulk-style and plated-meal systems under eleven service factors (McGlone *et al.*, 1995). By giving patients a bedside choice of meals, the problems of food wastage at ward level can be minimised. With this method, the caregiver could supervise many hidden aspects of mealtime care, ranging from meal trolley supervision, the serving and delivery of food, checking patients' well-being, observing their feeding difficulties, providing assistance during mealtimes, and observing the contents of discarded dishes. (Department of Health, 1997) However, the training of service staff and labour costs are more intensive, important in a time of budget restrictions (McGlone, 1995).

Table 2.3: Comparison on the bulk and tray delivery systems for hospital food distribution

Factors	Bulk	Tray
Portion control	Haphazard	Effective
Catering personnel	Disinterested	Well motivated
Meal distribution on ward	Time consuming	Quick
Nurse' awareness of patients' appetites	Observed	Easily overlooked
Size of helping	Can be varied	Less adaptable
Staffing level in kitchen	Lower	Intensive at mealtimes
Staffing level on ward	Intensive at mealtimes	All available hands at mealtimes for short time only
Food containers	Few wastage	Attractive presentation
Wash up in kitchen	Laborious	Efficient, hygienic
Wash up on ward	Some involvement	Maybe eradicated
Patient attitude	Can be adequate and enjoyable	Enjoyable

(McGlone *et al.*, 1995: 284)

However, some nurses opposed their role as meal deliverers and felt that their time should not be spent serving meals, which took them away from their other duties. From Carr and Mitchell's (1991) comparison study between meals plated by catering staff and served by nurses or a bulk service by nursing staff, the results showed that mealtime care was not related to staffing levels or the prevalence of feeding problems. They concluded that a meal delivery system should free nurses from the "non-

nursing” duty of serving food, releasing them to give more direct nursing care. For this reason, a tray served system, where food was plated in a central location and stacked into trolleys for delivery, offered a convenient and efficient alternative at ward level and as a consequence the cost of foodservice staff could be reduced. Plating food in the hospital kitchen ensured the catering manager retained more control over the quality and portion of the meals served to patients (Ervin and Edwards, 1995). However, the disadvantages of this method include very impersonal patient service and problems with food moisture loss due to the small portion sizes (Department of Health, 1997).

2.6.2.2 The role and responsibilities of staff at mealtimes

As compared to other hospital services, dietary services are often accorded low status because they are not normally regarded as part of the ‘treatment’ or ‘therapy’ that patients receive when they are in hospital. Often, it was not featured when patients and their care were reviewed at ward rounds or meetings and as Bond (1998) stated, it was too often classified as:

‘just a hotel service and hence not worthy of the attention of health professionals’
(p. 27).

Food service, therefore, was often given a low priority, especially with public hospitals grappling with economic constraints. Some catering managers have expressed that delivery of food to the ward and actual foodservice to the patient were most difficult for them as they were relying on the interdependence of other departments (Ervin and Edwards, 1995). McGlone (1996) found that caterers saw nurses as having rather more responsibility than orderlies for the delivery of menu cards and giving guidance for their completion, but they saw nurses as having a more major responsibility for the distribution of food. Moreover, Kowanko (1997) found that from the nurse’s point of view, feeding patients was no longer regarded as a valuable nursing task, with food being served and cleared away by catering staff and most patients being left to manage their meals themselves.

Kowanko *et al.* (1999), from the results of semi-structured interviews of seven medical nurses, found many problems associated with varying perceptions of responsibilities for aspects of the food services. Nurses expressed uncertainty about their responsibility for menu choice, preparation of patients and their immediate environment in anticipation of meal delivery, and ensuring that patients can and do enjoy their meals. Without a better understanding of the importance of good nutrition in relation to health and disease, they would be unlikely to give a high priority to feeding patients and monitoring their nutritional intakes.

Another alternative is for the Catering staff to be given the sole responsibility for the complete cycle of foodservice, for both the distribution and collection of food. De Raeve (1994) claimed that in this way, catering staff could hold in their mind the kind of people that are being catered for. Hence, a duty of care would behave them to help patients more closely to select balanced menus, to cook food properly, to observe proper hygiene, and to make some aesthetic efforts.

The attitudes difference between catering staff and nursing staff

From the results of measuring the differences among the cognitive, emotional, and affective aspects of service attitudes between hotel/restaurant staff and Nurses, Larsen and Bastiansen (1991) and Gregorie (1994) discovered that hotel/restaurant staff had more positive service attitudes than Registered Nurses (RNs). They suggested that this was partially because nurse-client relations had a relatively low degree of flexibility and hospitals tended to be very hierarchical organisations. The two different service orientations, with nurses being demand-led and hotel/restaurants staff being customer-led might cause this discrepancy, as they stated that:

‘[...] in the service sector the customer is always right. In hospital, this tradition often seems to be the opposite that the medical system knows what is right for you’.

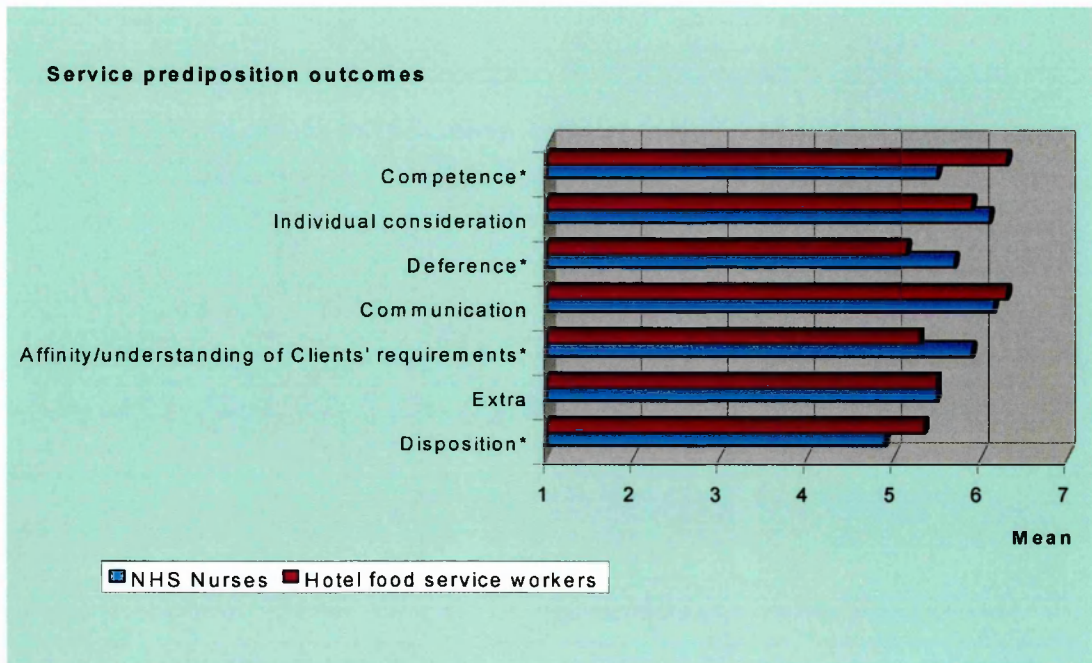
(Larsen and Bastoansen, 1991: 31)

Echoing the service attitude suggested by Larsen and Bastiansen (1991), Lee-Ross (1999a) recently found no significant differences between nurses and hotel workers

on service predisposition (having positive attitudes to service provision), but some notable differences existed between the groups in four dimensions: disposition, affinity, deference, and competence. Nurses scored lower on disposition and competence than hotel workers, whereas affinity and deference were felt to be more important elements of service provision by nurses (Figure 2.9). He concluded that the possible explanation for this could include:

- A different focus for skills training for nurses, which was not directed by client preferences but rather by nursing and clinical practice (Lee-Ross, 1999a).
- A bureaucratic organisational structure might also offer little autonomy to nurses thus limiting their opportunities to provide what they think clients would prefer (*ibid.*).
- Limited financial resources and a shortage of skilled staff stopped nurses from providing clients with what the client deserved (*ibid.*).
- Quality strategies tended to be directed by individual companies; often giving rise to hospitality service inconsistencies, with a consequent negative impact upon perceived quality by clients (Lee-Ross, 1999b).

Figure 2.9: A comparison of service predisposition outcomes and scores between NHS nurses and hotel foodservice workers



Note: * = $p < 0.05$. , (Lee-Ross, 1999: 95)

These differences are understandable, since as Darby and Daniel (1999) indicated, nursing staff were more often working in a crisis environment compared with service workers in other industries such as hotels and banks. While nurses' therapeutic role was obviously important, it was nonetheless the functional, expressive aspects of service that were most often evaluated because the technical dimensions were often not understood by patients.

Conversely, some are of the opinion that catering staff should not be left alone to serve the dietary needs of patients. Cortis (1997) argued that catering staff might not always be made aware of the specific needs and requirements of individuals, and they were unlikely to be expected to ask patients if they need assistance or why they had not eaten a meal (Gregoire, 1994). Often catering staff learn very little of the concepts of nutrition during their training, the most general of which - 'healthy eating' (e.g. cutting down on fat and sugar) was usually not appropriate for malnourished or at-risk patients with poor appetites who enquire energy- and nutrient-dense food (Mayon-Davis, 1999). In addition, if nurses lose contact with the current food intake

Li-jen Jessica Hwang Chapter 2: Overview of England's Health Care System and Hospital Catering of patients, a patient's poor nutrient intake might go unnoticed and corrective action would not be taken, the consequence of which could lead to malnutrition. (King's Fund Centre, 1992; Kowanko, 1997).

Furthermore, Gregoire's (1994) comparison of service orientation opinion variance between catering staff and nurses found that overall the rating of twenty statements (Table 2.4) did not differ in their personal motivation toward providing service. Significant differences were noted for ten statements. In general, for most statements, catering staff seemed to have more positive attitudes towards service procedures and organisational support than nursing staff. Nursing staff were significantly more positive about their interaction with patients.

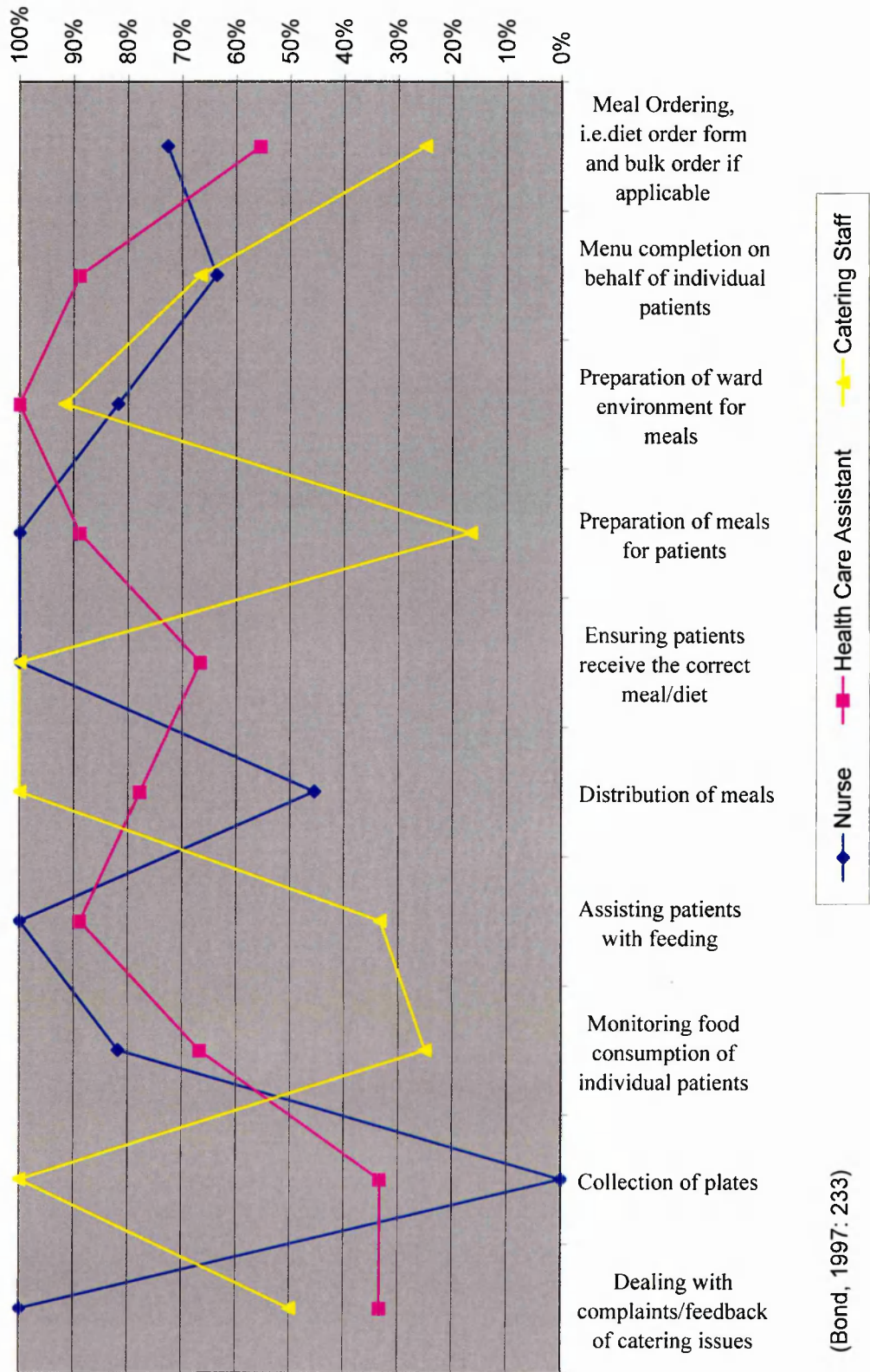
By duplicating Gregoire (1994)'s comparison study, Lambert *et al.* (1999) added two more non-traditional comparisons on meal systems. One applied a host system, where catering staff specifically trained in meal-service procedures provided a waiter/waitress service while delivering meals directly to patients; the other used a patient-focused program, where a hospital staff cross-trained to provide a full range of patient-care meal services to patients. They discovered similar findings that there were no significant differences in the meal tray delivery factor between foodservice and nursing service in terms of patients' rating of quality of service. They suggested that the traditional nursing service meal systems would provide more involvement by more directly addressing the problems and concerns of feeding patients.

An alternative strategy would be for those in nursing positions to supervise the serving and delivery of food either by catering staff, ancillary staff, or domestic staff, ideally leaving them free to observe and assess the patient's mealtime needs. Bond (1997) highlighted an audit tool from St. James's & Seacroft University Hospital Trusts in Leeds that was used to gather perceptions from their current ward staff on their accountability and responsibility for a range of meal service activities (Figure 2.10). Results indicated difficulties might arise in monitoring food intake, which becomes problematic when ward assistants collect plates and do not communicate their observations to the nurses.

Table 2.4: Comparison of rating of service orientation statements: catering staff vs. nursing personnel

Factor	Statement
Factor one: service procedures***	I provide good service when I deliver meal trays. ***
	Delivering meal trays to patients is one of the most important responsibilities of my job. ***
	Our supervisor pushes us to provide excellent patient meal service. ***
	Our meal service procedures make it easy for me to give excellent patient service. ***
	In this hospital, patient meal service is given the same importance as most other procedures.
	When we are too busy to provide good meal service, the supervisor brings in more help. ***
Factor two: Personal delivery of service	I try to please patients when I serve their meal.
	I am cheerful when delivering meal trays to patients.
	I will not go out of my way to provide good service to patients at meal times.
	I was not trained to give good service to patients at meal times.
	I often have patients express dissatisfaction with the way I serve their meal tray.
	My supervisor will give employees a good rating, even if they provide poor patient service at meals. *
	I do not enjoy delivering meal trays to patients. *
	I am allowed to take my breaks even if it means patients must wait to be served their meal.
Factor three: Patient interaction*	Patients treat me with respect.
	Patients choose this hospital because of its good service.
	I enjoy working when my ward is filled. *
	Patients show understanding and patience when we are really busy.
Statements not loading on any factor	I provide good service, even when a patient is grouchy. **
	I have my special patients. *
* P ≤ 0.05, ** P ≤ 0.01, *** P ≤ 0.001. between catering staff and nursing staff	
(Gregoire, 1994:1132)	

Figure 2.10: staff responsibility for a range of meal service activities



(Bond, 1997: 233)

Current meal service practices

The current norm, according to *Wellard's NHS handbook 1999/2000*, appears to be for Domestic staff to be the only personnel involved with serving meals and drinks to patients as it is explained that their role is to ensure the highest standards of hygiene. It is doubtful that employees named as *domestic* staff would be able to understand the principles and importance of feeding patients without any specific food training. As raised in the report *Hungry in hospitals* (1997), published by the Association of Community Health Councils, the feeding of patients has consequently become a situation where:

'in some hospitals, no-one is taking responsibility for ensuring that patients are eating, or investigating why some patients are not eating and drinking' (Angeline, 1997: 22).

Ervin and Edwards (1995) concluded that even though the majority of hospitals of all sizes delegated responsibility for delivery and service of food to staff who were not employed specifically by the catering department, the catering manager would still be held accountable for the quality of the meal that the patients received.

Angeline's (1997) examination of who should be responsible for ensuring that patients eat and drink in the hospital found that absence of nursing assistance for patients at meal time was mainly due to the lack of a clearly defined nursing role.

From a ward sister's view, Swain (1998) suggested that the role of nurses should be:

- Assessing the initial nutritional status of patients;
- Highlighting the risk factors that may occur during a patient's treatment or hospitalisation;
- Repeating this assessment at regular intervals;
- Liaising with the catering department in order to provide a good food guide;
- Ensuring that meals were served with the same supervision as medicine rounds, and paying specific attention to individuals' needs and requirements;
- Checking the amount of food eaten and its effects;

- Identifying reasons if the patient was unable to eat adequate amounts, and informing catering staff, dietician and/or doctor. (Swain, 1998:27)

In the end, most researchers have arrived at the conclusion that the ultimate responsibility for mealtime service rests with the nurses. From the dietician's view, Wilson (1998) proposed that nurses, doctors, dieticians and other staff should take ownership of food provision for patients in hospital and cannot just leave the responsibility to facilities management and finance departments. Bond (1998) concluded that nurses were in a position to see that patients under their care do not go hungry, and thus are ideally placed to make the case for resources to see that the patients are well fed and to make sure that eating really matters. De Raeve (1994) stated that

'delivery of food from the service trolley and into the patient's stomach is a nursing responsibility' (p.238),

thus some investment should be made in making mealtimes enjoyable and the patients' environment a pleasant place to eat. Several articles emphasised that nurses had an important role to play in nutritional care (Cortis, 1997; Handcock, 1997; Bond, 1998) with the Royal College of Nursing stating that:

'Nurses are responsible for feeding patients' (1996: p.5).

which is backed by a statement from the United Kingdom Central Council for Nursing, Midwifery, and Health Visiting (UKCC)

'Nutrition is essential for feeding and health. The feeding of patients is not just a routine task. It provides an opportunity to observe and monitor aspects of a patient's progress, both psychological and physical. Without this involvement, judgements about a patient will be made with incomplete information.' (Hancock, 1997: p. 5)

It would seem that communication between nurses and patients, and between nurses and catering staff are important if patients' nutritional needs are to be met. *Nutrition Guidelines for Hospital Catering* (Department of Health, 1995a) recommended that members of groups should reflect the wide range of interested parties involved in hospital catering, nutrition, and patient care. Table 2.5 illustrates an example of an ideal meal service team, however, the question remains on how the 'providing of advice' by each member of the team contributes to practical meal services.

Table 2.5: An example of meal service team

Staff	Implements
Food production staff	To provide practical advice on all aspects of food.
Nursing	To provide advice on aspects of total patient care assessment and service.
Medical	To provide advice on aspects of total patient care and of finance and resources (through committee work).
Dietetics	To provide advice on the nutritional aspects of what is produced and eaten.
Catering/service manager or business manager	To provide advice on business plan and liaison with other service departments.
Patient representative	To represent the consumer and provide feedback.

(Department of Health, 1995a: 54)

From the issues discussed so far, the factors influencing the management of meal services can perhaps be narrowed down to twelve factors, as suggested by Maryon-Davis and Bristow (1999), that can identify the reasons for poor management of food and nutrition service in hospitals (Table 2.6). A poor image of hospital food, a low priority of services, and a weak food chain in the meal service procedure, and confused job delegation of meal services particularly at the ward level, have led to a deterioration of the meal services in hospital care. The images come both from within and as a result of external perceptions of hospital catering; consequently, catering departments are usually grouped with general facilities rather than patient care services.

Table 2.6: Factors influencing the management of food and nutrition in hospitals

Factors
1. Hospital food has a poor image.
2. Providing nutritious food is not regarded as a priority
3. Doctors and nurses generally have a low awareness and a lack of training and knowledge about nutrition.
4. Hospital catering departments or contractors work to very tight budgets.
5. Nutrition is not regarded as a priority at ward level.
6. Issues of responsibility of remain confused and unclear.
7. There is a lack of professional co-ordination and co-operation.
8. Information for monitoring and audit is not being properly collected, nor being reported to and acted upon by decision-makers and managers.
9. There is no shortage of guidance, but it is not being taken up (review in Appendix 3).
10. There are no formal means of generally enforcing standards and recommendations.
11. Improvements to catering services are perceived as a drain on resources that would otherwise be allocated to patient care.
12. There is a lack of research evidence.

(Maryon-Davis and Bristow, 1999: 29-34)

2.7 Conclusion

The catering department's budget and direction is directly affected by the hospital's budget and direction, which is in turn set by the regional and national health systems. Catering does not exist in a vacuum. As the NHS has evolved, emphasis has shifted from simply treating medical conditions to include the overall patient experience and issues once considered peripheral, such as catering and nutrition. The economic challenges and shifting patient dynamic makes the provision of nutritious, flavoursome meals increasingly difficult and important.

The Catering department does not depend only on Dieticians and Chefs to offer meals, but also on the co-operation of other staff in the hospital, including doctors, nurses, and administrators. There is a need for communication between clinical and catering staff in order to plan diets to assist in patients' recovery. Under this mutually beneficial relationship, the resources allocated to catering need to be considered not

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only from a cost standpoint, but also with regard to the additional medical benefits derived from well-nourished patients. Bond (1998) has indicated that more research is necessary when auditing the cost-effectiveness of investing resources in dietary care in NHS hospitals.

The next chapter will discuss the demand side of the hospital catering issue, by examining the attributes that impact on patient meal service satisfaction, and related issues, such as the practicality of nutritional guidelines, the implications of malnutrition and food wastage.

Chapter Three

Chapter Three:

Patients and Foodservice

- Food choices and nutritional implications

3.1 Introduction

As discussed in the previous chapter, it is only recently that the NHS has begun to acknowledge the importance of meal services in the hospital environment. Yet the provision of food and drink to patients is a multidimensional phenomena. While nurses are at the ‘sharp end’ of patient feeding and clearly carry responsibility for ensuring that patients are eating adequately, patient foodservice also involves the catering department, other health care professionals and most hospital departments (McGlone *et al.*, 1997). The importance is heightened in that foodservice and nutrition are important determinants of clinical care outcomes, the cost-effectiveness of hospital care, and patient satisfaction with the quality of care received (Holmes, 1999a).

Food is also an important part of the ‘hotel’ services delivered to hospital patients. As significant sums of money are spent on hospital catering (refer Chapter 2), Allison (1996) suggested that the nutritional care of the majority of patients had suffered from the separation of hospital budgets into ‘hotel’ and ‘treatment’ costs. Catering has become the poor relation of management, especially since the separation from dietetics in 1948 (McGlone *et al.*, 1995). Catering services have been described as “running on a shoe-string” (Allison, 1996: 856) and are designed to cope with institutional meals, on the same model as student hostels or prisons. They are not

targeted towards the sick. The problems lie not just in the purchase and preparation of food, but in the transport, delivery and presentation of the food to the patient in a manner that ensures its consumption.

This Chapter starts by investigating several food choice models, focusing on the factors influencing patients' food intakes and their implications on the feeding of patients in hospitals. The methods used to rate the quality of hospital meal services will then be explored to determine the key concepts of foodservice leading to patient satisfaction.

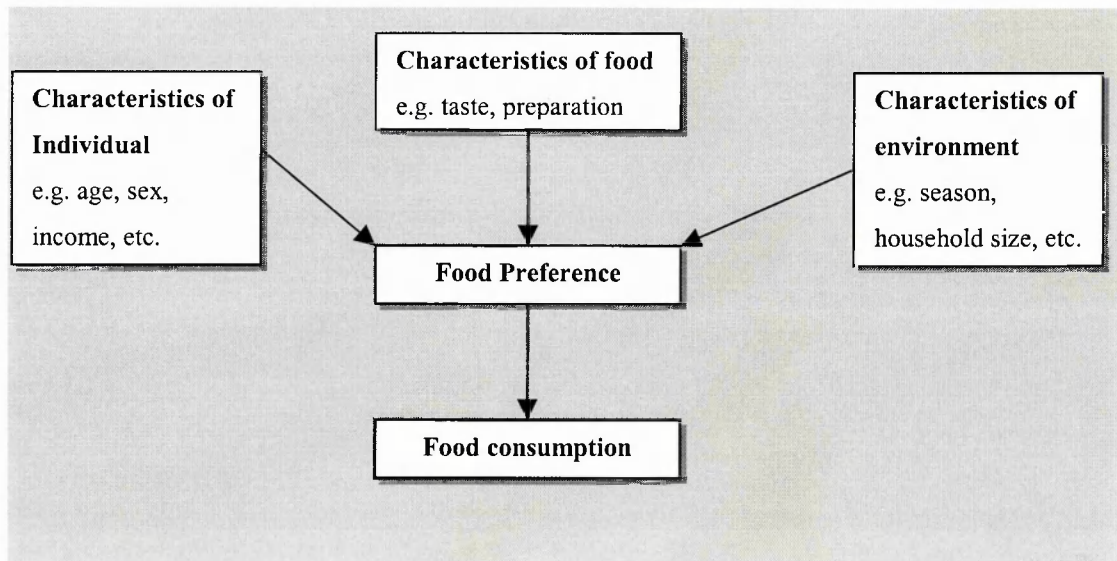
3.2 Food choices

It can be difficult to persuade ill people to eat. Increasing food consumption requires a close collaboration between members of the health care team (for example, nurses, dieticians and catering staff) to identify foods that patients 'fancy' and would enjoy (Holmes, 1999b).

3.2.1 Factors influencing food choices

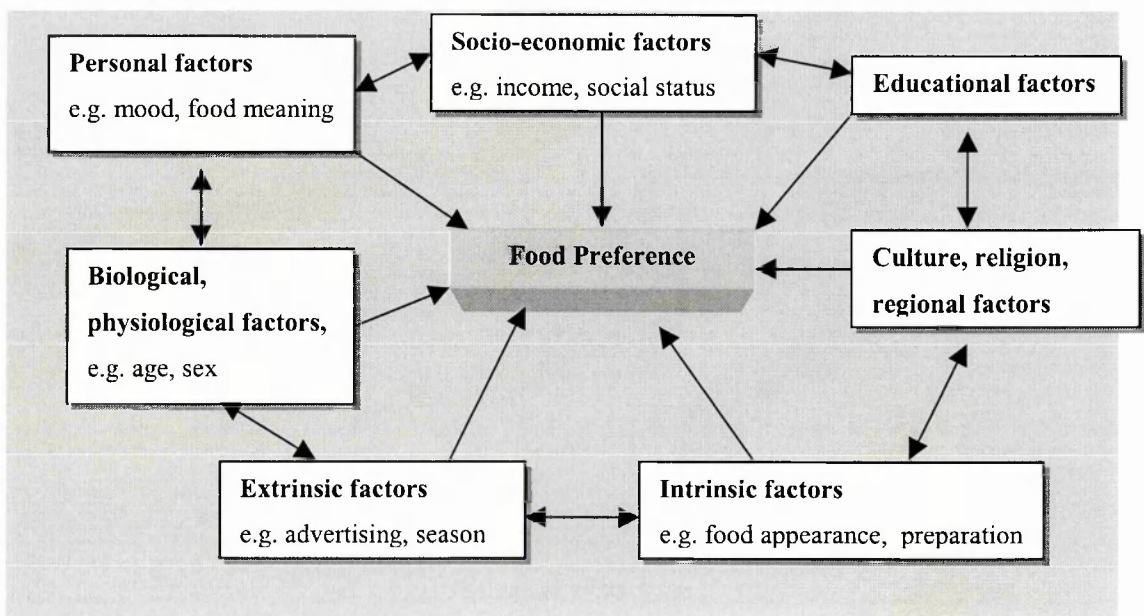
Shepherd (1995) stated that food choice is like any complex human behaviour and is influenced by many interrelating factors. As such, several models have attempted to obtain a better understanding of the influences on food consumption. Examples include Randall and Sanjur's model from 1981 (Figure 3.2), Khan's 1981 model of food preference (Figure 3.3), and Shepherd's factoring of food choices model in 1985 (Figure 3.4).

Figure 3.1: Randall and Sanjur’s model of food preference

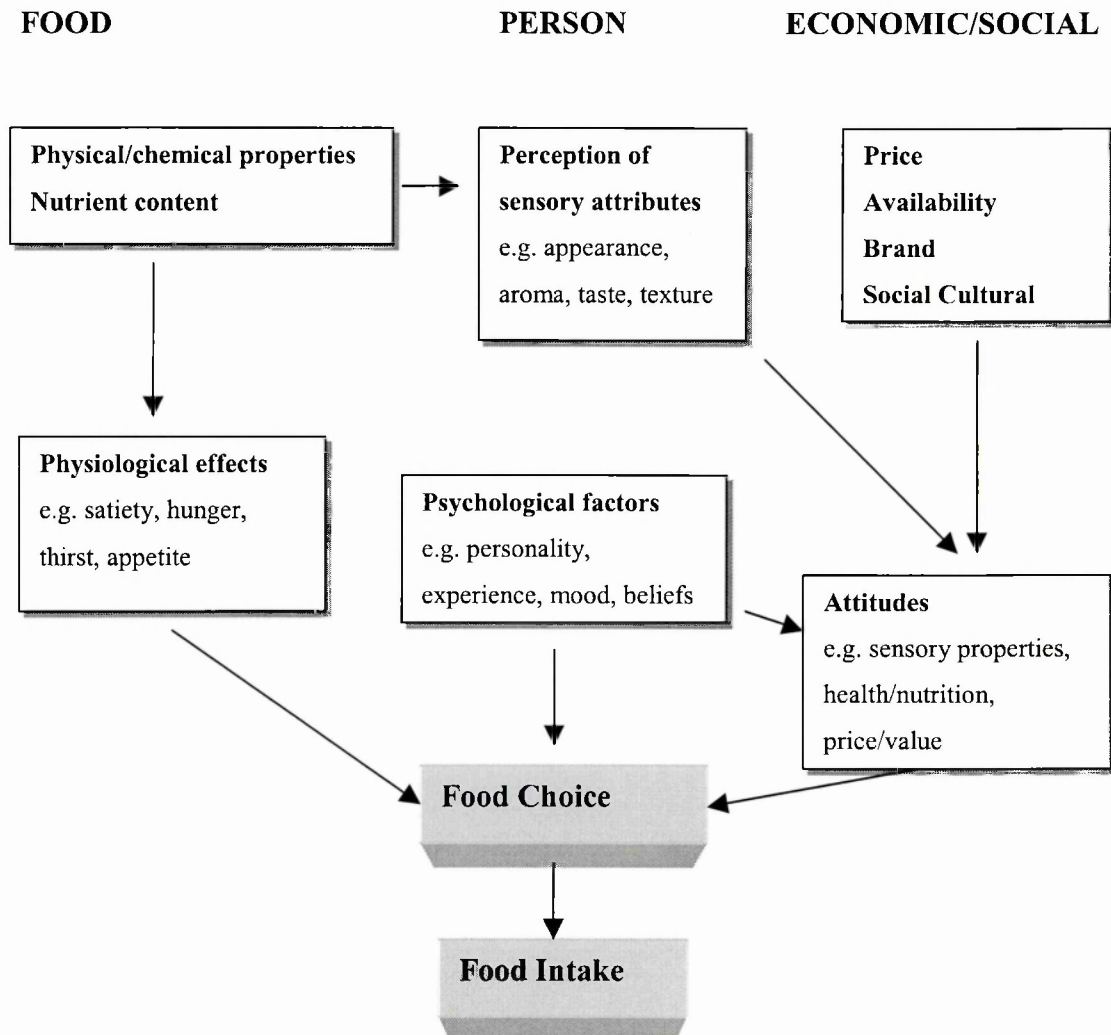


(Bareham, 1995:10)

Figure 3.2: Khan’s model of food preferences



(Shepherd and Sparks, 1995: 203)

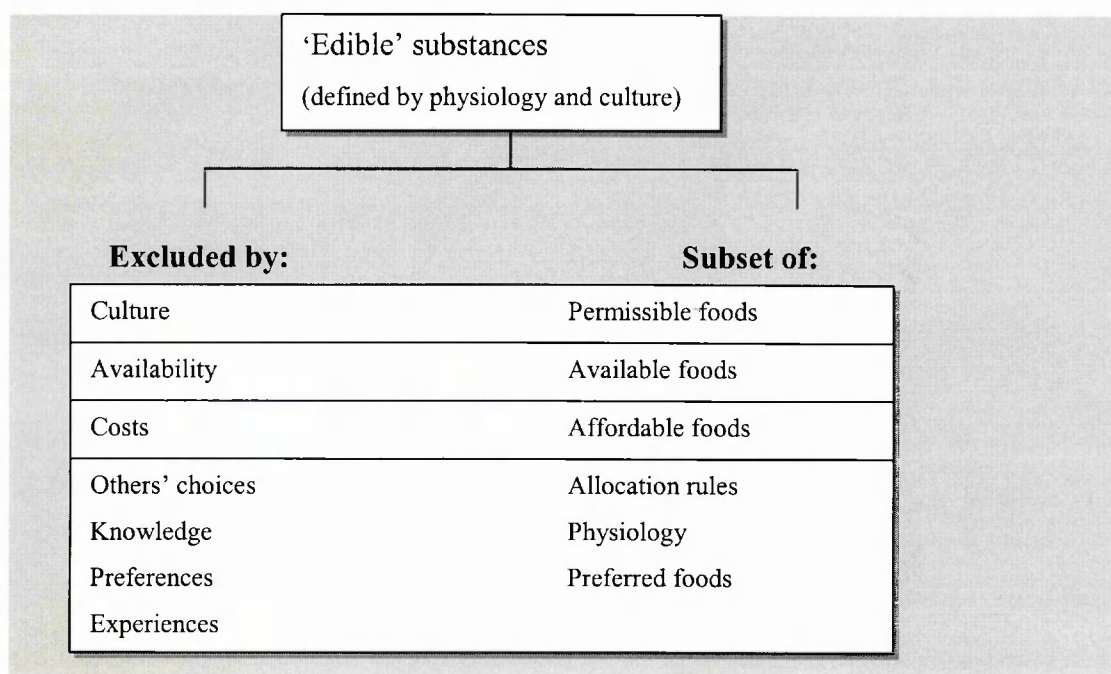
Figure 3.3: Factors affecting food choice (Shepherd's 1985 model).

(Shepherd and Raats, 1996: 347)

Although these models differ in emphasis, they share some common features, including the identification of cultural and socio-economic factors, personal or individual characteristics (such as age, sex, mood, or personal circumstance), factors involved with the food itself (such as the method of preparation, taste, or appearance) and the way it has been promoted (such as price, brand, advertising). All of these models have been criticised as being only functioning catalogues of the likely influences on food choices and intakes rather than being predictive (Bareham, 1995; Shepherd, 1996).

Emphasising the multi-factorial nature of the food choice models, Wheeler (1992) suggested that food choice could be described in terms of a hierarchy of constraints (Figure 3.5). Each constraint could be analysed at varying levels of detail. Some constraints may override others and the various factors affecting food choice do not carry equal weight. However, the interactions between these levels are still not clear.

Figure 3.4: A hierarchical model of food choice (Wheeler, 1992)



(Wheeler, 1992:66)

Other constraints may make patients' eating more difficult in the 'unnatural' hospital environment, such as unwilling customers; alien physical surroundings (threatening noises, sight and smells, interaction with strangers of different social class, sex, or race); loss of privacy and personal space; or being held to strict mealtime routines (Kipps and Middleton, 1990a; 1990b).

With a 4-point scale on 68 items summarised from the existing literature, Steptoe *et al.* (1995) generated a multidimensional measure of motives related to food choice (Table 3.1 shows the final 36 items). The confirmatory factor analysis verified this simple nine-factor model as a good fit in the re-test sample and the internal consistency of the factors was high between test-retest reliability (Cronbach α

between 0.84-0.70). The nine factors accounted for 65.2% of the variance. They revealed that familiarity was the most important factor among eight other underlying food choice factors, followed by mood, sensory appeal, price, ethical concerns, health, convenience, natural content, and weight control.

Table 3.1: Food Choice Questionnaire – items and test and re-test reliability

Factors	Items	Factor loading
It is important to me that the food I eat on a typical day:		
1. Health	Contains a lot of vitamins and minerals	0.77
	Keeps me healthy	0.75
	Is nutritious	0.75
	Is high in protein	0.72
	Is good for my skin/teeth/hair/nails, etc.	0.68
	Is high in fibre and roughage	0.66
2. Mood	Helps me cope with stress	0.79
	Helps me to cope with life	0.79
	Helps me relax	0.78
	Keeps me awake/alert	0.60
	Cheers me up	0.60
	Makes me feel good	0.57
3. Convenience	Is easy to prepare	0.82
	Can be cooked very simply	0.81
	Takes no time to prepare	0.76
	Can be bought in shops close to where I live or work	0.65
	Is easily available in shops and supermarkets	0.59
4. Sensory Appeal	Smells nice	0.80
	Look nice	0.72
	Has a pleasant texture	0.70
	Tastes good	0.53
5. Natural Content	Contains no additives	0.81
	Contains natural ingredients	0.72
	Contains no artificial ingredients	0.71
6. Price	Is not expensive	0.87
	Is cheap	0.87
	Is good value for money	0.76
7. Weight Control	Is low in calories	0.87
	Helps me control my weight	0.79
	Is low in fat	0.74
8. Familiarity	Is what I usually eat	0.79
	Is familiar	0.79
	Is like the food I ate when I was a child	0.66
9. Ethical Concern	Comes from countries I approve of politically	0.87
	Has the country of origin clearly marked	0.79
	Is packaged in an environmentally friendly way	0.43

(Steptoe *et al.*, 1995: 272)

To apply these factors to this research, some factors (such as price and brand) would not be considered important to the patients since they do not directly pay for their

meals and rarely have any knowledge of any brand names associated with the meal components.

To further review the general factors that might influence food intake, the next section narrows down the specific attributes that have been suggested to have an influence on, in particular, patients' food consumption.

3.2.2 Factors influencing patients' food consumption

Since its release in 1997, *Hungry in Hospital*, a report by the Association of Community Health Councils for England and Wales (1997), has drawn the attention of many reporters. It listed 14 reasons why patients did not eat and drink in hospitals (Table 3.2), and has been cited by many other authors (Arrowsmith, 1997; Field, 1998; Holmes, 1998; Lancaster, 1998; Millar, 1998; Wood, 1998; Allison, 1999; Bactawar, 1999; Holmes, 1999a; Wood, 1999).

Table 3.2: Factors that contribute to patients not eating and drinking in hospitals

Factors	
1. Problems with ordering	2. Communication
3. Quality	4. Quantity
5. Inappropriate food	6. Choice
7. Timing	8. Assumptions
9. Positioning	10. Utensils
11. Physical problems	12. Medication
13. Eating environment	14. Lack of assistance

(Burke, 1997: 3)

Using a semi-structured interview with 40 patients as part of an audit of nutritional practice and knowledge, Rawlinson (1998) found nine factors that determined whether patients enjoyed their meals and their importance in rating the quality of the meal (Table 3.3). The presentation of food appeared to be the most important feature.

Table 3.3: Factors determining whether patients enjoyed their meals

Factors	Importance
1. Presentation	16
2. Sitting comfortably	13
3. Being able to reach the meal	9
4. The meal being the correct size	9
5. Temperature of food	7
6. Eating in a pleasant environment	6
7. Having his or her dentures	5
8. A nurse being available to help	5
9. Having the correct implement with which to eat	4

(Rawlinson, 1998: 293)

These factors, along with others that may influence patients' food consumption, are discussed in Section 3.2.2.1-3.2.2.16.

3.2.2.1 Problems with ordering

A number of patient's **rights** were outlined in the NHS' Patient's Charter (Citizen Charter Unit, 1999), one of which was a choice of meals. Although most hospitals produced either individual printed menu cards for the patient or a ward food requirement report to enable patients to make their choices, several problems have emerged from the meal ordering systems. Orders may not always have been made by the patient. They may have been too sick to make their own decisions so choices were made for them. This might pose a question as to whether the patient would then eat the meal that was presented to them. Bond (1997) observed that some patients were not approached and asked about their likes or dislikes. One cited incident was in relation to a UK unit where all the ordering was carried out by nurses without reference to the patients. Patients then chose from what was delivered to the ward, and as a result, some popular dishes would run out leaving some patients without their first choices. This could possibly lead to patients not eating what was available to them or leaving most of the food they did get.

Another source of difficulties or frustrations for patients is where they have to make decisions even if the menu information or details of the dishes are not understood fully. Allison (1999) argued that menu language might be a particular problem in

areas with a high immigrant population or if the dishes on the menu are not fully explained with details of the cooking method or ingredients used. For example, it can be difficult for people with an allergy for a particular food, such as peanuts, to make appropriate choices. As suggested by the *Nutritional Guidelines for hospital catering* (Department of Health, 1995), a diet code label beside each dish might overcome some of these problems, such as understanding the name of the dish or offering some indication of what the patients can choose from. Steele (1998) recommended that menus could be improved by adding translations or displaying a picture of ethnic dishes to cater to different cultural dietary needs.

Alternative strategies to improve menu ordering could include either a Spoken menu or a Computerised one in the room instead of the printed menu. Oyarzun *et al.* (2000) found that with spoken menu implementation (a dietetic technician verbally presented lunch and dinner menus to patients 1 to 2 hours before meal services), manual menu-processing time decreased and patient interaction time increased, and led to statistically increased patient satisfaction. Although the cost of the data resources used was not clear in their findings, Silverman *et al.* (2000) revealed that currently seven percent of US hospitals employed either a verbal or computerised method to assist with their menu ordering.

Discrepancies between what was ordered and the portions requested and what was actually received might create a great deal of frustration for some patients and ward staff. If a patient misses a meal for reasons such as being admitted after the set meal time or being away for medical tests or examinations, it might be difficult for them to make alternative arrangements (Burke, 1997; Holmes, 1999a). *Hospital Catering* (NHS Executive, 1996) has stated that meals and refreshments should be available outside of scheduled meal times for patients who have missed meals, or whose treatments coincide with meal times. In this respect, some additional posts, such as ward hostesses or feeding care attendants, were suggested to address this deficiency (Allison, 1999).

Shortening the length of time between ordering and consuming the food might also encourage the patients to eat. Another right outlined in the Patients Charter specifies

that the ordering of food should take place no more than two meals in advance (Citizen's Charter Unit, 1999).

3.2.2.2 Communication

Lines of communication in a hospital should be kept open in a number of directions. Communication could be broken either between hospital staff and patients or between the hospital staff themselves (for example, catering and nursing staff over menus, ordering or serving meals).

Catering staff might not always be aware of the specific needs and requirements of individuals and are not expected to ask patients if they need assistance or why they have left a meal. As the patient in UK hospitals either does not have a formal nutritional assessment (Bond, 1997), or does so very rarely (Allison, 1999), the status of food consumption is not easily tracked. Sidenvall *et al.* (1994) using multiple methods (interviews, observation, and recorded data) to investigate the meal situation in geriatric care, found that few notes had been taken on portion sizes, assistance given to the patient, or any evaluation except the code for a prescribed diet, highlighting insufficient communication regarding patients' needs. In addition, staff who cleaned up after the meals might not keep the nursing staff informed, and often made assumptions that patients did not want food when they left most or all of their meals. A Nutrition Care Steering Group in Leeds (1997) revealed that problems with the patient care elements of the audit were observed on the wards where there was no participation in the meal service by Registered Nurses. It appeared that failures in patient care occurred when communication between the staff on the ward was poor. Therefore, nurses might not discover or record non-eating through the pressure of other work, or a lack of motivation or understanding of the clinical importance of such observation (Allison, 1999).

An inefficient menu ordering system or an inability to respond quickly to changing requirements may also disrupt the communication between the wards and the catering department. In some cases the kitchen might already have sent meals up for patients who have been discharged, were 'nil by mouth', were transferred to other establishments, or have even passed away. Consequently, this could lead to an

increase in the level of food wastage although the staff might offer the surplus meal to other patients as an alternative. (Edward and Nash, 1997; Edward and Nash, 1999; Allison, 1999)

3.2.2.3 Quality of food

Holmes and Holmes (1991) stated that the factor of prime importance for food consumption was whether or not patients were presented with foods that they found palatable and acceptable. However, the results of efforts in this direction are often mixed. The introduction of centralised catering systems has made it difficult to provide purpose-cooked meals or snacks designed to meet individual needs (Sizer, 1996). Allison (1999) found that the general appearance and presentation of food was often poor. As discussed in Chapter 2, different cooking methods might have an impact on the taste, texture, or colour of food. The distance travelled from a centralised kitchen to the wards can have an effect on the temperature of the food, for as Friend (1998) described,

'keeping food hot from the kitchen to the ward was always the biggest headache'
(p.29).

If hot food gets too cold or chilled food gets too warm by the time it is served to patients, it is less likely to be consumed (Burke, 1997). The National Audit Office (1994) found that 16 percent of the patients surveyed thought that their hot meals were too cold, which was thought to be caused by factors such as insufficient cooking, faulty equipment, or slow delivery and service

Although in-ward kitchens might solve some problems, the introduction of the Food Safety Act (1990) with its food hygiene regulations may prohibit both the preparation and storage of food in ward kitchens, thus limiting flexibility at ward level (Garrow, 1994; McGlone *et al.*, 1997). Hospitals might also be reluctant to allow patients to receive full meals from home that might require re-heating. This might create difficulties for some ethnic groups, preventing them from eating food they know and are comfortable with.

3.2.2.4 Quantity of food (portion sizes)

The amount of food served for the meal can have an effect on the amount of food consumed. The National Audit office patient's survey (National Audit Office, 1994) found that 22 percent of patients complained that meals served were either too large or too small, with patients aged over 75 often finding their meals too large. Too much food on a plate could be off-putting and create unnecessary waste; conversely, not enough food would mean that patients go hungry. An insufficient account was taken of the evidence from nutritional science of the effect of differing ages, sex, size, current nutritional status and the disease process (Allison, 1999). Problems could be overcome by allowing patients to choose the portion size they want from the ward trolley if a bulk style food service system was used, or if some indication was made during menu ordering if a plated-meal system was used (Burke, 1997). Mitchell (1999) concluded in her qualitative study of a community hospital nutrition audit that a programme for staff involved in feeding patients to train them in practical skills for serving attractive meals and correct portion sizes would increase patients' appetites and more tightly control food wastage. In their study of an elderly patient hospital, Allison *et al.* (2000) found that by reducing portion sizes by 25% and increasing the energy density by 30%, waste was reduced by 30% and energy intake was increased to 96% of that recommended by the Health of the Nation. It can therefore be said that food quantity does not necessarily equal nutritional quantity.

3.2.2.5 Inappropriate food

Many researchers have suggested that the food served in hospitals may not be appropriate for all patients. Holmes and Holmes (1991) doubted that current dietary recommendations would be suitable for acute patients since dietary reference values and a diet designed to prevent disease were statistical concepts relating to physiological requirements for health and well-being among population groups. They argued that patients under the stress of illness should not be considered in relation to opportunities to change established eating habits. They explained that feeding patients in hospital could pose significant problems, not least because the majority of the population was sick. It is also a captive population, which can bring little influence to bear on the types of food that is offered, the cooking methods or the times at which the food is served, all of which clearly influence food consumption (*ibid.*).

Field (1998) noted that issues related to healthy eating were not relevant to feeding patients on the ward and argued that the important factor was to get patients to eat enough to meet their needs. She then explained that mass catering, which was adequate for around 80% of patients, did not always provide for the disordered appetites of very sick people who often need frequent small meals to stimulate their appetite. Shalaby (1996) highlighted that patients suffering from the effects of trauma, surgery, or illness might not obtain enough nutrients from the normal daily recommendations. A high protein diet may be necessary to meet the high demand for protein to repair body tissues.

In North America, several authors also have contested the suitability of meeting dietary guidelines for health promotion and disease prevention in hospital. Traviss and Hauchecorne (1998) argued that acute patients were not likely to benefit from nutritional disease-prevention strategies, as teaching survival basics for discharge was already a sufficient challenge for them. The acute illness with its associated stress and fatigue was recognised as one of several learning barriers allied with hospitalisation. The average acute-care patient is beyond middle age, has a chronic illness in addition to the reason for admissions, has or was at risk for malnutrition, has been hospitalised for less than seven days and was contraindicated with the heart-healthy diet. They suggested that avoiding the promotion of a single dietary message to all patients and providing entrées with moderate (not low) fat, sodium, and energy content with adjustments to the beverages and other accompaniments could help individual patients achieve a range of dietary modifications. In addition, Chima (1998) and Miller and Schiller (1998) claimed that an inpatient's stay was not so much an opportunity for education as an opportunity to identify educational needs that could be best met after discharge. The primary objective of an acute-care hospital should be to deliver sufficient amounts of energy and proteins to patients to promote healing, enhance patient satisfaction and improve intake. In the UK, Holmes and Holmes (1991) had similar findings, that in the acute sector the major catering concern should not be so much on what the patient ate but focus on whether or not he or she had eaten at all.

The *Nutritional Guidelines for Hospital Catering* (Department of Health, 1995) encourages the use of diet codes with each dish to improve clarity (Table 3.4 for

examples). These codes can then be utilised by the patients to make an informed decision, in consultation with their physicians, about which meals are appropriate for them.

Table 3.4: Examples of diet codes

Codes	
♥ =	Healthier Option (for those with normal nutritional requirements)
↗ =	Energy dense (for those with increased nutritional requirements)
D =	Suitable for patients on a Diabetic diet
S =	Suitable for those requiring a soft choice
R =	Suitable for patients on Weight Reducing diet

(Department of Health, 1995:11)

3.2.2.6 Choices

The number of choices available on a hospital menu can be a source of dissatisfaction. The complaint of a lack of variety in the meals available is often the first to be voiced by patients (Eastwood, 1997). Allison (1999) found that current hospital menus did not always take account of the needs, tastes, and customary eating habits of different groups of patients. According to age, race, culture, or the disease process, the variation on the needs for fortified and/or modified-consistency meals were often limited under menu considerations. Budget limitations also play a role, as it is more expensive to store and prepare a larger selection of food.

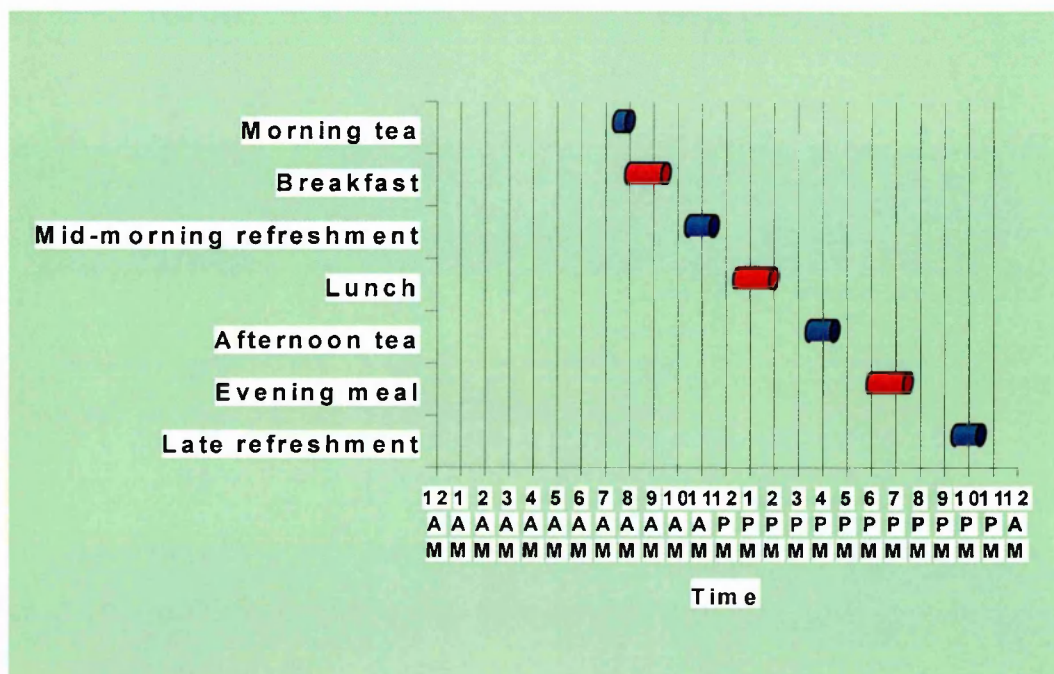
Stephoe *et al.* (1995), in their study of University students and the general public in the London area, found that familiarity was one of the most important factors underlying food selection. Religion may be a particularly important cultural determinant of food acceptability and be associated with particular eating practices or food consumption. Many cultures dictate the manner in which foods can or should be prepared (for example, Kosher food or Halal meat) to demonstrate religious faith. Failure to adhere to religious practices can, therefore, cause considerable distress and food refusal. Vegetarians would be an example of another group that require special

care since the menu might not be particularly designed for them. They are frequently faced with a limited selection of uninteresting meals. (Burke, 1997)

3.2.2.7 Timing

Since hospital meals function as “institutional meals” (Holmes, 1999a), the timing of food service could be very different from normal food habits. Some people might prefer small quantities at more frequent intervals, some people might eat only twice a day, while others might only eat whenever they feel hungry. Although three meals and seven drinks per day at fixed times are suggested by the catering guidelines (see Figure 3.5, for example), it might be difficult for acute patients to adjust during a short stay. The Community Health Councils (CHCs) surveys (Burke, 1997) have shown that patients may experience a gap of more than twelve hours between the evening meal and breakfast if there were not any late night refreshments available. Mitchell (1999) also critiqued that the timing of meals needed to be reviewed to ensure that there would be more time between each meal and to allow for snacks midmorning, mid-afternoon, and bedtime.

Figure 3.5: An example of hospital meal service timing



(NHS Executive, 1996: 50)

3.2.2.8 Positioning

Something as simple as where the food is placed for the patient can affect how much they eat. A tray simply placed out of reach of a patient, who may be too ill to bother reaching out for it or unable to reach it by reason of disability, visual or hearing impairments, could result in an uneaten meal. Patients themselves might also be improperly positioned so as to allow them to manipulate, eat and swallow the food. (Allison, 1999) Some of these issues are discussed further in Section 3.2.3.10.

3.2.2.9 Utensils and equipment

As part of the preparatory work before serving the meals, the provision of suitable and clean utensils, crockery, cutlery and drinking vessels is necessary for independent patients to get the food from the plate to their mouth. It may seem obvious, but many reports have highlighted insufficient cutlery for each course of the meal or meals observed (National Audit Office, 1994; Burke, 1997; Bond, 1997; Maryon-Davis and Bristow, 1999; Fenton *et al.*, 1995). In some instances, knives were not provided for items such as cheese and biscuits, or only one spoon was provided for both soup and dessert.

3.2.2.10 Physical problems

Physical problems or limitations can have an effect on consumption. Some patients might be physically handicapped and unable to manipulate cutlery if food was not cut up for them to eat (Holmes, 1999a). Others might have difficulty with opening pre-packed foods, such as pre-packed sandwiches or yoghurts (Burke, 1997) or simply be unable to lift the lid off the plate without help. Some might have problems with their teeth. Especially for the elderly, false teeth might be lost, misplaced, or not fitted at mealtimes. Bond (1997) listed some examples of the physical symptoms that might inhibit food consumption (Appendix 3.1). Patients can undergo an altered, diminished or even complete loss of taste due to drugs or the close hospital environment, or experience nausea, vomiting, anorexia, constipation, or diarrhoea. They might physically be unable to maintain an upright posture at mealtimes to prepare food, load cutlery, transfer and insert food in mouth or have limited hand/arm movements. Visual impairments can also affect the ability to locate food items on a

tray and eat independently. Neurological deficits might affect the capacity to chew food, or cause leakage of food and fluids from the mouth. Any of these conditions, which are far from rare in hospital patients, might have a negative effect on food intake. (*ibid.*)

3.2.2.11 Medication

Although medication is routinely given as part of a patient's treatment, a lack of awareness of the interaction between drugs and nutrients might affect patients' nutrition. Both Bond (1997) and Holmes (1998; 1999a) highlighted that both the therapeutic and side-effects of a drug could affect nutrient intake, metabolism requirements and perceptions of taste and smell; conversely, food can influence absorption, metabolism and excretion of drugs (Table 3.5). They also noted that food (or individual nutrients) could have a marked effect on drug effectiveness by either increasing, decreasing or simply delaying absorption of the production of the drug-metabolising enzymes, or by influencing blood flow. Such drugs can sometimes be stopped or changed following discussions between medical and pharmaceutical staff without detriment to treatment (Allison, 1999).

Table 3.5: Effects of some drug action on nutritional status and food consumption

Alterations	
Altered food consumption	Appetite changes
	Alterations in the perception of taste/smell
	Decreased secretion of saliva
	Gastric irritation or discomfort
	Nausea and vomiting
Altered absorption of nutrients	
Luminal effects	Altered gastrointestinal pH
	Changed gastrointestinal motility
	Altered activity of the bile acids
	Binding of nutrients, thus preventing absorption
Mucosal effects	Inactivation of enzyme systems
	Reduction in absorption due to damage to gastrointestinal organs
	Mucosal cells' surface area
	Alterations in the metabolism and /or utilisation of nutrients
	Alterations in the pattern of nutrient excretion
Altered metabolism/utilisation of nutrients	
Altered nutrient excretion	

(Bond, 1997: 34)

3.2.2.12 Eating environment

Eating behaviours can also be influenced by the mealtime environment. The alien surroundings of a hospital ward might cause significant stress over and above that caused by illness *per se*. Holmes (1999b) commented that combined with illness, the unfamiliar environment, surroundings, and routine in hospital might markedly reduce appetite. Bélanger and Dubé (1996) found that being in hospital created many negative emotions in patients (afraid, discouraged, depressed, scared, nervous, upset, tense, irritable, etc.) and few positive emotions when they assessed the patients' satisfaction with foodservices.

Some people might prefer to eat alone because they feel embarrassed by their eating habits (for example, elderly people who have problems when eating and who might be used to eating alone) or because they do not want to socialise at meal times (for example, acutely depressed patients) (Burke, 1997). However, some ambulant patients might prefer to eat in a more attractive dining area with social interaction to escape unpleasant odours, behaviour or medical conditions associated with the ward environment (Allison, 1999).

The South East Thames Regional Health Authority (SETRHA, 1993) recommended that some investment should be made in making the patient's environment a pleasant place to eat. The purchase of tablecloths and place mats, for example, could dramatically improve the eating environment and the amount of food eaten.

3.2.2.13 Lack of assistance

Some patients are incapable of feeding themselves without difficulty. However, patients with special needs are not always identified and nurses do not always have time to help patients eat. Insufficient staff may be available at mealtimes to assist or monitor patients. Untrained orderlies, care assistants or volunteers might not report uneaten meals, but simply place the tray at their bedside and remove it unquestioningly if untouched (Burke, 1997). In auditing the links of the food chain of

hospital, Steele (1998) observed the delayed provision of assisted feeding caused food to become less appetising or even remain uneaten.

3.2.2.14 Interference with meal times by ward rounds, investigations, and procedures

Although medical investigations are essential, they often result in patients missing their meals. Eastwood (1997), in his examination of five clinical units at a Scottish University teaching hospital over two-week period, highlighted that 7.6 percent of these missed meals were due to clinical investigations, for example medical rounds. Allison (1999) pointed out that 'nil by mouth' orders, when used inappropriately or prolonged unnecessarily, could have nutritional implications. Bactawar (1999) used the criteria of feeding and nutrition in hospital recommended by the Royal College of Nursing (RCN) in 1996 to audit the ward activities during lunchtime for 70 patients of three wards. It was shown that mealtimes were interrupted by non-meal-related activities ten times during a lunchtime period, but even after re-education on nutrition programmes, three interruptions by non-meal-related activities were still found (Table 3.6).

Table 3.6: Other activities taking place on the ward at lunchtime

Non-meal-related Activities	Initial audit	Re-audit
Doctor's rounds	√	√
Pharmacist's rounds	√	
Drug rounds	√	
Physiotherapy assessment	√	
Routine ECG	√	
Visit from ambulatory care staff		√
Arrival of press	√	
Dieticians visit	√	
Social workers visit	√	
Toileting of patient in bay	√	
Bed changing /piles of linen		√
Patient transfer assessment	√	
Total other activities	10	3

(Bactawar, 1999:62)

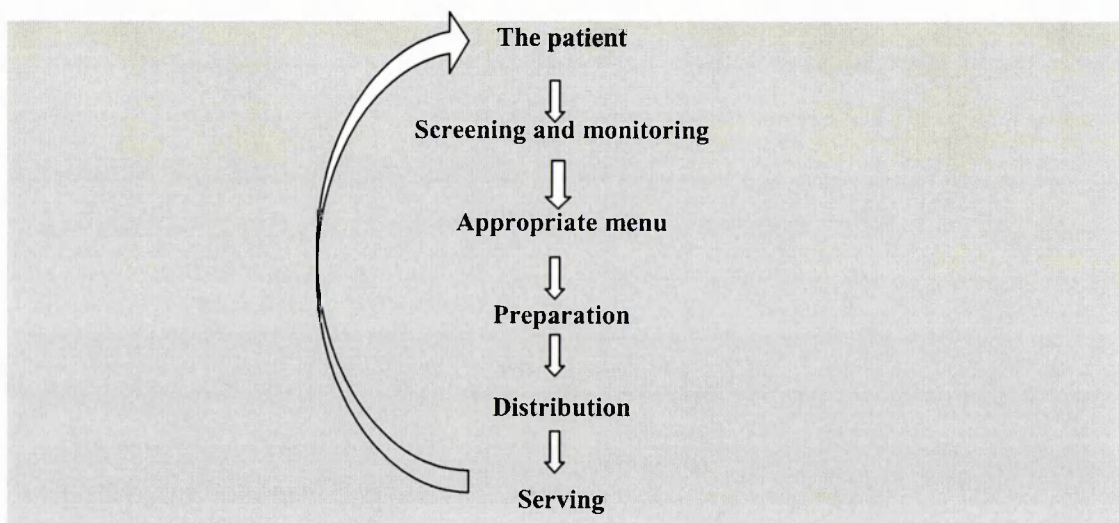
In *Nutritional Guidelines – the food chain* (SETRHA, 1993) it was suggested that procedures and ward rounds at meal times were very disruptive for the patient and thus it was recommended that medical staff strictly observe meal times and ensure

that no ward rounds or procedures interfere with them. However, as can be seen above, the problem persists. Edward and Nash (1997) found that some ward staff expressed that meal service often interfered with the domestic and medical routine and that it was difficult to balance medical and meal requirements. As a result, meals were very often served late, and not at their best in terms of presentation and nutritional content.

3.2.2.15 Failure of management

Management has a role in monitoring the entire food process to ensure it functions as a whole. Archer (2000) described the hospital food chain as the entire process of nutritional care from patients choosing food from the menu right through to the patient eating the food or receiving nutritional support (Figure 3.6). The report explained that the chain was only as strong as its weakest link as this food chain requires different individuals and professional groups to link together in a co-ordinated and seamless manner at each stage. Poor arrangements for serving, for example, might nullify all the efforts expended trying to produce good food. Conversely, if food quality was poor or the food inappropriate for the patient, it would not be consumed despite the best efforts of ward staff. A lack of co-ordination and communication could lead to a break in the chain, likely in part to be due to a poor definition of responsibilities (Maryon-Davis and Bristow, 1999).

Figure 3.6: The hospital food chain



(Archer, 2000: 12)

3.2.2.16 Education

The education of the hospital staff is another important factor influencing food consumption and staff awareness of role of nutrition in patient care. Holmes (1999a) stated that although nutrition should be regarded as integral and central to patient care, meals seemed to be viewed as a supplement to clinical care rather than as a central part of it. With this being the norm, the belief is that nutrition was described as not central to care but rather only as part of the room and board element of hospitalisation.

Lennard-Jones (1995) highlighted a lack of awareness among nurses and medical staff about the problem of under-nutrition. Many lacked the necessary skills and knowledge to help with complex eating difficulties (Burke, 1997; Holmes, 1999a). Since many nurses have little or no involvement in nutritional care, many articles have argued that the task of patient feeding was often delegated to unqualified staff, for example domestic staff (Lennard-Jones, 1992; Burke, 1997; Holmes, 1999a). Using a pre- and post-education review of the nurse's awareness of the importance of nutrition, Cooney and Griffiths (1997) found that a nutrition education programme increased nurses' awareness of several factors influenced by nutritional state: length of hospital stay, patient's mood, mobilisation, healing of pressures sores, and development of chest infections.

One of USA's largest surveys of hospital patient satisfaction (n=1,007,612 patients) (Press, 1997) found that although food and nutrition were not found to be major issues, interpersonal issues (staff sensitivity to patients' needs) as part of meal services was a major influence on the likelihood of recommending a hospital. It claimed that:

'simply treating the physical manifestations of disease was not enough and staff must understand the entire range of socio-emotional responses that accompany the physical problem' (Press, 1997: 7).

Each of these factors, at least to some degree, has an effect both on the type and the amount of food consumed. These, in turn, then, have a knock-on effect on the patient's well-being and recovery. These effects and their consequences will be discussed in Section 3.2.3.

3.2.3 Effects and consequence of hungry patients

3.2.3.1 Nutritional implications

Shalaby (1996) noted that when patients lose their appetite and suffer rapid weight loss, a balanced diet becomes even harder to achieve than under normal conditions. The effects of trauma, surgery, illness and medication may mean that even the normal daily requirements for nutrients are not met, let alone specific needs for recovery. This results in:

- Increased infection rates, therefore increased complications,
- Delayed recovery - longer hospital stays,
- Increased expenditure on drugs, dressings, and medical care, etc. (*ibid*)

Hankey and Wynne (1996) audited the meal provision in an elderly care hospital and found that although the menus achieved the majority of current dietary guidelines, the potential difference was between provision and intake. It demonstrated that adequate nutritional intake was more difficult to achieve than just the adequate provision of nutrients to the population. They concluded that although snack meals extend the range of choices, more traditional meals with a greater energy density might be of greater benefit in safeguarding the nutritional status of the institutionalised elderly patients. As McGlone *et al.* (1995) emphasised, 'food that is provided and not consumed has no nutritional value' (p.283).

As food intake becomes lower than the body requires, a possible effect is under-nutrition. Maryon-Davis and Bristow (1999) have shown some impacts of undernutrition on functional and clinical outcomes (Table 3.7). There was also evidence of a relationship between undernutrition and increased length of stay (Lennard-Jones, 1992; Tucker and Miguel, 1996), longer convalescence and rehabilitation, and increased re-admission rates (Maryon-Davis and Bristow, 1999).

Table 3.7: The effects of undernutrition on clinical and functional outcomes

Outcomes
Increased post-operative complications
Increased risk of pressure sores
Poor wound healing
Sepsis
Reduced immune response
Lowered resistance to infection
Apathy/depression
Weakness/ immobility
Reduced muscle strength
Reduced ability to cough
Reduced quality of life
Increased risk of mortality

(Maryon-Davis and Bristow, 1999: 22)

3.2.3.2 Financial implications

3.1.1.1.1 Prolonged length of stay

The nutritional implications of poor food consumption extend beyond medical considerations. Within a King's Fund report (Lennard-Jones, 1992, and highlighted subsequently by others: Cooney, 1997; Beese, 1997; Whitfield, 1999), it was suggested that better nutrition could cut hospital stays by five days for 10 percent of patients, and save £266m across the NHS each year. Another report by the Nuffield Trust (Maryon-Davis and Bristow, 1999) argued that improved nutrition in hospital could lead to a significant reduction in the amount of time people spend as inpatients, with a saving to the NHS of £300m a year. They estimated that over 40% of food delivered to patients was wasted because portions were too big, food was unappealing or no help was given with eating.

From the medical and surgical patient records of twenty different acute care hospitals in the USA, Tucker and Miguel (1996) examined the average length of stay as the measure of patient outcome. They argued that nutrition often had been overlooked as a potential cost containment measure because its benefits were not always visible on the bottom line. They calculated that early nutrition care service could save up to 50% in patient days. Maryon-Davis and Bristow (1999) found that a lack of incentive

for hospital managers to improve nutrition and linkage to an absence of recognition of the importance of the issues by policy makers at the centre has produced little awareness of the importance of nutrition among managers and doctors.

3.1.1.1.2 Drug waste

Another area of potential cost implications is a lowered level of drug absorption, which may result from poor food intake. Reduced gastric emptying might be a significant determinant of drug response, meaning that effective drug levels may not be reached. Slow absorption can also prolong drug effects (Holmes, 1998).

3.1.1.1.3 Food waste

Several studies had been carried out on hospital food waste. Although the sample sizes varied and different methods and measurements of waste were used (making comparison difficult), the results all indicated that large quantities of food were found uneaten, or even untouched, and returned to the kitchen.

Hong and Kirk (1995) found that at 11 hospitals in the UK the mean of plate waste left by patients was 14% of the weight of the food served. A total of 55.8% of all patients surveyed left some of their food. Some reasons given for leaving a large amount of food were found to be low appetite, portion sizes too big, food not tasting good, food being overcooked or undercooked, and food not being hot enough. They also revealed that dissatisfaction with the served meal appeared to contribute to patients not finishing their meals. The type of hospital and patient being surveyed was not indicated in the study.

From eight wards caring for elderly female patients with mental health problems, Fenton *et al.* (1995) reported that plate waste plus un-served food made up 41% of meals available at the ward level. They concluded that the reasons for the low intakes might be a combination of service losses (for example, portion control by nurses at the ward level) and plate waste (provision of inappropriate eating utensils, unfamiliar or disliked foods and insufficient time for meals). Field (1998) found 40% of food

sent to the wards was wasted from a study measuring plate waste on two main meals from four wards of different disciplines.

Communication problems had food wastage implications. Stephen and Allison (1997) in their 28-day audit of 'tray wastage', found that trays were sent to the ward for patients who were nil by mouth, off the ward, or discharged in 13% of cases in medical wards, 11% for surgical wards, and 9% in Orthopaedic wards. Missed meals also accounted for much wastage. Eastwood (1997) revealed that hospital patients missed between 11% and 27% of all meals during his examination of five clinical units at a Scottish university teaching hospital over two-week period (Table 3.8). Overall, breakfast accounted for 49% of missed meals, lunch for 33 %, and dinner for 17%. Post-surgery patients in surgical wards appeared to have the largest percentage of meals uneaten. The reasons for this were not explained in the study.

Table 3.8: Missed meals during a two-week period in a Scottish university hospital

Unit	Total meals served (no.)	Missed Meals	
		No.	%
Gastroenterology-medicine	470	79	17
General medicine	885	223	25
Surgery	316	86	27
Before surgery	87	20	23
After surgery	86	66	77
Clinical oncology	264	31	12
Rheumatology-geriatric medicine	152	16	11

(Eastwood, 1997:1261)

Edwards and Nash (1997 and 1999) found similar results with a large amount of food wasted in hospital, ranging from 17- 67% respectively after assessing four hospitals and 966 patient meals over a 24-hour period. Breakfast (23.1%) created lower wastage than lunch (39.99%) and evening meals (42.5%). Waste was higher where meals were put onto plates in wards (57.75%) than where meals were plated in the hospital kitchen (35.28%). Part of the reason seemed to be that the advantages of the bulk ward service system were distorted since the trolleys were parked in the corridor outside the ward and plated by the nurses or catering staff without the patients being

able to choose by sight. Insufficient time at the ward caused the food not to be well-presented or properly portion controlled.

Kelly (1999) did a comparison of food wastage between a plated and a bulk system of meal provision in three wards (2 elderly rehabilitation and one stroke ward), and found both systems produced a significant amount of total waste (average 50.5% for a bulk system and 61.6% for a plated system). Although the bulk system appeared to have less food wastage than the plated system, some shared problems emerged as reasons for wastage (Table 3.9); for instance, portion sizes being too large, poor presentation of food, or patients not hungry or too poorly to eat any thing.

Table 3.9: Reasons reported by patients (%) for food wastage

Reasons for food wastage	Plated system	Bulk system
1. Portion too large	85.7	72.4
2. Patient not hungry	48.6	72.4
3. The appearance/presentation of food	31.4	55.2
4. Patient too poorly	25.7	24.1
5. Familiar foods not on the menu/not enough choice	20.0	24.1
6. Food not the right temperature	20.0	31.0
7. Problems with chewing and dentures	17.1	3.5
8. Different meal times than at home	8.6	20.7
9. Patient has difficulty reaching food	8.6	6.9
10. Assistance in feeding not adequate	8.6	6.9
11. Not enough sauce or gravy	2.9	13.8
12. Patient doesn't like eating with others	2.9	6.9
13. Food taken away from patient too soon	11.4	-
14. Patient not in appropriate eating position	5.7	-
15. Swallowing problems	2.9	-
16. Did not like the taste	-	31.0
17. Lacks salt/tasteless	-	13.8
18. Type of meal inappropriate for the time of day	-	10.4
19. Did not like how the food was cooked	-	6.9
20. Meal inappropriate for the weather	-	3.5

(Kelly, 1999: 417)

Although the causal relationship was still not clear, the message of these wastage figures should not be underestimated as they might have clinical and financial implications on patient care. Field (1998) has gone so far as to suggest that employing a cook at ward level would be cheaper than keeping people in hospital longer than necessary.

After understanding the many factors which may influence food choices in hospital and their implications an important question still remains: what do the patients really think about the meal service and which factors would likely contribute to patients satisfaction?

3.3 Quality rating of meal services

This section reviews the dimensions and factors that could be used to benchmark meal services and further predict patient's satisfaction. These have been drawn from several empirical researches that have explored the multidimensional aspects of patient satisfaction with hospital foodservices.

DeLuco and Cremer (1990) attempted to understand the Canadian general public's experiences regarding hospital food and service and examined their perceptions of, the importance of, and satisfaction with hospital foodservice. Overall the results showed that hospital food was of good quality and that food service employees were helpful and considerate to the respondents, but there were negative perceptions on food seasoning and prompt delivery of food requests. Table 3.10 displays the statements measured with an indication of statistically significant influences on the level of patient satisfaction. Three aspects of foodservices were discovered: 'Hospital meals and menu', 'Services', and 'Dietitians'. Each aspect consists of several attributes for measuring procedures, products or services. Several statements, particularly of the characteristics of food and services had positive correlations with the level of satisfaction. In the food aspect, patient's satisfaction was positively correlated with the perceptions that meals were nutritious and delicious, food looks and tastes fresh, aroma, freshness, seasoning, tenderness, and temperature of hot food and the menu items are considered to be available to select a healthy or satisfying meal. In the service aspect, patient's satisfaction also correlated with the timing and the correctness of the meals that arrive, food being left within reach, helpful staff, and food orders arriving shortly after requested.

Table 3.10: DeLuco and Cremer's (1990) statements on hospital food and services

Aspects	Statements
Hospital Meals and Menus	1. Meals are nutritious. **
	2. Menu items are available to select a healthy meal. **
	3. Menu items are available to select a satisfying meal. **
	4. Food looks and tastes fresh. **
	5. Cold food is just the right temperature.
	6. Hot food is just the right tenderness. **
	7. Meals have a good taste. **
	8. Meals look delicious.
	9. Meals smell delicious. **
	10. Hot food is just the right temperature. *
	11. Meals are seasoned just right. **
Service	12. Meals arrive around the same time every day. **
	13. Employees leave food within reach. *
	14. Employees who bring meals are cheerful.
	15. Employees who pick up menus are helpful. *
	16. Meals arrive exactly as ordered. *
	17. Food orders arrive shortly after requested. **
Registered dieticians	18. Helpful in providing food which patients like to eat.
	19. Informative about food nutrition.
	20. Available to help patients understand diet.
	21. Visible to patients.

Measured on a 4-point scale: strongly agree, agree, disagree, or strongly disagree.

* $P < 0.05$, ** $P < 0.01$ indicate a positive relationship between factors and levels of satisfaction with hospitalisation (n=198 respondents that had been hospital patients).

(DeLuco and Cremer, 1990: 1713)

The results also represent the high level of importance placed on most of the food and service quality characteristics for determining a good quality hospital meal as shown by the high percentage of very or moderately important ratings for the statements (Table 3.11).

Table 3.11: DeLuco and Cremer's (1990) importance of various quality characteristics for hospital meals

Quality characteristics	Rating very or moderately important (%)
1. Freshness of food	98.7
2. Taste of food	96.4
3. Nutrition of food	96
4. Tenderness of food	95.5
5. Nutrition counselling	95.5
6. Temperature of food	93.7
7. Placing food within reach	93.7
8. Service quality of service characteristics	93.3
9. Appearance of food	91.9
10. Aroma of food	89.3
11. Seasoning of food	87.9
12. Pleasant greeting	87.9
13. Dependable tray delivery	87
14. Food quality of service characteristics	87
15. No missing food items on tray	84.7
16. Prompt delivery	83.4
17. Assistance with menu selection	71.7
18. Importance in the selection of a hospital for medical care.	50.2

Measured on a 4 point-scale: very important, moderately important, slightly important, or not important.

(DeLuco and Cremer, 1990: 1713)

By integrating the concepts of technical and interpersonal aspects of a service from the area of service marketing, Dubé *et al.* (1994) used factor analysis to reduce 26 attributes of patient satisfaction with foodservices to seven satisfaction dimensions (Table 3.12), which accounted for seventy-five percent of the total variance. With the results of stepwise multiple regression analyses, Food quality, Meal service timeliness, Meal service reliability, Customisation of meals, and Attitude of staff who deliver meals were found to be significant predictors of patient's overall satisfaction (as marked *** in Table 3.12). However, a reliability analysis was not performed for each factor or for the whole set of attributes, leaving some room for doubt.

Table 3.12: Dubé *et al.*'s (1994) dimensions of foodservice and its attributes

Dimensions of foodservice	% of variance explained	Foodservice attributes
Attitude of the staff who deliver menus***	34.5	1. Warmth of staff who deliver menus
		2. Efficiency of staff who deliver menus
		3. Attentiveness of staff who deliver menus
		4. Help from staff who deliver menu
		5. Knowledge of staff who deliver menus
		6. Courtesy of staff who deliver menus
Customisation***	12	7. Possibility to choose appealing meal
		8. Possibility to choose healthful meal
		9. Clarity of menu presentation
		10. Portion size
		11. Conformity with menu choices
		12. Instruction about menu choices
		13. Flexibility in service hours
Food quality***	8.8	14. Flavour of meals
		15. Presentation of meals on tray
		16. Freshness of meals
		17. Temperature of hot meals
Attitude of the staff who serve meals	6	18. Courtesy of staff who serve meals
		19. Warmth of staff who serve meals
		20. Attentiveness of staff who serve meals
		21. Information about procedures
Meal service timeliness***	5.2	22. Time allowed for eating
		23. Time needed to pick up the tray
Meal service reliability***	4.7	24. Punctuality of foodservice
		25. Service hours
Cold food temperature	4.1	26. Cold food temperature

Measured with 7-point scale (1= very dissatisfied and 7= very satisfied) and obtained by factor analysis with orthogonal rotation (varimax).

*** $P < 0.001$ ($n=132$) with overall satisfaction by stepwise multiple regression analyses.

(Dubé *et al.*, 1994: 396-7)

Gregoire (1994) further compared the patient's assessment of the quality of meal services delivered by either dietary employee or nursing employee, which generated two factors labelled as 'Meal tray delivery' and 'Food quality'. Table 3.13 lists the 16 measurement statements that comprised the two factors. Although both factors showed a high reliability ($\alpha = 0.86$ and 0.75), they only explained 48.9% of variance. This is lower than that recommended by Hair *et al.* (1998), who noted that a solution of 60% of the total variance was considered satisfactory in social science settings.

Table 3.13: Gregoire's (1994) statements of assessing hospital meal service

Factors	Statements
Meal tray delivery	1. The employees who delivery my meal trays usually are polite.
	2. Employees who deliver my meal trays usually are neat and clean.
	3. Employee who serves meal trays in this hospital provided good service.
	4. Employees who serve my meal trays treat me with respect.
	5. Care is taken to make my meal trays attractive.
	6. In this hospital, service of meals is given the same importance as other procedures.
	7. Employees who deliver my meal trays always ask if I need anything before leaving the room.
Food quality	8. This hospital's menu offers healthful foods.
	9. This hospital's menu includes foods I like.
	10. My hospital food always is good.
	11. My hospital food always has an excellent flavour.
	12. Hospital smells make eating very difficult.
	13. Hospital food usually is soggy, tough, or dry.
	14. Most brands of food used in this hospital are low quality.
Statements not loading on a factor	15. It is hard to enjoy a meal in bed.
	16. Eating in a hospital room is very enjoyable.

Measured by 5-point Likert scale. (n=552 patients)

(Gregoire, 1994:1130)

To extend the idea of the *post facto* comparison study on the patient satisfaction with foodservices, Gregoire (1997) investigated seven items and overall satisfaction (Table 3.14) and found that food and service items were not statistically different between inpatients and post-discharged patients, with the exception of the rating of overall satisfaction. However, the study suffered from small sample sizes due to a large number of non-responses from both inpatient and post-discharge surveys.

Table 3.14: Patient overall satisfaction rating of food and nutrition service

Items	Mean + SD
1. Taste of food	3.96
2. Amount of food	4.3
3. Temperature of food	4.16
4. Variety of food	4.15
5. Time meal served	3.97
6. Attention by Food and Nutrition staff	4.38
7. Courtesy of tray delivery staff	4.44
Overall satisfaction	4.29***

Measured by 5-point scale. (n=93)

*** means significant differences between inpatient and post-discharged patient from the results of paired T-tests, $P < 0.001$.

(Gregoire, 1997: 249)

After surveying both inpatients and post-discharge patients to rate the quality of eleven aspects of satisfaction with hospital foodservice, Lau and Gregoire (1998) revealed that from multiple regression analysis six variables were found to be significant predictors of satisfaction from inpatients and five from post-discharged patients (Table 3.15). Among them, 'quality of food' was the strongest predictor, explaining 68% of the total variance in both groups.

Table 3.15: Lau and Gregoire's (1998) predictors of overall satisfaction on hospital foodservice

Predictor	Inpatients (n=252)	Post-discharged patients (n=437)
8. Quality of food	***	***
9. Attention given by food and nutrition staff	***	***
10. Explanation of diet	***	***
11. Variety of food	***	***
12. Taste of food	***	
13. Temperature of food	***	
14. Amount of food		
15. Likelihood of getting what has been ordered		***
16. Time meals delivered		
17. Courtesy of personnel who delivered trays		
18. Usefulness of food and nutrition information		
Overall satisfaction	NA	NA

Measured by 5-point scale; analysed by the stepwise multiple regression.
*** $P < 0.001$.

(Lau and Gregoire, 1998: 1304)

Lau and Gregoire (1998) also found that three items (the likelihood of getting the food that had been ordered, overall satisfaction, and usefulness of information about food and nutrition services) exhibited significant differences between inpatient and post-discharge patients. Through further telephone interviews with patients whose overall satisfaction declined after discharge, they concluded the reasons for these differences might stem from improving appetites, having more time to think about the experience after discharge and less stress from the pain medication. Unfortunately, there were some limitations to their research, particularly in drawing many conclusions on the comparison between inpatients and post-discharged patients since two separate questionnaires with some degree of similarity had been sent to two separate groups of subjects. Even the additional questionnaires sent to the surveyed inpatients after discharge were ineffective as they were hampered by the small number of returns

(n=48). The results from the inpatient questionnaires on their own were valuable, but the additional data from the post-discharge patients who were an unrelated group is of dubious value.

O'Hara *et al.* (1997) carried out their research on predicting the satisfaction with hospital foodservice in a continuing-care setting by utilising only eight questions (Table 3.16). The results found two variables ('Taste of food' and 'Cold food being cold enough') arising from the logistic regression analysis as predictors of the level of overall satisfaction. Although the results were encouraging for predicting patients satisfaction toward meal services, the validity and reliability of any definite conclusions from the findings is compromised because of the unclear question development and fairly small sample size.

Table 3.16: O'Hara *et al.*'s (1997) satisfaction predictors of hospital foodservice

Items	Spearman correlation with overall satisfaction
1. Presentation of meals	0.50 **
2. Taste of food	0.57 **
3. Hot food hot enough	0.49 **
4. Cold food cold enough	0.43 **
5. Tea/coffee hot enough	0.42 **
6. Receive what was ordered	0.35 *
7. Quantity of food	0.07

N= 65 convenience samples, measured by 5 point semantic scale.

* $P < 0.05$, ** $P < 0.01$.

(O'Hara *et al.*, 1997: 404)

In addition to the areas explored in the above research, patients' appetites may play a role in satisfaction with meal services. Dubé *et al.* (1994) revealed that appetites stated by patients to be 'as good as' or 'better than usual' during their stay were significantly correlated with satisfaction with the meals and foodservices, as well as with the dimensions of Food quality, Meal service reliability, and Attitude of the staff who serve meals ($P < 0.01$).

In summary, the findings from these studies have established important factors influencing the rating of the quality of hospital foodservice with some even indicating the possibility of predicting the level of patient's satisfaction toward meal services. Table 3.17 summarises the key aspects of these studies. Some attempted to identify the dimensions along which patients perceive and judge these services, the relative contribution of patients' perceptions to satisfaction judgement, and moderators that influenced satisfaction (Maller *et al.*, 1980; DeLuco and Cremer, 1990; Dube *et al.*, 1994; Gregoire, 1994; O'Hara, 1997). Others examined the different perceptions of the quality ratings of a hospital foodservice department between inpatients and post-discharge patients (Gregoire, 1997; Lau and Gregoire, 1998). Overall the studies were designed to evaluate food programmes in specific settings and more fundamentally, to demonstrate that satisfaction research is a feasible and appropriate approach in identifying and documenting opportunities for foodservice improvement.

However, these studies are considered rather superficial in their scope and ignore many of the developments in service quality theory and measurement that have taken place in other fields. In addition, all of them collected survey data from either the USA or Canada with only a few studies drawing results from acute hospitals (Dube *et al.*, 1994; Trudeau and Dube, 1995; Belanger and Dube, 1996). Focusing on rating the quality of hospital meal service in England, with its different approach to the health care system (discussed in Chapter 2), has not been addressed in the literature, in particular for acute patients.

Table 3.17: Studies of satisfaction with hospital foodservices

Study	Setting	Sample	Methods	Major Findings
Maller <i>et al.</i> , (1980)	Five medical facilities	N= 1,597 staff and patients	Survey of food and service variables	Environment factors are more important than food variables
Schwartz (1988)	Outpatient clinic	N= 149 clients	Scale development	Satisfaction was high; lowest ratings for non-food clinic characteristics
DeLuco and Cremer (1990)	General public	N= 233 randomly chosen	Telephone interviews regarding hospital foodservices	Generally, satisfaction was high; the quality of food and relative services were important in choice of hospital and their satisfaction.
Johnston and Upton (1991)	12 hospital cafeterias	N= 1,681 customers and managers	Self-administered questionnaire	Food quality is more important than environment variables
Dube <i>et al.</i> (1994)	Acute-care urban hospital	N=132 patients	Survey of overall satisfaction and 26 specific foodservice attributes	Seven dimensions of satisfaction emerged, the most important being attitude of the staff who deliver menus
Gregoire (1994)	Nine medical-surgical hospital with 300-500 beds	N=744; 552 patients and 192 employees	Survey of meal service on agreement with 16 statements on a five-point scale with patients; 20 statements with employees.	Attributes of service are more important than food attributes
Trudeau and Dube (1995)	Acute-care urban hospital	N=49 patients	Survey questionnaire	Satisfaction with diet counselling is determined by facilitation skills and compliance intentions
Belanger and Dube (1996)	Acute-care urban hospital	N=102 patients	One questionnaire per day during the stay	Interpersonal aspects largely accounted for satisfaction with foodservices. Positive emotion was linked to satisfaction.
O'Hara <i>et al.</i> (1997)	Geriatric continuing-care hospital	N= 65 patients	Eight items questionnaire (7 questions on a 5-point scale; one on a 3-point scale)	Patients were positive about the quality and quantity of food and foodservices; the presentation of food was the best predictor of satisfaction.
Gregoire (1997)	Medical centre	N=93 in- and postdischarged patients	Eight items questionnaire on 5-point scale	No differs was found on food and services items between being inpatient and discharged, except overall satisfaction.
Lau and Gregoire (1998)	USA Midwestern teaching hospital in medical- surgical units	N=689; 252 inpatients and 437 postdischarged patients	Questionnaire on the quality of food and nutrition services using a 5-point scale	Food quality was the best predictor of overall satisfaction.

(Adapted from O'Hara *et al.*, 1997:402)

3.4 Conclusion

Feeding patients is not so simple a task as just putting food in front of them. An enormous number of factors need to be considered, especially for hospital meal services. The problems lay as much with the failure of ward management by nurses and doctors as with hospital management and caterers. Excellent food could be produced, but unless it is delivered and served in an appropriate manner, it is unlikely to be eaten.

After reviewing the various factors that may influence patients in their food choices, the linkage between the factors is still not clear. Each of them, alone or in combination, may have an effect not only on what patients eat, but also how much. The effects of negative feedback for these factors may have far reaching consequences, both for the patient and the hospital. Aside from the purely medical and nutritional implications of poor or improper food intake, there are financial implications as well. Under-nutrition or malnutrition can increase recovery times and prolong patient stays, increasing costs and waiting lists. Drugs may not function as well without the proper intake of food and the food itself may just be wasted. Studies have been undertaken to investigate patient satisfaction, and while they serve as a basis for research in this area they ignore a number of important considerations. A more rigorous approach, based on an overall conceptual framework linking the concepts of service quality with the factors influencing patient's food consumption, is called for. The next chapter will focus on the theories of service quality and how these theories have been applied in investigating service quality in other industries, thereby providing new insight into how they may apply to the hospital caterer.

Chapter Four

Chapter Four:

A Literature Review of Conceptual Models of Service Quality and Patient Satisfaction

4.1 Introduction

Rising health care costs and competition among hospital facilities have increased the need to recognise patient satisfaction as an important indicator of quality care. This task, however, is not straightforward. Several specific issues limit the measuring of patient satisfaction. In particular, Aharony and Strasser (1993) pinpointed the following deficiencies:

(1) methodological dilemmas and a lack of standardised approaches to patient satisfaction survey research, (2) a lack of clarity and consistency in understanding the determinants of patient satisfaction, [...], (4) a lack of an accepted conceptual or theoretical model of the patient process, and (5) a lack of consensus within the medical profession on the role that patient satisfaction should play in the assessment of quality of care. (p.50)

The difficulties in measurement are further heightened by the unique nature of this particular industry. Hart (1996) has conceptually distinguished between the unique purpose of the National Health Service as compared to other services provided in either private or other service industries.

'the health services might be seen as fulfilling a need rather than satisfying a desire by purchasing a service. The aim of the health service should be sufficiently effective to reduce further demand rather than sustaining demand to compete in the market place, when compared with the purchases of private services as well as consumers of their own health status.' (Hart, 1996:1237)

This review has attempted to summarise the existing literature by integrating data from previous reviews and additional studies. It starts by examining the nature of service quality and its applicability to healthcare, followed by a review of relevant conceptual models with their critiques, particularly of the SERVQUAL model. Additionally, several industry-specific adaptations of SERVQUAL dimensions and attributes are investigated to provide recommendations for capturing the quality of meal services in hospital. Finally, the linkage from service quality to patient satisfaction is discussed to provide the basis for the research method.

4.2 The Nature of Service Quality

A service is a complicated phenomenon in and of itself, but discussions about the quality of a service involve even more intangibles. After reviewing many authors' suggestions, Grönroos (1990) offered one of the most comprehensive definitions of a service:

"A service is an activity or series of activities of a more or less intangible nature that normally, but not necessarily, take place in interactions between the customer and service employees and/or physical resources or goods and/or systems of the service provider, which are provided as solutions to customer problems."
(Grönroos, 1990: 27)

Following from this definition, service is further presented as having four distinguishing characteristics. These are discussed below in relation to a patient's experience of service quality in a hospital.

- **Intangibility** - Unlike most manufactured products, services cannot be seen, tasted, felt, heard, or smelled before they are purchased. For instance, a

patient receiving chemotherapy cannot know the value of the service in advance. Under these circumstances, an outcome of the patient's recovery requires confidence and trust in the physicians.

- **Inseparability** –Often both the service provider and the patient must be present for the transaction to occur. Patient-contact employees are part of the product. The food may be outstanding in the hospital, but if the staff has a poor attitude or provides inattentive service, the patient might downgrade the overall experience and report a lower level of satisfaction.
- **Variability (Heterogeneity)** –Services can be highly variable, depending upon who provides them, when and where they are provided, and even who else is there as part of the service experience. Services are produced and consumed simultaneously, which limits quality control. Fluctuating demand makes it difficult to deliver consistent product during periods of peak demand. It also depends on the service providers' skills and performance at the time of the exchange.
- **Perishability** –Services cannot be stored. They are only produced during the time the patient is visiting the health care provider.

(Kotler and Clarke, 1987; Kotler *et al.*, 1996)

From the meaning of a service to its characteristics, the definitions of service quality are explored in terms of the marketing field and the health care field.

4.2.1 In the marketing field

In the absence of tangible evidence upon which to evaluate either quality or a service's specific characteristics, many of the attempts to define service quality are necessarily open-ended. Parasuraman *et al.* (1988) in their SERVQUAL model offered a workable approach by defining quality as:

'a comparison between expectations and performance.' (p.42)

Oliver (1993) also stated that service quality is more or less an interpersonal dynamic filled with uncertainty. Therefore, he defined the core of what service quality is as:

'a comparison to excellence in service by the customer.' (p. 71)

Rust and Oliver (1994) believed that service quality was a subjective concept and might be measured on an incident-specific or cumulative basis.

Hoffman and Bateson (1997) interpreted service quality to be:

'an attitude formed by a long-term, overall evaluation of a firm's performance.'
(p.299)

These vague definitions only serve to link service quality to an equally open-ended concept of excellence whereby it is assumed that technical levels of excellence will be recognised by consumers.

4.2.2 In the health care field

To better understand service quality in the health care field, several different approaches are elaborated in defining this concept. Maxwell (1984) recognised that the quality of care cannot be measured in a single dimension. Moss (1998) further expounded on the quality of healthcare, stating that:

"good-quality health care is so much more than a measure of the technical aspects of clinical interventions. Much of health care is a series of compromises and trade-offs and choices made in the best circumstances by fully informed patients guided by knowledgeable health professionals in appropriate surroundings. Good-quality care also incorporates appropriate and competent technical care with opportunities for patients to make choices and to discuss concerns and anxieties, and it should result in an outcome appropriate to the problem." (p.173)

Donabedian (1980) explored the definition of quality particular to the health care field in much greater depth. He illustrated that the management of healthcare can be divided into two dimensions: the technical and the interpersonal. The first involves the application of the science and technology of medical and other health sciences to managing the social and psychological interaction between clients and practitioner; the second is the art of one-on-one caring. While it is difficult to separate these two aspects of care, and the terminology is neither universally accepted nor very specific, it does provide a useful basis for investigating quality among health care services.

Donabedian (1980) went on to define quality management as:

‘the management that is expected to achieve the best balance of health benefits and risks. It is the responsibility of the practitioner to recommend and carry out such care. All other factors, including monetary costs, as well as the patients’ expectations and valuations, are thereby regarded as either obstacles or facilitators to the implementation of the standard of quality.’ (p.13)

Patients therefore feature very heavily in the definition of quality, specifically their values and expectations regarding the management of the interpersonal process. It can be concluded that patient satisfaction is of fundamental importance as a measure of the quality of care because it gives information on the provider’s success at meeting the values and expectations upon which the client is the ultimate authority. However, patient satisfaction does have some limitations as a measure of quality, mainly due to the patient’s generally incomplete understanding of the science and technology of care, so that judgements concerning these aspects of care could be faulty.

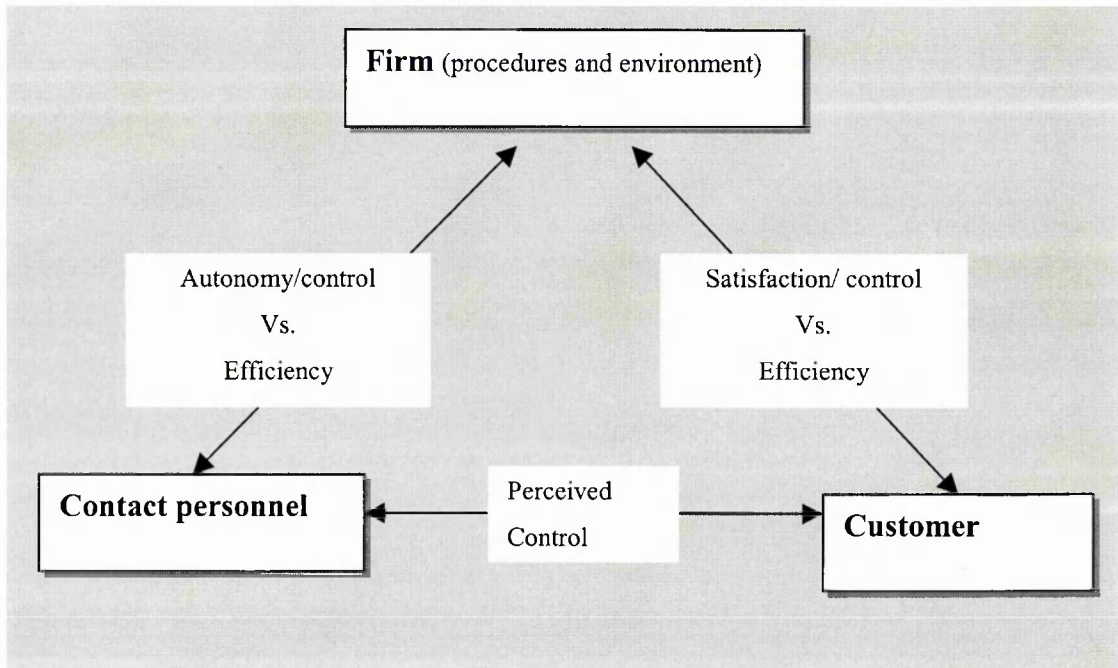
4.3 Conceptual models

Three models are examined in relation to the concept of service quality. Each examines service quality in a broad and conceptual light and highlights different approach to the same issue.

4.3.1 The service encounter- A three-cornered fight

Bateson (1985) proposed a model, named *the service encounter- A Three-Cornered Fight*, to illustrate the compromise between partially conflicting parties: the customer, the server, and the service firm as embodied in the operating procedures and the environment (Figure 4.1).

Figure 4.1: The Service Encounter – A Three-Cornered Fight



(Bateson, 1985: 76)

He explained that there was a mutual interdependence between the three parties and the relationship was on two levels.

'At one level, [...] the customer, by working with the service personnel within the framework imposed by the firm, hopes to gain satisfaction and value for money. The contact person, by serving the customer in the way specified by the firm, hopes for job satisfaction, customer satisfaction, and remuneration. The firm can only make money in the long run by satisfying staff and customers in a way that makes economic sense from an operation perspective. At a completely different level, these three parties were in conflict with each other and the service encounter would

be hypothetically dominant and focus solely behaviour control.' (Bateson, 1985: 73-74)

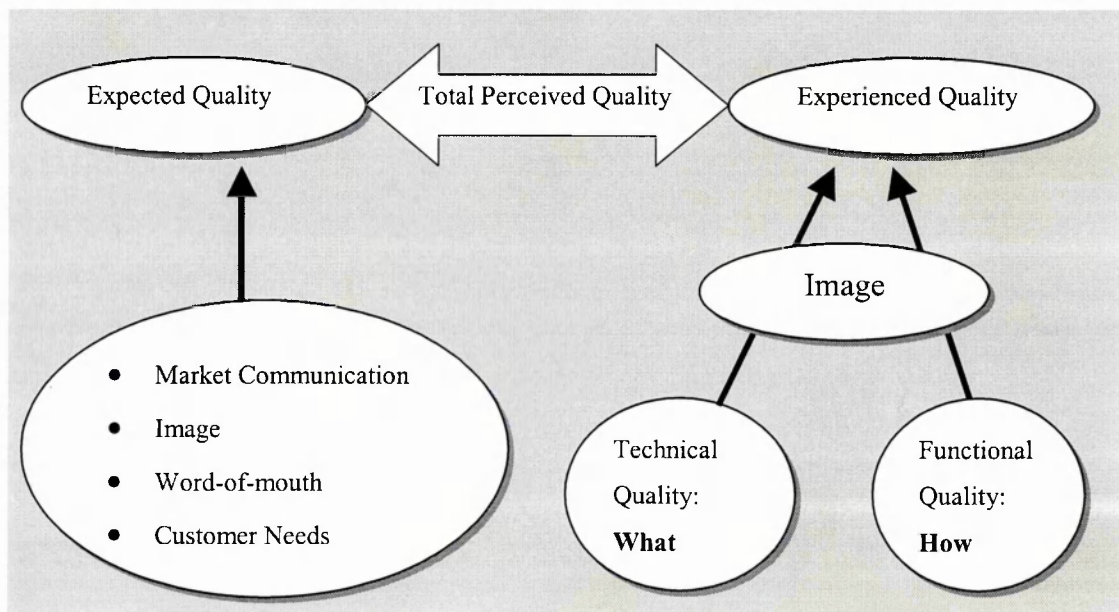
He then claimed that the ideal service encounter should *balance* the need for control of both the customer and the contact personnel against the efficiency demands of the operations. Hoffman and Bateson (1997) interpreted this three-cornered struggle among the firm, its employees, and the consumer as a matter of gaining the perception of *behaviour control*, rather than the reality. They suggested that it is equally important for the service firm itself to maintain control of the service experience as results showed that the higher the level of control over the situation perceived by the consumer, the stronger became their satisfaction with the service.

4.3.2 Grönroos's concept of Perceived Service Quality and the model of total service quality

Grönroos (1990) based his approach to service quality on research into consumer behaviour and the effects of expectations concerning goods performance in post-consumption evaluations. In essence, he postulated that the quality of a service as it is perceived by customers has two dimensions: a *technical or outcome dimension* (what) and a *functional or process-related dimension* (how). *What* customers receive in their interactions with the organisation is clearly important to them and to their quality evaluation. The customer was also influenced by the way in which the technical quality, the outcome or the result of the process, was transferred to him or her. This is *how* the customer receives the service and how he or she experiences the simultaneous production and consumption process. It can be seen that the functional quality dimension cannot be evaluated as objectively as the technical dimension; frequently it is perceived subjectively. Within these two basic quality dimensions of *what* the customer receives and *how* the customer receives it, an impression of total quality has been formed which is incorporated with the image of the firm, its resources, and its ways of operating. As far as the quality perception of services is concerned, image can be viewed as a filter of utmost importance in the mind of the customer.

Not only *What* the customer receives and *How* they receive it, filtered by the image, lead to experienced quality. A favourable *total perceived quality* is obtained when the *experienced quality* meets the expectations of the customer, that is, the *expected quality*. The expected quality is a function of a number of factors including market communication, word-of-mouth communication, corporate/ local image, and customer needs, as shown in Figure 4.2. The level of total perceived quality is not an independent measure, but rather is indicated by the *gap* between the expected and experienced quality. (*ibid.*)

Figure 4.2: Model of Total Service Quality



(Grönroos, 1990: 41)

Grönroos (1990) further expanded on his basic model and created six criteria of Good Perceived Service Quality to measure the phenomenon.

- **Professionalism and skills-** The customer realises that the service provider, with its employees, operational system, and physical resources, has the knowledge and skills required to solve their problems in a professional way. It can be identified as a technical quality dimension.
- **Attitudes and Behaviour-** The customer feels that the service employees (contact people) are concerned about them and interested in solving their problems in a friendly and spontaneous way. This represents a functional quality dimension.

- **Accessibility and Flexibility-** The customers feel that the service provider, and their location, operating hours, employees, and operational system, are all designed and operate so that the service is both accessible and prepared to adjust to the demands and wishes of the customer in a flexible way. This involves the functional quality dimension.
- **Reliability and Trustworthiness-** The customer knows that whatever takes place or has been agreed upon, they can rely on the service providers, their employees and systems to keep promises and perform with the best interests of the customers at heart. (Process-related criteria)
- **Recovery-** The customer realises that whenever something goes wrong or something unexpectedly happens, the service provider will immediately and actively take actions to keep them in control of the situation and find a new, acceptable solution. (Process-related criteria)
- **Reputation and Credibility-** The customers believe that the operations of the service provider can be trusted and give adequate value for money, and stands for good performance and values which can be shared by customers and the service provider. This is image related, thus fulfilling a filtering function.

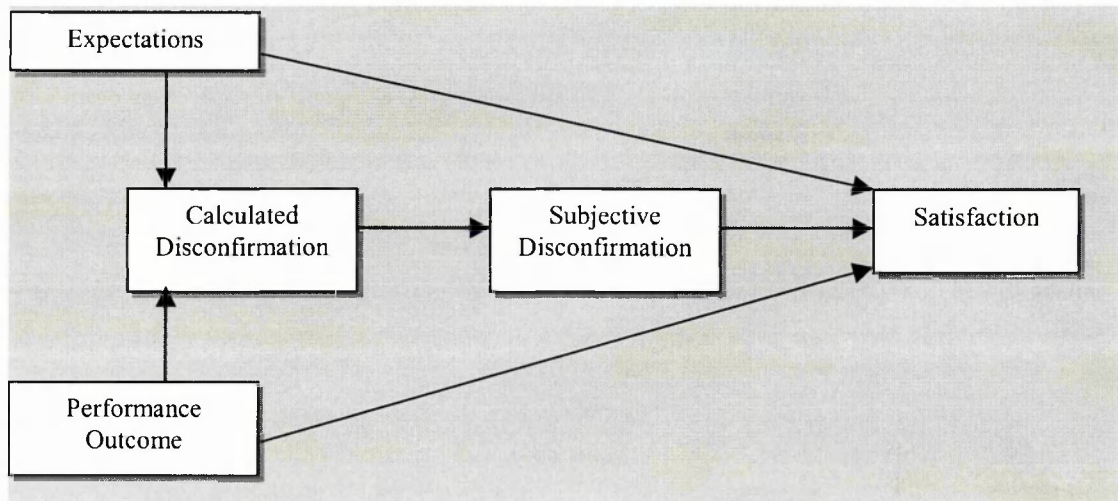
These six criteria can be viewed as guidelines for managerial principles. In various industries and for various customers certain criteria are more important than others, and in specific situations there may be other determinants of good quality that are not covered by these six criteria. To date, Lapierre (1996) replicated these six dimensions in telecommunication network services and his results generally supported Grönroos' (1990) dynamic model, but the dimensions were still problematical in terms of statistical significance.

4.3.3 Expectancy- Disconfirmation model

Similar to the Gronroos' expression of service quality as the gap between experienced and expected quality, the expectancy-disconfirmation model (Oliver, 1993) has been most heavily developed and debated in the marketing literature. It recognises that satisfaction is both an end-state as well as an on-going process (Figure 4.3). The operation of expectancy disconfirmation in influencing satisfaction is generally

viewed as two processes consisting of expectation creation and the disconfirmation of those expectations with outcome comparisons.

Figure 4.3: Expectancy Disconfirmation (and performance) model



(Oliver, 1997: 120)

The disconfirmation scales are two-sided, or bipolar, which permits disconfirmation to take on a positive as well as a negative value. The phrase *negative disconfirmation* will refer to the negative discrepancy that occurs when performance is below standard; while the phrase *positive disconfirmation* refers to the positive discrepancy that occurs when performance is above standard. When performance is equal to standards or expectations, a *zero disconfirmation* exists. (Oliver, 1997)

Outcomes apparently have both a direct influence on satisfaction and an indirect influence through disconfirmation. The relative effects of each of these concepts vary somewhat from study context to context. Expectations also have an impact on satisfaction. Very high or ideal expectation levels are likely to generate negative effects on satisfaction through the limitations of the ceiling effect, as performance would have to exceed the top of the scale to meet or exceed expectations.(*ibid.*)

The third possibility is that the association between prior expectation and outcome satisfaction is entirely mediated by the disconfirmation variable. Thus, the three interpretations (negative, positive and zero) of expectation effects on satisfaction are plausible. Afterward, the mental or subjective interpretation that emerges from the

differences is a calculated difference between expectations and outcomes. The subjective interpretation of this comparison is presumed to be the more powerful antecedent of satisfaction and be conceptualised as having independent effects on satisfaction. (*ibid.*)

Related with the multidimensional character of a service experience, the subjective disconfirmation bonds with multiple performance dimensions and the multiple disconfirmation perceptions. For example, satisfaction with low quality often can exist in health care whenever a person's expectations in a given situation are low and performance is adequate to the task. It falls under the "satisfaction-as-relief" mode by "negative reinforcement", whereby a consumer is relieved of an aversive state. (*ibid.*)

This expectancy-disconfirmation paradigm has been implemented in several different settings. The most relevant examples are Oliver's (1980) study on a community-wide flu inoculation (health care) and a subsequent Oliver (1994) study of parents' satisfaction within children's hospital care. Their results were positive and supported the model. Bitner (1990) examined subjects' attributes for service failure in airline travel and found that disconfirmation was significantly related to satisfaction, but the role of performance in service satisfaction was not studied. This suggests that the application of a disconfirmation model may have been effective because of its interaction with the product characteristics (e.g. in-flight meal, magazine, seat comfort), the service characteristics (e.g. ticketing, stewardess service), or both. Reisig and Chandek (2001) found the scope of the expectancy-disconfirmation model was useful in providing conceptual guidance in researching police encounters that had been relatively void of theory, but it had limited applicability as their results showed that the disparity between expectations and actual service was not correlated with satisfaction in general.

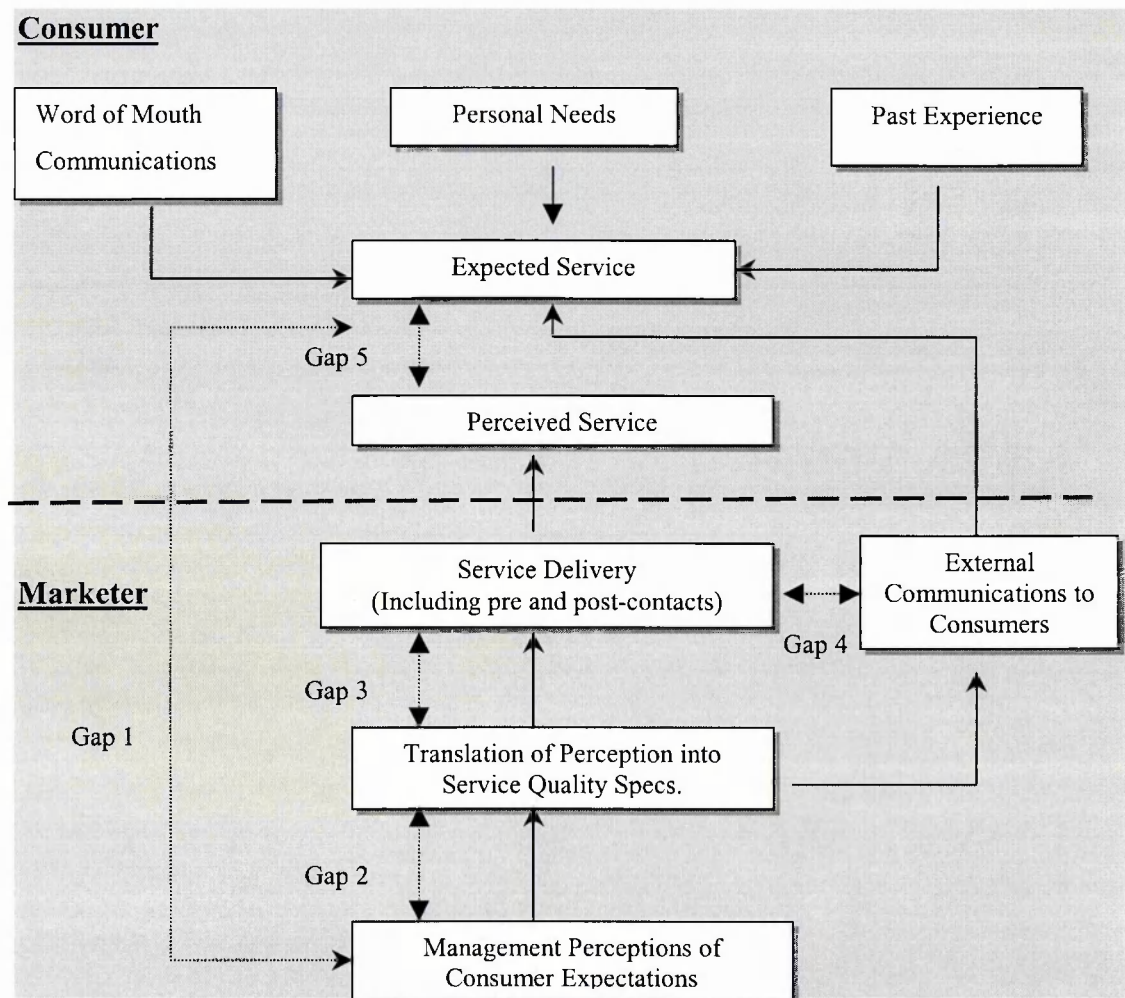
On an operational level, one of the many forms of expectancy-disconfirmation is the SERVQUAL scale. This method was claimed to be the best by Cronin and Taylor (1994), and Mels *et al.* (1997) also found that a factor analysis of the 22 items of the SERVQUAL model has generated results that fit better and are more interpretable

than Grönroos (1990)'s model. With these two recommendations, the SERVQUAL model is discussed next.

4.3.4 SERVQUAL model

Based on similar concepts to the Expectancy-Disconfirmation model, the *Service Quality Model*, originally designed by Parasuraman, Zeithaml, and Berry in 1985 and refined in 1988, has had considerable usage in service quality research in recent years. It is intended for use in analysing sources of quality problems and for helping managers understand how service quality can be improved. Through focus group interviewing of executives from various industries, they discovered five discrepancies or gaps between the various elements of the basic structure, which occurred as a result of inconsistencies in the quality management process (Figure 4.4).

Figure 4.4: Service Quality Model (SERVQUAL)



(Parasuraman *et al.*, 1985: 44)

- **Gap 1:** *The Consumer expectation-management perception gap* is also named the knowledge gap, and is the difference between what consumers expect of a service and what management perceives the consumers to expect. When this type of gap occurs, a variety of other mistakes tend to follow; for example, providing wrong facilities, the wrong staff with the wrong training. Services may be provided that customers have no use for, while the services the customers do desire are not offered. Three factors likely influencing the knowledge gap are the attitude toward conducting consumer research, the information flow from front-line personnel to upper level of the organisation, and the size of the organisation hierarchy.
- **Gap 2:** *Management perception-service quality specification gap* is also named the standards gap, which is the difference between what management perceives consumers to expect and the quality specifications set for service quality. Even if customer expectations have been accurately determined, the standards gap may vary between management's perception of customer expectations and the actual standards set for service delivery, such as order processing speed and the behaviour of contact personnel at each point in the system. Corporate leadership may set other priorities that interfere with setting standards that lead to good service such as the hospital concentrating on medical treatment as the primary aspect of care as compared with foodservice. Perhaps with the difficulties in attempting to write specifications for particular employee behaviours at the ward level, catering managers may have no control over the process or fail to receive complaints regarding meal service issues. (*ibid.*)
- **Gap 3:** *Service quality specification-service delivery gap* is also named the delivery gap, and is the difference between the quality specifications set for service delivery and the actual quality of service delivery. The existence of the delivery gap depends on both the willingness and the ability of employees to provide the service according to specification. *Role conflict* may happen when the service provider sees inconsistency between what the service manager expects employees to provide and the service their patients actually want. If the conflict continues to occur, staff may become frustrated, gradually losing their commitment to providing the best service they can, and/or simply quit altogether.

Role ambiguity may result when employees, due to poor employee-job fit or inadequate training, do not understand their roles or what their jobs are intended to accomplish, or are unfamiliar with the organisation and its goals. When staff are not allowed to make independent decisions about individual cases without first conferring with a manager, they may feel alienated from the service and it is less a part of their job. Through repeated *dispersion of control*, staff may feel themselves unable to perform a service adequately. Another situation may occur when there is *inadequate support* in receiving personal training and/or technological and other resources necessary for staff to perform their jobs in the best possible manner. For example, ward staff could become discouraged by insufficient cutlery or dirty equipment and become reluctant to put extra effort in to travel to the kitchen, resulting in poor staff productivity and unsatisfied customers.

- **Gap 4:** *Service delivery-external communications gap* is also named the communication gap, which is the difference between the actual quality of service delivered and the quality of service promised in the firm's external communications such as the hospital guide and menu. This can occur when patients are promised delivery of an alternative meal in half an hour but then have to wait a hour or more or never receive the food. Or perhaps the promise of a soft diet on the menu has been broken with a meal containing chunks of food, resulting in a lack of future customer trust.
- **Gap 5 :** *Expected service-perceived service gap* is the name given to the difference between customer's expectation and perception, and is a function of the knowledge gap, the specifications gap, the delivery gap, and the communications gap and results in $Gap5 = f(Gap1, Gap2, Gap3, Gap4)$.

The model (Figure 4.4) demonstrates how service quality emerges and each step has to be considered when analysing and planning service quality. The upper part of the model contains phenomena related to the customer. Expected service consists of the customer's past experience, personal needs, and word-of-mouth communication, while perceived service is the outcome of a series of internal decisions. The bottom

part of the model relates to the marketer (service provider). Management perceptions of customer expectations guide the decisions regarding the service quality specifications that an organisation follows during service delivery.

The SERVQUAL instrument consists of two sections: a 22 item section that measures customer expectations of excellent firms in the specific service industry, and a second 22-item section that measures consumer perceptions of a particular firm in that service industry (Appendix 4.1). Results from the two sections are then compared to arrive at gap scores for each of the five dimensions (which were restructured from Parasuraman *et al.* 1985's study). They are:

- **Tangibles**, - physical facilities, equipment and appearance of personnel;
- **Reliability**, - the ability to perform the promised service dependably and accurately;
- **Responsiveness**, -willingness to help customers and provide prompt services;
- **Assurance**, - knowledge and courtesy of employees and their ability to inspire trust and confidence;
- **Empathy**, -caring and individualised attention the firm provides its customers.'

(Parasuraman *et al.*, 1988: 23)

The larger the gap, the farther consumer perceptions are from expectations, and the lower the service quality evaluation.

In relation to customer satisfaction, the SERVQUAL model (1985) also proposed that:

- 'When *Expected Service* (ES) > *Perceived Service* (PS), perceived quality is less than satisfactory and will tend toward totally unacceptable quality, with increased discrepancy between ES and PS.
- When ES =PS, perceived quality is satisfactory.
- When ES < PS, perceived quality is more than satisfactory and will tend toward ideal quality with increased discrepancy between ES and PS.' (p.48-49)

The results demonstrated that the SERVQUAL model had consistently high reliability and validity in terms of capturing the underlying service quality. They claimed that this skeleton could be adapted or supplemented to fit the characteristics or specific research needs of any particular organisation.

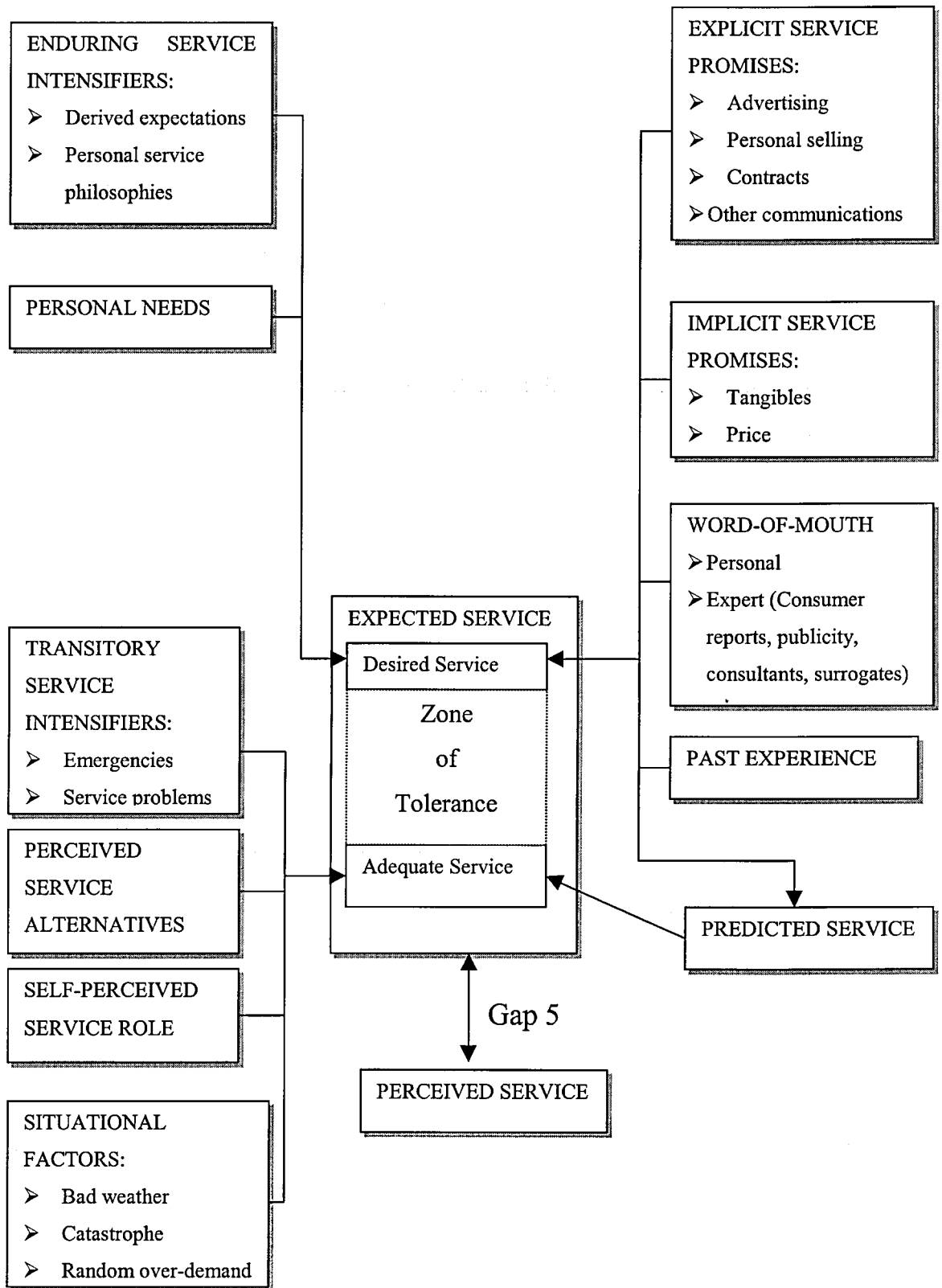
In 1991, they redefined the SERVQUAL wordings and added a further refinement by allocating 100 given points across the five dimensions. The average perceived performance scores were then weighted by this point-allocation into a WP score in order to assess their importance in evaluating a company's service. The results showed that the reliability of the SERVQUAL model had improved and that the Tangible dimension might be split into two sub-dimensions - Equipment and Facilities, and Personnel and Communication materials. (Parasuraman *et al*, 1991)

A few years later, the same group of scholars revised the conceptualisation of expectations. From the results of focus group interviews, they then introduced a concept of '*zone of tolerance*' to extend the original SERVQUAL model (Zeithaml *et al.*, 1993). The *zone of tolerance* was defined as:

'bounded on the lower end by adequate service and on the upper end by desired service, captures the range of service within which a company is meeting customer expectations. The first level is Desired service, which is the level of service the customer hopes to receive, consisting of a blend of what the customer believes can and should be delivered. The second, lower level of expectations is adequate service, which is the level of service the customer will accept. Adequate service is the minimum service a company can provide and still hope to meet customers' basic needs.' (Zeithaml *et al.*, 1996:35)

Within this definition, the model posited service expectations as existing at two different levels that customers used as comparison standards in assessing service quality. The conceptual model of customer service expectation then is illustrated in Figure 4.5.

Figure 4.5: Nature and Determinants of Customer Expectations of Service



(Zeithaml *et al.*, 1993: 5)

Incorporating this concept of *zone of tolerance*, the modified SERVQUAL captured not only the discrepancy between perceived service and desired service (labelled as *measure of service superiority gap*, MSS) but also the discrepancy between perceived service and adequate service (labelled as *measure of service adequacy gap*, MSA). Once again, it utilised 22 scaled items for measuring service quality along five dimensions (Parasuraman *et al.*, 1993). In order to incorporate the expanded conceptualisation of expectations, Parasuraman *et al.* (1994) proposed three alternative measurement formats:

- Three-column format (separate rating of desired, adequate, and perceived service with three identical side-by-side scales),
- Two-column format (direct rating of MSS and MSA on a side-by-side scale),
- One-column format (direct rating of MSS and MSA in separating sections).

The results showed that the three-column format presented superior diagnostic value and was capable of specifically indicating the position of the zone of tolerance and the perceived service level relative to the zone, but not the other two formats. However, this three-column format posed some practical difficulties, specifically in the ease of completing the questionnaire and the time required of the respondents.

Table 4.1 summarises the SERVQUAL series model studies in terms of the research's data collection, analysis and significant findings. The studies were collected from various industries in the USA using fairly large sample sizes generated through mailings. The questionnaires used 22 items with 7 or 9 point Likert scale, but the format changed from separate expectations and perceptions in single columns to two and three-column formats, and wording changing from some negative wording to all positive wording. The data analysis used the five dimension structure as the basis for the initial factor extraction, with five dimensions being generated in the final extraction and extremely high Cronbach's alpha reliability coefficients across the studies.

Table 4.1: SERVQUAL series model studies

Study	Parasuraman <i>et al.</i> 1985, 1988	Parasuraman <i>et al.</i> 1991	Parasuraman <i>et al.</i> 1994	Parasuraman <i>et al.</i> 1996
Data collection	Customers of telephone co., securities brokerage, insurance co., banks and repair and maintenance	Customers of a telephone co., two insurance cos., and two banks	Customers of a computer manufacturer, retail chain, auto insurer, life insurer.	Customers of a computer manufacturer, retail chain, auto insurer, life insurer.
Country of field study	USA	USA	USA	USA
Sample size	Range from 298 to 487 across companies	Range from 290 to 487 across companies	3,069	1,009
Questionnaire format	Similar to PZB (1988) format with separate expectations and perceptions sections	Similar to PZB (1988) format	One-column, Two-column, or Three column format with adequate and desired service levels and added 'no opinion' option	Three-column format with adequate- and desired-, and perceived- service levels on SQ measures; added 13 items battery on behavioural intentions (BI) measures
Major wording changes	Negative worded questions	Negatively worded questions changed to positive form; "companies should" terminology in expectations section replaced with "excellent companies will" terminology	Positive wording	Positive wording
Original SERVQUAL item retained	22 items	Twenty items (two remaining original items were replaced by new items)	All 22 items	All 22 items
Response scale	7 points scale	7 point scale	9 point scale	9 point scale for SQ; 7point scale for BI
Questionnaire administration	Mail survey	Mail survey	Mail survey	Mail survey
Data Analysis procedure for assessing factor-structure	Principal-axis factor analysis followed by oblique rotation	Principal-axis factor analysis followed by oblique rotation		multiple regression
Basis for initial number of factors extracted	PZB's (1988) Five-dimensional structure	PZB's (1988) Five-dimensional structure	PZB's (1988) Five-dimensional structure	PZB's (1988) Five-dimensional structure
Findings- Reliability coefficients (Cronbach's alphas)	0.87-0.90	0.80 - 0.93	0.75-0.97	0.8-0.96
Final number of dimensions	Five	Five (six if "tangible" is split into two dimensions)	Five	Five
Validity	Convergent- Q (i.e. P-E) scores on the five dimensions explain 0.57-0.71 of variance in overall quality on a ten-point scales. Concurrent - Q scores related to hypothesized to presence of service quality	Q (i.e., P-E) scores on the five dimensions explain .57 to .71 of variance in overall quality scores measured on a 10-pt scale; Q scores also related as hypothesized to presence of service problems, satisfactory problem resolution and willingness to recommend.	Convergent- MSS and MSA scores cross three different format explain 0.10-0.86 of variance in overall quality on a nine-point scales. Concurrent - Q scores related to hypothesized to presence of service quality	Not examined

4.3.5 Criticism of the SERVQUAL model

The SERVQUAL instrument has been challenged by a number of authors and the following highlights these debates.

4.3.5.1 The role of the expectation in relation to overall quality

Some findings have suggested that expectation scores might not actually be contributing to the strength of the relationship between service quality and overall quality rating variables. Cronin and Taylor (1992) found that SERVPERF, which measures only the service performance, had slightly higher correlation coefficients of discriminant validity when solely measured with the performance scores of service provided. Such results have raised questions regarding the relevance of the expectations-performance gap as the basis for measuring service and provided support for simple performance-based measures of service quality.

Other studies have cast doubts on the utility of expectations as a quality measure. Mongold and Babakus (1991) extended the SERVQUAL measurement to hospital personnel (administrators and employees below department head) with their 15 modified attributes. In terms of expectations, they found that the patients, employees and administrators were very consistent, but patients' scores in two dimensions of Reliability and Responsiveness were significantly higher than both hospital staff and administrators. Two items - 'expecting hospitals to have patients' best interest at heart' and 'expecting up-to-date equipment' were found to be significantly different between hospital staff and administrators. In terms of perceptions, the results revealed that the perceptions of both administrators and hospital staff were somewhat lower than patients' perceptions at levels that were statistically significant for all attributes. The gap scores of the patients were significantly higher in all attributes than the gap scores of hospital staff and administrators.

In evaluating the quality of clinical services, O'Connor *et al.* (1994) found that actual patient expectations for five SERVQUAL dimensions would closely align with the patient-contact (non-physician employee) understanding of patient service quality expectations, but not with that of administrators or physicians. In the hotel services

industry, Saleh and Ryan (1991) found the existence of five gaps between customers and management perceptions and expectations. In particular, although the management appeared to over-estimate guests' expectations, and as a result 14 of the 33 items were found to be significantly different, in a large part the guest's service expectations were still not met. Other sectors have been studied as well. In assessing the service quality of foodservice outlets in the UK, Jones and Tyas (1996) concluded from their discriminate analysis that performance items distinguished more effectively between sites than other series, such as expectations or performance less expectation ($Q = P - E$). Lam (1997) also found that expectations showed statistically significant correlation with perceptions, but not with gap scores, intentions, or overall ratings in the Hong Kong health care industry.

In light of the debate surrounding the issue of whether service quality should be measured as the difference between perceptions and expectations ratings or simply as the perception ratings, Zeithaml *et al.* (1996) explained that:

'the perception-only operationalization was appropriate if the primary purpose of measuring service quality was to attempt to explain in variance in some dependent construct; the perception-minus- expectations difference-score measure was appropriate if the primary purpose was to *diagnose* accurately service quality' (p.40).

They emphasised that measuring expectations and perceptions separately allowed managers to better understand the dynamics of customer's assessment of service quality over time. They also noted that the difference-score formulation displayed stronger discriminant validity than the non-difference score formulation. (Parasuramen *et al.*, 1993; 1994)

Carman (1990) supported the proposition that expectations were important in determining satisfaction. His results suggested that expectations changed with familiarity. Managers could use expectation as an indication to increase satisfaction by either decreasing expectations or actually increasing performances. For a new user of the SERVQUAL approach, he recommended that data should be collected on all

three measures: importance, perceptions, and expectations. However, if the factor structure of importance and expectations were stable through time and across subjects, subsequent procedures might solely consist of a perception battery.

In evaluating the hospital services in Spain, Fuentes (1999) revealed that expectations were significantly related to perceptions but not overall quality while perceptions were highly significantly related to total quality. She concluded that expectations did not play a fundamental role in the conceptualisation of service quality.

As a final caution, Lam and Woo (1997)'s test-retest reliability investigation of SERVQUAL found that the SERVQUAL scale possessed internal consistency, but the performance items failed to be stable over time, especially in Assurance and Empathy. This has added doubt to the usefulness of using performance items alone in measuring service quality.

4.3.5.2 The role of importance to service quality

There have been many differing opinions held concerning the role of importance measures in performance and customer satisfaction predictions. The instrument used by the developers of SERVQUAL consisted of five dimensions with a weighting factor of one hundred when summarising the twenty-two attributes. Parasuraman *et al.* (1994) argued that using survey questions to measure the importance of independent items (referring to Carman's (1990) suggestion) was a form of 'double counting' and did not contribute meaning in the regression analysis, as compared with their original 100 point system. However, De Carvalho and Leite (1999) integrated the ranking of the six most important attribute items into their service quality survey as an alternative method. They concluded that where time or cognitive constraints were binding (for instance, in a hospital setting), obtaining orders of importance would be a much more simple and direct loading method than computing the width of the tolerance zones for each attribute, as proposed by Parasuraman *et al.* (1994).

Instead of having separate questions on 100 points allocation to each dimension, Youssef *et al.* (1996) developed a different method of weighting for each of SERVQUAL's five dimensions by introducing the following two steps:

- '1. For each patient, add the SERVQUAL scores on the statements pertaining to the dimension and divide the sum by the number of statements making up the dimension.
2. The questions obtained in step 1 for all patients are totalled and divided by the number of patients.' (pp.19-20)

They presented just the results of both the weighted and un-weighted SERVQUAL scores and explained that they showed a different level of detail on the quality gaps without discussing any further implications of the usefulness of their weighting scheme.

The use of importance weighting is also a matter of some discussion. After comparing the results from weighted and un-weighted dimension analysis, Cronin and Taylor (1992) concluded that the service quality was actually better reflected with no weighting represented. Oliver (1997) argued that the concept of importance was intuitively attractive, but not empirically defensible. As noted, without knowledge of the relation between performance and satisfaction and why features were considered important or not by consumers, interpretation became ambiguous. He then concluded that importance as evaluated by the consumer did not add to predictability in satisfaction models and unduly added to the survey length. He claimed that the only acceptable procedure was to rely on the statistical coefficients generated in a regression of satisfaction on the performance ratings or dimensions with the scores of importance.

Other studies have revealed that the inclusion of importance weights for each attribute did not improve the explanatory power of the disconfirmation model, but found that importance weights made good theoretical and intuitive sense (Rao and Kelkar ,1997; Dean, 1999; Hussey, 1999). Rao and Kelkar (1997) expounded on this issue, stating that the importance ratings seemed to stay homogeneous to different attributes of the service across the respondents, but served the managers by helping them to prioritise and selectively focus on those attributes that consumers consider important. Some

researchers (Basky, 1992; Qu, 1997; Kivela *et al.*, 1999a;1999b) have argued strongly that the importance dimension should be included in the analysis because different individuals operate at different importance levels, particularly when investigating dining satisfaction in restaurants (Kivela *et al.* ,1999a; 1999b).

As Oh and Parks (1997) concluded, the inclusion of importance in measuring attitudes seems to be a philosophical rather than a statistical question, and the relative pros and cons of measuring the concept of importance remain unknown.

4.3.5.3 Dimensions

On the basis of factor-loading patterns and inconsistencies in the number of factors retained across many SERVQUAL replication studies, it appears that the literature has not yet reached consensus on the appropriate set of service quality dimensions to be used and their exact content. Suggestions vary both between and among the sectors to which the scale was applied, more in some cases and less in others.

Table 4.2 shows that the five dimensional factor structure is either not clear or not the same across the studies. It varies from two in Babakus and Boller's (1992) study to twelve in Licate *et al.* (1995). From studies assessing the proposed SERVQUAL structure, the results from the confirmatory factor analysis revealed that a 5-dimensional model was a poor overall fit statistically (Babakus and Boller, 1992 in a study of utility services; Babakus and Mongold, 1992 in a study of health services; Cronin and Taylor, 1992 in a study of banking, pest control, dry cleaning, and fast food; Bojanic and Rosen, 1994 in restaurant studies; Mels *et al.*, 1997 in a study of five different types of companies; and Llosa *et al.*, 1998 in a study of banking services). In 1994, Parasuraman *et al.* tried an alternative scale to verify SERVQUAL for measuring service quality, and the overall findings revealed considerable inter-dimensional overlap, especially among responsiveness, assurance, and empathy. They argued that service quality is a multifaceted construct, which is evidenced by the lack of a clear consensus on the number of dimensions and their interrelationship.

Table 4.2: SERVQUAL replication studies

Study	Woodside <i>et al.</i> 1989	Carman 1990 *	Brensinger & Lambert 1990 *	Finn & Lamb 1991 *	Mangold & Babakus 1991 *
Data collection	Customers of discharged patients of two private hospitals	Customers of a dental school patient clinic, a business school placement centre, a tire store and a hospital	Purchasers of motor carrier services	Customers of four retail store s types: "stores like K-mart, Wal-Mart, etc., JC Penney, Sears, Foley's, etc. and Saks, Neiman-Marcus, etc."	Patients and hospital staff
Country of field study	USA	USA	USA	USA	USA
Sample size	687	Ranged from 74 to 600+ across settings	170	Ranged from 58 to 69 across settings	443 from discharged patients, 111 from hospital staff
Questionnaire format	Performance based	Similar to PZB (1988) in placement center setting; only perceptions measured in the other three settings	Similar to PZB (1988) format	Similar to PZB (1988)	Similar to PZB (1988) format
Major wording changes	Positive wording	No major changes in the SERVQUAL items retained, however, several of the new items added were transaction-specific (rather than general attitude statements as in the original SERVQUAL	No major changes	No major changes	Negatively worded question changed to a positive form
Original SERVQUAL item retained	20 single items (non from SERVQUAL)	Ranged from 10 to 17 across settings	All 22 items	All 22 items	15 pairs of matching expectation-perception items
Response scale	Mainly 3 points, but some used 4, 5, 11 points	7 points scale	7 point scale	5 points scale	5 point scale
Questionnaire administration	Telephone survey	Self-administered by respondent on-site	Mail survey	Telephone survey	Mail survey
Data Analysis	Cross-tabulate, Chi-square test, Analyses of variance, multiple regression, and path analysis.	Principal-axis factor analysis followed by oblique rotation	Principal-axis factor analysis followed by oblique rotation	LISREL confirmatory factor analysis of five dimensional measurement model	Mean score and T-tests
Basis for initial number of factors extracted	6 dimensional structure	Factors with eigenvalues greater than one	PZB's (1988) Five-dimensional structure	PZB's (1988) Five-dimensional structure	PZB's (1988) Five-dimensional structure
Findings-	Not examined	Mean 0.75 (across 35 scales derived through factor analysis)	0.64-0.88	0.59-0.83	Non
Reliability coefficients (Cronbach's alphas)					
Final number of dimensions	6 dimensional structure	Between six and eight dimension depending on setting	Five dimensions as in PZB (1988); however, only four factors retained based on eigenvalues/ greater-than-one criterion	LISREL model fit for five-dimensional structure poor (no alternative factor structure examined)	Five
Validity	Not examined	Not examined	Convergent- Q scores on the five dimensions explain: 0.39 of variance in four-point overall quality scale; 43 of variance in 100-point overall performance scale; 0.08 of variance in customer's "share of business" received by motor carriers.	Not examined	Not examined

(* adapted from Asubonteng *et al.*, 1996: 68-73; remainder from the original studies)

Table 4.2 continued					
Study	Saleh & Ryan 1991	Babakus & Boller 1992 *	Babakus & Mangold 1992	Cronin & Taylor 1992 *	Lytle & Mokwa 1992 *
Data collection	Customers of four star hotel	Customers of an electric and gas utility co.	Customers of a hospital	Customers of banking, pest control, dry cleaning, fast food	Customers of health-care (fertility) services
Study Samples					
Country of field study	Canada	USA	USA	USA	USA
Sample size	200 guests and 17 management staff	689	443	660	559
Questionnaire format	Similar to PZB (1988) format	Similar to PZB (1988)	Similar to PZB (1988)	Similar to PZB (1988) format	Similar to PZB (1988) format
Major wording changes	Negatively worded question changed to a positive form	No major changes	Negatively worded question changed to a positive form	No major changes, except normative expectation measure used for 22-attribute (what "should be")	No major changes, except for language changes and several items added
Original SERVQUAL item retained	33 items	All 22 items	15 pairs of matching expectation-perception items	All 22 items	15 pairs of matching expectation-perception items
Response scale	5 point Likert scale	7 point scale	5 points scale	7 point semantic differential scale	5 point scale
Questionnaire administration	Self-administered by respondent on-site	Mail survey	Mail survey	In-home personal Interviews	Mail survey
Data Analysis	Factor analysis	Principal-axis factor analysis followed by oblique rotation; LISREL confirmatory	Principal-axis factor analysis followed by oblique rotation; LISREL confirmatory	Principal-axis factor analysis followed by oblique rotation; LISREL confirmatory	Principal-axis factor analysis followed by oblique rotation; LISREL confirmatory
procedure for assessing factor-structure					
Basis for initial number of factors extracted	PZB's (1988) Five-dimensional structure	PZB's (1988) Five-dimensional structure	PZB's (1988) Five-dimensional structure	PZB's (1988) Five-dimensional structure	Factors with eigenvalues greater than 1
Findings-	0.73-.93	0.67-0.83	0.89-0.97	0.74-0.83	Overall high means scores for the observable variables
Reliability coefficients (Cronbach's alphas)					
Final number of dimensions	Five	Not clear; 5 dimensional factor structure; LISREL model fit poor; 2-dimensional structure (with one representing negative items and the other positive items) most viable solution.	Not clear five-dimensional factor structure; LISREL fit poor	Five	Seven
Validity	Not examined	Convergent- Q scores (across 22 items) correlates 0.59 with overall quality score on a four-point scales. Concurrent - correlations of Q and P score with satisfactory complaint solution are 0.58 and 0.6 respectively	Not examined	Not examined	Not examined

(* adapted from Asubonteng *et al.*, 1996: 68-73; remainder from the original studies)

Table 4.2 continued

Study	Joby 1992	Headley & Miller 1993 *	Walbridge & Delene 1993 *	Bojanic & Rosen 1994	Bowers <i>et al.</i> 1994 *
Data collection	Patients of hospitals	Customers of medical services	Physicians on staff at two major teaching hospitals	Customer in a chain restaurant	Patients of an army hospital
Country of field study	USA	USA	USA	USA	USA
Sample size	353	159 usable pre-and post- encounter response, 11 primary care physicians	212	85	298
Questionnaire format	Similar to PZB (1985) format	Similar to PZB (1988)	Similar to PZB (1988)	Similar to PZB (1988)	Similar to PZB (1988) format
Major wording changes	Negatively worded question changed to a positive form	No major changes, except for languages necessary to switch between a generic provider reference and a specific provider of medical services	Two other determinants were added to SERVQUAL items: core medical services and professionalism/ skills	No major changes	No major changes
Original SERVQUAL item retained	11 variables of perceived quality	All 22 items	22 items	All 22 items	All 22 items, as well as items in Caring and Outcomes
Response scale	5 point scale	7 point scale	10 point scale	7 point scale	7 point scale
Questionnaire administration	Self-administered by respondent on-site	Mail survey	Mail survey	Self-administered by respondent on-site	Mail survey
Data Analysis procedure for assessing factor-structure	Analysis of covariance	Principal-axis factor analysis followed by oblique rotation; LISREL confirmatory	Tabulations + <i>t</i> -tests, analysis of variance, reliability tests and correlations were conducted	Factor analysis followed by oblique rotation and regressing the overall quality	Regression analysis
Basis for initial number of factors extracted	PZB's (1985) ten dimensional structure	Factors with eigenvalues greater than 1	PZB's (1988) five dimensional structure	Factors with eigenvalues greater than 1	Not examined
Findings- Reliability coefficients (Cronbach's alphas)	Not examined	0.58-0.77	0.53- 0.74	0.44-0.81	Not examined
Final number of dimensions	Ten	Six	Five from PZB, two from Haywood-Fourmer (1988) and Swartz and Brown (1988)	Six	Five
Validity	Not examined	Not examined	Not examined	Not examined	Not examined

(* adapted from Asubonteng *et al.*, 1996: 68-73; remainder from the original studies)

Table 4.2 continued

Study	Chaston 1994	McAlexander <i>et al.</i> 1994 *	O'Connor <i>et al.</i> 1994 *	Taylor & Cronin 1994 *	Anderson 1995
Data collection	Senior managers in both primary and acute care sector of NHS	Patients of two independent general dental offices	Entire medical staff, administrative staff, patient-contact employees, and established adult patients of a physician-owned multispecialty group medical clinic	Individuals in shopping malls who had used hospital service within the last 45 days	Patients of a university health clinic
Country of field study	UK	USA	USA	USA	USA
Sample size	84	346	775	116 Study 1, 227 Study 2	431
Questionnaire format	Performance evaluation	Similar to PZB (1988)	Similar to PZB (1988) format	Similar to PZB (1988)	Similar to PZB (1988)
Major wording changes	Modified SERVQUAL model, followed by 5 gaps theory	No major changes	No major changes	Modified slightly to reflect health care setting	Modified slightly to reflect health care setting
Original SERVQUAL item retained	Non 22 items retained	All 22 items	All 22 items	22 paired items	15 pairs of matching expectation-perception item (similar with Babakus & Mongold, 1992)
Response scale	Not clear	7 point scale	7 point scale	7 point Likert scale	5 point Likert scale
Questionnaire administration	Mail survey	Mail survey	Mail survey	Personal interviews	Self-administered by respondent on-site
Data Analysis procedure for assessing factor-structure	Percentage	LISREL	Canonical discriminant functions	Factor analysis followed by oblique rotation, two-stage least square	Means of expectations and perceptions and gap scores
Basis for initial number of factors extracted	N/A	PZB's (1988) Five-dimensional structure	PZB's (1988) Five-dimensional structure	PZB's (1988) five dimensional structure	PZB's (1988) five dimensional structure
Findings- Reliability coefficients (Cronbach's alphas)	Not examined	0.82 SERVQUAL TO 0.91 SERVPERF	0.79-0.92	0.74 - 0.96 (Study 1), 0.71 - 0.93 (Study 2)	Not examined
Final number of dimensions	Not clear	Ten	Five	Six factors of expectation scale and four factors of performance scale	Five
Validity	Not examined	Not examined	Not examined	Not examined	Not examined

(* adapted from Asubonteng *et al.*, 1996: 68-73; remainder from the original studies)

Table 4.2 continued

Study	Bebko & Carg 1995 *	Clow <i>et al.</i> 1995 *	Fusilier & Simpson 1995 *	Gabbott & Hogg 1995	Licata <i>et al.</i> 1995 *
Data collection					
Study Samples	Patients in hospital nursing units	Households who had used dental services recently	AIDS patients, social workers, and family members, who were involved with the hospitalizations and had observed the nursing care provided	Household who has the electoral role	Patients, primary care physicians, and specialist physicians of a large regional hospital
Country of field study	USA	USA	USA	UK	USA
Sample size	262	240	27	594	558
Questionnaire format	Similar to PZB (1988)	Similar to PZB (1988)	Similar to PZB (1988)	Similar to PZB (1988)	Similar to PZB (1988)
Major wording changes	No major changes	No major changes	No major changes	different 24 items on primary health care practice	Modified slightly to reflect health care setting
Original SERVQUAL item retained	22 items	All 22 items	22 items	non	15 pairs of matching expectation-perception item
Response scale	7 point scale	7 point Likert scale	7 point scale	5 point Likert scale	5 point scale
Questionnaire administration	Personal interviews	Mail survey	Self-administered by respondent on-site	Mail survey	Mail survey
Data Analysis					
procedure for assessing factor-structure	Loglinear model- difference between perceived and actual bell response time (means and <i>t</i> -tests)	LISREL	Taps and notes were transcribed for coding	Factor analysis followed by standard varimax rotation and Cluster Analysis	One-way ANOVA principal components factor analysis using varimax rotation, MANOVA
Basis for initial number of factors extracted	Not clear	PZB's (1988) five dimensional structure	PZB's (1988) five dimensional structure	Factor loading greater than 0.5	PZB's (1988) five dimensional structure
Findings-					
Reliability coefficients (Cronbach's alphas)	Mean 0.69 - 317.29	0.72 - 0.89	Interrater agreement was 0.99		0.87 0.43 - 0.73
Final number of dimensions	Not clear	Seven	Five	Six	Twelve
Validity	Not examined	Not examined	Not examined	Not examined	Not examined

(* adapted from Asubonteng *et al.*, 1996: 68-73; remainder from the original studies)

Table 4.2 continued					
Study	Stevens <i>et al.</i> 1995	Tomes & Ng 1995	Hart 1996	Jones and Tyas 1996	Jones <i>et al.</i> 1996
Data collection	Customers of fine-dining, casual-dining, and quick-serve restaurants	In-patients of a NHS hospital	Patients of four outpatient clinics (enuresis, diabetes, paediatrics and general medical)	Customers of quick-serve restaurants	Customers of quick-serve restaurants
Study Samples					
Country of field study	USA	UK	UK	UK	UK
Sample size	596	196	72	195	234
Questionnaire format	Similar to PZB (1988) with only perception section	Similar to PZB (1988)	Similar to PZB (1988)	Similar to PZB (1988)	Similar to PZB (1988)
Major wording changes	Different 29 items on restaurants setting	Modified SERVQUAL items slightly to reflect healthcare setting and several of the new items added were transaction-specific (rather than general attitude statements as in the original SERVQUAL	No major changes	Modified SERVQUAL items slightly to reflect catering setting and several of the new items added were transaction-specific (rather than general attitude statements as in the original SERVQUAL	Modified SERVQUAL items slightly to reflect catering setting and several of the new items added were transaction-specific (rather than general attitude statements as in the original SERVQUAL
Original SERVQUAL item retained	29 items	49 items	All 22 items	All 24 items and 12 additional food related items	All 24 items and 12 additional food related items
Response scale	7 point Likert scale	7 point scale	7 point scale	Unknown	Unknown
Questionnaire administration	Telephone interviews	Self-administered by respondent on-site	Unknown	Self-administered by respondent on-site	Self-administered by respondent on-site
Data Analysis	Mean score	Under two distinct sets of variables factor analysis followed by varimax rotation	Mean score and Gap (P-E)	Principal-axis factor analysis followed by oblique rotation, and analysis of variance and discriminant analysis	Principal-axis factor analysis followed by oblique rotation
procedure for assessing factor-structure					
Basis for initial number of factors extracted	PZB's (1988) five dimensional structure	Factors with eigenvalues greater than 1	PZB's (1988) five dimensional structure	Factors with eigenvalues greater than 1	Factors with eigenvalues greater than 1
Findings-	0.89-0.92	0.64-0.96	Not examined	0.947-0.976	High > 0.75
Reliability coefficients (Cronbach's alphas)					
Final number of dimensions	Five	Seven; 5 under intangible aspect and two under tangible aspect.	None	Seven	Six
Validity	Not examined	Not examined	Not examined	Not examined	Not examined

(* adapted from Asubonteng *et al.*, 1996: 68-73; remainder from the original studies)

Table 4.2 continued					
Study	Youssef <i>et al.</i> 1996	Lam 1997	Lam & Woo 1997	Mels <i>et al.</i> 1997	Rao & Kelkar 1997
Data collection	Discharged patients and in-patients of NHS hospitals	Patients of seminar	Student customers of bank, restaurant, supermarket, and retail chain	customers of banks, insurance brokers, motor repair, electric repair, life insurer	Patients of a healthcare clinic
Country of field study	UK	Hong Kong	Hong Kong	South African & UK	USA
Sample size	174	82	217	650	358
Questionnaire format	Similar to PZB (1988)	Similar to PZB (1988)	Similar to PZB (1988)	Similar to PZB (1988)	Satisfaction on each item and sub-open questions and importance of each item
Major wording changes	No major changes	negatively worded question changed to a positive form	No major changes	No major changes	Positive worded form
Original SERVQUAL item retained	All 22 items	All 22 items	all 22 items	all 22 items	Different 15 items
Response scale	9 point Likert scale	5 Likert scale	7 points Likert scale	5 Likert scale in three companies, 9 Likert scale in other two.	6 point semantic scale
Questionnaire administration	Mail survey	Self-administered by respondent on-site	Self-administered by respondent on-site	Mail survey	Mail survey
Data Analysis procedure for assessing factor-structure	Mean and Gap	Exploratory factor analysis with oblique rotation	test-retest on reliability analysis on among one week, two month, and one year.	Exploratory factor analysis with oblique rotation	Stepwise regression
Basis for initial number of factors extracted	PZB's (1988) five dimensional structure	PZB's (1988) five dimensional structure	PZB's (1988) five dimensional structure	Factors with eigenvalues greater than 1	Kept 15 items
Findings- Reliability coefficients (Cronbach's alphas)	Not examined	0.65-0.88	0.68-0.95 for expectation over all periods, 0.13-0.82 for performance in one year.	Not examined	0.88
Final number of dimensions	Five	Two	Five	Two	Not clear
Validity	Not examined	Convergent- Q scores (across 22 items) correlates 0.71 with overall quality score on a five-point scales. Concurrent - correlations of Q are 0.53 with P, and 0.44 with intentions respectively	Not examined	Not examined	Not examined

(* adapted from Asubonteng *et al.*, 1996: 68-73; remainder from the original studies)

Table 4.2 continued

Study	Kaldenberg <i>et al.</i> 1997	De Carvalho & Leite 1999	Dean 1999	Fuentes 1999	Hussey 1999
Data collection	University students who had used dental services recently	Customers of post services	Patients of five medical centre and 12 maternal & child health centres	Patients of hospital	Customers of banks
Country of field study	USA	Brazil	Australia	Spain	UK
Sample size	162	540	490	170	100
Questionnaire format	Revised SERVQUAL and sub-open question of each items	Similar to PZB (1994) and rank six most important attributes	Similar to PZB (1988)	Similar to PZB (1988)	Similar to PZB (1988)
Major wording changes	No major changes	Negatively worded question changed to a positive form	Modified slightly to reflect health care setting	Negatively worded question changed to a reflect setting positive form	Modified slightly to
Original SERVQUAL item retained	All 22 items	39 items	14 pairs of matching expectation-perception item; added one new item	All 22 items	18 items
Response scale	9 point scale	9 point scale	7 point Likert scale	7 point Likert scale	7 point Likert scale
Questionnaire administration	Self-administered by respondent on-site	Mail survey	Self-administered by respondent on-site	Personal interview	Personal interview
Data Analysis procedure for assessing factor-structure	Descriptive and correlational analysis	Correlation analysis and Regression analysis	Factor analysis followed by oblique rotation and regressing the overall quality	Factor analysis followed by oblique rotation and regressing the overall quality	Mean
Basis for initial number of factors extracted	PZB's (1988) five dimensional structure	Kept 39 items	Factors with eigenvalues greater than 1	Factors with eigenvalues greater than 1	PZB's (1988) five dimensional structure
Findings- Reliability coefficients (Cronbach's alphas)	not examined	Not examined	0.57-0.87	0.64-0.92	Not examined
Final number of dimensions	None	Not clear	Four	Three	Five
Validity	Not examined	Not examined	Not examined	Convergent- P scores (across 22 items) correlates 0.87 with overall quality score. Concurrent - correlations of E and P score are 0.36 respectively	Not examined

(* adapted from Asubonteng *et al.*, 1996: 68-73; remainder from the original studies)

Nevertheless, some studies have displayed characteristics of an uni-dimensional construct (Cronin and Taylor, 1992 in studies of banks, pest control, dry cleaning, and fast food; Lapierre, 1996 in telecommunications; Lam, 1997 in healthcare clinics). Lam's (1997) study of patients in Hong Kong found that the expectations, performance, perceptions, and gap scores emerged as uni-dimensional measures without any meaningful underlying dimensions although SERVQUAL has demonstrated consistent and reliable scales to measure health care quality. On the other hand, from the result of Llosa *et al.*'s (1998) empirical study on testing SERVQUAL's dimensionality in banking services, the hypothesis of uni-dimensionality suggested by Cronin and Taylor in 1992 was not warranted because a three-cluster partition appeared. They suggested a few options that might solve the dimensions concern, in terms of:

- Reformulating certain items
- Reassigning certain items
- Eliminating certain items

It can be concluded that these findings were deemed to warrant additional research on the dimensionality of the SERVQUAL items. The uncertain dimensions lead to the question of whether SERVQUAL is a generic model capable of being applied to all service industries, or if each type of service requires an adapted instrument (Williams, 1998).

4.3.5.4 Measurement formats

Kaldenberg *et al.* (1997) tested the effectiveness of the new 'one column' alternative version of SERVQUAL on dental services, framing the responses on a nine-point scale. They posited that the SERVQUAL instrument was not intended to undermine or subvert the professional's understanding of the appropriate standard of technical care, but instead to supplement it. Unfortunately, their analysis was limited to the descriptive level and no further statistical analysis was applied.

DeCarvalho and Letie (1999) successfully replicated the three-column format SERVQUAL with an additional factor ranking the six most important attributes. The

results showed that the more important an attribute, the thinner its tolerance zone as expressed by Parasuraman *et al.* (1994). However, the very low response rate of ten percent limited the validity of the results, illustrating the practical difficulties of this method. With these limitations on primary data collection, the 1991 SERVQUAL model appears to be more appropriate, especially in the less than ideal conditions during hospitalisation. As an example, the majority of SERVQUAL replication studies in Table 4.2 utilised two sections of positively stated items on expectations and perceptions in a 7 point Likert scale, and most of their results had high reliability coefficients.

Asubonteng *et al.* (1996) in their examination of several SERVQUAL replications (part of Table 4.2) concluded that:

- 'Factor-analysis results relating to the convergent validity of the items representing each dimension are mixed because in several studies the highest loadings for some items were on different dimensions from those in Parasuraman *et al.*(1988).
- Lack of support for the discriminant validity of SERVQUAL is reflected by the factor loading patterns, and the number of factors retained is inconsistent across studies.
- The usefulness of expectation scores and the appropriateness of across-study comparisons have very important implications for service quality research and SERVQUAL users.' (p.75)

4.3.6 Industry-specific adaptations of SERVQUAL dimensions and attributes

4.3.6.1 Catering field

In the catering industry, Stevens *et al.* (1995) duplicated SERVQUAL's five dimensions with modified descriptions utilising 22 statements conforming to the restaurant dining environment to measure customer satisfaction (Appendix 4.2). Their results displayed only cursory information, and did not explore in much detail the reliability and validity of the model in this particular application. Johns and Tyas (1996) revealed that the five-dimension model was only a partial fit and new items

concerned with food seemed to be distinct factors. They suggested seven factors in investigating service quality of foodservice outlets (Johns and Tyas, 1996: 338):

1. Efficiency
2. Communication
3. Reliability
4. Treatment of customers' problems and availability of senior staff
5. Speed and staff quality
6. Visual appearance
7. Actual food and service quality

However, Johns *et al.* (1996) later found six factors arising from the application of the questionnaire and concluded that meal experience factor patterns were still unclear and ambiguous.

Based on extensive review of relevant consumer behaviour literature, Kivela *et al.* (1999a) proposed a model specifically for dining satisfaction underpinned by the disconfirmation-expectancy theory (Appendix 4.23). Using semi-structured face-to-face interviews, they captured 28 restaurant attributes in five dimensions (Kivela *et al.*, 1999b: 269) as:

1. Food attributes;
2. Service attributes;
3. Atmosphere attributes;
4. Convenience attributes; and
5. A restaurant that offers...x (ambience/ service/ product) attributes.

Similarly constrained to the relatively monopolistic situation of catering in hospitals, Sampson and Showalter (1999) found eleven service quality attributes associated with school lunch programmes to evaluate further customer satisfaction (Table 4.3).

Table 4.3: School lunch service quality attributes

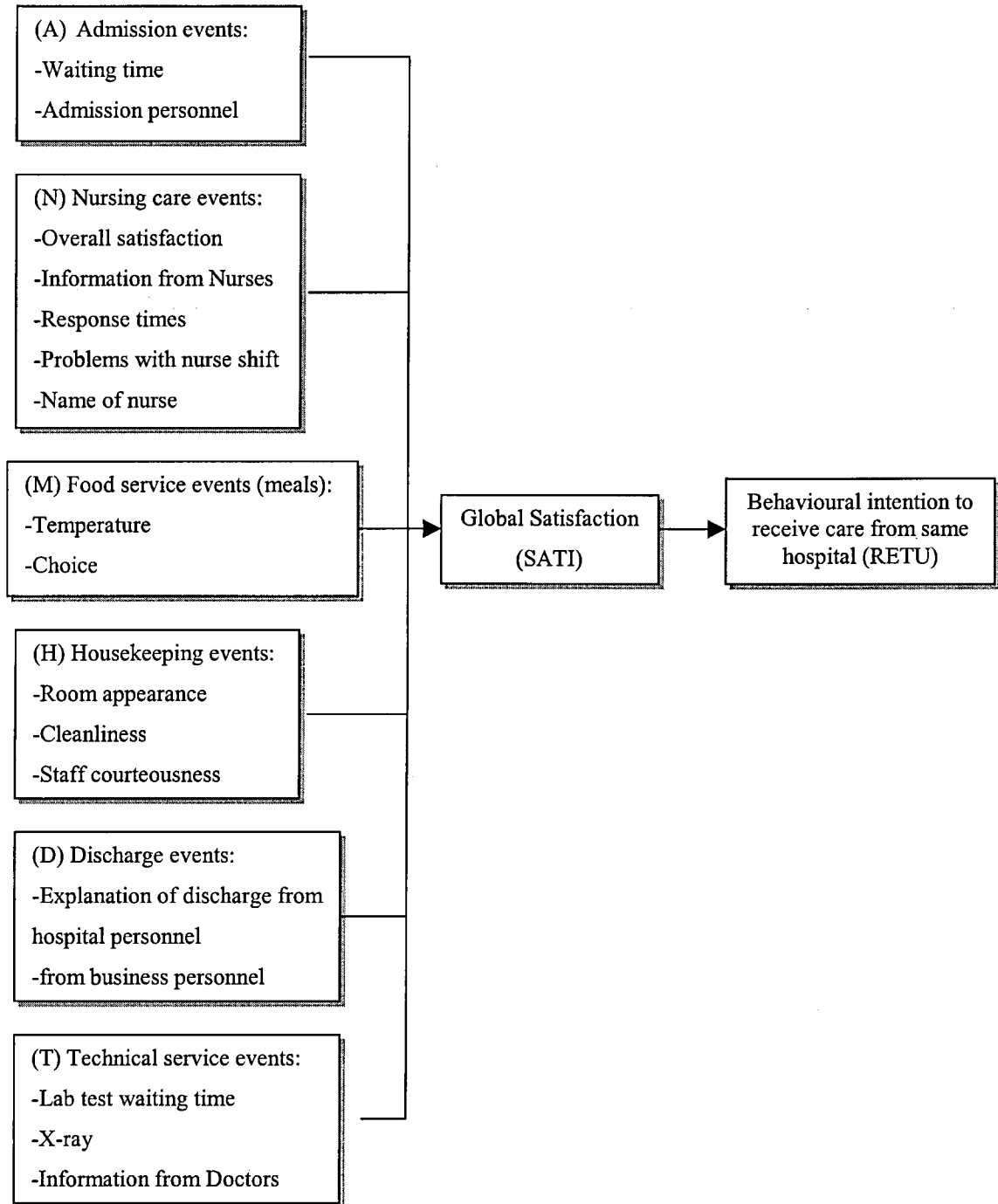
Item #	Attributes
1	Cleanliness of lunchroom
2	Lunchroom appearance
3	Length of lunch period
4	Courtesy/helpfulness of lunchroom staff
5	Staff responsiveness when you need help
6	Ability to socialise the way you like
7	Lunchroom rules and rule enforcement
8	Lunch food you eat at school
9	Seating availability in the lunchroom
10	Arrangement of lunchroom tables/seats
11	Amount of time spent waiting in line

(Sampson and Showalter, 1999: 10)

4.3.6.2 Health care field

Woodside *et al.* (1989) have drawn from SERVQUAL's 1985 model and proposed an alternative model of patient satisfaction and behavioural intentions for service encounters (Figure 4.6). They identified six major groups of service encounters and 20 specific experience-based items to measure the service quality. After using a telephone survey of 689 discharged patients from two USA private hospitals, they found general support for their proposed framework although the path analysis presented slightly different factors. Some groups of staff in the service encounter had an influence on patient satisfaction for one hospital, but not for the other. However, the items of food being served at the right temperature and meal choices were more strongly directly associated with overall satisfaction with the meal served and indirectly influenced global satisfaction with hospital services for both hospitals.

Figure 4.6: General Framework of Patient Satisfaction and Behaviour Intention of Service Encounters for Hospital care.



(Woodside *et al.*, 1989:8-9)

Bowers *et al.* (1994) in their attempt to identify important attributes for consumers of healthcare, found that the elements of the generic SERVQUAL dimensions did not

completely define the construct of healthcare quality. They suggested that patients defined healthcare quality in terms of *Empathy, Reliability, Responsiveness, Communication, and Caring*. These were mostly human dimensions related to how the healthcare service was delivered and not related to the technical competence of the provider. They also revealed that Communication between patient and caregiver was important in determining satisfaction with healthcare, but was not captured in SERVQUAL.

After rephrasing, eliminating, and adding to the SERVQUAL questionnaire in order to capture NHS culture, Tomes and Ng (1995) formed 49 statements to assess service quality in hospital care (Appendix 4.54). They found that underlying factors of service quality had either distinct Tangible or Intangible aspects. They then factor-analysed separately each set and identified seven factors- five intangible: empathy, relationship of mutual respect, dignity, understanding, religious needs, and two tangible: food and physical environment. Dean (1999) found that particularly in the health care field, employee attitudes and behaviour, timeliness, and dependability, awareness of customer needs, and the appearance of physical surroundings were key dimensions of importance to customers. Alternatively, Fuentes (1999) in his study of hospital services in Spain proposed three factors - *tangibles, delivered service, and process of performance*.

By applying the SERVQUAL method to NHS hospitals, Youssel *et al.* (1996) have recommended that the statements might be more appropriately broken down into more detailed sub-statements and aggregated on other dimensions than those under which SERVQUAL was grouped. They verified Carman's (1990) thoughts that when one of the dimensions of quality was particularly important to customers, they were likely to break that dimension into sub-dimensions.

In addition to the five original dimensions, Conway and Willcocks (1997) in the UK have proposed five dimensions that specifically apply in the health care context:

- **Access** - patients want access to the benefits of health care offered.
- **Choice** - a desire to have services driven by customer preferences.

- **Information** - providing important information about the services before, during, and after their health care experiences.
- **Redress** - a knowledge of quality control procedures or a form of remedial action.
- **Representation** - patient surveys on a distribution of funding resource allocation.

Although their additional five dimensions were recommended to NHS policy makers, they have not been found in other empirical research to verify their efficacy as a predictor of service quality.

Other studies again disagreed on the number of factors or dimensions involved in service quality assessment. In using SERVQUAL as an assessment tool on measuring service quality in restaurants, Bojanic and Rosen (1994) revealed that factor analysis generated 6 factors - Tangibles, Reliability, Responsiveness, Assurance, Knowing the customer, and Access. Knowing the customer, Reliability, and Assurance were found to be significant predictors of overall quality.

Compared with SERVQUAL's original design of 22 attributes for five dimensions, Babakus and Mongold (1992) used only 15 paired matching items in evaluating hospital services (Appendix 4.5) because seven items were considered irrelevant to the hospital environment and could lead respondents to invalid responses. With these changes, they found that the factor analysis generated three unclear and meaningless factor structures on the expectation aspect and two-factor structures on the perception aspect with Eigenvalues greater than 1.0. The results showed a poor model fit when they tried confirmatory factor analysis using the LISREL program. They suggested that the dimensionality and abstraction level of the construct still remained unknown and needed further work.

After evaluating the reduplication studies of SERVQUAL that have been successfully applied to NHS hospital care (Appendix 4.6), Youssef *et al.* (1996) concluded that the SERVQUAL instrument had powerful potential applications to NHS hospitals through:

- **'understanding quality:** by helping training and development of both top executives and contact staff through the NHS hospitals;

- **Market research:** by providing a systematic framework for understanding marketing research in order to understand the real quality dimensions for patients, which would involve regular repeats of the SERVQUAL questionnaire, perhaps on yearly basis;
- **Auditing quality:** by comparing and evaluating progress made by different hospitals in quality management initiatives programmes, making NHS hospitals better able to compete with one another in the internal market;
- **Setting standards:** by helping in the development of quality standards and specification for consultations, treatment and operations;
- **Measuring performance:** by using standards and specifications to assess service performance.' (p.27)

Lam (1997) agreed that SERVQUAL facilitated benchmarking of service quality delivery levels with competitors and assessment of the internal service quality of a particular department or division of a company. When adapting broad theories and scales from the general service setting (e.g. SERVQUAL or SERVPERF) to the health care environment, Taylor and Cronin (1992) suggested a careful evaluation should be conducted because of the highly involved and risky nature of health service and the general lack of expertise possessed by consumers. It was also possible that consumers behave differently in a health service setting than they do in other service settings. Hart (1996) suggested that the measurement of the quality of healthcare needs to be located in the matrix of all key direct providers, managers, and consumers. Patients' perception of clinic quality needs to supplement and not replace the methods of quality which have been in use.

In summary, whilst the extant studies have divergent levels of attribute specification, it appears that most researchers agree with the concept of measuring guest satisfaction based on multi-attribute scales that reflect the multifunctional nature of the hospitality service. Notwithstanding the fact that the original assertion related to the aggregate dimensions, no empirical test of the conjecture seems available to date.

4.4 The Linkage between Service Quality and Customer Satisfaction

A consensus appeared in the literature that service quality and satisfaction are distinct constructs (Oliver, 1993; 1997; Spreng and Mackoy, 1996). Parasuraman *et al.* (1994) stated that:

'customer satisfaction is a transaction-specific assessment whereas service quality is a global assessment' (p.112).

The arguments were that service quality was a form of attitude representing a long-term overall evaluation, whereas satisfaction represented a more short-term, transaction-specific measure (Cronin and Taylor, 1994; Rust and Oliver, 1994). Indeed, as Oliver (1993) stated:

'quality perceptions do not require experience with the service or provider, [...] in contrast, satisfaction is purely experiential' (p.76).

He used the example of a five-star restaurant that was perceived as high quality by consumers who have never visited it. A number of differences between quality and satisfaction are listed in Table 4.4.

Table 4.4: Conceptual differences between Quality and Satisfaction

Comparison Dimension	Quality	Satisfaction
Experience dependency	None required; can be externally or vicariously mediated	Required
Attributes/dimensions	Specific to characteristics defining quality for product or services	Potentially all attributes or dimensions of product or service
Expectation/ standard	Ideals, excellence	Predictions, norms, needs.
Cognitive/affective	Primarily cognitive	Cognitive and affective
Conceptual antecedents	External cues (e.g. price, reputation, various communication sources)	Conceptual determinants (e.g. equity, regret, affect, dissonance, attribution)
Temporal focus (short-versus long-term)	Primarily long-term (overall or summary)	Primarily short-term (transaction- or encounter-specific)

(Oliver, 1997: 177)

In particular, patient satisfaction has been defined by Van Campen *et al.* (1995), in their review of literature on measuring the quality of care from a patient's perspective, as:

'a quality judgement concerning the general valuation of health services by a patient. Quality judgement (QJ) is equal to perception (P) minus expectation (E): $QJ = P - E$.' (p.111)

Joby (1992) defined patient satisfaction as:

'a patient's (affective or emotional) response to his or her (cognitive or knowledge-based) evaluation of the health care provider's performance (perceived quality) during a health care consumption experience. [...] Patient satisfaction as an attitude, and therefore an emotional response, has been shown to be determined by the (dis)confirmation of patient expectations.' (p.56)

Zeithamel *et al.*, (1990) suggested that quality was related to and shared some conceptual overlap with satisfaction. Satisfaction was influenced by a number of cognitive and affective processes including equity, attribution, and emotion. Lin and Kelly (1995) stated that patient satisfaction constituted a crucial aspect of quality of care. Steiber and Krowinski (1990) went further to state that quality and satisfaction were distinct but at the same time highly interrelated, as their study of how consumers perceive health care quality in 1988 found a high correlation (0.71) between the two.

Later research more closely examined this connection. In Taylor and Cronin's (1994) structural equation model incorporating reciprocal paths between satisfaction and quality (quality \Rightarrow satisfaction, satisfaction \Rightarrow quality, or quality \Leftrightarrow satisfaction), they found that only the reciprocal path (quality \Rightarrow satisfaction) was significant. From their study on health services, they concluded that there was a clear identification of a non-recursive relationship between service quality and consumer satisfaction. They further suggested that consumers of health services might not distinguish service quality from satisfaction in their minds when they respond to patient satisfaction or service quality surveys. Unfortunately, it was not clear whether the satisfaction and quality measures were of an encounter-specific or global nature (Oliver, 1997).

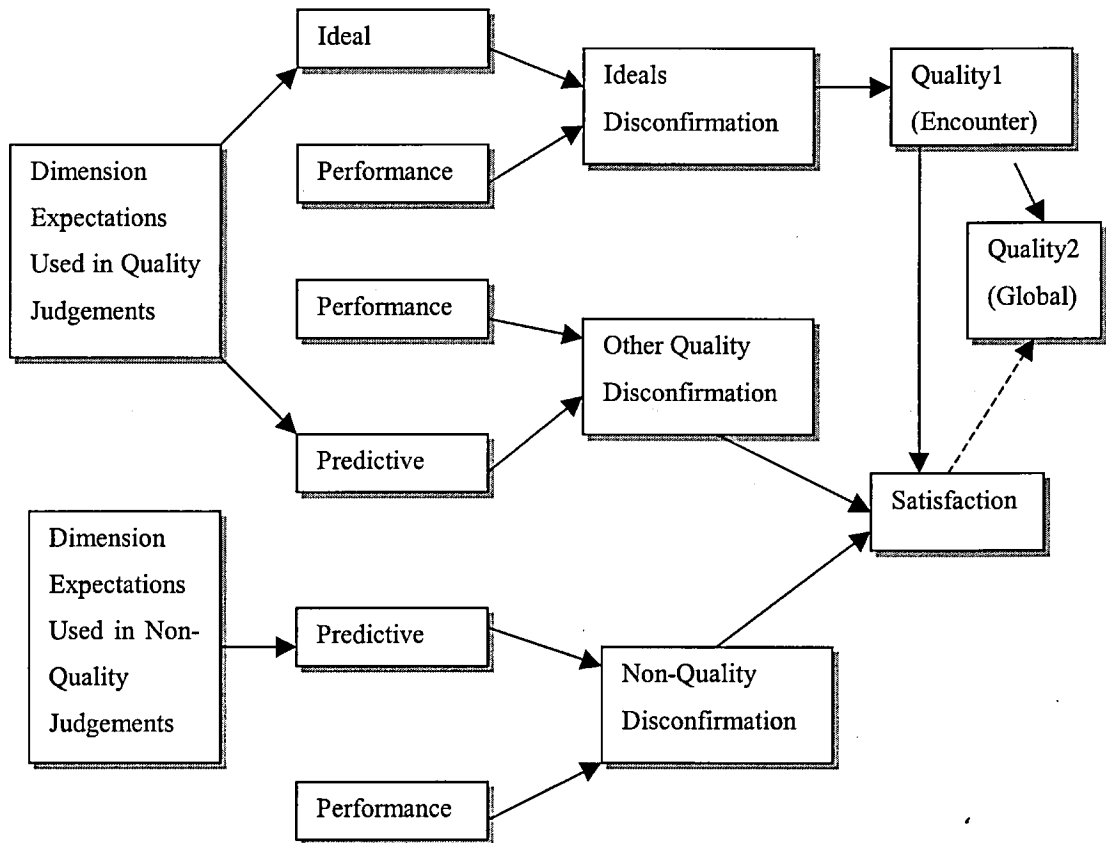
Some researchers have posited that satisfaction is an antecedent of perceived quality (Oliver, 1993; Cronin and Taylor, 1994; Parasuraman *et al.*, 1985, 1988, 1994). Oliver (1993) proposed a quality-influences-satisfaction model whereby satisfaction is superordinate to quality as shown in Figure 4.7. It proposed that individual quality judgements were unique to each service encounter operation and implied that each satisfying experience reinforced the previous quality perception. Furthermore, there is a potential link implying that satisfaction is then a potential change agent for perceptions of quality. Through a disconfirmation model, Spreng and Mackoy (1996) found that although expectations did not have a direct effect on service quality, the results showed that expectations had a negative effect on satisfaction, but a positive effect on both satisfaction and perceived service quality through perceived performance. This reconfirmed Oliver's model in Figure 4.7. The intangible nature of service quality makes it extremely difficult to measure.

4.5 Conclusion

Service quality, by its very nature, is difficult to define and even more difficult to measure. A number of conceptual models have been developed in an attempt to mitigate these difficulties, and of these a number have been tested in the field. Of these, the SERVQUAL model is one of the most scrutinised and adaptable. It has also been tested extensively in the health care field, where it has been proven to be a valid instrument for measuring service quality.

While the SERVQUAL instrument has been proven, questions remain over whether or not to include expectations and importance measures, which attributes should be investigated and how they fit into which dimensions. Using this model as a blueprint, the hospital catering service encounter can be discussed with regards to its principle constituents: patients, service personnel, and the NHS organisation. Chapters 5 and 6 explore the methodology of this research approach and details the methods applied after consolidating the results of the literature review.

Figure 4.7: A Service Quality and Service Satisfaction Model



Note: ----> means a potential link.

(Oliver, 1993: 80)

Chapter Five

Chapter Five:

Methodology I

5.1 Introduction

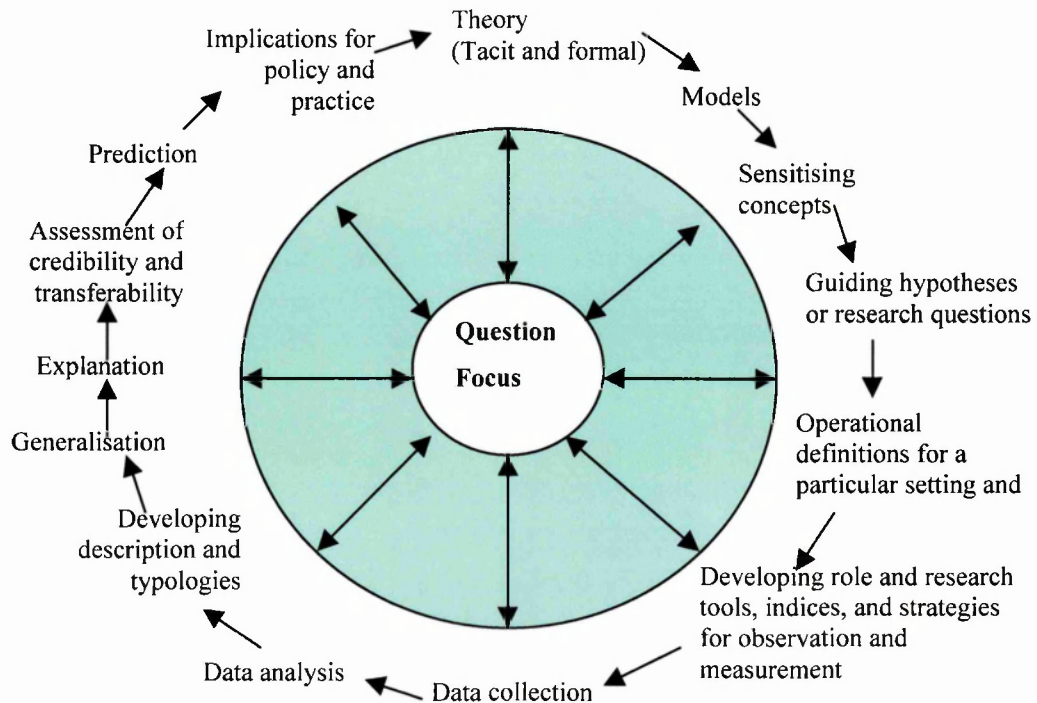
Previous Chapters have explored literature in areas relevant to the provision of catering service in UK hospitals. This chapter begins with the formulation of the conceptual framework and theoretical assumptions behind the research, followed by a deliberation over the quantitative and qualitative research position, an examination of the strategic choices and research methods, and finishes with a discussion of the contingent nature of the data chosen to work with for the purpose of targeting the research question (gaps). By examining the growing importance of acute in-patients in NHS hospitals and the needs of catering services, the sampling method will be analysed in order to select the most appropriate one for the environment.

5.2 Research process

The research process is a continuous one, consisting of a number of major stages focused around a central question, as illustrated in a model developed by Marshall and Rossman (1995) (Figure 5.1). The model provides a schematic description of the interactive relationship between the research focus and the process, which begins with the development of an initial theory. This assists in selecting from a mass of confusing material those elements that are of concern to the researcher. On the basis of the theory, the researcher can develop assumptions or hypotheses about relationships that ought to exist if the theory is valid. Guided by these assumptions, decisions can be made on the role of the researcher and strategies for data gathering.

The data analysis generates results, which lead to tentative empirical generalisations and may in turn be the beginning of the next cycle.

Figure 5.1: Major stages of research process



(Marshall and Rossman, 1995: 17)

With this model in mind, information was gathered from a variety of sources, primarily:

- Books from libraries: University libraries, Hospital libraries, and the King's Fund library.
- Articles from CD-ROM searches: On-line search on Emerald/Anbar Databases, Articles in Hospitality and Tourism (AHT), Medline, Pubmed, and Thesis search.
- Secondary data from National Statistics, The Health of the Nation, National Food Survey, Regional Health Authority, and NHS Headquarters.
- Web sites: NHS Executive, Department of Health.

5.3 Theoretical Framework of the research

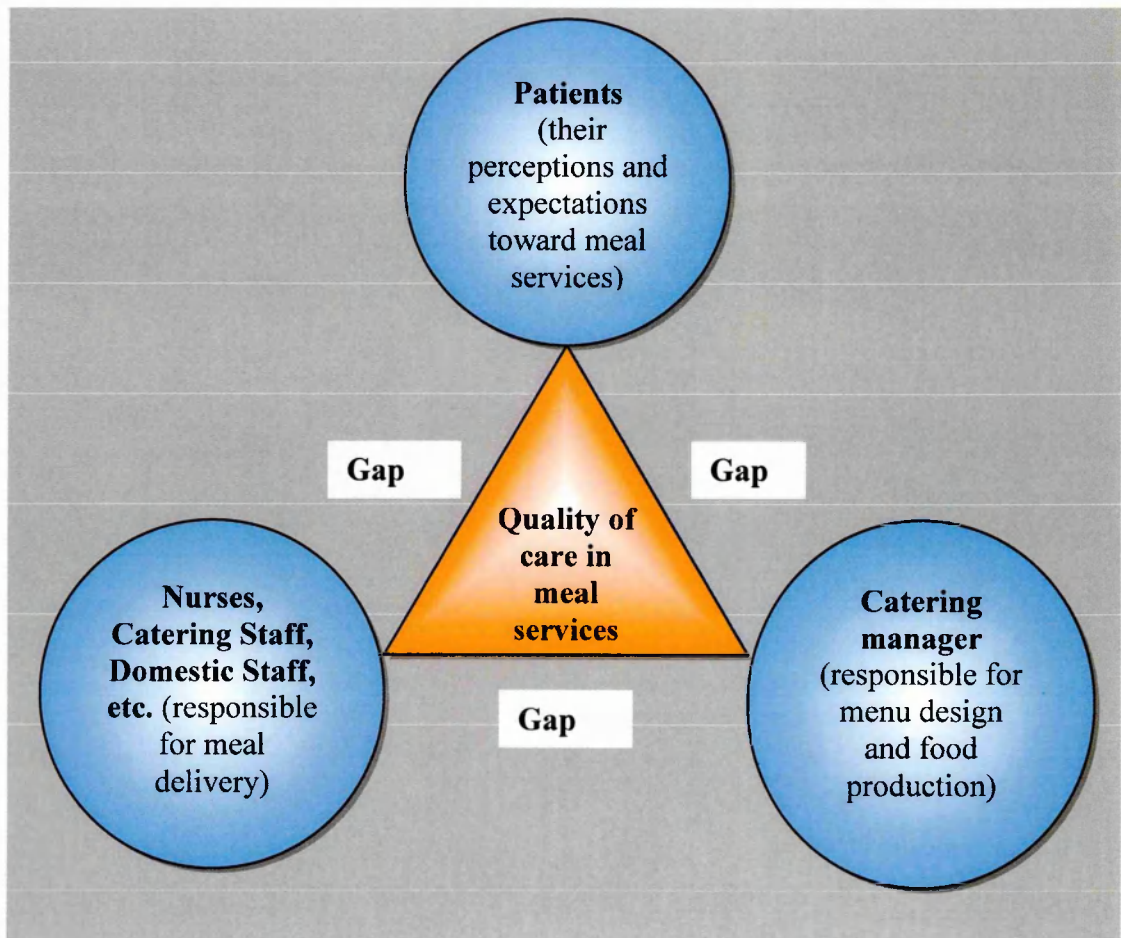
A framework provides a structure or a skeleton upon which subsequent efforts can build upon. The framework for this research aims to provide an overview of the key elements of service processes and outcomes in meal services. The underlying structure to this research is based on 'gap' theory (discussed in Chapter 4). As Randall and Senior (1994) proposed in their examination of the meal service process in hospital (refer Section 2.6.2 of Chapter 2), in the distribution chain three groups of people are involved in advancing their own interests onto how a catering operating system should operate and what level of quality should be achieved:

- Patients,
- Nurses, catering staff, domestic staff, etc., responsible for meal delivery,
- Catering departments, supervised by a catering manager in terms of menu design and food production. Dietetics may also have a role in offering advice on maintaining a balanced diet in the menu.

This may lead to the service encounter becoming a three-cornered tug-of-war (as discussed in Section 4.3.1. of Chapter 4). Patients are likely to be interested more in what is being offered and whether they can get the meals they want when they want them. They want to feel comfortable and have friendly and helpful service from hospital staff. Meal delivery staff may be more interested in how the mealtime routine affects their schedule and their duties. The Catering department may have a greater interest in controlling costs, producing an efficient and effective workforce, and meeting the Health and Food Hygiene regulations. These three viewpoints can be expected to generate conflicting priorities.

With the different interests among the three groups, service delivery is likely to suffer inconsistencies and inefficiency in terms of meal provision in hospital (Figure 5.2). Depending on the individual hospital system, different hospital staff, under the control of different departments, may be in charge of different tasks in order to complete the hospital meal service process. Communication between patients and meal delivery staff, patients and the catering department, or meal delivery staff and the catering department play a key role in determining service quality and the performance of high quality services.

Figure 5.2: Competing interests (Gaps) in delivering the quality of meal service in hospital



(Adapted from Bateson, 1985: 76)

However, the aim of all three groups is that the service encounter should result in food intake as the final outcome of the catering contribution. A patient's satisfaction/dissatisfaction can then be seen as part of the process of the eating experience within the structure imposed by food choices and interpersonal aspects.

Appetite may serve as a complex and inter-mediate factor for all involved in the eating experience, and it could be influenced by food quality, the attitude of the staff who deliver the menus, meal service timeliness and reliability (Dubé *et al.*, 1994). The physical presentation of the food is not only a function of the food's appearance, texture and aroma, but also offers a first impression of the dish. The effects of hospitalisation may also influence appetite; for example, pain from medical conditions may create depression, which may lead to a loss of appetite (Bélanger and

Dubé, 1996). These factors can change the appetite and in turn either change attitudes toward food or become a direct cause of a different food choice.

5.3.1 Food choice factors associated with foodservice

As mentioned in 3.2.1, Shepherd's 1985 model of factors affecting food choice has been modified for the current research (hospital-catering) environment. Since patients do not directly pay their hospital bill and rarely see a brand name associated with the meal components, both price and brands were excluded from the factors used in assessing the quality of the meal service. The remaining factors have been interpreted in terms of their existence under hospital conditions.

- **Personal background.** The patient's personal background focuses on two areas; social factors, such as social status, demographics, religion and culture in addition to psychological factors - people's personality, beliefs, and mood.
- **Hospitalisation.** As mentioned in Chapter 3, compared with the home, patients are placed in unfamiliar surroundings under the restrictions of hospital care. Eating environments and temporary physical difficulties suffered by the patients may impose constraints on their choice, may generate feelings of a loss of control over their life, which might in turn influence the patients' appetite. As illustrated by a study of the emotional experience of hospitalisation on patient satisfaction with foodservices in a Canadian acute-care hospital (Bélanger and Dubé, 1996), the isolation and pain of hospitalisation can be a constant mental drain, depressing appetites and desires. The psychological effects of being in hospital have generally been associated with negative emotions (fear, discouragement, depression, distress, nervousness, irritability, etc.) and rarely with positive ones.

Other non-patient factors are important as well.

- **Availability.** Cost constraints and catering system weaknesses could affect the availability of food choices. Under certain types of medical treatment and disease, some patients' diet may be further restricted, such as a low sodium or high protein diet. This research will focus on a standard diet provided by the central catering

department to isolate it as far as possible from the medical aspects of treatment as would be the case with, for example, Parenteral and Enteral feeding. Since Bélanger and Dubé (1996) found that the availability of the menu to the patient may stimulate appetite through cognitive recognition of favoured foods or positive descriptions, the variety of menu choices and choice of portion sizes will be examined for their implications toward eating (refer to Chapter 3).

- **Palatability.** Food quality can depend on many variables as discussed in Chapter 3. The combinations of physical and chemical properties of food components produce a diverse range of specific flavours, textures, and aromas of the food itself. This can be represented by:
 - Flavour , texture, and aroma of meals,
 - Presentation of meals on tray,
 - Freshness of meals,
 - Food temperature.

These three factors - personal background, availability, and palatability, in addition to appetite - all shape attitudes towards food. This complex mix potentially influences what patients would order from the menu and later what they in turn may consume.

5.3.2 *Interpersonal factors of foodservice*

As discussed in Section 4.3.4 of Chapter 4, five dimensions of service quality from the SERVQUAL model (Parasuraman *et al.*, 1990) were considered to determine aspects of services; Tangibility, Reliability, Responsiveness, Assurance, and Empathy. The results from Bowers, Swan, and Koehler (1994) verified that within the hospital environment these factors, reconfigured as caring, communication, empathy, responsiveness and reliability related significantly to patients' satisfaction. As a result, these five modified dimensions for hospital catering are to be examined in this research. They are delineated as:

- **Caring.** Caring refers to the bedside manner. This forms patient's attitudes as a result of contacts with hospital staff, who can be nurses, catering staff, or ancillary

staff. Within this interaction, the general feeling of warmth, attention, and courtesy can inspire the trust and confidence of the patients. According to their knowledge of nutrition and healthy eating and their understanding of the information on the patients' eating record, in principle staff can offer patients advice on making choices.

- **Communication.** Communication involves keeping patients informed in a language that they can understand and listening to them. It may mean that the hospital has to adjust its language for different consumers - increasing the level of sophistication with well-educated patients or speaking simply and plainly with a novice or non-English speaker. The menu can be a tool of this communication giving a clear understanding of menu items and instructions about menu choices; explaining information on the hospital catering procedures, such as the serving schedule, or other related catering services; and assuring the patient that a problem will be handled.
- **Reliability.** Reliability means the ability to perform the promised service dependably and accurately. For instance, it includes conformity with the meal choices, which answers the question of whether or not the patients will receive the correct items they ordered from the menu, the punctuality of foodservice and service times.
- **Empathy.** Empathy relates to the individualised attention the hospital provides to patients. Understanding and knowing the patient involves making the effort to understand the patients' needs, which may involve learning the customer's specific requirements. Paying extra attention or helping to feed the patient may be necessary if they have some physical difficulties, cannot reach the tray, or have some difficulties opening pre-packed food. Approaching a patient with suitable timing may imply flexibility in service hours to allow for eating and time needed to pick up the tray.

- **Responsiveness.** Responsiveness means the willingness to help patients and provide prompt service, such as high quality food, efficient and effective service, and acting upon feedback.

These factors, suggested from the literature in Chapter 3, may impact on the quality of meal service in hospital, but the links among them will be ascertained from this research. An analysis of the gaps among patients, catering managers, and delivery staff can therefore be used to identify problems or possible improvements, which can offer catering managers or hospital administrators a clearer picture of their system. Later, this information could then be used to introduce new strategies for improving not only the feeding and care of patients but also the value of the hospital catering system.

5.4 Methodological Strategies

As Denzin (1989) proposed, the research act should treat an instance of interpretative, symbolic interaction (the *interpretative interactionism*). Thus, the methodological strategies adopted for this study would depend on what the research questions are and how to answer them to achieve the research objectives. Arksey and Knight (1999) argued that in a constructivist view, knowledge, perception, memory, emotion and understanding are human constructs, not objective things and concluded that people share similar (but not identical) understandings of things that are common experiences and subject to society-wide interpretations. The intention of this research is to show that implementing different research and interviewing methods are not just responses to different research needs but also embody quite different ontological and epistemological perspectives.

Since competing theories of being (ontology) and of knowledge (epistemology) create different implications for the research methods, an overview on these competing approaches is given.

5.4.1 Research purposes: exploratory, descriptive, causal

Research can be organised into three groups based on what the research is trying to accomplish – explore a new topic, describe a social phenomenon, or explain why things occur (Table 5.1). Each of the three types of research has a distinct and complementary role to play in many research studies (Aaker *et al.*, 1995).

Table 5.1: Types of research

Exploratory	Descriptive	Explanatory
<ul style="list-style-type: none"> ▪ Become familiar with the basic facts, setting, and concerns. ▪ Create a general mental picture of conditions. ▪ Formulate and focus questions for future research. ▪ Generate new ideas, conjectures, or hypotheses. ▪ Determine the feasibility of conducting research. ▪ Develop techniques for measuring and locating future data. 	<ul style="list-style-type: none"> ▪ Provide a detailed, highly accurate picture. ▪ Locate new data that contradict past data. ▪ Create a set of categories or classify types. ▪ Clarify a sequence of steps or stages. ▪ Document a causal process or mechanism. ▪ Report on the background or context of a situation. 	<ul style="list-style-type: none"> ▪ Test a theory' predictions or principle. ▪ Elaborate and enrich a theory's explanation. ▪ Extend a theory to new issues or topics. ▪ Support or refute an explanation or prediction. ▪ Link issues or topics with a general principle. ▪ Determines which of several explanations is best.

(Neuman, 2000:22)

This research contains elements of all three in varying degrees. Starting with the descriptive technique, the outcome of this research will present a picture of the characteristics of the respondents, summarise their attitudes toward the provisions of meal services, and illustrate information about the physical meal service procedure at the ward level in acute hospitals. Since the research on service quality of meal services in hospitals, especially NHS hospitals, is limited and rarely found in literature reviews (Chapter 2 to 4), overall this study is considered to be exploratory research to seek new issues that may formulate future research.

5.4.2 Quantitative and qualitative paradigms

With some preconceived notions of what concepts are relevant and how they should be defined, the *Quantitative* approach is used as a research strategy. Blaikie (2000) viewed research designed using the highly structured nature of quantitative methods to be aimed at maximising control over the data gathering and to attain uniformity in the application of the techniques in order to achieve some notion of objectivity and replicability. Neuman (2000) opined that most quantitative research relies on a positivist approach to social science in terms of emphasising precisely measuring variables and testing hypotheses linked to general causal explanations. However, Arksey and Knight (1999) have argued that positivism (mainly in a quantitative approach) is often used to describe the types of knowledge typically associated with the natural sciences. Ideally, these are objective facts 'out there' to be discovered through rigorous enquiry, leading to laws or generalisations that describe the world and allow good predictions to be made. Yet the limitation of applying positivism occurs when studying smaller groups in the shorter term, when people respond to specific situations as they see them and make value-led choices. Even though the findings may seem to support making law-like statements about human thought and behaviour, those statements tend to be very loose and general.

Alternatively, *qualitative* approaches concentrating on understanding the thinking and behaviours of individuals and groups in specific situations, and can direct attention to the differences and particularities in human affairs and prompts the researcher to discover what people think, what happened, and why (Arksey and Knight, 1999). Mason (1996) attempted a definition of qualitative research as:

‘► grounded in a philosophical position which is broadly *'interpretivist'* in the sense that it is concerned with how the social world is interpreted, understood, experienced or produced. Whilst different versions of qualitative research might understand or approach these elements in different ways (for example, focusing on social meanings, or interpretations, or practices, or discourses, or processes, or constructions) all will see at least some of these as meaningful elements in a complex – possibly multi-layered – social world.

- Based on methods of data generation which are *flexible* and *sensitive* to the social context in which data are produced (rather than rigidly standardised or structured, or removed from 'real life' or 'natural' social context, as in some forms of experimental method).
- Based on methods of analysis and explanation building which involve understandings of complexity, detail and context. Qualitative research aims to produce rounded understandings on the basis of rich, contextual, and detailed data. There is more emphasis on '*holistic*' forms of analysis and explanation in this sense, than on charting surface patterns, trends and correlation. Qualitative research usually does use some form of quantification, but statistical forms of analysis are not seen as central.' (Mason, 1996: 4)

Some criticism has emerged that capturing this complex, humanly created reality demands that the researchers become participants in the social setting, abandoning the detached observer status of the natural scientist (Arksey and Knight, 1999). From a methodological perspective, applying qualitative research impacts on the reliability and validity of the measurements and the representativeness of the sample because corroboration and replication are more difficult to achieve with qualitative rather than quantitative methods (Aaker, 1995; Blaikie, 2000).

Considering these two ideal-typical descriptions of differences in defining the meanings, adopting tactics, and position, the qualitative/quantitative comparison (Table 5.2) is often denigrated to that of *opposition* or dichotomy (Blaikie, 2000). Denzin and Lincoln (1998) pointed out the qualitative/quantitative differences in five significant ways (uses of positivism, acceptance of post-modern sensibilities, capturing the individual's point of view, examining the constraints of everyday life, and securing rich descriptions) which reflect commitments to different styles of research, different epistemologies, and different forms of representation.

Table 5.2: Differences between quantitative and qualitative research

Paradigms	Quantitative	Qualitative
Research	Theory is deductive. Technocratic perspective (more with positivism) Linear research path follows a fixed sequence of steps.	Inductive. Transcendent perspective (more with interpretative and critical approaches) Cyclical path
Researchers	Measuring concepts Establishing causality Generalising Replicating Focus on individuals Predictability and security	Using the social actor's point of view Describing thickly Focusing on social processes Adopting a flexible approach Developing concepts and theory
Methods	Observation: structured Questionnaire (self-administered) Structure interview Content analysis of documents	Participant observation Interviews (semi-structured or unstructured) Focus interview In-depth interview Oral/life histories Focus interview/groups interviews Content analysis of documents
Data reduction	Coding: pre-coding and post coding Index construction Scaling: e.g. Likert and Guttman Factor analysis Cluster analysis	Coding: open and axial coding Developing themes Typology construction
Data analysis	Description <ul style="list-style-type: none"> • Distribution: numerical and graphical • Central tendency and dispersion Association <ul style="list-style-type: none"> • Correlation: simple, partial, and multiple • Analysis of variance and covariance • Regression: simple, partial and multiple Causation <ul style="list-style-type: none"> • Factor analysis • Path analysis • Regression: simple, partial and multiple Inference <ul style="list-style-type: none"> • Sample statistic to population parameter • Sample differences to population differences 	Description <ul style="list-style-type: none"> • Theory generation • Analytic induction (Protocol analysis) • Grounded theory: open and axial coding • Categorising and connecting • From everyday typifications to typologies • Discourse analysis and constructionist approaches

(Adapted from Blaikie, 2000: 232- 253 and Neuman, 2000:123)

Blaikie (2000) argued that despite the surface differences between words and numbers, quantitative and qualitative distinctions were not fundamentally different but just a matter of degree. For example, questionnaires and structured interviews as expected produce numerical data, but some question might initially have been open-ended to capture other categories not listed as an option. Conversely, in-depth

interviews mainly produce non-numerical data, but some elementary counting might be used through the content analysis method.

Some authors have claimed that qualitative and quantitative research differ in many ways, but they also *complement* each other (Veal, 1997; Neuman, 2000). All social researchers narrow their topic into more specific, focused research questions. The styles of research depend on the topic, purpose, intended use of the study results, and the orientation toward social sciences, suggesting a different form and sequence of decisions, and different answers as to when and how to focus the research.

Some authors postulated that the research design should not have to make stark either/or choices between qualitative and quantitative methodology since both methods are useful and legitimate (Silverman, 1993; Mason, 1996; Babbie, 1998). Silverman (2000) viewed such dichotomies or polarities of qualitative/quantitative distinction as highly dangerous and pushing too far, and indicated that it would be sensible to make pragmatic choices between research methodologies according to the research problem. Mason (1996) also explained that because neither of the methods are the unified bodies of philosophy, method, and technique which they are sometimes seen to be, qualitative research should not be seen as necessarily in opposition to and un-complementary to, quantitative research and she stated that:

‘The distinction between quantitative and qualitative methods is not entirely clear cut.’ (Mason, 1996: 6)

5.4.3 Multiple-methods (Triangulation)

Debates over the relationship between quantitative and qualitative methods have led to advocacy of the idea of combining different types of methods. The concept of multiple-methods, also termed Triangulation, is to obtain data from a wide range of sources, using a variety of methods, investigators or theories, with a particular emphasis on the functions of *confirmation* and *completeness* bearing on the same phenomenon (Arksey and Knight, 1999). Approaching research questions from different angles and bringing together a range of views and information that adds

depth and breadth of understanding has the potential to generate new and alternative explanations, ones that better capture the social complexity that the fieldwork explores. Triangulation is regarded as a strategy to overcome problems of validity and bias (Patton, 1990; Mason, 1996; Arksey and Knight, 1999).

5.4.3.1 Types of triangulation

Denzin (1989) elaborated on four basic types of multiple triangulation involving varieties of methodologies, data, theories, and investigators.

- *Methodological triangulation* refers to the use of a research design drawing on a variety of methods to collect and interpret the data. The rationale, as Arksey and Knight (1999) stated, is that:

‘cumulatively the weaknesses of one research method are offset by the strengths of the others’ (p.23)

‘Within-method’ triangulation essentially involves cross-checking for internal consistency or reliability while ‘between-method’ triangulation tests the degree of convergent validation (Jick, 1979). ‘Between- (or across-) method’ triangulation combines two or more distinct methods to measure the same phenomenon, but from different angles. In this research, Phase I and II employed a self-administrated questionnaire using a quantitative approach, and Phase III used an in-depth protocol interview using a qualitative approach, but all phases concentrate on the meal service encounter in hospital. Thus, it was intended to examine the results from the convergent viewpoint arising from the different methods.

Another alternative is labelled ‘with-in method’ triangulation, using a variety of techniques within the one single method to collect and interpret data. In Phases I and II, Section 2 measures the multidimensional expectations of meal services, Section 3 measures the same multidimensional perceptions of meal services, and Section 4 measures the importance of each dimension of meal services. All three sections focus on the service quality of meal provision in hospital and contribute

to the overall calculation of the Service Quality equation and assist in benchmarking good practices.

- *Data triangulation* means the use of a research design involving diverse data sources to explore the same phenomenon. The data sources can be varied, or triangulated, in terms of different comparison groups, at different points in time, or from a range of settings. Sampling, as suggested by Denzin (1989), is across three levels of analysis: aggregate (at the level of individual), interactive (at the level of interacting individuals), and collectively (at the level of organisations). In this research, patients (individual level) are examined regarding their satisfaction toward meal services in hospital. The research also examined how their attitudes have been generated out of the encounters with the service personnel at the interactive level and catering managers within the same hospital at the collective level. From this, gaps may emerge to help explain the weaknesses in meal services from three conflicting points of views.
- *Theoretical triangulation* refers to approaching the data with diverse perspectives and hypotheses in mind in order to gain a more holistic view of the setting. The research compiles a list of possible theoretical points of view with respect to a common set of research questions, and from these derive a number of propositions. Empirical data would then be collected on whatever phenomenon the proposition at hand directed attention towards and analysed each proposition against the data in efforts to assess the relevance, utility and power of each. In this research, the possible influencing factors of food choices in hospital (discussed in Chapter 3) were identified, and with an understanding of the model of service quality (examined in Chapter 4), the proposed theoretical framework in section 5.2 has been developed from two distinctive areas - food choices and service quality. This was intended to strengthen the existing theory and practice of meal service in hospital.
- *Investigator triangulation* means that multiple investigators from different disciplinary areas but sharing an interest in the focus of study were joined in the research process. Triangulating researchers might decrease the degree of the

potential bias generated by a single researcher. In this research, it was not possible to employ this type of triangulation since the author was the only one devoted to conducting the empirical research.

5.4.3.2 Criticisms of triangulation

The effectiveness of triangulation rests on the premise that the weakness in each single method can be compensated by the counter-balancing strengths of another. Patton (1990) commented that:

'Triangulation is a powerful solution to the problem of relying too much on any single data source or method, thereby undermining the validity and credibility of findings because of the weaknesses of any single method.' (p.193)

Triangulation is used not only to examine the same phenomenon from multiple perspectives but also to enrich the explanation of the research question and understanding by allowing for new or deeper dimensions to emerge (Jick, 1979).

However, various constraints and shortcomings may affect the effectiveness of the triangulation strategy. The practical constraints are the restrictions of time and the available financial resources, the skills of researchers, and the social organisation and political orientations of the research group, which may make it impossible to conduct triangulation in multiple methods, multiple data sources, measures, and perspectives (Denzin, 1989; Patton, 1990; Brannen, 1992). Jick (1979) raised the question of whether the various instruments might be viewed as equally sensitive to the phenomenon being studied and acknowledged that replication can be exceedingly difficult as qualitative data in particular were problematic to replicate.

Blaikie (2000) argued that it is inappropriate to combine methods because:

'The distortion in its adaptation from surveying and navigation, the vagueness in the manner in which it has been formulated, the naivety with respect to differences on ontological assumptions, the tendency to impose a single, absolutist ontology on

multiple socially constructed realities, and the problems of interpreting convergent and divergent results, make the triangulation of methods and data a very doubtful activity' (p.270)

Denzin (1989) was aware that there were some limitations with multiple triangulation. He responded that the goal of multiple triangulation was a fully grounded interpretative research approach, and objective reality will never be captured and meaningfully compared to correlation analysis in statistical studies.

Mason (1996) commented that implementing a mixed approach might mean that the results relate to different objects or events rather than different aspects of the same phenomenon, leading to some potential problems when analysing data obtained from multiple sources. She did agree, however, that the concept of triangulation (conceived as multiple methods) encouraged researchers to explore intellectual puzzles in a rounded and multi-faceted way and enhanced validity, but disagreed with the use of the term of 'triangulation' as implying a technique for checking out one method against another as being probably misleading.

Arksey and Knight (1999) concluded that a triangulated study still had potential merits, especially if triangulation was conceived less as a strategy for confirmation and more as one for in-depth understanding and completeness. Blakie (2000) suggested that triangulation would be most relevant when different types of methods were used with the same ontological assumptions and then the implications of achieving convergence or divergence of results can be handled to stimulate theoretical development and to suggest new directions for research. In summary, Table 5.3 outlines the advantages and limitations of triangulation.

Table 5.3: Advantages and limitations of triangulation

<i>Advantages</i>	<i>Limitations</i>
<ul style="list-style-type: none"> • Can increase confidence in results. • Can strengthen the completeness of a study. • Can address different but complementary questions within a single study. • Enhances interpretability: one set of data gives a handle to understanding another set. • Divergences can uncover new issues or processes that can result in turn in the development of new theories, or the modification of existing ones. • The researcher is closer to the research situation, contributing to a more nuanced understanding of the focus of study. 	<ul style="list-style-type: none"> • Might be time-consuming with resource implications. • Undertaking replication and comparative studies can be difficult. • Researchers may not be technically competent in particular methods. • Researchers might be tempted to make an inconsistent data set artificially compatible in order to produce a more coherent account.

(Arksey and Knight, 1999: 25)

In consideration of these criticisms and limitations of triangulation, this research design has endeavoured to overcome possible weakness. Statements in measuring the attitude toward meal service in Phase I were echoed in Phase II to cross-check the consistency of these issues. For example, the issues of who should help patients with any food related enquires (discussed in Chapter 2) and the factors which might influence patients' choice and eating (discussed in Chapter 3) surveyed in phase I (patient survey) were also enquired in Phase II (staff survey) (Table 5.4).

Table 5.4: The issues applied across Phase I and Phase II

Issues	Statements in Phase I (Patient)	Statements in Phase II (Staff)
Placing meals where the patient can reach	'Staff should leave food within reach.'	'I ensure the patients can reach the plates when I serve them.'
Helps patient with eating difficulties	'Staff should always be willing to help patients with eating difficulties.'	'An important part of my job is to help those patients with eating difficulties.'
Interaction between patients and staff	'Staff should be polite and pleasant'	'I am polite and pleasant when delivering meal trays to patients, even if they are grouchy.' 'Patients treat me with respect.' 'Patients show understanding and patience when we are really busy.'
Missing meals	'Other food should be provided when a patient misses the regular meal service.'	'I will notice if a patient misses the regular meal service and make sure alternative food is provided.'
Meal orders	'Meals should arrive exactly as ordered.'	'I ensure patients get the meal that they ordered.' 'Ensuring a patient eats enough of the right types of food is an important of patient care.'
Individual care	'Patients should be given personal attention.' 'Meal sizes should be according to individual needs.'	'Patients show their appreciation for individual care.'
Collecting meal trays	'Enough time should be given to eat the food.'	'I will not collect the food trays without the patients' permission.'
Who should be responsible for meal care	'Who do you think should help patients with any food- related enquiries.'	Opinion of the levels of responsibility for mealtime care among staff

The issues related to food quality and managerial procedures from Phase I and II were mapped on to the interview protocol in Phase III in order to enhance understanding on the functioning of meal services in hospital. For example, the issues on food quality (e.g. taste, presentation, smell, selection, temperature, and freshness of food) in Phase I were interconnected with question relating to on food preparation methods and menu design when interviewing the catering managers in Phase III. In addition, the issues involving meal procedure (e.g. the punctuality of timing of the meals served) and the core theme of patient satisfaction in Phase I were rephrased as prompts for the catering managers in Phase III. Finally, the statements related with meal service procedures for ward staff and roles of staff involved with mealtime care in Phase II were also integrated into the issues examined with the catering managers in Phase III.

If the data from different phases lead to the same conclusions, the convergent results generate confidence and are not methodological artefacts. If the data from different

phases are divergent, the results on meal service gaps among patients, contact persons and catering managers, can be equally fertile areas for theory-building, policy and practice.

5.4.4 Reliability and Validity

Reliability and validity are fundamental issues in establishing the truthfulness, credibility, or believability of the findings of the research. Many authors have emphasised the importance of addressing the reliability and validity of the measure regardless of the quantitative or qualitative approach (Mason, 1996; Veal, 1997; Babbie, 1998; Hair *et al.*, 1998; Neuman, 2000).

Two definitions present the meaning of reliability as:

‘the extent to which research findings would be the same if the research were to be repeated at a later stage or with a different sample of subjects.’ (Veal, 1997:35)

, and

‘the degree to which the observed variable measures the true value and is error free; thus, it is the opposite of measurement error. [...] The indicators of highly reliable constructs are highly intercorrelated, indicating that they all are measuring the same latent construct. As reliability decreases, the indicators become less consistent and thus are poorer indicators of the latent construct.’ (Hair *et al.*, 1998: 9, 583)

Factors such as a respondent’s momentary distraction when completing a questionnaire, ambiguous instructions, and technical difficulties may cause the introduction of variable measurement errors (Frankfort-Nachmias and Nachmias, 1997).

Several improvements can increase the reliability of the measures. As Neuman (2000) suggested, in the quantitative method the first step is to develop unambiguous, clear theoretical definitions; that is, each measure indicates one and only one concept. Section 5.3 has provided a blue print to pinpoint each concept of this research intended to measure the gaps in service quality. The second step is to use as precise a

level of measurement as possible. A seven point Likert scale is used, the same measurement as the SERVQUAL model proposed by Parasurman, *et al.* (1990). The third step is to use multiple indicators. The attitudes toward meal service in hospital are constructed into 19 variables in the Phase I patients' survey and 17 variables in Phase II from the service personnel survey. When generating the factors influencing meal services, Cronbach's alpha is used to examine equivalence reliability with multiple indicators (applied on the attributes of meal services in Phase I and Phase II). Inter-coding reliability is also achieved by utilising Formic 3.0 to scan the questionnaire and with double-checking by hand to eliminate any errors. The fourth step is to use pre-tests, pilot studies and replication to confirm the measurement, which will be discussed in greater length in Chapter 6.

Mason (1996) argued that in the qualitative method, the reliability of the data generation and analysis can be demonstrated to be appropriate to the research questions through careful and honest explanations and consistent collection procedures. As such, Phase III used an interview protocol to aid in this regard.

Babbie (1998) interpreted reliability to mean the degree of '*precision*', representing the fineness of distinctions made between the attributes composing a variable; however, reliability does not ensure *accuracy* as validity does (Hair *et al.*, 1998: Babbie, 1998). Thus, the meaning of validity is the extent to which:

'the information collected by the researcher truly reflects the phenomenon being studied.' (Veal, 1997:35)

, and

'a measure or set of measures correctly and accurately represents the concept of study- the degree to which it is free from any systematic or non-random error.' (Hair *et al.*, 1998: 9)

The questions of validity concern ontological and conceptual clarity in the sense that the research is clear about what it means, and relevant epistemology in that the method of the research demonstrates the research strategy has appropriately honed in on these elements (Mason, 1996). When the researcher constructs a measurement

instrument, three methods of measuring validity should be considered: criterion validity, content validity, and construct validity (Neuman, 2000).

- **Criterion validity**, sometimes called Empirical validity (Frankfort-Nachmias and Nachmias, 1996), is concerned with the relationship between a measuring instrument and the measurement outcomes. One form of this type of validity is *predictive validity* which refers the degree of correlation, known as the correlation coefficient, between the results of a given measurement and an external criterion (*ibid.*). The other is *concurrent validity* associated with a pre-existing indicator that is judged to be valid (Neuman, 2000). As the final outcome of serving meals for patients should be eating the food as provided, the factors which may be likely to predict outcomes will be exposed in the findings chapter and any discrepancies with the literature will be discussed.
- **Content validity** refers to how much a measure covers the range of meanings included within the concept (Babbie, 2000). The objective is to ensure that the selection of scale items extends past just empirical issues to also include theoretical and practical considerations. This form of validity, also known as *face validity*, subjectively assesses the correspondence between the individual items and the concept through ratings by expert judges, pre-tests with multiple sub-populations, or other measures (Hair *et al.*, 1998). The other concern, *sampling validity*, is whether the measuring instrument in question adequately samples a given population (Frankfort-Nachmias and Nachmias, 1996). Chapter 6 outlines the detailed method applied in the field to closely connect the intellectual puzzle and research questions to show the validity of this research and the analysis method in order to generate relevant data in explaining the gaps existing within the quality of meal services in hospital.
- **Construct validity** addresses the relationship to a general theoretical framework in order to determine whether the instrument is tied to the concepts and theoretical assumptions they are employing (Frankfort-Nachmias and Nachmias, 1996). *Convergent validity* confirms that the scale is correlated with other known measures of the concept even though they represent different methods.

Discriminant validity, the opposite of convergent validity, ensures that the scale is sufficiently different from other similar concepts to be distinct even though a similar instrument is used. Moreover, *nomological validity* can determine if the scale has corresponding relationships with prior research or the concepts in a theoretically based model (Hair *et al.*, 1998). In this research, Section 5.3 demonstrates the link between the theoretical framework and the literature emerging from Chapter 2, 3, and 4 which tackles the issues of construct validity.

5.4.5 Methods of conducting research

The choice of a data collection method is a critical point in the research process. There are many factors to be considered (which may be type of population, question form, question content, response rates, costs, available facilities, and the time involved in data collection) (Aaker, 1995) and many variations of the three basic survey methods: mail survey, telephone survey and personal interview. Each has advantages and disadvantages (Table 5.5), and the final decision, which involves some trade-offs, depends on its appropriateness to the purpose and means of the research.

Table 5.5: Comparisons of mail, telephone, and personal surveys.

Issues	Mail survey	Telephone survey	Personal interview survey
Cost (assuming a good response rate)	Often lowest	Usually in-between	Usually highest
Ability to probe	No personal contact or observation	Some chance for gathering additional data through elaboration on questions, but no personal observation	Greatest opportunity for observation, building rapport, and additional probing.
Respondent ability to complete at own convenience	Yes	No	Perhaps, if interview time is prearranged with respondent.
Interviewer bias	No chance	Some, perhaps due to voice inflection, etc.	Greatest chance
Ability to decide who actually responds to the questionnaire within a household	Least	Some	Greatest
Sampling problems	Up-to-date, accurate mailing list and low response rate	Up-to-date, accurate phone subscriber list, unlisted numbers, no phones, refusals	Not-at-homes and refusals.
Impersonality	Greatest	Some due to lack of face-to-face contact.	Least
Complex questions	Least suitable	Somewhat suitable	Least
Visual aids in survey	Little opportunity	No opportunity	Greatest opportunity
Opportunity for building rapport	Least	Some	Greatest
Potential negative respondent reaction	“junk mail”	“junk calls”	Invasion of privacy
Interviewer control over interview environment	Least	Some in selection of time to call	Greatest
Time lag between soliciting and receiving response	Greatest	Least	May be considerable if a large area is involved.
Suitable types of questions	Simple, mostly dichotomous(yes-no) and multiple-choice questions	Some opportunity for open-ended questions, especially if interview is recorded.	Greatest opportunity for open-end questions
Requirement for technical skills in conducting interview	Least	Medium	Greatest

(Gilbert, 1992, PhD Thesis)

For the preliminary data, a mail survey was used to identify current practice in catering operations from catering managers in NHS acute hospitals in England since this method profits from low cost and avoidance of interviewer bias and the ability to reach respondents over the eight widely dispersed regions. An exploratory interview with hospitalised patients was then used to explore the factors and issues that influence patient’s food choices and their perceived quality of meal services. This can

build a rapport with patients with more in-depth views of why or why not they eat the food. A standardised interview protocol was used to minimise any possible interview bias.

For the collection of the main data, the Phase I - patient survey and Phase II - service personnel survey employed combinations of survey methods using a drop-off approach: first telephone contact to get co-operation, followed by delivery by the researcher of a self-administered questionnaire, which is then either picked up or mailed in. This is considered cost-effective for increasing the response rate (Aaker, 1995) and ensures accurate sampling and a minimum of interviewer bias, while permitting researcher assessments, providing necessary explanations and giving the benefit of a degree of personal contact (Oppenheim, 1992). The main benefits are low cost, quicker responses and relative anonymity for the respondents; however a side effect may be the introduction of some errors due to patchy and incomplete responses (Veal, 1997).

With a telephone appointment in advance, Phase III – semi-structured in-depth interviews - explored the scope of the catering manager's experiences, views and knowledge toward meal services and generated explanations and understanding of catering services in hospitals in terms of the ontological position and epistemological assumptions. A standardised interview protocol minimised interviewer bias. Several suitable prompts helped to focus on the relevant meal service issues and to discover any hidden agendas; at the same time it maintained spontaneity and flexibility on the topic (Oppenheim, 1992).

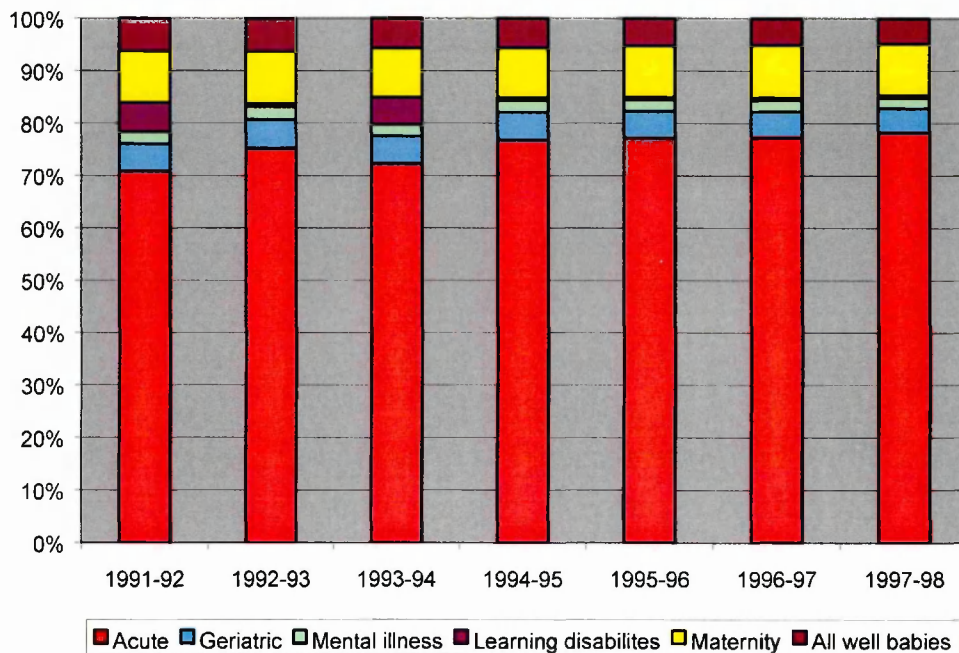
5.5 Sampling

After reviewing the strength and weakness of the research methods, this section deals with whom would be the one answering the questions, and how the sampling method could be used to address any perceived liabilities.

5.5.1 Acute patients

Developments in the UK health care system have increased the importance of shorter-term, acute patients in hospital as opposed to more long-term chronic and mental patients. Hospital-based acute services have continued to expand throughout the 1980s and into 1990s, absorbing a higher proportion of the medical workforce and increasing their share of the rising health care budget (Department of Health, 1997) (Figure 5.3).

Figure 5.3: Hospital Inpatient Activity, NHS Trusts (£000,000s)



(Department of Health, 1997: 37; 1999:36)

Several factors have drawn attention to acute patients. Medical technology has evolved, and less invasive diagnosis and treatment methods have become commonplace (Devlin, 1995; Smith, 2000). Stocking (1993) pointed out that endoscopes are used in internal surgery function without puncturing the patient, and Lithotripsy employs high-energy shock waves to effectively shatter both kidney and gall stones, speeding up the treatment and recovery process and making day surgery possible. The improved understanding of human genetics and deoxyribonucleic acid (DNA) and the development of techniques to cut, splice, and recombine DNA has

many implications for diagnostics, monitoring, prevention and treatment of disease. Genetic biology and gene therapies have shown signs of becoming capable of improving the human genome with possible significant effects on the delivery of health care. The free market initiatives of the third wave of health care reform, introducing increased competition and tendering from contractors, have focused attention on the cost and efficiency of hospital activities (Stocking, 1993). Economic pressures encourage the reduction of the length of hospital stays and the shortening of waiting lists (Smith, 1999). The initiatives arising from the 1997 NHS white paper, in a drive to improve quality, are thought to have far-reaching implications for acute services (Smith, 2000). All of these changes in the hospital dynamic serve to emphasise the pressures faced by hospital administrators and the growing importance of acute care to the health care system.

Unfortunately, only a limited number of studies have concentrated on acute patients. Harrison (1996) indicated that one of the critical areas of concern for the future of acute care was the poor research base. He found that most of the current studies focus on only a part of the problem and used only a part of the available data. This presented two dangers:

- 'Hospital managers have to cope with pressures, the nature of which they do not understand.
- 'The likely effects of different forms of policy response outside the acute hospital itself are not explored. In business jargon, the market is not understood.' (Harrison, 1996:203)

These two factors demonstrate consequences of the poor research base for the future of acute care. Managers and clinicians are expected to do their best with existing resources, working methods and constraints, which often forces them to abandon the pursuit of possible better outcomes. The inadequate body of research is especially lacking in studies of acute patient's feeding and nutritional assessment. Much of the previous work on health service catering has focused on particular client groups,

while its impact on the general acute population is largely unknown. This knowledge gap is the basis for the direction of this study.

5.5.2 Considerations for sampling methods and sample size

5.5.2.1 Representativeness of Population

In order to properly apply a quantitative approach in Phase I and II to encompass the attitudes regarding meal services during the service encounter in hospital, it is critical to construct a representative sample of cases from the population. Ideally, a representative sample would share exact correspondence between the sample characteristics and the population attributes. Therefore,

'The purpose of sampling is usually to study a representative subsection of a precisely defined population in order to make inferences about the whole population.' (Silverman, 2000:102)

Although only probability samplings can make entirely accurate estimates of populations, it may be necessary to make trade-offs in sample design under certain circumstances with practical limitations such as time, resources, costs, and access to the field (Oppenheim, 1992; Frankfort-Nachmias and Nachmias, 1996). However, with a qualitative approach, the sampling method should focus on the cases that will enhance the understanding about the processes in a specific context (Neuman, 2000). In Phase III, the qualitative approach will generate a deeper understanding of how the hospital catering manager function.

5.5.2.2 Requirements for statistical considerations

As all inferential statistics are based on the assumption of representativeness, the sample should be representative in a quantifiable way of the population from which it has been drawn (Rose and Sullivan, 1996), while considering the accuracy of the estimates required and the problems of statistical significance.

The effect of sample size could play an important role in the statistical power of the significance testing and the generalisability of the results. Caution was needed though, as sample size could impact the statistical test either by making it insensitive (at small sample sizes) or overly sensitive (at very large sample sizes). Alpha, or Type 1 error, is the chance of a test showing statistical significance when it is not present. Power is the probability that statistical significance will be indicated if it is present. Hair *et al.* (1998) suggested that studies be designed to achieve alpha levels of at most 0.05 with power levels of 80 percent, and at that level:

'power becomes acceptable at sample sizes of 100 or more in situations with a moderate effect size at both alpha levels. Specification of a .01 significance level requires a sample of 200 per group to achieve the desired level of 80 percent power. Eighty percent power is reached with sample of 130 for a 0.05 alpha level and samples of 100 for a .1 significance level' (p. 12).

Analysis implementing a specific level of R^2 correlation or statistically significant regression coefficients are even more sensitive to sample size. For instance, Tabachnick and Fidell (1996) recommended that in order to satisfy factor analysis, the sample should have at least 300 cases, with 500 being very good, and 1000 as excellent. Therefore, the samples were targeted for a minimum of 500 participants in total for the patient survey with at least 130 patients drawn from each hospital having at least 130, and 300 participants for the service personnel survey.

5.5.2.3 The Ethical Approval issue

After July 1997, the NHS's ethical approval procedure was restructured. When research is intended to take place within five or more Local Research Ethics Committee (LRECs) geographical boundaries anywhere in the UK, the Multi-Centre Research Ethic Committee (MREC) in each of the eight English regions to be investigated must be consulted, involving a great deal of paperwork and an expensive fee. Before approaching the hospitals, the approval of the relevant LRECs would be required, too. In consideration of this and the financial costs and time constraints, the feasible number of hospitals for the research was narrowed down to four hospitals.

With the ethical issues in mind, the names of the participating hospitals would be presented in abbreviated form so as to not identify hospitals specifically. All the participants would be anonymously recorded for data analysis and the information gathered treated strictly confidentially.

5.5.3 Initial survey of catering operations in the acute NHS hospitals

With the purpose of selecting the representativeness of the samples, an initial survey was carried out to identify patterns of current practice in catering operations and to establish criteria of patients' food choices. The population of all 238 acute NHS Trusts in England was obtained by cross-referencing both the 1997/1998 IHSM Health Social Services Year Book (FT Healthcare, 1997) and the 1997 Directory of Hospitals and NHS Trusts (FT Healthcare, 1997) (Appendix 5.1). A letter with three questions on the catering systems and a request for a sample of the weekly menu was sent to the catering manager of each of the trusts.

With an 80.7 percent return rate, the results showed differences among and within the eight regions, but not significant enough to form recognisable patterns among the regions. There was a lack of agreement and standardisation regarding what constitutes a catering establishment. A majority of Trusts relied primarily on the batch cooking method to produce the meals and the nursing staff for meal service to deliver meals to patients. Traditional English foodstuffs dominated the menu with beef, potatoes, and beans being the most common meal options, but other cuisine also had a place on the menu, such as pasta, pizza, and rice. The findings were published in the *International Journal of Health Care Quality Assurance* (Hwang *et al.*, 1999) (Appendix 5.2).

Since the conclusion of the initial survey was that no patterns existed among the catering systems in the eight regions (before reform in 1999), it was decided to select hospitals within the South Thames region for the exploratory field research. A multiple-stage sampling method was implemented. Of the 32 acute trusts in the South Thames region, 17 used in-house catering operations, and 15 were contracted out to companies including Granada Healthcare, Gardner Merchant, Batman Healthcare,

Mediclean, and Interserve Facility management. It was decided that the field would be evenly selected between hospitals using In-house and Contracted-out catering operations.

5.5.4 The field for the Piloting questionnaire

In a pilot run, samples for piloting are selected according to criteria consistent with the method selected for the main study, as indicated by the following guidelines:

‘the respondents should be reasonably representative of the sample population’,
(Aaker *et al.*, 1995: 308)

The samples were therefore carried out in two NHS trusts within the South Thames region (at the time of piloting) that fulfilled the following criteria:

- Classified as an acute trust (according to the 1997/8 IHSM health and social yearbook)
- One from each of In-house or Contracted-out catering operation systems within the South Thames region, conforming to the current breakdown of catering systems within the region,
- Hospitals within the trust were approached for permission to access patients.

Hospital MU was the In-house caterer that was contacted, and after being refused by the first four contracted-out catering hospitals, Hospital SH also agreed. The decision to use 100 respondents was consistent with achieving the desired power levels.

Although both hospitals had a capacity of 500 – 600 beds, the response rate was very low due to patients’ being unsuitable or unavailable or due to a busy staff. To get 50 randomly selected participants from each hospital, the research was carried out in two visits a month apart among ten wards.

5.5.5 *The field for the main research*

Since two LREC Chairmen had responded to enquiries that the research did not require any ethical approval, it was decided to directly contact the hospitals with the request for participation.

Unfortunately, the boundaries of the eight regions had changed since April 1999 (as discussed in Chapter 2). The 32 acute trusts in the South Thames region were re-located into three different new regions; consequently the two pilot hospitals were not in the proposed field redefined as the South East region. This consists of 32 different acute Trusts (Appendix 5.3); 19 using in-house catering and 13 contracted-out catering. After considering the size of the population within the 14 Districts in the South East region, two Districts (Isle of Wight and West Kent) were excluded because of their extreme size compared with the rest. As a result, four out of the remaining 27 hospitals were selected, two each according to the catering operation being in-house or contracted-out, and then contacted for their approval.

5.5.6 *The samples for each phase*

After gaining the permission of the hospitals, three phases, as proposed in the theoretical framework (Section 5.2), were employed to investigate the conceptual gaps among the three groups: Patients, Service personnel, and Catering managers.

- Phase I was the in-patient questionnaire. Patients were recruited after consultation with the ward sister from among those with one or more days stay in the hospital. The valid sample was targeted at 150 from each of the four hospitals, irrespective of response rate and excluding incomplete returns.
- Phase II was the hospital staff questionnaire for those involved with meal services, such as charge nurses, nurses, Health Care Assistants (HCA), and domestic staff. Since a low response rate might be expected, any staff possibly involved with meal services were asked to participate the survey if they were willing to.

- Phase III was the interview with the four “elite” hospital catering managers. Marshall and Rossman (1995) described ‘Elite interviewing’ as

‘A specialised case of interviewing that focuses on a particular type of interviewee, who is considered to be the influential, the prominent, and the well-informed people in an organisation or community and are selected for interviews on the basis of their expertise in areas relevant to the research’ (p.83)

The trade-offs in elite interviewing are that the interviewees can provide an overall view of an organisation and its relationship to other organisations since their position is more likely than other participants to be familiar with the legal and financial structure of the organisation (Marshall and Rossman, 1995). They can also report on an organisation’s policies, past histories, and future plans from a particular perspective. Accessibility to elite may be difficult, and an elite person who is well practised in meeting the public may turn the interview around, thereby taking charge of it based on their wishes and predilections. A well-prepared interview protocol can moderate this effect.

5.6 Conclusion

The chapter has examined several elements essential to designing an empirical research. The process was first examined, giving an overview of the entire flow of the research. From the literature review, a theoretical framework to support the research was formulated that addressed the gaps in the quality of meal services. Keeping the framework in mind, the practicable research strategies were constituted with the intensive consideration of the pros and cons of each method considered. For this research, a multiple-method approach using mixed data collection methods was adopted, always with an eye towards reliability and validity. The overall scope of the research was discussed, and the most suitable sampling method to capture the required results was decided upon.

By reviewing the structure of the research methodology, this chapter has established an outline of the general goals and reasoning behind each phase of the research. The

next chapter explains the details of the procedures used in the surveys and interviews, scrutinises the rationale of the questionnaire development and then selects suitable data analysis techniques to examine the results and construct a conclusion that fulfils the research objectives.

Chapter Six

Chapter Six:

Methodology II: methods and techniques

6.1 Introduction

An important factor in any research is the reliability or validity of the primary data. While the previous chapter provided an overview of the methodological theory (or the why) underlying this research, this chapter presents an overview of the mechanical operation (or the how) of the study. It begins by elaborating on the questionnaire development for the three phases of the research, each examining one of three groups in the field. The following section of this chapter explores the methods of quantitative and qualitative analyses that when used may scientifically generate an overall picture of meal services in NHS acute hospitals. Each of these sections scrutinises the rationale for the implementation methods selected and their possible impact on the research.

6.2 Questionnaire Development

Keeping the aforementioned methods of data collection and sampling in mind, the questionnaires were built utilising a funnel approach, which starts off the module with a very broad and possibly attention grabbing question and then progressively narrows down the scope of the questions until in the end it comes to some very specific points (Oppenheim, 1992). An introduction stressing the confidentiality and anonymity of the study served to reassure potential respondents before the main body of the questionnaire, the development of which is discussed in the following sections.

6.2.1 The Exploratory Interview

Under the theoretical framework proposed in Chapter 5, exploratory interviews were conducted to investigate the suitability of the dimensions of patients' perceptions associated with hospital foodservice and to improve the conceptualisation of catering management. In-depth interviews were carried out to gather the perceptions of inpatients on such aspects as the quality of food, menu ordering, and interpersonal service. The interview protocol is shown in Appendix 6.1. With permission from the Chairman of the Local Research Ethics Committee and the hospital manager, a convenience sample of thirty inpatients from the surgical, geriatric, and general medical wards of a south London NHS acute hospital was compiled.

The 30 to 60 minutes of tape-recorded data per interviewee were transcribed into notes and distilled into manageable variables using a frequency system of context analysis. Using the Statistical Package for the Social Sciences software (SPSS 8.0), frequencies and χ^2 (Chi-squared) tests were conducted to determine associations among the variables.

Results of this initial interview with patients showed a generally positive impression of hospital meal service in relation to their current stay and the interpersonal service provided by the hospital staff. Over half of the respondents did not finish their meal, offering mixed reasons for this. Most respondents based their meal selection on the mood they were in at the time of choosing from the menu. The majority of the very positive comments towards staff service came from the elderly wards, with none from the medical wards. Among the ten different suggestions for possible improvement of hospital meal service, 'more choices on the menu' was the most frequently quoted. More importantly, results generated insights into nine dimensions of patients' perception toward meal service for the patient survey that might identify or influence satisfaction and the resulting outcome of food consumption. The nine dimensions were personal background, hospitalisation, availability, palatability, caring, communication, reliability, empathy, and responsiveness.

6.2.2 Phase I- patient satisfaction

6.2.2.1 Method

From the results of the exploratory interview, a questionnaire was designed in five sections (Appendix 6.2) and arranged on two sides of a single A3 size paper. The questionnaire started with a statement to express the importance of completing each question in each section as far as possible, with a dummy question to illustrate what was required.

Section one dealt with overall impressions of catering meal service regarding:

- **Food intake** As eating is the final result of meal service, the question was phrased as ‘How often do you completely finish your meal?’, with possible answers ranging from ‘1’ - not often to ‘7’ - very often.
- **Who should assist patients with food related enquiries.** The question was worded ‘Who do you think should help patients with any eating difficulties?’, with the options of ‘doctors’, ‘nurses’, ‘catering assistants’, and ‘others’ followed by a space to specify ‘others’.
- **The timing of meal service.** The question was ‘How do you find the timing of the meals served in this hospital?’, with responses ranging on a seven point scale from ‘1’ being very inconvenient to ‘7’ being very convenient.
- **Satisfaction with hospital foodservice.** Since patient satisfaction was a significant aspect of the outcome of healthcare (Arnetz and Bengt, 1996; Larson *et al.*, 1996; Woodside *et al.*, 1989), the question was ‘overall, how satisfied are you with the meals served?’, with options ranging from ‘1’ - completely dissatisfied to ‘7’ - completely satisfied.

A modified SERVQUAL instrument was adapted for this research as it deemed to be most appropriate for this type of investigation. The original version of SERVQUAL served as the basis for the instrument, as the practical difficulties of the modified

version was considered to be too complicated for respondents under hospitalisation (Section 4.3.4). Sections two, three, and four looked, respectively, at the expectations, perceptions, and importance of 19 items, which were generated from the results of the exploratory patient interviews and previous service quality research, especially from the catering industry (discussed in Chapter 4). Importance was included as theoretical and intuitive logic argues for its inclusion, and can help to prioritise meal service. The measurement used a 7 point Likert-type scale to determine the levels of agreement with each statement. As Gregoire (1994: 1131) concluded:

'a patient satisfaction questionnaire should allow patients to evaluate both the personnel delivering the meal tray and the quality of the food because both influence the patient's view of meal service', (p.1311)

The statements focused on the following dimensions:

- Hospitalisation,
- Availability,
- Palatability,
- Caring,
- Communication,
- Reliability,
- Empathy, and
- Responsiveness.

Table 6.1 lists these dimensions, their items and the statements were used to measure the patients' impressions of meal services.

Table 6.1: Statements on foodservice provided for patients

Dimensions	Items	Statements
Hospitalisation	Physical and social eating environment/ decor	Q5-A pleasant eating surrounding should be offered to stimulate the appetite.
		Q6-Social contact should be part of the mealtime routine.
Availability	Food choices/ variety of food	Q7-Menu should offer a good selection of meals.
	Quantity of food/ food size	Q8-Meals should smell delicious. Q9-Meal size should be according to individual needs.
Palatability	Flavour of food/ taste	Q10-The food should taste good.
	Attractiveness of tray	Q11-The food should look good on the trays. Q12-The food should be freshly prepared.
	Temperature of food (food served at right temperature)	Q13-Food should be served at the correct temperature.
Caring	Attitude of delivery staff	Q14-Staff should leave food within reach.
	Attitude of service staff	Q15-Staff should be polite and pleasant.
Communication	Usefulness of food and nutrition information	Q16-The menu should provide useful information on food and nutrition.
	Explanation of diet	Q17-Each dish on the menu should be clearly described.
Reliability	Timeliness of meal delivery	Q18-Enough time should be given to eat the food.
	Accuracy of items on tray	Q19-Meals should arrive exactly as ordered.
	Service reliability	Q20-Meals should be served around the same time each day.
Empathy	Customisation	Q21-Other food should be provided when a patient misses the regular meal service.
	Individual attentiveness	Q22-Patients should be given personal attention.
Responsiveness	Helpfulness for disabled patients	Q23-Staff should always be willing to help patients with eating difficulties.

Section five addressed the background of the respondents - their age, gender, occupation, medical ward, expected length of stay, and type of diet. The final question was open-ended allowing the respondent an opportunity to make comments on any topic related to catering services in hospitals.

After the contents of the questionnaire were developed, the software package Formic © Ltd. Version 3.0 (1996) was utilised to design the layout of the questionnaires. Some advantages of using Formic 3.0 to assist research are:

- Enhanced coding reliability of data,
- Elimination of keying errors associated with manual data entry,
- Conversion of datasheets for other statistical software and storage for analysis,

- Increased efficiency by mechanical scanning when processing large amounts of information (Phase I targeted over 600 valid samples.)
- Strengthen credibility with a professional presentation.

6.2.2.2 Data administration

An introductory letter emphasising the confidentiality of the research (Appendix 6.3) enclosed with a copy of the questionnaire was sent to catering managers to inquire about any hospital policy concerns, e.g. Ethical approval. After obtaining agreements from the chairmen of the Local Research Ethics Committee (LREC) (Appendix 6.4) and the hospital managers (Appendix 6.5), a letter once again emphasising the confidentiality of the research (Appendix 6.6) was delivered to the ward sister of each of the wards (chosen on the recommendations of the hospital managers) to explain the purpose of the study. The sisters were then contacted beforehand to arrange convenient times to administer the questionnaire. Upon arrival at the wards, the sisters were consulted to determine which patients would be suitable under these criteria: co-operative, conscious, and capable of answering questions. Patients with mental or physical problems or with intravenous feeding were not included. The self-administered questionnaires, which were anticipated to take only 15 minutes to complete, were handed out and collected the next day by the researcher, personally. The process was continued until reaching the targeted numbers from each hospital. The wards from which respondents were drawn were medical, elderly care, or surgical. Any missed questionnaires could be returned in envelopes provided to the wards.

6.2.2.3 Pre-Piloting

Before moving to the main research, a pilot study was carried out to test the appropriateness of questionnaire and data administration. The first 10 respondents among the patients of Hospital MU were used as pre-piloting for the purpose of clarifying the wording and sequencing of the questions by the double interview method. The procedure entailed presenting the draft questionnaire to selected respondents in the normal way, and then, after completion, they were asked a series of questions designed to uncover the respondent's interpretations of the key concepts

(Foddy, 1993). Six additional questions examined the time needed to complete the questionnaire, whether there were any uncomfortable, repeated, difficult or awkward questions, problem wording, or any further suggestions (Appendix 6.7).

The pre-piloting revealed the following:

- ◆ The average time to finish was approximately 12 minutes, with a mode of 10 minutes. The longest was 20 minutes because the respondent had poor eyesight.
- ◆ Eighty percent of the respondents did not find any of the questions uncomfortable.
- ◆ From an administrative standpoint, it was found that to collect the questionnaire the next day left too much time for the respondents to remember to fill it in, and some might get lost. An alternative method, suggested by one of the ward sisters, was to distribute the questionnaires to patients in the morning and gather them in the afternoon. This was adopted for further questionnaires.
- ◆ During the scanning process, many missing answers resulted from writing that was too light or slightly out of the box so the scanner could not read them. Also, two respondents answered the same question twice, or missed read a question. To improve the situation, a sentence was inserted before section one to encourage the completion of all the questions as much as possible: 'For accuracy, please complete each and every question in the survey.'
- ◆ Question 2 was identified as being difficult to understand. The phrase 'Eating difficulties' was confusing, so in the new draft it was changed to 'any food related enquiries'.
- ◆ Three respondents felt the questions were repeated because the introduction for each of the three sections was not clear enough or easy enough to see. This was strengthened in the new draft.

6.2.2.4 Piloting

It was estimated that approximately 27.6% of patients hospitalised at the time of the study completed a questionnaire (using an average of 20 patients per ward and ten wards from Hospital MU and nine wards from Hospital HSH). Patients who the nurses did not recommend, or were unable or unwilling to respond, or did not fill in more than two sections of questions, were not included in the results. Based on 105

valid questionnaires returned from the two pilot hospitals, the results were consistent with the proposed theoretical framework and previous researches in the field, but generated different dimensions from those discussed in Chapter 4. The perceptions were generally higher than the experiences; the resulting gaps between the two have a role in rating patient satisfaction. It also served as a validation for the work to date, and encouragement for the further development of the main study. Some improvements on the questionnaire were made in the area of:

- Highlighting the visual background of alternate questions to aid in readability and act as a guide linking the question with the answer.
- Giving more encouragement when interacting with patients and returning later in the day for collection, and handing out surveys to patients absent when visiting the first time to increase the number of responses.
- Altering the orders of the statements in Section two, three, and four, descending in accordance with the degree of factor loading from the results of the factor analysis.
- Rewording the phraseology of section four to more closely match the corresponding statements in section two and three.
- Instead of asking for the 'occupation' of the respondent, the respondents' gross head of household income was adopted since the occupation did not readily show a meaningful separation of the respondents' background. The pattern for different household income groups is similar to that for the levels of qualification and social class when relating diet quality and knowledge, as measured by the diet score of the Health Education Monitoring Survey (ONS, 2000). Diet quality also increased with increasing household incomes. While the British food survey grouped households into eight income groups (A1, A2, B, C, D, E1, E2 and OAP (Old Age Pensioner)) according to the ascertained or estimated gross income of the head or principal earner in the household, this study adapted the pattern into just six groups (A, B, C, D, E, OAP).

The final questionnaire as modified is in Appendix 6.8.

6.2.3 Phase II- meal service personnel

The second phase of the study extended the focus to the perceptions of meal service personnel.

6.2.3.1 Method

The initial meal service personnel questionnaire (Appendix 6.9) was designed to measure three aspects of the service orientation of employees who were involved in the meal service to patients. It again started with an example question for guidance.

Question one was a filter question that functioned both to measure the degree of the respondent's involvement with mealtime care and the suitability of the respondents. Using a seven-point scale varying from 'Never' to 'Always', it operated using the conditions that if the respondent has answered 'Never' to all the items, the questionnaire would be discarded. From Carr and Mitchell's (1991) proposed most frequent tasks involved in mealtime care (refer Chapter 2), question one has been adapted and integrated with the hospital meal service process as seen by Randall and Senior (1994). The ten resulting sub-questions, therefore, enquired into the degree of the respondent's involvement in the following tasks during their daily routine:

- Giving menu cards to patients,
- Assisting with patients' menu choices,
- Collecting and returning menu orders to the kitchen,
- Supervising the meal trolley,
- Serving food from the meal trolley,
- Checking patients' well-being at meal delivery,
- Assisting with eating problems as they occur,
- Collecting discarded dishes,
- Observing returned meal trays,
- Helping patients with food-related enquires.

The statements on the perceptions of those serving hospital meals in Question two were designed considering the suggestions of Gregoire's (1994) study on the patient meals delivered by catering employees vs. by nursing employees (refer Chapter 3) and corresponded with the dimensions involved in patients' satisfaction. Therefore,

the respondents were asked to rate their agreement with 17 service-orientated statements by using a seven-point Likert scale as follows.

1. Delivering meal trays to patients is one of the most important responsibilities of my job.
2. Our meal service procedures make it easy for me to give excellent patient service.
3. In this hospital, patient meal service is given the same importance as most other procedures.
4. Reporting what was left on the tray to the kitchen is an important issue in terms of waste control.
5. I ensure patients get the meal that they ordered.
6. I ensure the patient can reach the plates when I serve them.
7. I will not collect the food tray without the patient's permission.
8. I was trained to give good service to patients at meal times.
9. I will notice if a patient misses the regular meal service and make sure alternative food is provided.
10. I am polite and pleasant when delivering meal trays to patients, even if they are grouchy.
11. I do not enjoy delivering meal trays to patients.
12. Patients treat me with respect.
13. Patients show understanding and patience when we are really busy.
14. An important part of my job is to help those patients with eating difficulties.
15. Observing the amount of food eaten by a patient is an important part of patient care.
16. Ensuring a patient eats enough of the right types of food is an important part of patient care.
17. Patients show their appreciation for individual care.

Question three sought the respondent's opinion on the degree of responsibility the various possible meal service personnel (e.g. doctors, nurses, catering assistants, domestic staff, and kitchen staff) should have over the feeding of patients.

For the purpose of triangulation analysis, statements 5, 6, 7, 9, 10, 12, 13, 14, 16, 17 and question three overlapped issues from the Phase I - patients survey (as discussed in Table 5.4).

Question four asked for respondents' demographic information, such as age, gender, level of education, years of experience at the hospital, and years of experience delivering meal trays.

An open-ended question at the end functioned to capture further issues or suggestions that the respondent would like to comment on in relation to hospital meal service.

As with Phase I, the format of the questionnaire was designed with Formic © 3.0 software.

6.2.3.2 Data administration

The survey was carried out at the same hospitals used in Phase I. Again a letter was sent to the catering managers, the hospital managers and the chairman of the LREC for permission, accompanied with a thank you for participating in Phase I (Appendix 6.10) and a sample of the questionnaire. After obtaining agreement from the hospitals (Appendix 6.11), a visiting time was arranged with the related in-charge managers.

All the hospitals employed two teams to process the meal service, nursing staff at the wards and the department facility management staff. The facility service managers agreed to distribute the questionnaire to their staff due to the shift variations (an example in Appendix 6.12), while the nursing staff received the questionnaire from the ward sisters after the researcher visited the ward. All participants received a return envelope to ensure the confidentiality of the data.

6.2.3.3 Piloting

With 98 useable questionnaires evenly distributed between the two pilot hospitals, the findings supported previous research in this area (refer Chapter 2). The questions served to confirm that the two teams - nursing staff and catering staff - had different focuses, with resulting different beliefs when participating in all aspects of mealtime service. The issues of communication and co-operation amongst the different hospital staff or between departments were found to be disruptive, as meal service seemed to be treated as an extra duty or of a lower priority by staff.

The overall structure of the questionnaire was proven sound with some minor adjustments:

- The statements in Question two were re-arranged descending according to the degree of factor loading generated by the factor analysis of the pilot study.

- Question three added 'Dieticians' as a choice of the hospital staff that should be responsible for mealtime care.
- More instructions in the covering letter and the end of pages were added to remind the respondents about the requested return date and reduce the turnaround time. The time lag between handing out the questionnaire and receiving replies was longer than expected.
- Background shading was reduced because of problems with the reading ability of the scanner.

Apart from these corrections, the main study was processed as proposed and the final questionnaire is shown in Appendix 6.13.

6.2.4 Phase III- in-depth interviews with catering managers

6.2.4.1 Method

In order to more fully understand the meal service provided by the hospital, a face-to-face interview with catering managers was used to provide background information on the catering operation and more fully examine the issues that emerged from Phase I and Phase II. The interview protocol mainly focused on three aspects: the history of the catering operation, meal service routines, and quality assurance procedures (Appendix 6.14 for the initial interview protocol). The interview finished with an open-ended-question for other comments the previous questions had not covered or any other points the manager wished to convey.

6.2.4.2 Data administration

The appointment for the interview was scheduled with the catering manager on the phone. The interviews took place in a quiet meeting room or managers' office and were recorded on paper and with a tape recorder for later transcription. After a friendly greeting, the interview started with a brief introduction stating the purpose of interview, outlining the areas the questions focused on, and emphasising the confidentiality of the conversation. Consent was obtained from the manager for the recording of the interview before beginning.

6.2.4.3 Piloting

A pilot study was warranted to clarify the instructions and exclude any wording liable to misunderstanding or misinterpretation. Two interviews were carried out with the catering managers from the pilot hospitals. Each interview lasted at least one hour and largely centred around the issues examined in Chapter 2 and 3. The results showed that different catering operations seemed likely to have different impacts on the patients' meal service. Each system presented its own benefits, but came with some disadvantages as well.

Although the initial interview protocol had captured most of the important issues concerning managing meal services for patients, some improvements were added to more closely link with Phase I and Phase II.

- More prompts were appended to Question 2 on the meal service routine in four areas (food preparation method, menu ordering system, menu design, and meal service personnel) to enhance the depth of inquiry.
- A question was added on whether managers were aware of their patient's satisfaction with a prompt asking on what evidence they based that opinion, to compare with the findings from Phase I.
- The role of the hospital staff (nurses, catering staff, domestic staff, kitchen staff, dieticians, and doctors) was included from Phase I.
- The years the participant has been involved in hospital catering was requested for the purpose of analysis.
- Before ending the interview, a question was added on what the respondent thought about the future of hospital catering.

The final interview protocol is documented in Appendix 6.15.

In summary, the outlines of the research in each phase, and their samples, methods, and objectives are illustrated in Table 6.2.

Table 6.2: The Research Phases

Phase	Sample	Methods	Objectives
Initial survey (Dec. 1997-Mar. 1998)	Hospital caterers in England Acute NHS Trusts (238), whole population	Bulk Mailing <ul style="list-style-type: none"> 3 questions on catering system, request for sample of weekly menu 	Addressing the question of the representativeness of the samples
Exploratory interview (Nov. -Mar., 1999)	Convenience sampling, in-patients (30 patients) from HMU.	Semi-structured open-ended interview on food quality, menu ordering, and service provided by hospital staff	Exploring dimensions of patients satisfaction toward meal service
Pilot tests of the three phases (Apr. - Nov., 1999)	Two pilot hospitals HMU (in-house) and HSH (Contract-out) in the South Thames region. Phase I- collected approximately 50% each of total 105 random respondents. Phase II - collected 98 valid random respondents, Phase III-two interviews with catering managers.	<ul style="list-style-type: none"> Questionnaire with 7-point Likert scale measurement Standardised multiple-choice questionnaire with one open- ended question In-depth interview with catering managers on the background of the operation 	<ul style="list-style-type: none"> Testing questionnaire wording, procedures, etc. Investigating the outcome of the piloting data.
Phase I: patient satisfaction survey (Aug. 1999-	Targeting 150 random sampling in-patients per hospital distributed from two in-house hospitals and two contract-out hospitals in the South East region.	Standardised multiple-choice questionnaire with one open-ended question	Investigating the gaps between patients' expectations and perceptions
Phase II: questionnaire with meal delivery personnel	Targeting 100 respondents per hospital randomly selected from the meal delivery personnel (nurses, catering assistants) of the same hospitals as Phase I.	Standardised multiple-choice questionnaire with one open- ended question	Investigating the views of meal delivery personnel (nurses and catering assistants, and any related persons)
Phase III: In-depth interview (-Mar., 2000)	Four hospital catering managers from the hospitals selected in Phase I.	Interview protocol	Investigating questions raised from Phrase I & II and other related topics

6.3 Statistical techniques for data analysis

After collection from the field, the data from Phase I and II were captured via an electronic scanner and exported into SPSS spreadsheets for quantitative analysis and processing. The data were checked against the hard copy to correct any entry errors or inconsistent codes. Any missing values were traced to determine whether they were miscoded or just a non-response answer.

The four interviews from Phase III were transcribed for qualitative analysis. The advantage of using transcripts is to permit the reader direct access to the data about which claims are being made, thus making analysis subject to detailed public scrutiny and helping to minimise the influence of personal preconceptions or analytical biases (Silverman, 1993). As the objective of the research is merely to gather information from the manager's point of view, the interviews were transcribed without detailing breaks and voice changes.

6.3.1 Quantitative analysis

The Statistical Package for the Social Sciences, Windows Version 9.0 (SPSS® v.9.0 and 10.0) and Excel 97 were used to analyse the quantitative data obtained from the research instruments.

6.3.1.1 Descriptive statistics

A descriptive statistics procedure was applied to develop a profile of the total sample, allowing for a picture of the distribution of data for each variable. Frankfort-Nachmias and Nachmias (1997) elaborated that:

'Descriptive statistics enable the researcher to summarise and organise data in an effective and meaningful way and provide tools for describing collections of statistical observations and reducing information to an understandable form' (p.355).

Frequencies and percentages were calculated for all variables of three Phases. All quantitative responses from Phase I and II were computed for measures of central tendency (mean, median, mode), measures of variability around the mean (Standard Deviation (SD) and variance), and measures of deviation from normality (Skewness and Kurtosis). When the value of the coefficient of skewness was over +8 or the coefficient of kurtosis exceeded +70, an outlier would be identified and either removed from the data set or brought into the distribution by transformation or re-coding (Coakes and Steed, 1997).

As per gap theory (the gap between expectations and perceptions by Parasuraman, Berry, and Zeithaml (1988) discussed in Chapter 4), the gaps were individually calculated by subtracting the values in Section Two of Phase I from the values in Section Three of Phase I, and then multiplied by the values on the aspect of importance (Section Four of Phase I). The equation for the Weighted Gap Measure (WGM) is therefore defined in Equation 6.1.

Equation 6.1: Weighted Gap Measure (WGM)

$$WGM_j = \sum (P_{ij} - E_{ij}) \times I_{ij}$$

From the result of the equation, the WGMs of each of the statements were used for factor analysis to summarise the statements into manageable dimensions.

6.3.1.2 Factor Analysis

The purpose of applying factor analysis is to create correlated variable composites from the original attributes ratings, and obtain a relatively small number of variables which explain most of the variances among the attributes (i.e. those that may most likely create the gaps between patients' expectations and experiences). The derived factor scores are then applied in subsequent analysis (i.e. to predict patients' satisfaction and the levels of food intake from Phase I). Hair *et al.* (1998) explained that:

'The purpose of factor analytic techniques is to find a way to condense (summarise) the information contained in a number of original variables into a smaller set of new,

composite dimensions or variates (factors) with a minimum loss of information-that is, to search for and define the fundamental constructs or dimensions assumed to underlie the original variables' (p.95)

Before applying the factor analysis, there are a number of assumptions and considerations to be monitored, as suggested by Coakes and Steed (1997: 184).

- **Sample size** –a minimum of five subjects per variable is required.
- **Normality**
- **Linearity**
- **Outliers among cases**
- **Factorability of the correlation matrix** (this could be judged in Stage 3 of the factor analysis procedure)
- **Outliers among variables**

Coakes and Steed (1997) stated that any outlier should be deleted because it may distort the analysis, but Hair *et al.* (1998) suggested that outliers should be retained to ensure generalisability to the population unless there was demonstrable proof that they are truly aberrant and not representative of any observations.

Seven stages of factor analysis were applied to summarise the data from Q 3 and Q4 - the patients' expectations and experiences in Phase I of this research and Q2 - the meal tasks as part of service personnel's daily routine and Q3 -beliefs statements of service personnel from Phase II of this research (Figure 6.1). Stage 1 was to identify the objectives of the Factor Analysis. In this case, it is to better understand patients' expectations and experiences toward foodservice in NHS hospitals and the beliefs of the service personnel (refer to Chapter 3). Stage 2 was to identify the structure of the relationships among the variables, referred to as R factor analysis, which analyses

'a set of variables to identify the dimensions that are latent (not easily observed) and [...] applied to a correlation matrix of the individual respondents based on their characteristics' (Hair *et al.*, 1998: 95).

Stage 3 was to confirm the appropriateness of the factor analysis, as assessed by the correlation matrix. The Bartlett test of sphericity was applied to detect the statistical probability that the correlation matrix has significant correlations among at least some of the variables. In addition, a measure of sampling adequacy (MSA) such as the Kaiser-Meyer-Olkin measure was used to quantify the degree of inter-correlations among the variables. As a guide 0.8 or above is considered meritorious; 0.7 or above, middling; 0.6 or above, mediocre; 0.5 or above, miserable; below 0.5, unacceptable (Hair *et al.*, 1998: 99).

Stage 4 was to derive the factors and assess overall fit. Principal component analysis was utilised because the primary concern was to predict the minimum number of factors needed to account for the maximum portion of the variance represented in the original set of variables; as compared with common factor analysis, which has more restrictive assumptions, use of only the latent dimensions, and is viewed as more theoretically based. As the statements in Phase I and Phase II were suggested from the results of the literature review and have undergone piloting procedures, the items are focused on the issues. The number of factors to extract was based on the criteria of an eigenvalue greater than one being considered significant because any individual factor should account for at least as much as a single variable to be retained for interpretation (*ibid.*). The factors that were considered insignificant were disregarded. A solution that accounts for at least 60 percent of the total variance is considered as a satisfactory solution.

Stage 5 was to interpret the factors. When the initial factor matrix was computed, the factor loading might warrant either an orthogonal or oblique rotation (i.e. Varimax or Oblique) to offer the most adequate interpretation of the variables under examination. Hair *et al.* (1998) suggested that Varimax rotation seemed to give a clearer separation of the factors compared with other methods. Next, the criteria for the significance of factor loadings were determined according to the guidelines in Table 6.3, so that the communalities of each variable should exceed 0.5 to offer sufficient explanation within one factor. The factor structure matrix is then labelled in accordance with the research concepts.

Table 6.3: Guidelines for identifying significant factor loadings based on sample size

Factor loading	Sample size needed for significance ^a
0.30	350
0.35	250
0.40	200
0.45	150
0.50	120
0.55	100
0.60	85
0.65	70
0.70	60
0.75	50

^a Significant is based on a 0.05 significance level (α), a power level of 80 percent, and standard errors assumed to be twice those of conventional correlation coefficients.

(Hair *et al.*, 1998: 112, quoted from computations made with *SOLO POWER Analysis*, BMDP Statistical Software, Inc, 1993)

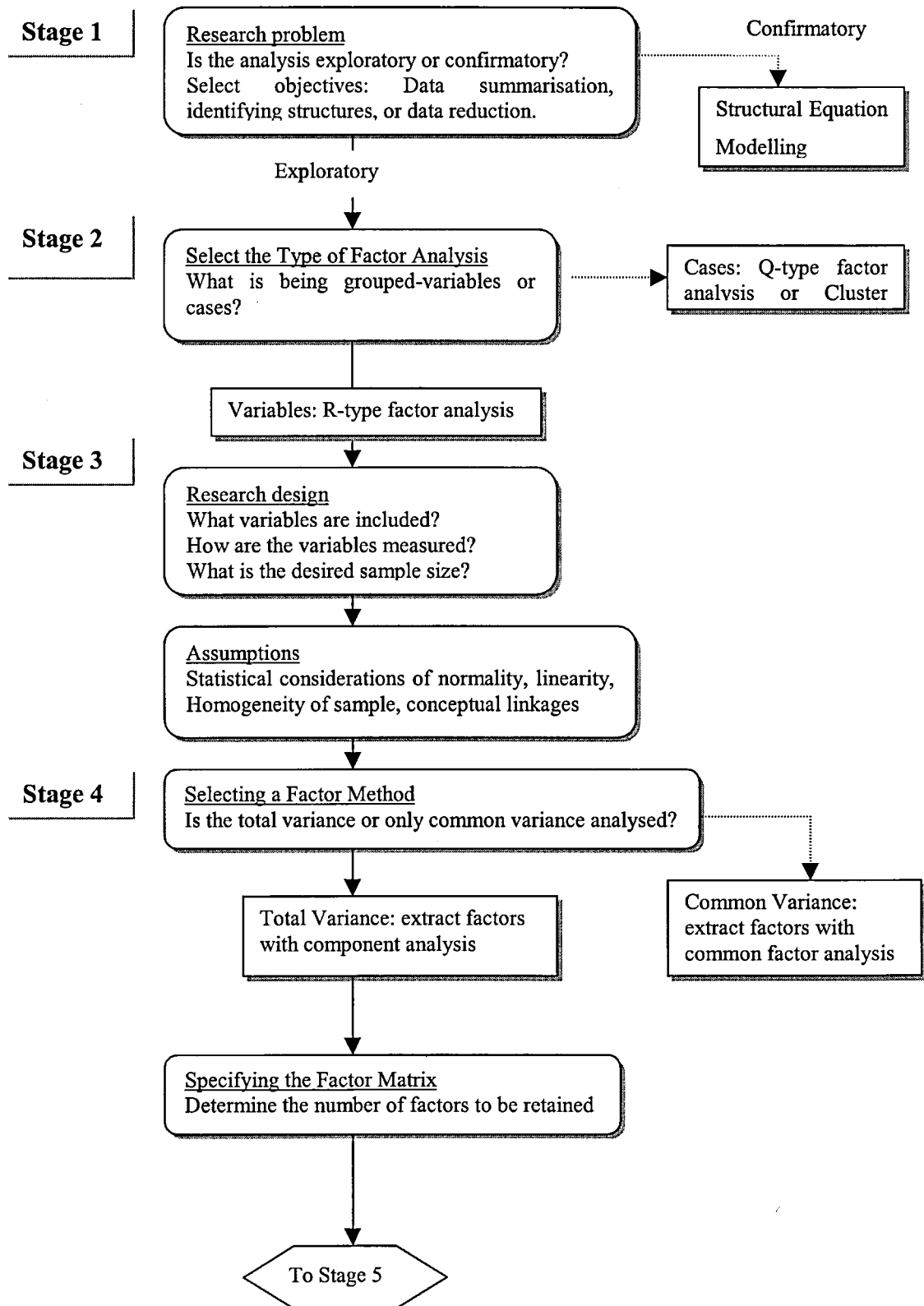
Stage 6 was to assess the validity and reliability of the results of the factor analysis by the split samples method and the value of Cronbach's alpha coefficient which can range from zero (no internal consistency) to one (complete internal consistency). Nunnally (1978) and Hair *et al.* (1998) suggested the lower limit for Cronbach's alpha was 0.7 which might be decreased to 0.6 in exploratory research. Before running Cronbach's alpha analysis, all the component variables should be verified as being coded in the same direction (Frankfort-Nachmias and Nachmias, 1996). Therefore, the values from question 2p in Phase II ("I do not enjoy delivering meal trays to patients") were reversed on the scale before the reliability analysis.

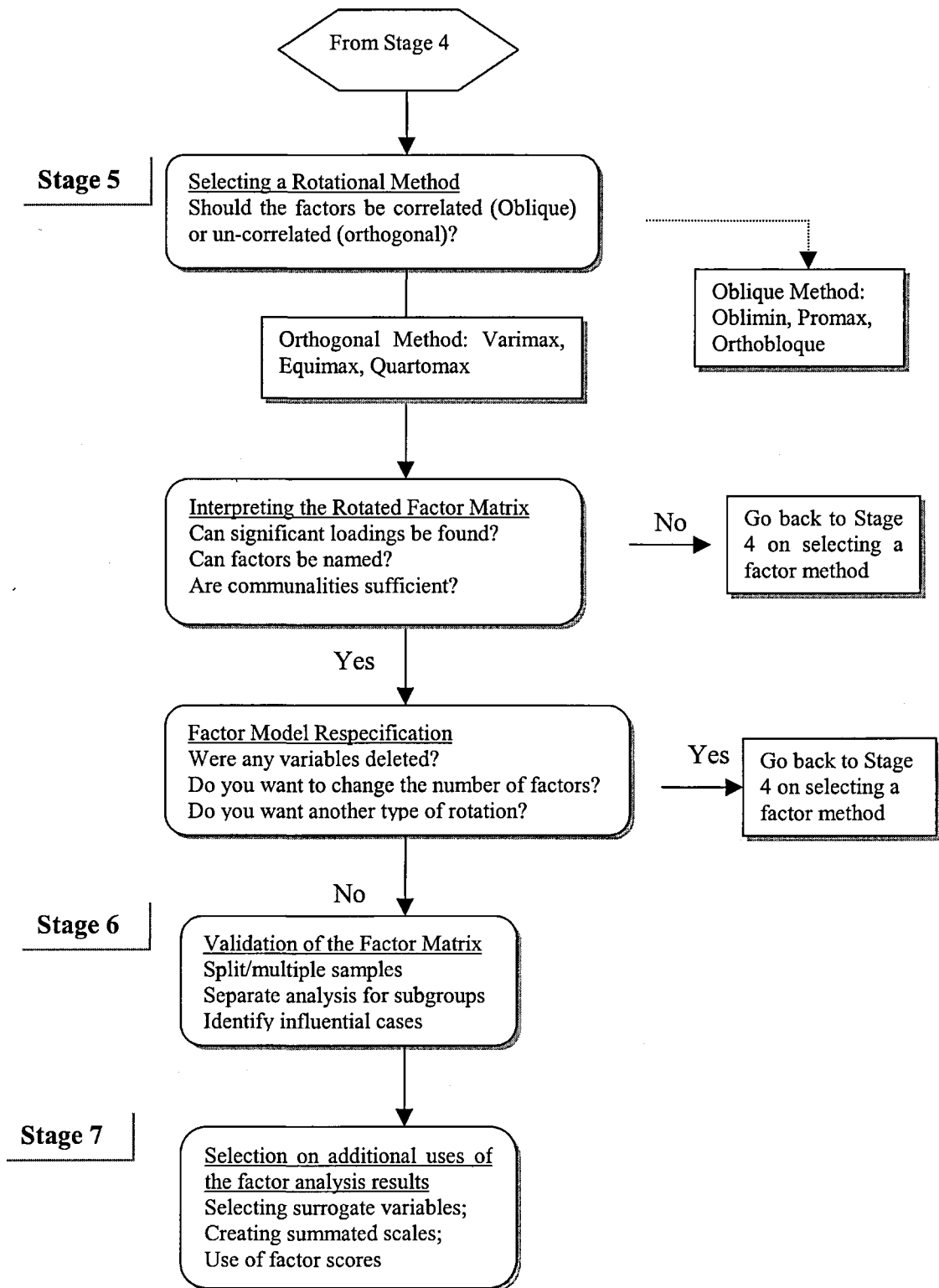
Stage 7 was to identify appropriate variables for subsequent application to other statistical techniques. Hair *et al.* (1998) outlined three options of data reduction to be:

- **Selecting surrogate variables** - By examining the factor matrix, the highest factor loading on each factor acts as a surrogate variable that is representative of that factor. The method is simple and easy to administer and interpret, but it has disadvantage of not representing all of the facets of a factor and being prone to measurement error.
- **Creating summated variables** – All of the variables loading highly on a factor are combined and the total (the average score of the variables) is used as a replacement variable. The abilities of the summated scale to portray complex concepts in a single measure and reducing measurement error can be essential in forming the conceptual and empirical foundation.
- **Computing factor scores** – Factor scores are measures of each factor computed for each subject and conceptually represent the degree to which each individual scores high on the group of items that have high loadings on a factor. The factor score has the advantage of representing a composite of all variables loading on the factor; however, it may potentially present some degree of influence in computing the factor scores and make interpretation more difficult.

The option chosen was based on the results of the correlation of the scores from each method since the objective of the factor analysis is to reduce the number of factors and should represent the individuality of each factor in this study.

Figure 6.1: Stages 1-7 in the Factor Analysis Decision Diagram





Note: —→ was used in this research, and→ was considered inappropriate to apply in the data analysis.

(Hair *et al.*, 1998: 94,101)

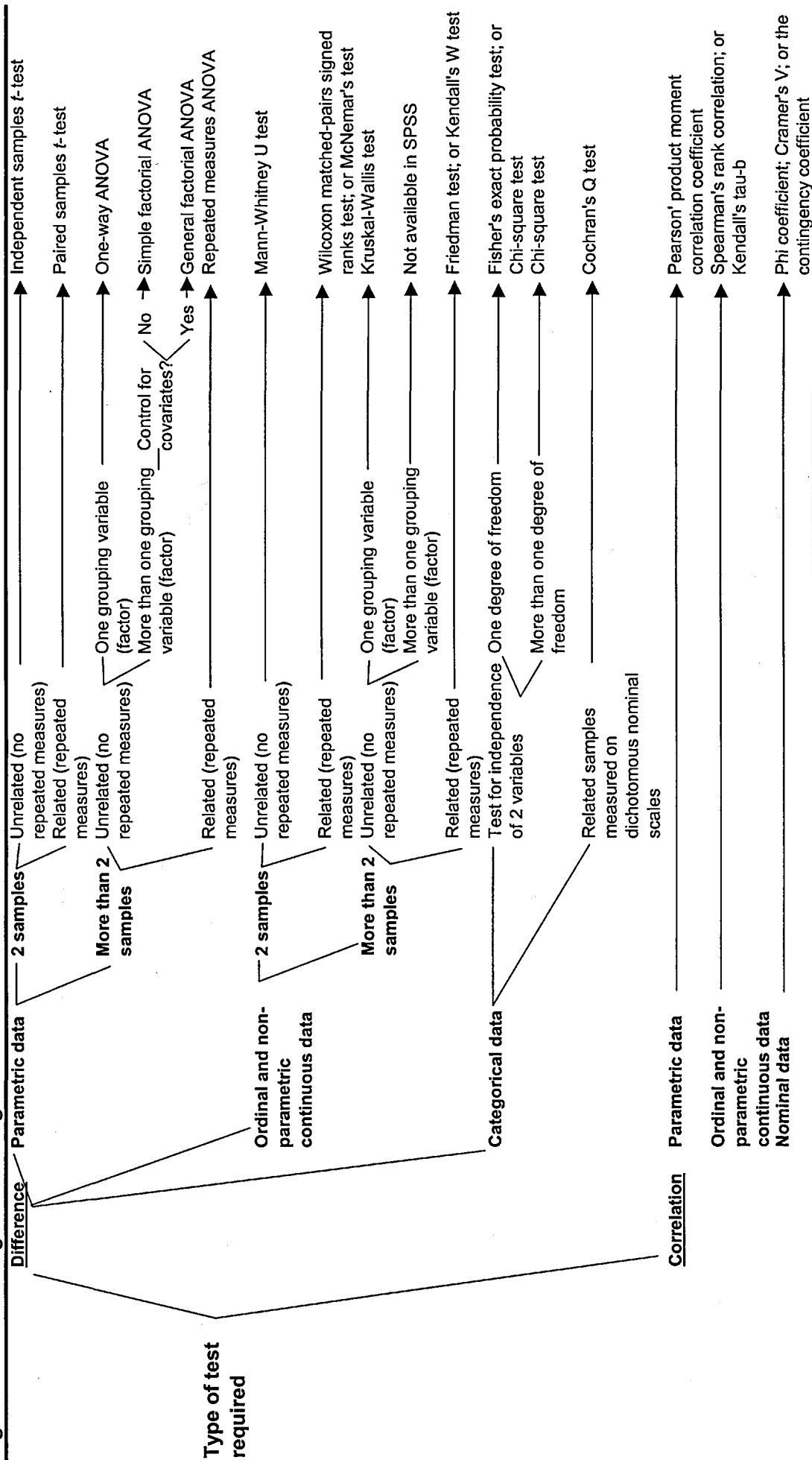
6.3.1.3 Inferential Statistics

With inferential statistics, it is possible that conclusions about a population can be drawn from a sample. Rose and Sullivan (1996) delineated that:

'Inferential statistics permit the researcher to demonstrate the probability that the results deriving from a sample are likely to be found in the population from which the sample has been drawn, and [...] to generalise from representative sample, by applying tests of significance to patterns found in these samples, in order to determine whether these hold for populations as a whole.' (p.240).

Figure 6.2 illustrates the decision process for choosing suitable statistical tests.

Figure 6.2: A flow diagram showing an overview of the choice of statistic test



Interpreting statistical inferences requires some considerations regarding statistical significance and statistical power. All tests were judged using 0.05 as the level of significance, indicating a 95% confidence interval.

Chi-square test

The relationship between the responses regarding meal services and the demographic variables of the respondents (i.e. respondents' gender, age, type of ward, length of stay, type of diet, and gross income of head of household in Phase I and respondents' age, gender, and job title in Phase II), were determined by χ^2 analysis. For this test statistic to be reliable, two requirements needed to be met:

- Not more than 25% of cells have an expected frequency of less than 5.
- None of the expected frequencies are less than 1. (Kinneary and Gray, 1997; Bryman and Cramer, 1999)

One-way Analysis of Variances (ANOVA) with Multiple Comparisons

When a single independent variable with three or more categories is compared for the possibility of differential impact with the dependent variable (integer/ratio measure), repeated *t*-test on pairs would not be practical since the use of more than one would raise the probability of committing a Type I error (Black, 1999). A solution would be to use the One-way analysis of variances procedure (One-way ANOVA). When performing One-way ANOVA, three basic assumptions underlie the results (Coakes and Steed, 1997; Norušis, 1997; Black, 1999):

- Independent random samples have been taken from each population.
- The dependent variable generates interval/ratio data and the data of the populations or sample are normally distributed from the histograms for each of the groups.
- The homogeneity of variances is equal across groups. SPSS provides Levene's test to evaluate the equality of variance.

When the variance showed statistical significance on the heterogeneity of variance, the transformation of the data can be applied in four ways - Arcsine, Square root, Logarithmic, or Reciprocal (Howell, 1997; Black, 1999). If the variables still

showed homogeneity even after these transformation procedures were performed, the data would be treated as ranked and a non-parametric test employed, such as the Kruskal-Wallis H test as an alternative to One-Way ANOVA (Normusis, 1997; Black, 1999).

If the results of the ANOVA test produced a statistically significant *F*-ratio (between-groups mean square/ within-groups mean square), further multiple comparisons would be computed to identify where the differences are (George and Mallery, 2000). Black (1999) delineated some of these tests, with the post hoc tests in order of increasing conservativeness of avoiding Type I and Type II errors (Table 6.4). Scheffé and Bonferroni are probably the most conservative of the set (George and Mallery, 2000). The more options a test offers the stricter it is when it comes to determining significance. Bryman and Cramer (1999) chose the Scheffé test because it is the most conservative in the sense that it is least likely to find significant differences between groups; that is, to make a Type I error. However, Coakes and Steed (1997) suggested the Tukey HSD post-hoc test is more lenient than the Scheffé test and allows the researcher to perform every possible comparison but is tough on rejecting the null hypothesis. As Norusis (1997) recommended the Bonferroni procedure, was one of the simplest tests, which adjusts the observed significance level by multiplying it by the number of comparisons being made. Therefore, the Tukey post-hoc test and Bonferroni test were applied to find out which pairs had showed differences.

Table 6.4: Some Multiple Comparison Techniques, in order of conservativeness for the six possible *post hoc* tests

	Test	Comparison	Description	A priori/post hoc
Least ↑ Conservative ↓ Most	Multiple t-tests	Pairwise	Standard t-test (not recommended)	Either
	Duncan	Pairwise	q-statistic, where q_{crit} is dependent on df and an α that increases with number of steps in the range, $\alpha =$ constant	Post hoc
	Newman-Keuls	Pairwise	q-statistic, where q_{crit} is dependent on df and r , the number of steps in the range, $\alpha =$ constant	Post hoc
	Tukey B	Pairwise	q-statistic, where q_{crit} is the average of those for Tukey A and Newman-Keuls	Post hoc
	Tukey A	Pairwise	q-statistic, where q_{crit} is constant no matter how many steps apart	Post hoc
	Scheffe	any combination	F-statistic, where F'_{crit} is constant and based upon F_{crit}	Post hoc
	Bonderroni t (Dunn's)	any combination	Modified t-test, where t'_{crit} is dependent on df and number of comparisons to be made	A priori
	Dunnett's	against a control	Modified t-test, between each group with a control (or a single group), where t'_{crit} is dependent on df_{error} and number of means, constant α_{FW}	Post hoc

(Black, 1999:467)

Independent t-test

Following the path of Figure 6.1, an independent *t*-test was computed to compare the mean difference in the variable between two groups (i.e. gender, type of catering). The same assumptions as One-way ANOVA were applied to determine the appropriateness of employing the test; if there are any violations, an alternative method to use is a non-parametric test (Mann-Whitney U test).

Paired t-test

With the same assumptions as Independent *t*-test, a paired *t*-test was employed to determine the difference between the expectations and experiences of meal services in Phase I.

6.3.1.4 Measures of Association

The association between any two variables can be represented by a data matrix produced by the joint frequency distribution of the two variables. Such measures of relationship, often referred to as correlation coefficients, reflect the strength and the direction of association between the variables and the degree to which one variable can be predicted from the other (Frankfort-Nachmias and Nachmias, 1996). Several commonly used measures are Lambda, Gamma, Kendall's tau-b, Chi-square, and Pearson's product-moment correlation coefficient. Table 6.5 elaborates on each measure of association.

Table 6.5: Five measures of association

Measure	Greek symbol	Type of data	Meaning
Lambda	λ	Nominal	Based on a reduction in errors based on the mode and ranges between 0 (independence) and 1.0 (perfect prediction or the strongest possible relationship)
Gamma	Γ	Ordinal	Based on comparing pairs of variable categories and seeing whether a case has the same rank on each. Ranges from -1.0 to +1.0, with 0 meaning no association.
Kendall's tau-b	T	Ordinal	Based on a different approach than Gamma and takes care of a few problems that can occur with Gamma and ranges from -1.0 to +1.0, with 0 meaning no association.
Pearson's product-moment correlation coefficient	r	Interval, Ratio	Used for the mean and standard deviation of the variables to tell how far cases are from a relationship (or regression) line in a scatterplot and ranges from -1.0 to +1.0, with 0 meaning no association.
Chi-square	X^2	Nominal, Ordinal	Based on sum of each difference squared divided by the expected value of the cell to determine whether there is an association. The larger chi-squared is, the stronger the association. If chi-squared is zero, the data are independent.

(Neuman, 2000:332)

When there is an assumption of linear, additive and asymmetric relationships among variables, the application of path analysis presents a causal model for understanding either direct or non-direct relationships. Frankfort-Nachmias and Nachmias (1996) defined path analysis as:

'a multivariate technique that uses both bivariate and multiple linear regression techniques to test the causal relations among the variables specified in the model. It involves three steps: drawing of a path diagram based on theory or a set of hypotheses, the calculation of path coefficients (direct effects) using regression techniques, and the determination of indirect effects.' (p.594)

The strengths of relationships are calculated from a development of multiple regression analysis to show which independent variables and which combinations of these variables best explain the dependent variables, and it is expressed by a path coefficient (β) linking each pair of variables along the route (Christopher and Elliott, 1970). The results indicate the single direct path and all possible indirect paths between the two variables. By diagramming a network of relationships among variables, Babbie (2000) concluded that the path analysis provides an excellent way of displaying explanatory results for interpretation.

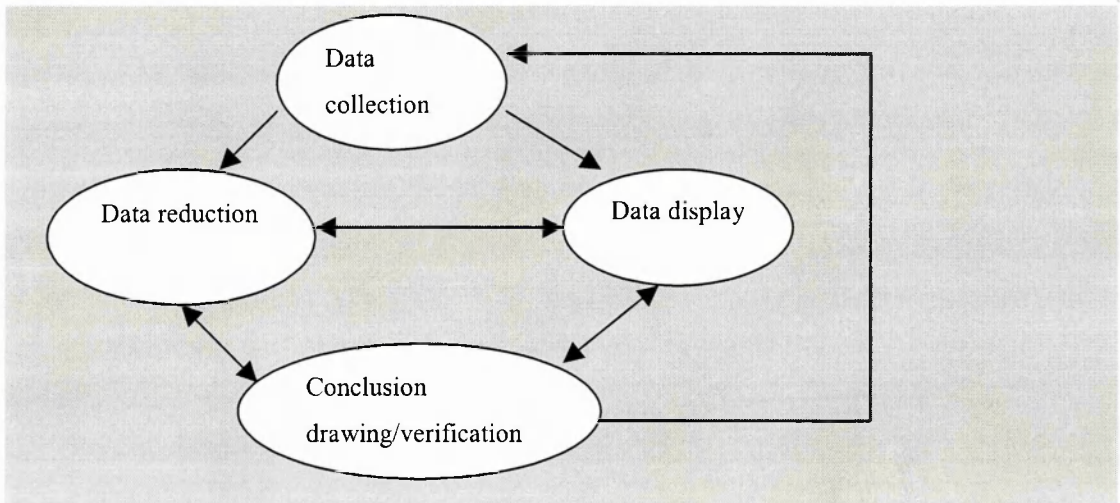
In this empirical research, the measures of correlation should reveal the similarity of the variables, but not necessarily the causal link. With the application of multiple regression to the data, a path analysis can establish a graphical representation of the Phase I results. This will show patients' satisfaction or food intake as dependent variables of one or more factors, in either direct or indirect cause relationships, to explain the phenomena of patient meal service in hospital.

6.3.2 *Qualitative analysis*

The qualitative data (e.g. open-ended questions yielding suggestions or comments from Phase I and II and interview transcripts of Phase III) were analysed using three general concepts suggested by Miles and Huberman (1994): data reduction, data display, and conclusion drawing/ verification (Figure 6.3). The coding of data (data reduction), leads to new ideas on what should go into the matrix (data display). Entering the data requires further data reduction. As the matrix fills up, preliminary conclusions are drawn, but they may lead to the decision to add another column to the matrix to test the conclusion. These three types of analysis activities then form an

interactive and cyclical process that can then lead back to the activity of data collection itself.

Figure 6.3: Components of Data Analysis: Interactive model



(Miles and Huberman, 1994: 12)

With these concepts in mind, the practical process for qualitative data analysis followed the 14 steps suggested by Miles and Huberman (1994), as summarised in Table 6.6.

Table 6.6: Qualitative data processing steps

Steps	Activity
1. Making notes in the field or tape recording	
2. Writing up or transcribing field notes	
3. Editing	Correcting, extending, or revising field notes
4. Coding	Attaching key words or tags to segments of text to permit later retrieval
5. Storage	Keeping text in an organised database (SPSS)
6. Search and retrieval	Locating relevant segments of text and making them available for inspection
7. Data linking	Connecting relevant data segments with each other, forming categories, cluster or networks of information
8. Memoing	Writing reflective commentaries on some aspects of the data, as a basis for deeper analysis
9. Content analysis	Counting frequencies, sequences, or locations of words and phrases
10. Data display	Placing selected or reduced data in a condensed, organised format, such as matrix or network, for inspection
11. Conclusion drawing and verification	Aiding the analyst to interpret displayed data and to test or confirm findings
12. Theory building	Developing systematic, conceptually coherent explanations of findings: testing hypotheses
13. Graphic mapping	Creating diagrams that depict findings or theories
14. Preparing interim and final reports	

(Miles and Huberman, 1994: 44)

Therefore, in this research the coding scheme outlined in Table 6.7 was based on the patterns found in the results of the factor analysis of phase I. Three dimensions were formed to group the 19 attributes of meal services. Each attribute was then coded into positive or negative divisions according to the tones of the comments toward the meal services. In addition, two more codes were added to reflect on other attributes, managerial issues on staff duties and hospital environmental constraints, which the patients survey (Phase I) had not covered.

Table 6.7: Coding scheme of patients' comments

Dimensions	Attributes	P/N	Code		
OVERALL	Overall impressions on meal service	Positive	Overall	+	
		Negative	Overall	-	
Food properties	Overall or general impressions on food	Positive	FOO	OVA	+
		Negative	FOO	OVA	-
	Flavour or taste of food	Positive	FOO	TAS	+
		Negative	FOO	TAS	-
	Aroma or smell of food	Positive	FOO	ARO	+
		Negative	FOO	ARO	-
	Freshness of food	Positive	FOO	FRE	+
		Negative	FOO	FRE	-
	Presentation of food or prepare	Positive	FOO	PRE	+
		Negative	FOO	PRE	-
	Temperature of food	Positive	FOO	TEM	+
		Negative	FOO	TEM	-
	Variety of food	Positive	FOO	VAR	+
		Negative	FOO	VAR	-
	Description of food content on menu	Positive	FOO	DES	+
		Negative	FOO	DES	-
	Menu ordering	Positive	FOO	ORD	+
		Negative	FOO	ORD	-
Interpersonal services	Overall or general impression with staff	Positive	PER	OVA	+
		Negative	PER	OVA	-
	Attitude of staff being polite and pleasant	Positive	PER	ATT	+
		Negative	PER	ATT	-
	Timing of meal delivery	Positive	PER	TIM	+
		Negative	PER	TIM	-
	Placing of food in front of patients	Positive	PER	PLA	+
		Negative	PER	PLA	-
	Helpfulness of staff	Positive	PER	HEL	+
		Negative	PER	HEL	-
	Individual attentiveness	Positive	PER	IND	+
		Negative	PER	IND	-
Length of meal time	Positive	PER	LEN	+	
	Negative	PER	LEN	-	
Alternative food provided if a meal is missed	Positive	PER	ALT	+	
	Negative	PER	ALT	-	
Environmental presentation	Overall impression of environment	Positive	ENV	OVA	+
		Negative	ENV	OVA	-
	Mealtime surroundings and facilities provided (i.e. cutlery)	Positive	ENV	SUR	+
		Negative	ENV	SUR	-
	Social contact during mealtimes	Positive	ENV	SOC	+
		Negative	ENV	SOC	-
	Quantity of food served (food portion sizes)	Positive	ENV	INF	+
		Negative	ENV	INF	-
	Information about food and nutrition	Positive	ENV	QUA	+
		Negative	ENV	QUA	-
Environmental constraints	Positive	ENV	CON	+	

Table 6.8: Table 6.7 continued

Management issues	Staff duties	Positive	MAN	DUT	+
		Negative	MAN	DUT	-
	Communication among departments	Positive	MAN	COM	+
		Negative	MAN	COM	-
	Staff workload at meal services	Positive	MAN	STW	+
		Negative	MAN	STW	-
	Procedure of meal services	Positive	MAN	PRO	+
		Negative	MAN	PRO	-
	Staff training on meal services	Positive	MAN	TRA	+
		Negative	MAN	TRA	-

6.4 Limitations and strengths of study

In order to be confident of the validity of the results, the methodology used in the construction of the study must be examined. There are three areas of the methodology that require discussion, the multiple-methods approach that was adopted, the practical considerations underlying the method, and the data analysis used. These three areas form the backbone of this research and by examining them the efficacy of the methodology can be confirmed.

6.4.1 Multiple-methods

Incorporating both quantitative and qualitative paradigms to maximise the research, this research has benefited from the strengths inherent in both approaches. By measuring the phenomenon using a quantitative approach, the application of statistical analysis distilled the data into meaningful variables for interpretation and allowed further conclusions to be drawn regarding the perceptions and expectations from both the patients and the hospital staff. Calculating the gaps between the patients and hospitals on certain variables has produced comprehensible and supportable suggestions on the areas that should be targeted by the managers for the improvement of meal services. Moreover, the qualitative approach provides an opportunity to complement the explanation of the results and confirm the meaning of the numbers. For example, comments from one phase of the research reinforced the gaps found in another phase, and further elaborated on the causes of the gaps.

As a consequence of this approach, this research has also inherited some of the difficulties inherent in combining the two approaches. When analysing the results from the patients (Phase I) and the catering managers (Phase III), quantitative comparison between them was expected to be difficult due to the discrepancy in the relative number of respondents - only four managers interviewed as opposed to more than 600 who filled out the questionnaire. As the result, a conceptual comparison between them has been made to more completely investigate the issues involved.

6.4.2 Practical Methods

Access to this field has been a complicated task during this research. The boundaries between medical and marketing research appear to be very ambiguous to healthcare professionals even though many of the hospital managers have been working with medical staff for years and the NHS itself is a very large organisation. The benefits of researching the quality of care, especially for meal services, have been limited by the existence of an institutional myopia, whereby some health professionals do not treat meal services as an integral part of therapy. To some extent, the subject of “eating” habitually has been taken for granted as just part of the daily routine, rather than an aspect of medical treatment. The priority placed on feeding a patient has been consistently considered lower than other hospital procedures, which has been confirmed as indicated by the results from Phase I through Phase III.

Undeniably, a thorough examination of the procedures and rationale of a research is necessary to govern the ethics of conducting a research. The respondent’s right to privacy and the right to refuse to answer certain questions, or to be interviewed at all, should always be respected, and undue pressure should not be brought to bear. The ethical obligations of this research have been vetted through the application for ethical approval from the appropriate authorities, from the chairmen of the ethics committees of the hospital Trusts, the permission of each member of hospital staff, and the guarantees made to treat the information strictly confidentially through the many steps explained in Chapter 5. Although the research was structured to answer any confidentiality considerations in its applied model (Chapter 4), methods and procedures (Chapter 5), the less than enthusiastic response from the Trusts appears to

indicate that they were unwilling to participate in the research. Although six Trusts (2 pilot and four main study) agreed to participate in the research, some staff were not always helpful or co-operative. In some cases it was felt that the staff considered this research to be an attempt to denigrate the hospital and its meal service rather than an opportunity to better understand and improve their patient satisfaction.

6.4.3 Data Analysis

With the assistance of Formic v 3.0 software and SPSS v9.0 and 10.0, the quantitative data analysis proceeded in a straightforward manner to generate the results or test hypotheses according to statistical analysis methods. However, the qualitative data were more complicated and the conclusion was that little help could be obtained from the computer to assist in the analysis. Even with the guide and data codes shown in Chapter 6, the tasks of transcribing the texts into manageable categories were uncertain and involved a high risk of biasing the data.

6.4.4 Some issues

Any research has by its very nature some limitations in its method and scope. As the results of this study are based on data collected in four NHS acute hospitals in the South East region, caution is strongly indicated in generalising the findings beyond the hospitals in this research as indicated by the necessarily restrictive nature of the sample. While the initial survey of all of the NHS Trusts in England indicated that the location of the trust had no statistical significance, the application of these specific results to other areas should be mindful of the potential limitations.

In practice, the dilemma of method selection involves the concept of a trade-off. As Aaker (1995) concluded that a data-collection method was seldom perfectly suited to a research objective, a successful choice would have the greatest number of strengths and the fewest weaknesses, relative to the alternatives. Each of the principal survey options of mail questionnaires or personal interviews had a serious drawback (as discussed in Section 5.4.5 of Chapter 5). Personal interviews were simply too costly and would have been feasible only with a sample that was too small to adequately identify any differences but was suited to the in-depth exploration of service procedures and

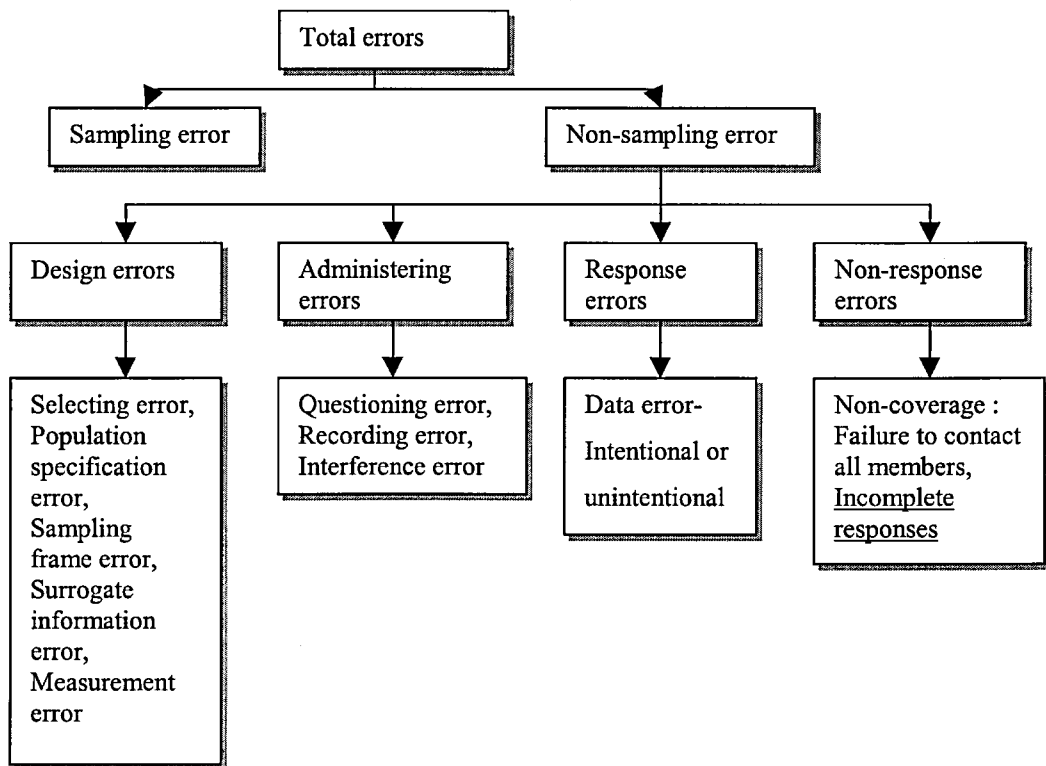
managerial issues, as used in Phase III - interviewing catering managers. The questionnaire applied in Phase I and II could have been administered by mail, but experience from pilot studies and secondary literature suggested that the response rate would be low unless substantial incentives and follow-ups were used. The solution was a self-administered questionnaire for patients and staff utilising ward-by-ward delivery and pick-up within a certain time frame, for example, either the same day or returned via the provision of addressed freepost envelopes (as explained in Section 6.2.3.2). A questionnaire lacks a depth of response which may have been achieved by a personal interview; however, this method in Phases I & II would have been too time consuming and costly.

Once the method of collection has been decided, a measuring instrument is developed to translate the research objective into information requirements and then into questions that could be answered by the anticipated respondents. Although the research was developed with guidance from SERVQUAL (discussed in Chapter 4) and food choice models (discussed in Chapter 3), the construct and measurement equivalence still faced a criterion problem. In consideration of the socio-cultural, economic, and political differences of the respondents, the definition of what is the best practice of meal services in hospitals was problematic. Measurement error could occur at any stage of the measurement process, from the development of the study instrument to the data analysis and interpretation stage. Regard must be made to the validity, reliability, and sensitivity of the scale measures, the limit of a scale to measure the various components of perceptions on specific information that is required to satisfy the research objectives and to generate a conclusion. The solution was to carefully pilot the instrument and data administration procedure for comprehension and discrimination before collecting the large amount of data for the main study as explained earlier in this Chapter.

Several potential sources of error might affect the quality of research outcome during the various stages of the research process (Figure 6.4). Some errors appear to be unavoidable; for example, non-coverage caused by the failure to obtain data from each member of the population and consequently sampling might bring certain biases. Patients might be unwilling to participate in the research due to their mental or physical problems. Some patients might not be available at the time when the questionnaire was

distributed due to their busy medical schedule. Therefore to lessen these potential sampling errors, each ward was visited twice to reach a sufficient percentage of samples to get a viable result.

Figure 6.4: Possible errors in the research process



(Aaker, 1995: 84)

Another example of potential error is the non-response that happens when the participants refuse to respond to the survey, for various reasons, after they have been asked. The survey was conducted during the patients' stay in hospital or given out during the staff's working hours to reach the greatest number of potential respondents, and refusals to participate in the study could have resulted from a lack time to spare for the research. Some potential responses were lost during moves to another ward or hospital, or when staff removed the questionnaire without notifying the researcher. This consequently leads to speculation on what were the non-respondents thoughts about meal services and the reasons for the non-response. Non-response might also indicate a lack of concern or interest in improving the quality of meal services.

Unintentional data error might occur when a respondent is unwilling or embarrassed to answer a sensitive question and then provides an inaccurate or false response. Item non-response could be caused by distrust of the motives of the questionnaire, such as how the question on the gross income of the household received a strongly defensive response from the patients in Phase I. Several respondents were suspicious about the survey, even with a very strong introductory statement on the purpose of the study, which could have affected their subsequent responses.

When comparing the three sets of data, the divergent nature of each sample and each research instrument places some limitations on the results. For instance, Phases I and II (patient and staff surveys) used questions that mixed the quantitative and qualitative approaches. The large variation in sample size for each survey also made comparison complex. Although many patients, staff and catering managers share a desire to put forth their views regarding the issue of meal service in hospitals, the model of competing interests proposed that the discrete viewpoints and motivations of each set of respondents would influence any results. Nevertheless, with limited resources and time constraints, this research has collected a sufficiently large number of samples from patients (n=609) and staff (n=283) to provide a coherent epistemology of meal service quality in hospitals that can provide benefits for others when assessing the quality of meal service in the healthcare field.

6.5 Conclusion

This chapter focused on the operational aspects of the research. The overall scope of the research was discussed, and the most suitable sampling method to capture the required results was decided upon. The three separate phases of the research were outlined, including their objectives, methods, means of data administration and pilot results. The techniques to be used to analyse the data were then examined, along with the implications of using each technique. These methods of data collection and analysis are adopted to minimise the research error, and the systematic processing of the results through proper statistical techniques will help insure the validity of the research findings and conclusions, which are presented in the following chapters.

Chapter Seven

Chapter Seven:

Research Findings I-Patient Questionnaire

7.1 Introduction

This chapter discusses the results of the patients' meal service survey completed under the protocols established in Chapter Five and Six. Starting with a general picture of the response rate and the characteristics of the respondents, the results are generated from the dimensions of the patients' expectations and perceptions using advanced statistical techniques to analyse the implications of any gaps between them that occur. From this, predictions regarding patient satisfaction and possibly the level of food intake can be made through regression analysis and path analysis. The effects of respondents' individual characteristics are then examined to establish if they contribute to an explanation of differing responses. Finally, the patient's comments are analysed to enhance quantitative information about the meal services, using a qualitative approach.

7.2 Response rate and Characteristics of the patient samples

As mentioned in section 6.2.1, the intention was to collect at least 130 responses from each of the four hospitals (total 520). As a result, 795 copies of the patient questionnaire were distributed to four NHS acute hospitals in the South East region with the consent of the hospital managers, wards sisters, and patients with the expectation that some would not be returned or be unusable. A total of 622 questionnaires were returned, either collected on the same day by the researcher, or mailed in later with the provided return envelope. The response rate (Givens>Returns)

was 78.2% in total, which was similar to the results from the piloting. The remaining 21.8 % difference could have occurred if some patients changed their mind and decided not to participate in the survey, if questionnaires were lost at the ward desk, or if patients were moved to other wards or transferred to other hospitals without finishing or returning their questionnaire.

Each hospital had similarly high return rates, and the valid returns achieved the desired numbers (Table 7.1). Within the returns, 11 questionnaires were excluded from the survey due to a large amount of missing information; as a result, a total of 609 questionnaires were used for data analysis.

Table 7.1: Patient survey response rate

Hospital	HHW	HSR	HHC	HRB	Total
Given	206	195	233	161	795
Returns	155	155	170	142	622
Response rate	75.24%	79.49%	72.96%	88.20%	78.24%
Valid	154	154	159	142	609

From the 609 valid returns, the patient-specific characteristics of the sample were determined (Table 7.2). The majority of patients (77.7%) were grouped in the 51-90 age range. The gender of the respondents was split fairly evenly between male and females. Since only one hospital separated the elderly ward from others, for analytical purposes it was re-grouped with the medical wards for comparison with the surgical wards. As the samples were obtained in acute hospitals, the majority of patients are expected to stay less than two weeks, however the results revealed that a significant portion would stay over 14 days. As explained by one nurse, one possible reason for delaying the discharge of patients was the problem of an insufficient supply of in-home care or nursing homes. The majority of patients (81.4%) received a normal diet while a few received different types of modified diets (e.g. diabetic, or vegetarian). As can be expected, the majority of respondents (46.5%) considered themselves Old Age Pensioners (OAP). A head of household Gross Income level of Type B and C (ranging from £150-600 per week) were the next biggest groups of respondents.

Table 7.2: Patient-specific characteristics of sample (n=609)

<i>Characteristics</i>	<i>No.</i>	<i>%</i>
Gender		
Male	279	45.8
Female	330	54.2
Age		
under 16	0	0
16-30	45	7.4
31-50	87	14.3
51-70	205	33.7
71-90	256	42
91 and older	16	2.6
Specialty of ward ^a		
Surgical	324	53.2
Medical	256	42
Elderly	29	4.8
Expected length of stay		
1-3 days	76	12.5
4-7 days	203	33.4
8-10 days	120	19.7
11-14 days	73	12
More than 15 days	136	22.4
Type of diet		
Regular diet	496	81.4
Diabetic diet	62	10.2
Low-salt diet	22	3.6
Pureed diet	17	2.8
Vegetarian diet and others	12	2
Gross income of head of household (£ per week)		
A. 600 and over	45	7.4
B. 300-599	82	13.5
C. 150-299	75	12.3
D. 50-149	50	8.2
E. Less than 50	12	2
OAP	283	46.5
Not provided by respondent	62	10.2
a. Ward types: Surgical included surgical, orthopedic, trauma, gynaecology, ear, throat, and noise. Medical included medical, haematology, cardiac, rehabilitation, oncology, and gastrology.		

Chi-square (χ^2) analysis of cross-tabulations using the above characteristics found no significant differences ($p < 0.05$) in the demographics of the patients based on whether they were in hospitals using either in-house or contracted-out catering operations. The age of the respondents and their type of ward were significantly related to the length of stay ($\chi^2 = 45.126$, $df = 16$, $p < 0.001$, Phi as strength of association = 0.272; $\chi^2 = 16.110$,

$df=4$, $p<0.01$, $\Phi = 0.163$, of each respectively). This may be due to the inclusion of elderly care wards and the likelihood that older people may suffer from more serious illnesses, and take longer to recover.

7.3 Section one of the questionnaire

Section one contained Question one to Question five; which measured the regularity of finishing the meal, asked which staff should be helping patients with any food related enquires, the convenience of the timing of meals being served, the appetite of the respondents, and the degree of satisfaction with the meals served. The result of Question one on the regularity of finishing the food showed it to be approximately half the time as indicated by the mean of 4.18 (with a 2.22 standard deviation) out of a 7-point scale ranging from 1 (not often) to 7 (very often). Thus it can be said that patients finished the food on average only sometimes, and the implications on food costs may be of concern to catering operations.

The results of Question two showed that many patients felt that more than one member of staff should be answering food related enquiries, as there were 645 total responses from the 609 respondents. The majority of respondents (52.6%) reported that Dieticians should respond to the enquiries, with catering assistants next at 30.3%, nurses 20.6%, and doctors last with only 4.5%. No significant differences were found with the characteristics of the respondents.

From question three, most patients had a less than hearty appetite during their stay in hospital as the mean was 4.07 (with a 1.86 standard deviation) with 7 being an excellent appetite and 1 being very poor. In question four, overall patients felt the timing of the meal served in the hospital was moderately convenient (as the mean was 5.32 ± 1.65 out of the 7-point scale).

In question five, overall patients were 'slightly satisfied' with the meals served as evidenced by a mean of 4.96 (with a 1.79 standard deviation) out of a 7-point scale ranged from 1 (completely dissatisfied) to 7 (completely satisfied).

7.4 Gaps between patients' expectations (Section two of questionnaire) and perceptions of meal services (Section three)

With the paired samples *t*-test, a comparison of each patient's paired ratings on their expectations and perceptions of meal service statements indicated that the 19 attributes were all statistically significantly correlated. Most of the paired attributes were found to show significant differences between the expectations and perceptions, with the exception of two items, 'staff being polite and pleasant' and 'personal attention' (Table 7.3). In terms of expectations of meal services, all 19 attributes received strong agreements with the statements ranging from 5.32 to 6.65 out of 7. The highest mean was regarding food served at the proper temperature. In terms of the perception of meal services, the means of the 19 attributes ranged from 4.9 (on 'social contact') to 6.34 (on 'enough time to eat'); which means that the respondents generally agreed with all the statements. All attributes of expectations presented higher scores than perceptions, but the mode (the most frequent response) of the 19 attributes was 7 out of the 7 point-scale for both expectations and perceptions. This indicates that the execution of meal service still needs to be improved to reach the level of most patient's expectations, but for some, they both expected and received good meal service. Four attributes had over one point difference in mean difference. They were the statements on the 'smell of food', 'taste of food', 'food freshly prepared', and 'temperature of food'; it appeared these four areas have the largest discrepancy, which may have implications on patient satisfaction.

Table 7.3: Gaps between patients' expectations and perceptions toward meal services (n=609)

Attributes Statements	Expectations		Perceptions		Paired Differences	
	Mean ^a	SD ^b	Mean	SD	Mean	SD
Meals should smell delicious.	6.17	1.27	4.95	1.77	1.22	2.00 ***
Food should taste good.	6.52	1.08	5.33	1.72	1.20	1.92 ***
Food should be freshly prepared.	6.44	1.18	5.32	1.81	1.12	2.04 ***
Food should be served at proper temperature.	6.65	1.07	5.48	1.69	1.09	1.89 ***
Menu should provide useful information on nutrition & food	5.88	1.37	4.91	2.00	0.97	2.10 ***
Menu should offer a good selection of meals.	6.34	1.18	5.39	1.74	0.96	1.92 ***
Each menu item should be clear described.	6.37	1.18	5.44	1.82	0.93	1.99 ***
Other food should be provided when a patient misses the regular meal services.	6.31	1.25	5.45	1.75	0.85	1.92 ***
Food should look good on the tray.	6.25	1.29	5.41	1.67	0.83	1.88 ***
Meals should arrive exactly as ordered.	6.32	1.17	5.66	1.73	0.66	1.94 ***
Staff should always be willing to help patients with eating difficulties.	6.46	1.16	5.84	1.44	0.62	1.62 ***
Meal size should be according to individual needs.	6.21	1.26	5.73	1.70	0.48	1.92 ***
Social contact should be part of the mealtime routine.	5.32	1.68	4.90	1.91	0.41	1.84 ***
Staff should leave food within reach.	6.60	1.00	6.36	1.25	0.24	1.23 ***
A pleasant eating surrounding should be offered to stimulate the appetite.	5.63	1.49	5.43	1.71	0.20	1.9 *
Meals should be served around the same time each day.	6.43	1.07	6.24	1.27	0.19	1.34 **
Enough time should be given to eat the food.	6.51	1.08	6.34	1.17	0.16	1.25 **
Patients should be given personal attention.	5.68	1.48	5.63	1.60	0.052	1.82
Staff should be polite & pleasant.	6.57	1.01	6.53	0.97	0.039	1.16

^a Scale ranged from 1= completely disagree to 7= completely agree
^b SD= standard deviation
^c * P<=0.05; **P<= 0.01;***P<=0.001

7.5 Section four of the questionnaire - Importance of factors when judging a hospital's meal service

All of the attributes of meal services were considered very important ranging from 5.18 (Social contact during mealtime) to 6.47 (Freshness of food) out of the 7-point scale (Table 7.4). The three attributes considered most important focused on the food characteristics of freshness, temperature, and flavour. The next three were more involved with staff's attitudes and ordering of food. The three least important in considering meal services in hospital were social contact during mealtime, mealtime surroundings, and information on nutrition and food.

Table 7.4: The ranking of the importance of various quality characteristics when judging a hospital's meal service (n=609)

Attributes of meal service	Mean ^a	SD ^b
Freshness of food	6.47	1.04
Temperature of food	6.45	1.04
Flavour of food	6.38	1.12
Attitude of staff	6.38	1.10
Getting what you ordered	6.38	1.08
Helpfulness of staff	6.31	1.09
Variety of food	6.26	1.17
Alternative food provided if a meal is missed	6.14	1.28
Presentation of food	6.11	1.26
Aroma of food	6.05	1.28
Description of food content on menu	6.04	1.24
Quantity of food	6.01	1.27
Placing of food	5.98	1.30
Length of meal times	5.97	1.34
Timing of meal delivery	5.89	1.33
Individual attentiveness	5.79	1.35
Information on nutrition & food	5.70	1.40
Mealtime surroundings	5.51	1.27
Social contact during mealtimes	5.18	1.70

^a Scale ranged from 1= completely unimportant to 7= completely important.
^b SD= standard deviation

7.6 The weighted gap measure (WGM)

According to the gap theory discussed in Chapter 4, the weighted gap measure (WGM) was calculated individually for each attribute. For each respondent, the

perception scores were subtracted from the expectation scores, and then multiplied by the importance score of the same attribute. The equation used is:

$$\text{WGM} = (\text{Expectations} - \text{Perceptions}) * \text{Importance of the attributes} \quad (\text{E1})$$

Therefore, a higher WGM is evidenced when expectations are greater than perceptions; that is, the meal services did not reach a level as high as the respondent expected. When the WGM is zero, it indicates that perceptions have met expectations.

The results showed that the WGM of all 19 attributes presented varying degrees of gaps (Table 7.5). However, some similarities emerged as the food characteristics (e.g. flavour, aroma, freshness, temperature, variety) were considered to be far from meeting expectations, and the intangible aspects of service (e.g. staff attitudes) were much closer to what the respondents expected.

Table 7.5: The ranking of the weighted gap measure of 19 attributes of meal services (n=609)

WGM	Mean	SD
WGM2 - flavour of food	7.72	12.78
WGM3 - aroma of food	7.63	12.84
WGM6 - freshness of food	7.28	13.51
WGM5 - temperature of food	7.06	12.48
WGM4 - variety of food	6.15	12.57
WGM8 - description of food content on menu	5.68	12.48
WGM16 - information on nutrition & food	5.52	12.50
WGM11 - alternative food provided if a meal is missed	5.22	12.03
WGM1 - presentation of food	5.20	11.79
WGM10 - getting what you ordered	4.19	12.53
WGM13 - helpfulness of staff	3.93	10.30
WGM 17 - quantity of food	3.20	12.22
WGM 19 - social contact during mealtimes	2.13	9.85
WGM15 - placing of food	1.29	7.04
WGM 18 - mealtime surroundings	1.16	10.77
WGM14 - timing of meal delivery	1.04	7.90
WGM7 – length of meal times	1.01	7.43
WGM12 - individual attentiveness	0.34	10.74
WGM9 – attitude of staff being polite and pleasant	0.30	7.20

7.7 Reliability of scale

Using Cronbach's coefficient α to test the internal consistency of the scale instrument, the results found an extremely high reliability was achieved among the 19 attributes in identifying the four aspects (Expectations, Perceptions, Importance, and WGM) of meal services in hospitals, proving that the scale measured the same homogenous variables. Table 7.6 shows that the alpha value of each attribute was above 0.9, where many have suggested 0.7 as the lower limit (Frankfort-Nachiman and Nachiman, 1996; Hair *et al.*, 1998). All scores on the item-total correlation indicated a high consistency of correlation between the individual response scores for the item and the total score on the instrument. This verified that the scale was reliable and each attribute measured the same phenomena.

Table 7.6: Reliability Analysis: Scale on 19 attributes

Attributes	Expectations		Perceptions		Importance		WGM	
	Correct item-total correlation	Alpha if item deleted	Correct item-total correlation	Alpha if item deleted	Correct item-total correlation	Alpha if item deleted	Correct item-total correlation	Alpha if item deleted
Presentation of food	0.5959	0.9371	0.7390	0.9296	0.6956	0.9447	0.7233	0.9207
Flavour of food	0.7004	0.9366	0.7830	0.9296	0.7241	0.9444	0.7675	0.9194
Aroma of food	0.5830	0.9367	0.7420	0.9295	0.6818	0.9449	0.7600	0.9196
Variety of food	0.6358	0.9358	0.6119	0.9300	0.7411	0.9440	0.7123	0.9209
Temperature of food	0.7511	0.9361	0.5949	0.9305	0.6971	0.9449	0.7236	0.9206
Freshness of food	0.6827	0.9360	0.6483	0.9299	0.6978	0.9449	0.7110	0.9209
Length of meal times	0.6878	0.9359	0.4053	0.9341	0.7061	0.9445	0.5283	0.9252
Description of food content on menu	0.6220	0.9357	0.5639	0.9305	0.7226	0.9443	0.6788	0.9217
Attitude of staff	0.6166	0.9366	0.4131	0.9348	0.7163	0.9445	0.4442	0.9265
Getting what you ordered	0.5639	0.9362	0.4329	0.9325	0.7089	0.9447	0.5992	0.9236
Alternative food provided if a meal is missed	0.4667	0.9376	0.4117	0.9330	0.6407	0.9456	0.5778	0.9241
Individual attentiveness	0.4410	0.9393	0.4768	0.9325	0.6886	0.9448	0.5213	0.9251
Helpfulness of staff	0.5733	0.9368	0.3560	0.9339	0.7019	0.9448	0.5016	0.9255
Timing of meal delivery	0.6034	0.9361	0.5303	0.9335	0.7230	0.9442	0.5027	0.9255
Placing of food	0.4572	0.9383	0.5418	0.9349	0.6932	0.9447	0.4450	0.9265
Information of nutrition & food	0.4192	0.9397	0.4792	0.9321	0.6589	0.9454	0.6178	0.9232
Quantity of food	0.4977	0.9377	0.4587	0.9318	0.6872	0.9448	0.5783	0.9241
Mealtime surroundings	0.5384	0.9399	0.5208	0.9316	0.6643	0.9455	0.5709	0.9241
Social contact during mealtimes	0.3789	0.9440	0.4167	0.9340	0.5445	0.9487	0.5618	0.9243
19 items		0.9406		0.9354		0.9477		0.9270

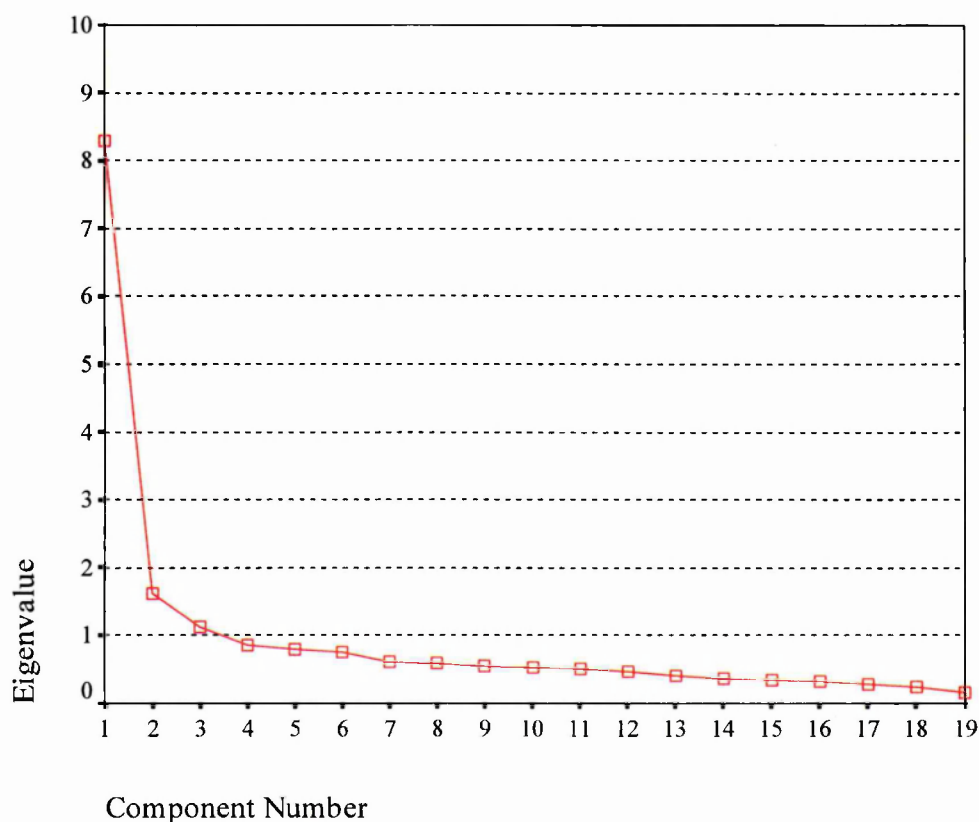
7.8 Underlying dimensions of meal services

Data collected on the 19 attributes of meal services were analysed by factor analysis followed by orthogonal rotation (varimax). This statistical technique allows the foodservice attributes that are highly correlated to be grouped under a limited number

of dimensions. These dimensions represent the underlying psychological dimensions of a concept; in other words, how patients perceived the quality of foodservice provided by the hospital.

As mentioned in 6.4.1.2, a seven step factor analysis was carried out on the 19 attributes of WGM of meal services. The results firstly revealed that the appropriateness of the factor analysis was satisfied. With the correlation matrix among 19 attributes, the Kaiser-Meyer-Olkin Measure of sampling adequacy was 0.941 of inter-correlation among the variables and Bartlett's test of Sphericity was significant ($\chi^2 = 5940.916$, $df = 171$, $P < 0.001$). Next, utilising the principal component extraction method and an eigenvalue of 1 as a cut-off point, the factor loadings were computed using three different rotations: Quartimax, Equimax, and Varimax. The screen plot illustrates the eigenvalues of the 19 attributes to visualise the number of factors that should be extracted by the cut-off points (Figure 7.1).

Figure 7.1: Screen Plot of the 19 attributes of meal services (n=609)



The outcome found that the varimax rotation showed the best fit, reducing the 19 attributes into three dimensions that accounted for 58.23 % of the common variances. Table 7.7 shows the correlation (or factor loadings) between each foodservice attribute and each dimension only when the factor loading was larger than 0.45 - a cut-off point based on 0.05 significance level and a power level of 80% within 150 samples per group (Hair *et al.*, 1998).

Table 7.7: The factor loadings of 19 attributes of meal services

Items/ Factors	Food properties	Interpersonal service	Environmental presentation
WGM-Flavour of food	0.848		
WGM-Aroma of food	0.814		
WGM-Freshness of food	0.802		
WGM -Presentation of food	0.790		
WGM-Temperature of food	0.751		
WGM-Variety of food	0.734		
WGM-Description of food content on menu	0.508		
WGM-Getting what you ordered	0.470		
WGM-Attitude of staff		0.715	
WGM-Timing of meal delivery		0.706	
WGM-Placing of food		0.644	
WGM-Helpfulness of staff		0.590	
WGM-Individual attentiveness		0.584	
WGM-Length of meal time		0.547	
WGM-Alternative food provided if a meal is missed		0.450	
WGM-Mealtime surroundings			0.766
WGM-Social contact during mealtimes			0.727
WGM-Quantity of food			0.662
WGM-Information about food and nutrition			0.600
% Variance	26.60	16.99	14.64
Cronbach's α	0.919	0.800	0.784

Note:

Measure of Sampling Adequacy (MSA) =0.941

Extraction method: Principal Component Analysis, cut-off at 0.45.

Data obtained by factor analysis with orthogonal rotation (Varimax).

The first dimension accounted for 26.6% of the common variance and was labelled *food properties*. It focused mostly on food characteristics such as the flavour, aroma, freshness, presentation, temperature, and variety of food, as well as the description of food content on menu and getting what you ordered. The second dimension accounted for 16.99% of the common variance and was labelled *interpersonal service*. It consisted of statements describing the attitude of staff, timing of meal delivery, placing of food, helpfulness of staff, individual attentiveness, length of meal time, and any alternative food provided if a meal was missed. The remaining attributes (mealtime surroundings, social contact during mealtimes, quantity of food, and information about food and nutrition) were included in the last dimension, which accounted for 14.64% of the common variance and was labelled *environmental presentation*.

An analysis of reliability was performed for each sub-scale, and Cronbach's α (0.9191 to 0.7836) demonstrated the internal consistency of each dimension. The factor scores were then selected for the attributes included in each of the three dimensions and were used in subsequent analyses. With zero correlation indicated by the Pearson product-moment correlation coefficient, the three dimensions have been successfully separated.

7.9 Predicting Patient Satisfaction and Food Intake

Many WGM attributes and the two dimensions reflecting characteristics of food and service quality were significantly ($P < 0.05$) related to satisfaction with overall hospital meal service (Table 7.8). Patient satisfaction was positively correlated with all WGM attributes on the food property dimensions (flavour, aroma, freshness, presentation, temperature, and variety of food, description of food content on the menu, and getting what you ordered) and the food properties dimension itself. Although the interpersonal service dimension did not have a significant correlation with satisfaction, its sub-scale of WGM attributes (responses relating to staff being polite, pleasant, helpful, timing of meal delivery, time to eat, and alternative food provided if a meal was missed) all showed significant relationships with satisfaction.

In addition, all the WGM attributes in the environmental presentation dimension and the dimension itself presented a positive correlation to satisfaction. These correlations may give some indication that patients looked forward to meals and were interested in all the aspects of meal services in hospital.

Table 7.8: Correlation between the level of patients' satisfaction and each WGM attribute and the three dimensions of meal services

Items/ Factors	<i>r</i>
Food properties	0.452 **
WGM-Flavour of food	0.473 **
WGM-Aroma of food	0.418 **
WGM-Freshness of food	0.382 **
WGM -Presentation of food	0.404 **
WGM-Temperature of food	0.366 **
WGM-Variety of food	0.421 **
WGM-Description of food content on menu	0.26 **
WGM-Getting what you ordered	0.349 **
Interpersonal service	0.042
WGM-Attitude of staff	0.104 *
WGM-Timing of meal delivery	0.165 **
WGM-Placing of food	0.11 **
WGM-Helpfulness of staff	0.194 **
WGM-Individual attentiveness	0.177 **
WGM-Length of meal time	0.084 *
WGM-Alternative food provided if a meal is missed	0.263 **
Environmental presentation	0.181 **
WGM-Mealtime surroundings	0.233 **
WGM-Social contact during mealtimes	0.19 **
WGM-Quantity of food	0.277 **
WGM-Information about food and nutrition	0.32 **
Based on Pearson's correlation coefficient	
* $P < 0.05$, ** $P < 0.01$.	

The regularity of finishing the food, Appetite, and convenience of meal timing were found to have strong positive association ($p < 0.01$) with overall satisfaction with the meals served. The Pearson product-moment correlation coefficient of the three factors were all close to 0.5, indicating a strong positive correlation (with 1 indicating complete positive (+1) or negative (-1) correlation). These results may suggest some kind of linear relationship exists between overall satisfaction and regularity of finishing the food, overall satisfaction and appetite, and overall satisfaction and

convenience of meal timing. This can be evaluated through the use of regression analysis.

Overall satisfaction with the meal served was found to have significant relationships ($p < 0.01$) with various demographic characteristics. The age of the respondents showed a positive relationship, as well as the gross income of head of household. The older patients tended to be more satisfied with the food.

Overall satisfaction with the meal served also showed a positive relationship with the type of catering system (contracted-out or in-house) and the hospital, but not with the type of ward (surgical or medical).

Furthermore, the regularity of finishing the meal was found to have a strong positive association with the appetite and convenience of meal timing meal ($r = 0.6417$ and 0.316 , respectively). The food properties dimension and the environmental presentation dimension also showed some positive relationship with the regularity of finishing the meal. With the exception of the male respondents showing a negative relationship, none of the correlation coefficients relating to the background of respondents was found to be significant in relation to the regularity of finishing meal.

The Correlation Matrix in Table 7.9 illustrates the strength of the associations between the variables. As can be expected, appetite appeared to have a strong positive correlation with the regularity of finishing the food ($r = 0.647$), a moderate positive correlation with satisfaction, convenience of meal service timing, F1- food properties, and F3- environmental presentation, and a small positive correlation with the respondent being in a surgical ward. Conversely, the male respondents seem to have poor appetites as displayed by the negative correlation.

Table 7.9 Correlation Matrix of patient satisfaction [^]

	Catering system	Hospital	Regularity of finishing	Appetite	Convenience of timing	Satisfaction	Gender	Age	Expected length of stay	Income of head of household	Type of wards	F1-Food properties	F2-Interpersonal services	F3-Environmental presentation
Catering system	1													
(Contracted-out/in-house)	1.000 ***	1.000												
Hospital ^{^^}														
Regularity of finishing	0.041	0.182	1.000											
Appetite	0.008	0.191	0.647 **	1.000										
Convenience of timing	0.030	0.199	0.316 **	0.331 **	1.000									
Satisfaction	0.172 **	0.233 *	0.514 **	0.413 **	0.495 **	1.000								
Gender ^{^^} (Male)	0.011	0.039	-0.184 **	-0.179 **	-0.037	-0.044	1.000							
Age ^{^^^}	-0.069	0.198 *	0.029	-0.026	0.060	0.208 **	0.075	1.000						
Expected length of stay ^{^^^}	0.002	0.250 ***	-0.054	0.000	0.023	0.010	-0.014	0.229 **	1.000					
Income of head of household ^{^^^}	-0.052	-0.061	-0.063	-0.038	0.065	0.157 **	0.160 **	0.630 **	0.168 **	1.000				
Type of wards ^{^^} (Surgical/medical and others)	-0.181 ***	0.238 ***	-0.054	0.091 *	-0.020	0.021	-0.051	0.103 *	0.119 **	0.080	1.000			
F1-Food properties	0.185 **	1.687	0.245 **	0.153 **	0.085 *	0.452 **	-0.038	0.303 **	0.040	0.300 **	0.014	1.000		
F2-Interpersonal services	-0.016	1.687	0.012	0.078	0.078	0.042	-0.141 **	0.038	0.031	-0.020	-0.045	0.000	1.000	
F3-Environmental presentation	0.038	1.687	0.152 **	0.121 **	0.187 **	0.181 **	-0.005	0.037	-0.066	0.022	-0.073	0.000	0.000	1.000

Note:

*** $P < 0.001$, ** $P < 0.01$, * $P < 0.05$.

[^] presents Pearson product-moment correlation coefficient.

^{^^} presents phi coefficient.

^{^^^} presents Spearman rank correlation coefficient.

n=609, except with income variable n=547.

As Table 7.9 indicated some relationships between the variables, a stepwise multiple regression analysis is the next step to verify the strength and causal relationships in order to predict the outcomes of meal services- patients satisfaction and the regularity of finishing the food. Various background characteristics of respondents were transformed and coded as dummy variables (1, 0) before beginning the regression analysis.

When predicting inpatient overall satisfaction with the meal services, the results suggested that the following variables had an impact, in decreasing order of contribution, on the variance: Regularity of finishing the food, Convenience of meal timing, Food properties, Catering system, Environmental presentation (Table 7.10).

Table 7.10: Predictors of overall satisfaction ratings on meal services

Model	Adjusted R ²	Std. error of the estimate	Entry F	Significant
1	0.263	1.54	217.640	***
2	0.385	1.41	191.170	***
3	0.496	1.27	200.470	***
4	0.503	1.27	154.570	**
5	0.506	1.26	125.455	**

Note: Result of stepwise multiple regression; ** $P < 0.01$, *** $P < 0.001$ (n=609)

- Model 1: (Constant); Regularity of finishing the food
- Model 2 : (Constant) ; Regularity of finishing the food, Convenience of meal timing,
- Model 3 : (Constant) ; Regularity of finishing the food, Convenience of meal timing, Food properties,
- Model 4 : (Constant) ; Regularity of finishing the food, Convenience of meal timing, Food properties, Catering system,
- Model 5: (Constant) ; Regularity of finishing the food, Convenience of meal timing, Food properties, Catering system, Environmental presentation.

Model 5 (Table 7.10) forms the multiple regression equation of *overall satisfaction* as a function of *regularity of finishing the food*, *Convenience of meal timing*, *Food properties*, *Catering system*, and *Environmental presentation* as:

Equation 7.1: Predicted Overall satisfaction

$$= 0.249 \times (\text{Regularity of finishing the food}) + 0.385 \times (\text{Convenience of meal timing}) + 0.595 (\text{Food properties}) - 0.304 \times (\text{Catering system}) + 0.116 \times (\text{Environmental presentation}) + 2.207$$

Table 7.11 shows the standardised beta regression coefficients of the five independent variables to allow for a direct comparison between coefficients as to their relative explanatory power of predicting *overall satisfaction of meal services* as the dependent variable, and Partial r as an incremental predictive effect (Hair *et al.*, 1995). The *convenience of meal timing* has the most impact, followed closely by the *food properties dimension* and *regularity of finishing the food*. The fourth variable was the *environmental presentation dimension*. The last variable was *catering systems being contracted-out*, which has a negative influence on satisfaction.

Table 7.11: The regression coefficient of predicting patient satisfaction with meal services

Factors	Standardized β coefficient	Partial r
Regularity of finishing the food	0.307	0.374
Convenience of meal timing	0.355	0.430
Food properties	0.332	0.411
Catering system (being contracted-out)	-0.035	-0.118
Environmental presentation	0.065	0.063

When predicting the regularity of finishing the food, the findings present a model including the variables of appetite, satisfaction, and gender (Table 7.12), in decreasing order of contribution to variance.

Table 7.12: Predictors of regularity of finishing the food

Model	Adjusted R ²	Std. error of the estimate	Entry F	
1	0.418	1.69	437.599	***
2	0.491	1.58	293.673	***
3	0.496	1.57	200.303	***

Note: Result of stepwise multiple regression; *** P < 0.001 (n=609)

- Model 1: (Constant); Appetite,
- Model 2 : (Constant) ; Appetite, satisfaction,
- Model 3 : (Constant) ; Appetite, satisfaction, gender (male).

Model 3 (Table 7.12) forms the multiple regression equation of the *regularity of finishing the food* as a function of *appetite*, *overall satisfaction*, and *gender being male* as:

Equation 7.2: Predicted Regularity of finishing the food

$$= 0.608 \times (\text{appetite}) + 0.371 \times (\text{overall satisfaction}) + 0.354 (\text{gender being male}) - 0.294$$

Table 7.13 displays the value of the beta coefficients on these three predictors: *appetite* presented the strongest indicator; *satisfaction with meals* was next; and *gender being male* was last.

Table 7.13: The regression coefficients of predicting the regularity of finishing the food

Factors	Standardized β coefficient	Partial r
Appetite	0.509	0.456
Satisfaction	0.300	0.273
Gender (male)	0.130	0.080

When predicting patients' appetite, the analysis showed that the model consisted of the *Regularity of finishing food*, *Convenience of meal timing*, and *Gender (male)* (Table 7.14) in decreasing order of contribution to variance.

Table 7.14: Predictors of patients' appetite

Model	Adjusted R ²	Std. error of the estimate	Entry F	
1	0.418	1.42	437.599	***
2	0.435	1.39	234.883	***
3	0.438	1.39	158.949	***

Note: Result of stepwise multiple regression; *** P < 0.001 (n=609)

- Model 1: (Constant); Regularity of finishing food,
- Model 2 : (Constant); Regularity of finishing food and Convenience of meal timing
- Model 3: (Constant); Regularity of finishing food, Convenience of meal timing, and Gender (male)

Model 3 (Table 7.14) forms the multiple regression equation for *appetite* as a function of *regularity of finishing the food*, *Convenience of meal timing*, and *gender being male* as:

Equation 7.3: Predicted *appetite*

$$= 0.494 \times (\text{Regularity of finishing the food}) + 0.159 \times (\text{Convenience of meal timing}) + 0.242 (\text{gender being male}) + 1.041$$

Table 7.15 shows the strength of the causal relation by the beta coefficients. The most important is the *regularity of finishing food*, next is the *convenience of meal timing*, and *Gender being male* is the least important.

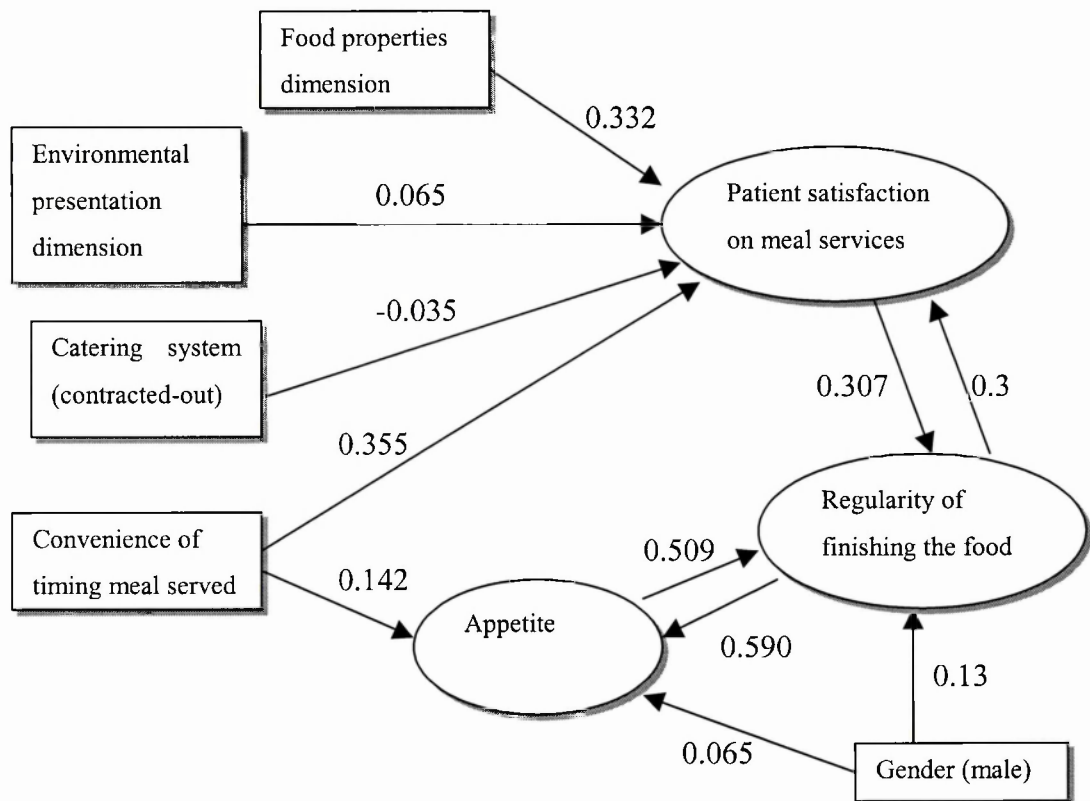
Table 7.15: The regression coefficients of predicting patient's appetite

Factors	Standardized β coefficient	Partial r
Regularity of finishing food	0.590	0.593
Convenience of meal timing	0.142	0.177
Gender (male)	0.065	0.085

In summary, a path diagram (Figure 7.2) illustrates the complexities of meal service quality as suggested by the results of the stepwise regression analysis on the three final outcomes of meal services: *patient satisfaction of meals*, *the regularity of*

finishing the food, and appetite. Some variables indicated a direct causal relation and some an indirect one. A solid-line arrow represents the path coefficients of the variables that had a direct causal relation on the dependent variables, e.g. satisfaction. The relationship between *patient satisfaction of meals* and the *regularity of finishing the food* and the relationship between the *appetite* and the *regularity of finishing the food* were found to be an instantaneous reciprocal interaction as shown by two opposing arrows.

Figure 7.2: Causal model of patient satisfaction with hospital meal services



Note: the value presented is the standardised beta β coefficient and is significant at the $p < 0.001$ level.

7.10 Effects of Individual Characteristics and Contextual Factors

A series of one-way analyses of variance and independent sample t -tests were conducted to test the effect of individual characteristics and contextual factors on

overall satisfaction with meal services, the regularity of finishing the food, patients' appetite, timing of meals served, and the three dimensions of foodservice. Alternatively, non-parametric tests (Mann-Whitney test or Kruskal-Wallis test) were performed if the assumptions of the one-way analyses of variance and independent sample *t*-test were seriously violated.

Individual characteristics

With the following exceptions, few differences were found on the basis of the demographic characteristics of patients.

7.10.1 Gender

The result showed significant differences on two factors and one dimension between male and female patients (Table 7.16). Male respondents appeared to more often to finish their food than female respondents and their appetites seemed to be better as well. In general, the scores of the three WGM dimensions from male respondents showed positive; that is, perceptions had met their expectations. The female group appeared to be much less pleased with meal services as their values were all below zero. However, only the WGM value of the interpersonal services dimension was found to be significantly higher than the female group.

Table 7.16: Mean difference of groups of respondents between male and female

	Male (n=279)		Female (n=330)		Levene's test for equality of variances		t	df	Sig.	
	Mean	SD	Mean	SD	F	Sig.				
The regularity of finishing the food	4.624	2.150	3.806	2.206	0.410	0.522	4.610	607	0.000	***
Appetite	4.427	1.747	3.761	1.892	1.611	0.205	4.481	607	0.000	***
Convenience of timing of meal served	5.387	1.587	5.264	1.708	4.062	0.044	0.924	61	0.356	
Satisfaction with meal served	5.047	1.759	4.888	1.823	1.485	0.223	1.088	607	0.277	
F1-food properties	0.042	0.938	-0.035	1.050	5.409	0.020	0.953	605	0.341	
F2-interpersonal services	0.153	0.968	-0.130	1.010	0.651	0.420	3.508	607	0.000	***
F3-environmental presentation	0.006	1.061	-0.005	0.947	1.009	0.316	0.132	607	0.895	

Note: Measured on a seven-point scale.
The results of Independent Sample *t*-test
*** $P < 0.001$ (2 tailed).

7.10.2 Age

Within the five different age groups, there were some significant differences on the regularity of finishing the food, patients' satisfaction with the meal served, and the food properties dimension (Table 7.17). The mean scores of how often the food had been finished appeared to be lower in younger patients, but the post-hoc test did not show any significant differences between any pairs. Through the post-hoc tests (Tukey HSD and Bonferroni test) patients in the age group 71-90 had significantly higher satisfaction with the meal served to them than those aged 16-30 and 31-50. Dunnett's test, applied with equal variances not assumed, found that patients older than 71 years of age tended to rate the food properties dimension higher than those younger than them; in other words, they have had their expectations more closely met on the dimension of food properties.

7.10.3 Length of stay

No significant differences were found by length of stay although the mean values showed some discrepancies between different groups of respondents (Appendix 7.1).

7.10.4 Gross income of head of household

Patients with different head of household gross income levels showed some significant differences with the satisfaction with meals served and the food properties dimension (Table 7.18). Post-hoc tests revealed that patients classified as OAP had higher satisfaction than those with head of household gross income in the £50-£149 per week range. This means that patients with OAP status found that the meal service had met their expectations compared with groups A-D (gross income of more than £50 per week) and thus may be much more satisfied than other groups of respondents, which would probably be expected as people in the 71-90 group also had higher satisfaction.

Table 7.17: Mean differences by Age

	16-30 (n=45)		31-50 (n=87)		51-70 (n=205)		71-90 (n=256)		>90 (n=16)		Statistic test	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	F ratio	Chi-square Sig.
Regularity of finishing the food	3.556	2.073	3.966	2.026	4.507	2.155	4.059	2.318	4.875	2.217	2.832	0.024 *
Appetite	4.089	1.952	3.828	1.579	4.376	1.766	3.891	1.955	4.125	2.125	7.048	0.070
Convenience of timing of meal served	5.422	1.288	5.103	1.406	5.395	1.619	5.297	1.808	5.625	1.708	5.135	0.162
Satisfaction of meal served	4.244	1.612	4.437	1.633	4.961	1.776	5.223	1.822	5.625	1.857	17.899	0.000 ***
F1-Food properties	-0.417	1.050	-0.358	1.008	-0.097	1.064	0.238	0.868	0.570	0.744	19.182	0.000 ***
F2- Interpersonal services	-0.165	0.978	-0.140	1.220	-0.006	0.827	0.046	0.985	0.570	1.680	6.410	0.093
F3-Environmental presentation	-0.423	1.147	-0.076	1.268	0.061	0.996	0.027	0.849	0.379	0.969	2.097	0.553

Note:

Measured on seven-point scale.

The result of one-way ANOVA and Kruskal-Wallis test

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$ (at 2 tailed).

Table 7.18: Mean differences by gross income of head of household

	A		B		C		D		E		OAP		Statistic test		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	F ratio	Chi-square	Sig.
Regularity of finishing the food	4.422	2.105	4.646	1.971	4.360	2.154	3.900	1.982	3.500	2.747	4.117	2.332			
Appetite	4.311	1.881	4.171	1.632	4.027	1.700	4.240	1.847	3.750	1.765	4.039	1.974	0.361	5.493	0.359
Convenience of timing of meal served	4.978	1.574	5.561	1.278	5.387	1.497	5.240	1.673	4.833	1.850	5.389	1.768		6.522	0.259
Satisfaction of meal served	4.600	1.615	4.744	1.831	5.000	1.542	4.340	1.880	4.500	2.195	5.258	1.777		19.770	0.001 **
F1-Food properties	-0.283	1.036	-0.447	0.927	-0.173	0.868	-0.214	1.038	0.073	1.687	0.263	0.942	9.413		0.000 ***
F2- Interpersonal services	-0.149	1.055	0.067	0.832	-0.008	0.993	-0.184	0.761	0.253	1.057	0.058	1.098	0.901		0.480
F3-Environmental persentation	0.078	0.934	-0.222	1.197	-0.013	1.357	-0.087	0.900	-0.373	1.274	0.074	0.873		5.089	0.405

Note:

A- > £600, B-£300-£599, C-£150-£299, D-£50-£149, E < £50, OAP-Old Age Pensions.

Measured on seven-point scale.

The result of one-way ANOVA and Kruskal-Wallis test

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$ (at 2 tailed).

Contextual factors

7.10.5 Catering system

No significant differences were found for the regularity of finishing the food, appetite, and convenience of the timing of the meal served between groups of respondents based on either in-house or contracted-out styles of catering system. Table 7.19 shows the means and the standard deviations between the in-house and the contracted-out catering groups, and the results of an independent sample *t*-test. Differences were noted, however, in the satisfaction with the meal served and factor one - food properties. In general, patients in hospitals that utilised in-house catering operations rated the service higher than those in hospitals where a contractor operated the catering service.

Table 7.19: Mean difference between groups of respondents based on either in-house or contracted-out catering

	In-house (n=313)		Contracted-out (n=296)		Levene's test for equality of variances		t	df	Sig.
	Mean	SD	Mean	SD	F	Sig.			
The regularity of finishing the food	4.27	2.17	4.09	2.26	0.357	0.550	-1.007	607	0.314
Appetite	4.08	1.86	4.05	1.85	0.357	0.550	-0.199	607	0.842
Convenience of timing of meal served	5.37	1.70	5.27	1.61	0.577	0.448	-0.746	607	0.452
Satisfaction with meal served	5.28	1.62	4.66	1.90	11.614	0.001	-4.312	607	0.000 ***
F1-food properties	0.19	0.92	-0.18	1.04	11.436	0.001	-4.642	604	0.000 ***
F2-interpersonal services	-0.02	1.07	0.02	0.93	0.194	0.660	0.384	607	0.701
F3-environmental presentation	0.04	0.95	-0.04	1.04	2.539	0.112	-0.094	607	0.347

Notes: Measured on seven-point scales.

The results of Independent Sample *t*-test.

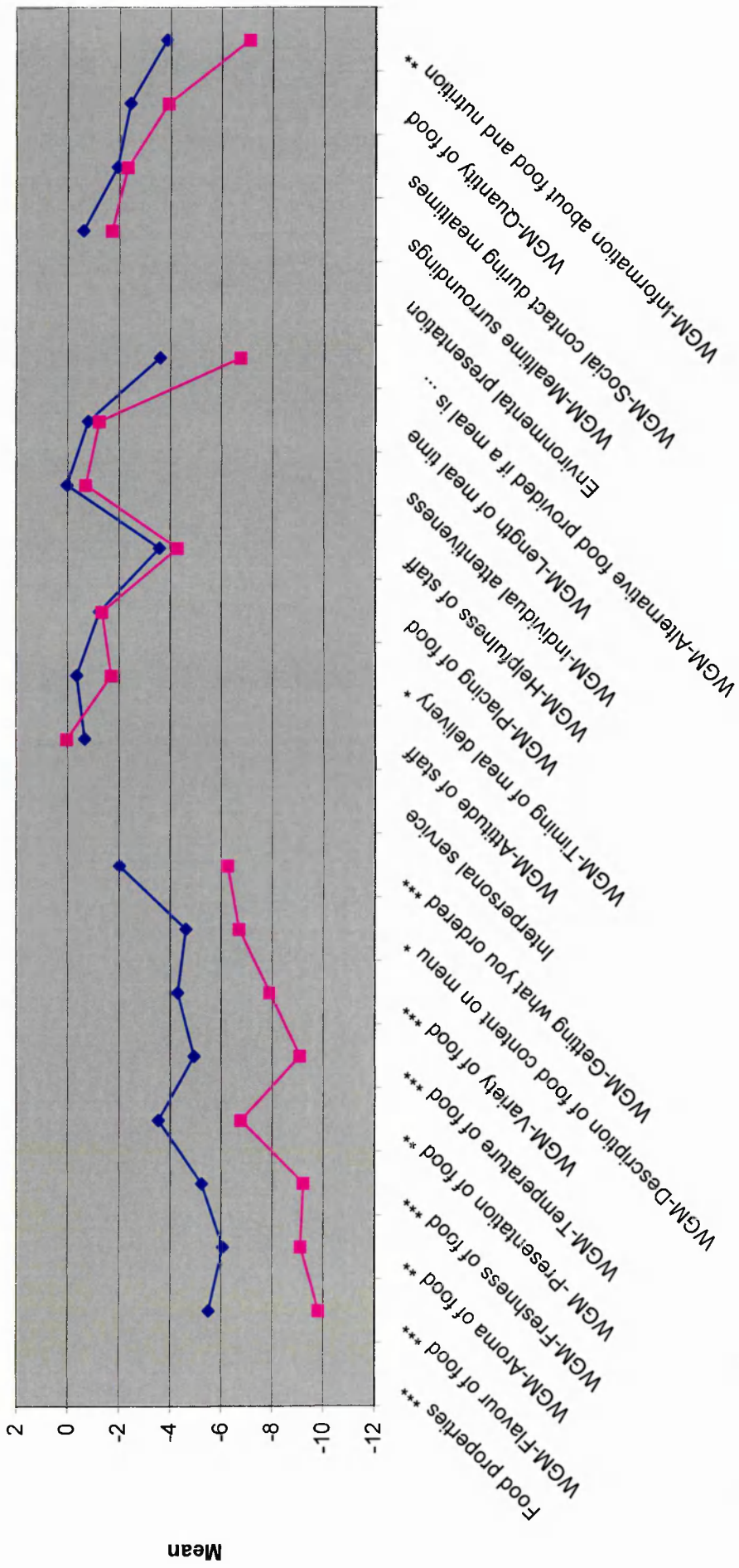
*** $P < 0.001$ (at 2 tailed).

Figure 7.3 illustrates the mean differences of 19 attributes sorted in three dimensions between groups of respondents based on the catering system. The majority of WGM attributes were below zero due to expectations being higher than the perceptions, except the WGM of staff's attitude being polite and pleasant from the contracted-out catering hospitals and the WGM of individual attention from the in-house catering hospitals. The scores of most WGM attributes from the contracted-out catering hospitals were generally lower than in-house ones. All WGM attributes in dimension one - food properties were found to have significantly higher scores for the in-house catering systems than those of the contracted-out systems. The level of meal services on the food properties dimension from the contracted-out catering hospitals were much further away from reaching patients' expectation of meal service.

7.10.6 Hospital

Through one way ANOVA analysis, the results showed that regularity of finishing the food, patients' satisfaction with meal services, and the dimension on food properties among hospitals were significantly different (Table 7.20). Post hoc tests using both Bonferroni and Tukey HSD tests found significant differences as the respondents in HHW hospital were less likely finish the food than those in HSR, and had less satisfaction than those in other hospitals. Once again, the respondents from HHW hospital had much lower ratings on food properties than HRB and HSR; it seems that the HHW hospital use of the cook-chill method did not gain them any advantages in food quality.

Figure 7.3: Mean differences of 19 attributes between groups of respondents based on catering system



WGM=(Expectation-Perception)*Importance,
 Measured by 7-point Likert scale,
 *** P<0.001, ** P<0.01, * P <0.05

◆ In-house (n=313) ■ Contracted-out (n=296)

Table 7.20: Mean differences by hospital

Hospitals	In-house		Contracted-out				Statistic test			
	HRB (n=142)	HSR (n=154)	HHC (n=159)	HHW (n=154)			F	Chi-square	Sig.	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
Regularity of finishing the food	3.937	2.168	4.584	2.141	4.296	2.201	3.883	2.301	3.383	0.018 *
Appetite	3.831	1.853	4.312	1.849	4.170	1.843	3.929	1.858	2.118	0.097
Convenience of timing of meal served	5.246	1.795	5.487	1.602	5.415	1.576	5.123	1.638	1.522	0.208
Satisfaction with meal served	5.106	1.670	5.435	1.563	4.937	1.820	4.377	1.941	24.973	0.000 ***
F1-Food properties	0.113	0.894	0.260	0.939	-0.047	0.912	-0.316	1.147	19.182	0.000 ***
F2-Interpersonal services	0.019	0.797	-0.048	1.268	-0.056	1.012	0.088	0.842	0.701	0.552
F3-Environmental presentation	0.076	1.025	0.005	0.885	0.009	1.006	-0.085	1.079	0.654	0.581

Note: Measured on seven-point scale.

The results of one-way ANOVA and Kruskal-Wallis test if the test of homogeneity of variance was violated.

* P< 0.05, ** P< 0.01, *** P< 0.001 (2 tailed).

7.10.7 Ward type

No significant differences were found by ward type, except in relation to the dimension of environmental presentation (Table 7.21). The respondents from surgical wards rated environmental presentation better than those from medical wards and others. They also generally found their expectations to be met on three dimensions on the meal services as the scores were positive.

Table 7.21: Mean difference by ward type

	Surgical (n=324)		Medical and others (n=285)		Levene's test for equality of variances				
	Mean	SD	Mean	SD	F	Sig	T	df	Sig
Regularity of finishing the food	4.068	2.181	4.309	2.254	1.063	0.303	-1.339	607	0.181
Appetite	3.938	1.753	4.211	1.959	8.472	0.004	-1.797	575	0.073
Convenience of timing of meal served	5.389	1.596	5.242	1.716	0.522	0.470	1.093	607	0.275
Satisfaction of meal served	4.991	1.755	4.926	1.840	1.726	0.189	0.442	607	0.659
F1-Food properties	0.008	0.976	-0.009	1.028	0.479	0.489	0.206	607	0.837
F2- Interpersonal services	0.034	1.024	-0.038	0.973	0.163	0.686	0.890	607	0.374
F3-Environmental presentation	0.085	0.981	-0.096	1.014	0.600	0.439	2.239	607	0.026 *

Note: Measured on seven-point scale.

The results of Independent Sample t-tests.

* P < 0.05 (at 2 tailed).

7.10.8 Diet type

No significant differences were found by any diet types (Appendix 7.2).

7.11 Patients' comments

Amongst the 609 returns, 230 patients (37.8%) made comments or suggestions on the meal services. Some of comments were discarded due to being irrelevant to the topic, thus 219 valid responses (Appendix 7.3) were coded according to the guide in Table 6.7 of Chapter 6 and the previous results in Section 7.8. and classified into overall impression and three dimensions – food properties, interpersonal service and environmental presentation. Under these codes, a positive or negative dimension was added to cluster the comments.

7.11.1 Overall impression (Code: OVA.+/-)

The total number of general comments was 44, which represented 13% of all valid responses. The comments or suggestions coded in 'OVA +/-' were general impressions toward meal services as a whole. Meal services being 'very good' or 'excellent' in general were frequent comments. Some had taken the budget constraints into consideration and the numbers of patients the catering operation served. However, negative opinions existed, for instance that the meal services 'could be better' or that there was 'inconsistency' from meal to meal; that may suggest inefficiency of the managerial control of the quality of meal services. One suggested that food should be used as a tool to stimulate patients' appetite and that would then aid their recovery. There were 42 positive comments and 10 negative ones. (Table 7.22 for examples).

Table 7.22: Examples of patients' comments on overall impression

Codes	Description	Examples
OVA+	Overall on meal services	'Very good' (#1036); 'Extremely good.' (#31000); 'no complaints' (#1076) 'Satisfactory' (#1078); 'excellent' (#2026); 'Due to the limited budget per person for meal etc., the best is being done.'(#3017);'Considering the number of meals provided throughout the day, and the allowances the catering staff receive for each meals, this hospital does remarkably well.' (#3067);'For myself I was impressed and was satisfied.' (#3084); 'Cannot fault food or service in any way' (#3117); 'With budget constraints, they managed quite well. Everyone is happy. They try the best to provide what they can.'(#4088).
OVA-		'Generally poor' (#1096) 'Could be better' (#1150);'The quality of food is inconsistent.'(#3012); 'Varies so much from excellent to very poor, I would prefer reasonable food all the time.' (#3037);'People serving the food should sit beside me to experience the food.' (#3013); 'During my stay the food was unsatisfactory.' (#3148);'Food poor- need to tempt appetite.' (#4118)

7.11.2 Food properties (Code: Foo.*.+/-)

The total number of comments relating to food properties was 196, which represented 57% of all valid responses. Of these, 53% were positive and 47% negative.

Table 7.23 shows examples of general comments about food. 70 comments, like 'food great' appeared to have a positive tone; however, the 20 negative comments included those on the poor quality of food. One even questioned the implementation

of the guidelines of a healthy diet from the health department in relation to the use of packaged foods.

Table 7.23: Patients' comments of overall impressions of food properties

Codes	Descriptions	Examples
FOO OVA+	Overall impression about food	'good meals' (#1030) 'Food great' (#1039) "Take it or leave good food spoilt. It's attitude.' (#1081); 'I find completely ok and consequently have looked forward to meal times.' (#2014); 'Food is as good as can be expected in circumstance.' (#2153)
FOO OVA-		'The food leaves a lot to be desired!!' (#1022) 'We do not expect 5 star menu's, but it can be made a whole lot better.' (#1058); 'the food here is poor quality' (#1065); 'The health department advised us to have a healthy diet for coronary safeguards. The suppliers of NHS food rely upon can and packet foods, very poor for health. (#1118)

Within the food properties dimension, several attributes (taste of food, freshness of food, and presentation of food) were mentioned in either a positive or negative way (Table 7.24). There were a few (6) positive comments on the taste of food, but many of the respondents (15) seemed to have problems with the taste, describing it as either 'too salty' or 'tasteless'. The types of dishes also appeared to discourage patients' appetite as one claimed that 'the menu is aimed at the older generation'. More vegetables and fruits were often suggested to improve the freshness of meals. The quality of prepared pureed or soft diet sometimes did not meet the requirement of being liquid enough, upsetting the patients. One patient had their mother bring in food.

Table 7.24: Patients comments on the taste, freshness, and presentation of food attribute

Codes	Description	Examples
FOO TAS+	Comments on taste of food	'very tasty' (#1030); 'very very good soup' (#4055)
FOO TAS-		'to me, the food never tastes nice' (#1007); 'no spices' (#1013) 'unappetising' (#1065); 'The seasoning is not very good (only salt and pepper).' (#2041); 'I dislike the bland tastelessness and old fashioned recipes. Normal people don't eat flavorless stews and mash- I would like to see more pasta, jacket potatoes, curries, and pizza. The shoddy puddings are out-dated too.' (#2052); 'Meals are uninspiring and mainly aimed at the older generation.' (#2077); 'Food tastes reheated.' (#3020); 'Vegs cooked too much, especially cabbage & other greens. Pastry & crumbles horrible, but all sponges excellent.' (#3079); 'Far too much salt in meals.' (#4010);
FOO FRE-	Comments on freshness of food	'Why no fresh in season vegetables?' (#1054); 'more fruits and salads' (#1112); 'lack of freshness to vegetables' (#1141); 'Salads should be fresher and fat taken off meal & cooked properly.' (#3037)
FOO PRE+	Comments on receipt or cooking method of food	on 'I have been happily surprised at the quality and presentation of meals.' (#1138)
FOO PRE-		'Whatever was on my plate today looked like cat sick. So I seemed to have lost my appetite. (my mum bought me a kebab!)' (#1075); 'I did not eat the food if it is not liquid enough smooth.' (#2080); 'Pureed or soft diet not always paid attention to, soft regular diet is sent up this. I have noticed a number of times when being here and upset the patient.' (#4115)

The temperature of food received much attention and comments mostly focused more on the negative aspect as the food was often described as being 'cool' (Table 7.25). There were 5 positive and 17 negative comments on food temperature.

Table 7.25: Patient comments on the temperature of food

Codes	Description	Examples
FOO TEM+	Comments on temperature of food	Hot food is always served hot.'; (#4026); 'the food is always served piping hot.' (#4060)
FOO TEM-		'the temperature of the meals still too cool!!! (remember a patient cannot always eat immediately. It is served so timing is so important.' (#1124); 'Light diet cold soup with warm ice cream-different...'(#2017); 'Food is often cold/tepid or late.' (#2086); 'Soup should be hotter.' (#2104); 'meals generally satisfactory but occasionally vegetables aren't cooked and pastry undercooked.' (#3015); 'Food is kept warm for a long period before it is eaten, therefore it is not so appetising.' (#4100)

The variety of food received 10 positive and 18 negative comments (Table 7.26). Some agreed the choices were fair for everyone; however, some with restricted diets complained about the very limited options.

Table 7.26: Patient comments on the variety of food

Codes	Description	Examples
FOO VAR+	Comment on variety of food	'I have enjoyed the variety of served food.'(#1151); 'I find the selection and presentation of food very good considering the number of patients to be fed.' (#2008); 'I'm a bit finicky with food, but the choice is so good there is a choice for everyone' (#2019); 'More of selection.'(#4020); 'Variety good.' (#4026); 'overall food and choice of menu are good.(#4079)
FOO VAR-		'more choice, not everything served with sauces/pickles' (#1033) 'a little more of special foods and less bread' (#1053); 'would like toast for breakfast.'(#1106); 'Range of choice becomes monotonous after 5 weeks.' (#2112); 'Meals should give a balanced diet.' (#3104); 'Menu is rather old-fashioned and stodgy- move fresh and healthy foods need to be provided, for example, yoghurt. My impression is that the kitchen at this hospital does well on a very limited budget.' (#4092)

As the menu functioned as a communication tool describing the dishes and carrying the food orders between the wards and the kitchen, the five negative comments revealed some potential problems (Table 7.27). The incidents occurred when a patient did not understand the size of food or the type of ingredients through the language of the menu, or the order was not placed by the patients or was cancelled without notice, or if there was a delay in the process to the kitchen.

Table 7.27: Patient comments on the description of the menu and meal ordering

Codes	Description	Examples
FOO DES+	Description of food content on menu	'The menu is very well presented. No complaint.'(#2114)
FOO DES-		'The size of food should have more detail below.' (#2107); 'Some names on menus should be described on reverse of menu as used to be, to know what you may be eating.' (#2128);
FOO ORD-	Get what you order	'Sometimes on the menu do not come on the ward' (#1095); 'Ordered a salad with sandwiches/ not received & crossed out on order.' (#3020); 'Menu not always available on time to be sent down in time for us to receive what we have ordered.' (#4115)

7.11.3 Interpersonal services (Code: PER.*./-)

Of all the valid responses, 70, or 20%, commented on Interpersonal services. Of these, 56 were positive, and 14 were negative.

The comments toward overall interpersonal services were found to have only positive aspects describing 'excellent service' (Table 7.28).

Table 7.28: Patient comments on Overall impressions of interpersonal services

Codes	Description	Examples
PER OVA+	overall impression of staff service	'We get excellent service.' (#1011, 2117); 'The staff is brilliant whatever you ask you get.' (#4035); 'Service-good!' (#4072)

Within the interpersonal service dimension, comments were related to several attributes: personal attention, timing of delivery, staff help, and individual attention (Table 7.29). The timing of the delivery of the three meals appeared to bother some patient's routine, such as the big time gap between the evening meal and next day's breakfast. Any incident of missing a meal and a patient could feel that they were starving. Other comments were more focused on the lack of individual attention regarding the choices offered to cater to patients' special needs, for example, vegetarians or allergy requirements.

Table 7.29: Patient comments on attributes of the interpersonal service dimension

Codes	Description	Examples
PER ATT +	Attitude of staff being polite and pleasant	'staff very pleasant and helpful' (#1039); 'Nurses are friendly + polite.' (#1104)
PER TIM -		'I don't agree with all food come on tray at same time.' (#1070); 'timing between B and L is too close' (#1088); 'late evenings are a gap.' (#3035); 'It is a long time between evening meal and breakfast.' (#3153)
PER HEL +	help from staff	'the staff were very helpful' (#2121)
PER IND -	Individual attentiveness	'On a completely fat free diet there is nothing appetising! It is the some for people on gluten-free, etc. They offer no substitute! I have had all my food brought in from home.' (#1050); 'Food should be liquidised for elderly without teeth causes problems for some.' (#2012); 'Some days there are no choices for vegetarian with nut allergy!! Nut roast.' (#2077); 'Hospital needs toaster towards patients dietary needs as meals available are quite restrictive. E.g. low or high fat dietary needs. Light diets etc. not enough choices.' (#2130); 'It would be nice for individual dishes for people that have a acid stomach problem. If the food were not too spicy or salt in food it would be all right. It would be helpful to give some option for people cannot digest properly.' (#3046); 'No specific policy /menu for vegetarians' (#3077); 'Very poor choices and knowledge of vegetarian foods and requirements.' (#3115); 'I am vegetarian and always find it difficult, not only in hospital but hotels.' (#3119)

7.11.4 Environmental presentation (Code: ENV.*+/-, and others)

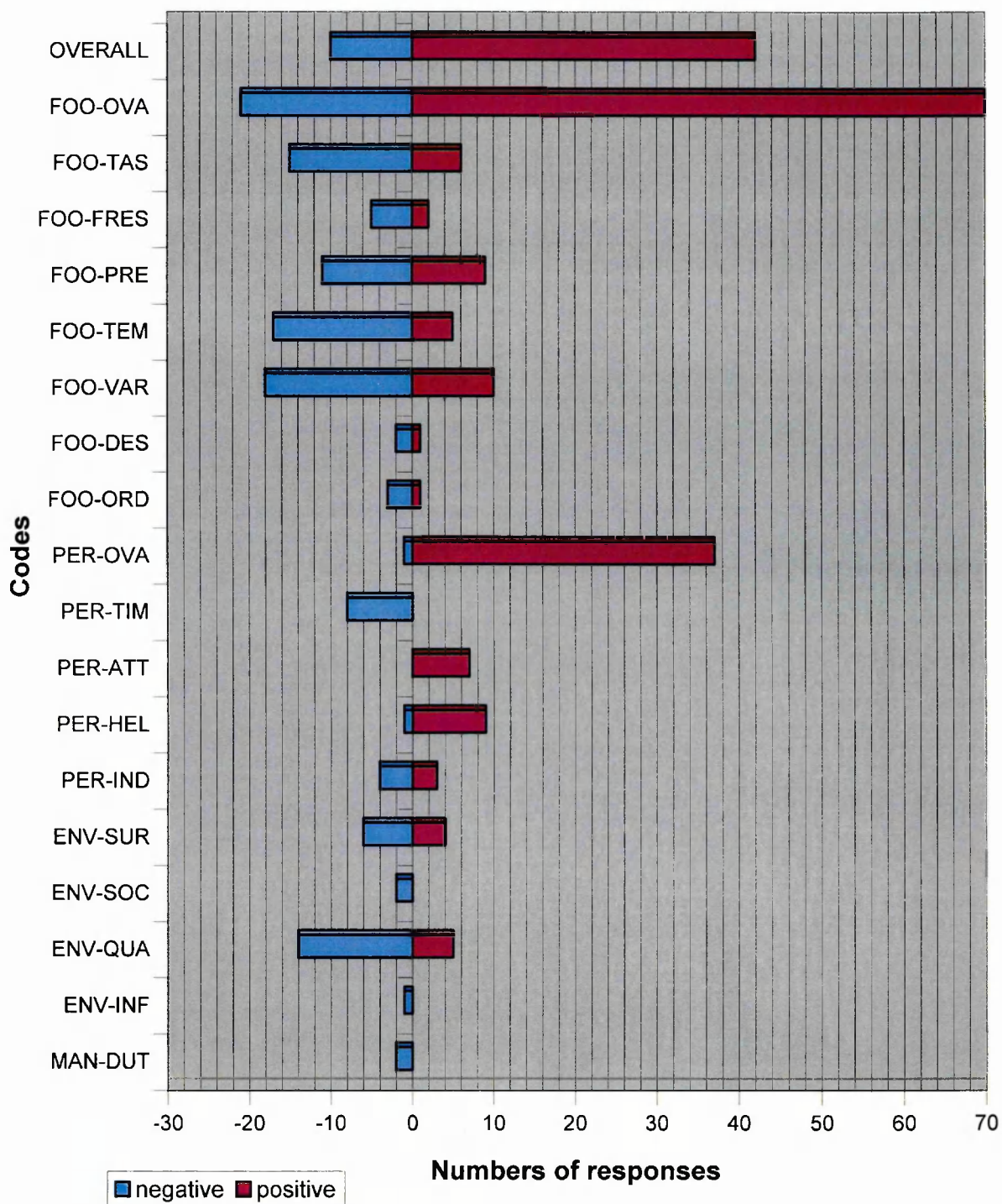
Of a total 32 comments related with the environmental presentation dimension (surroundings and social contact, information about nutrition and food, quantity of food), 23 comments were negative and 9 were positive. Table 7.30 illustrates some examples. Problems with utensils and sharing space with neighbours causing disruptions seems to increase pressure on the bedside eating environment. Although some options were given to adjust the portion size of food within the menu ordering, the control appeared to be difficult as some patients thought some dishes were too large, but some thought them a bit too little. Moreover, other comments about the role and duty of staff emerged to express the confusion regarding the job specifications between nurses and catering staff.

Table 7.30: Patient comments regarding environmental presentation issues

Codes	Description	Examples
ENV SUR -		Plastic cutlery could be a little more robust' (#1036) 'dirty utensils to eat with' (#1092)' for those able would be nice to sit at table.' (#2118)
ENV SOC -		Unfortunately, meals taken on the ward mean that is not a particularly conducive eating environment. Also social opportunities are limited.' (#1146);'Meanwhile, other disruptive patients not very helpful.'(#2005); 'It is difficult to comment from a hospital bed' (#1074)
ENV INF -	information about food and nutrition	'Nutritional information incorrect sometimes, eg. Food supposed to be high protein... ' (#4063)
ENV QUA +	meal size	'Sufficient' (#1078);'Larger serving of side orders, ie. Potatoes.' (#2091); 'Bigger portions better choices.'(#2097)
ENV QUA -		'not everything served with decent portions' (#1033); 'insufficient amounts of some items (breakfast fruits) are sent to cover orders' (#1095); 'would appreciate more than one portion of vegetables.' (#1097); 'Personally I would have enjoyed larger portions,' (#1137); 'Small appetites should be provided for.' (#2107); 'Even if "small portion" ticked, quite often it is too large for an invalid & a lesser amount would be more tempting.' (#2134); 'too much food' (#2144); 'The meals were often too large for me.' (#3125); 'To much food.' (#3144); 'Small portion should be really small.' (#4099)
MAN DUT -	duties among staff with management operation	'Nurses should do only nursing duty and overseeing the meals giving the right food to right patients. The cook should cook and serve the food together. They should be a team together between them.' (#10003)

In summary, the results revealed the respondents have expressed more positive comments (211 responses, 61%) than negative ones (133 responses, 39%) (Figure 7.4). The largest proportion of comment related to the food in general. The attributes in the Food properties dimension received many more negative comments than the attributes in interpersonal services dimension and other issues.

Figure 7.4: Summary of patients' comments on meal services



Key to Codes-

- >OVERALL: Overall impression on meal services
- >FOO-OVA: Overall impression about food
- >FOO-TAS: Taste of food
- >FOO-PRES: Freshness of food
- >FOO-PRE: Receipt or cooking method of food
- >FOO-TEM: Temperature of food
- >FOO-VAR: Variety of food
- >FOO-DES: Description of food content on menu
- >FOO-ORD: GET what you order
- >PER-OVA: Overall impression of staff service
- >PER-TIM: Timing of service
- >PER-ATT: Attitude of staff being polite and pleasant
- >PER-HEL: Help from staff
- >PER-IND: Individual attentiveness
- >ENV-SUR: Social surrounding
- >ENV-SOC: Social contact
- >ENV-QUA: Meal size
- >ENV-INF: Information about food and nutrition
- >MAN-DUT: Duties among staff with management operation

7.12 Conclusions

The results of this survey emphasise the multidimensional aspect of patients' satisfaction with meal services. As the results showed, patients had higher expectations toward the meal services than perceptions. After being weighted by the importance aspect, the WGM of 19 attributes were factored into three dimensions: food properties, interpersonal services, and environmental presentation and verified with a high score of reliability of scale. Through regression analysis, the causal model was then formed to establish the complex influences on patients' satisfaction and food intake.

Several significant outcomes emerged from this patient survey:

- The instantaneous reciprocal interaction of relationships between *patient satisfaction with meals* and the *regularity of finishing the food* and between *appetite* and the *regularity of finishing the food* illustrates some of the difficulties in defining the meal services outcomes in terms of their influences.
- Two of the three dimensions arising from the factor analysis of the WGM 19 attributes, the WGM of food properties dimension and Environmental presentation dimension were found to be linked with predicting patient meal service satisfaction. The interpersonal dimension did not appear to have any correlation with outcome of food intake (Table 7.9).
- Besides these WGM dimensions, the convenience of the meal service timing was found to have a strong influence on predicting patient's meal service satisfaction.

Moreover, the findings highlighted the needs to pinpoint the most critical areas for improvement and the subgroups of patients who are in most urgent need of increased satisfaction. Sub-groups of patients based on various characteristics or contexts were more sensitive to different aspects of meal services; for instance, the specific menu for vegetarian or medical needs.

The final comments from patients also provided more conversational evidence about meal services and enhanced the meaning of the previous quantitative data. The

proportion of positive to negative comments about meal services (Figure 7.4) supported the patient rating of being slightly satisfied with meal services overall (Section 7.3). Food issues appeared to receive largely negative comments, specifically regarding food taste, food temperature, and food variety (Figure 7.4) which once again corroborates the quantitative findings from Table 7.5 that shows large gaps on the same issues. In addition, the comments on management issues highlights new areas of patient concerns about meal service.

This chapter analysed the viewpoints of the consumers, the patients, on meal service. The next chapters will focus on the opinions of the providers in the NHS, mainly service personnel and catering managers, on the same issues.

Chapter Eight

Chapter Eight:

Research Findings II- Service Personnel Questionnaire

8.1 Introduction

With the understanding gained on patients' expectations and perceptions regarding the meal service they received (Chapter 7), this chapter addresses the views from the hospital personnel who served the meals or had duties related with meal service. Beginning with the response rate and respondents' characteristics, the results explore the involvement of hospital staff with mealtime tasks, their beliefs about the service orientation factors, and the staff responsibility for mealtime care. In addition, comments made regarding meal services in hospital will be examined to further elucidate the views of the hospital meal service staff.

8.2 Service personnel survey

8.2.1 Response rate and Specific characteristics of respondents

Returning to the same hospitals where the patient surveys were collected, staff involved in meal services were asked to participate in the second survey as outlined in Chapter 6. The total response rate was 43.72%, giving 283 valid returns for analysis (Table 8.1). At one hospital (HHW), the proposed number of questionnaires could not be distributed due to unforeseen difficulties with new catering and patient service managers at the Trust. They had concerns over what they termed overloading the work and distribution routine of their staff. Since the response rates from each

hospital were similar, the returns can be treated as nearly equal for comparison purposes in spite of the discrepancies in the number of returns.

Table 8.1: Staff survey response rate

Hospitals	HHW	HSR	HHC	HRB	Total
Given	51	200	194	200	645
Valid returns	23	96	89	75	283
Response rate	46%	48%	46%	37%	43.72%

Table 8.2 presents the specific characteristics of the sample based on the 283 valid returns. The majority of the respondents were female (90.1%), 25-44 years old, and from either the nursing or the catering departments. The majority of respondents were titled 'staff nurse', with 'nurse auxiliary' second, and 'health care assistant' third. The job title was then reorganised into four categories (nursing senior (n=50), nurse (n=114), HCA/NA (n=96), and non-medical(n=23)) for later analysis. The respondents were mostly from the surgical ward, followed by those from the medical ward and elderly ward. The respondents from the catering department constituted the smallest sample since they had little chance to serve meals to patients.

Table 8.2: Specific characteristics of the respondents (n=283)

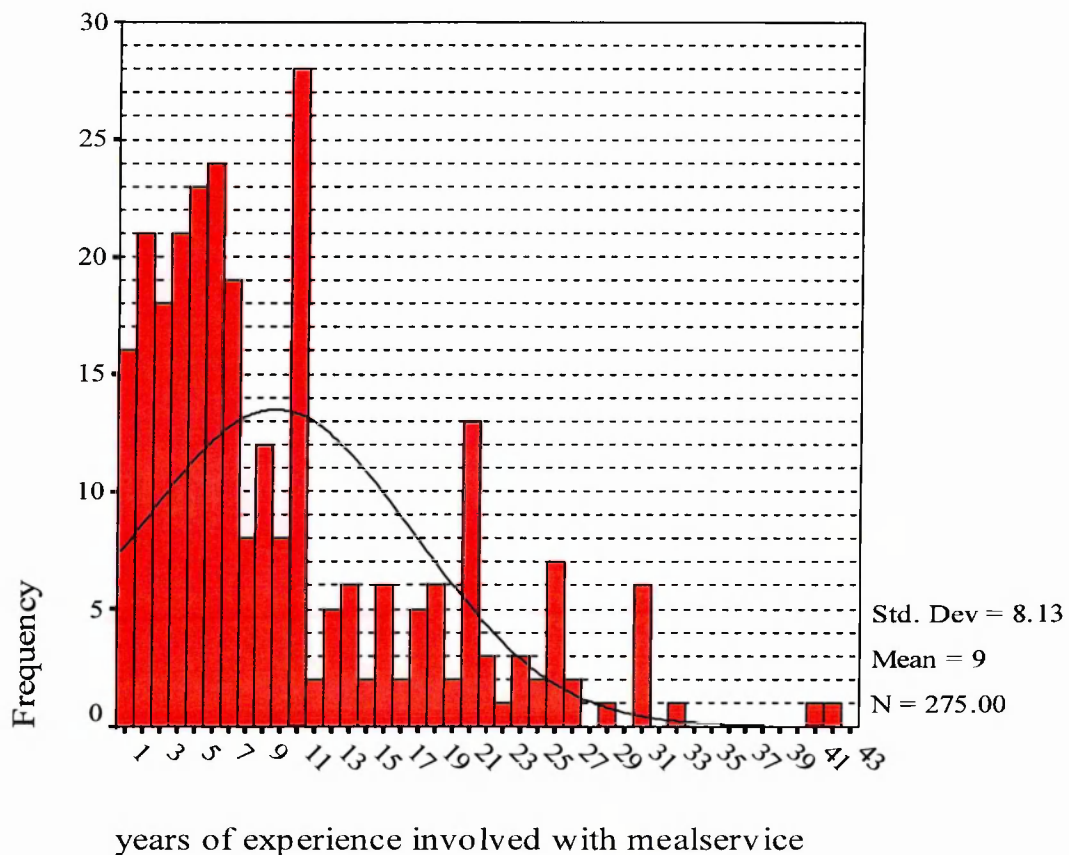
Characteristic	No.	%
Gender		
Male	28	9.9
Female	255	90.1
Age (year)		
Under 25	51	18.1
25-34	82	29.1
35-44	75	26.6
45-54	57	20.1
55 and over	17	6
Not provided	1	0.4
Job title		
Ward manager/sister	18	6.4
RNs/senior nurse	32	11.3
Staff nurse	98	34.6
Student nurse	16	5.7
Healthcare assistant (HCA)	42	14.9
Nurse auxiliary (NA)	54	19.1
Housekeeper	12	4.3
Catering supervisor	5	1.8
Catering staff	5	1.8
Not provided	1	0.4
Type of ward		
Surgical	144	50.9
Medical	96	33.9
Elderly care	25	8.8
Catering department	18	6.4

A χ^2 test showed that there was a significant difference between the job title and the hospital ($\chi^2 = 39.542$, $df=9$, $p < 0.001$). Two hospitals (HHC and HSR) seem to employ the HCA/NA group to be involved with the meal services tasks, and the other two hospitals (HHW and HSR) tended to utilise nurses to perform meal services. However, there were no significant differences between the job title and type of catering system.

A χ^2 test also showed there to be a significant difference between the job title and type of wards ($\chi^2 = 13.463$, $df=3$, $p < 0.01$). The surgical wards had more nursing staff and HCA's/NA's serving meals than other wards, which used more non-medical staff.

From the returns, 275 respondents identified the number of years of experience they had in relation to meal tray delivery, and eight did not specify length of experience particularly using terms such as ‘too many’ or ‘more than you imagine’. The average number of years was nine, illustrated by the histogram of the sample distribution in Figure 8.1. Two respondents had been involved for 40 years or more, while the majority (10.2%) of respondents had ten years experience. Over half of the respondents (51.6%) had less than 7 years involvement. A high percentage (5.8%) of respondents had less than one year involved in meal tray delivery, which may result from a high rate of staff turnover and imply some suspicion of the level of effectiveness and efficiency of the operating meal service system.

Figure 8.1: Years of experience involved with meal tray delivery



8.2.2 Question one: Involvement with mealtime tasks

Overall, the mean of extent of involvement with mealtime tasks as part of routine ranged from 5.67 to 3.57 out of a 7-point scale depending on the task (Table 8.3).

The highest mean of involvement was related to ‘assisting with eating problems as they occur’, and the lowest one with ‘collecting and returning menu orders to the kitchen’. This implies that staff were more involved when patients’ encountered eating problems, but much less so with the physical aspects of meal services and managing menu orders. This suggests that some important aspects of monitoring the nutritional wellbeing of individuals may be missed, with less involvement in assisting with menu choices and observing returned trays.

Table 8.3: The mean of mealtimes tasks as part of routine

Mealtimes tasks	Mean	SD
q1g-Assisting with eating problems as they occur	5.67	1.59
q1f-Checking patients' well-being at meal delivery	5.47	1.68
q1j-Helping patients with food related inquire	5.04	1.65
q1e-Serving food from the meal trolley	4.70	2.2
q1b-Assisting with patients' menu choices	4.57	1.8
q1d-Supervising the meal trolley	4.49	2.12
q1i-Observing returned meal trays	4.38	1.96
q1a-Give the menu card to patients	4.37	2.15
q1h-Collect discarded dishes	3.95	2.08
q1c-Collecting and returning menu orders to the kitchen	3.57	2.18

Note: Measured on a 7-point scale from 1 being ‘never’ to 7 being ‘always’.

8.2.2.1 Reliability of scale for the meal tasks

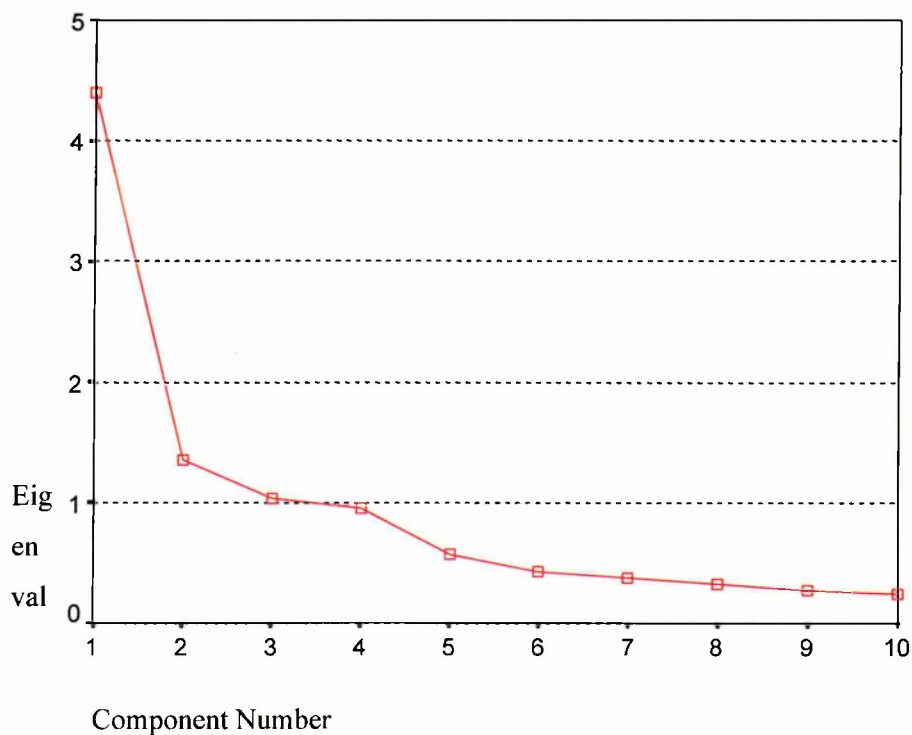
Using Cronbach’s coefficient α to assess the internal consistency of measurement, the results revealed the alpha values of each item were all above 0.8 and that all the item-to-total correlations exceeded 0.5 (Table 8.4). A high alpha (0.7 as an acceptable level) indicates that the items in the scale were ‘tightly connected’ (Frankfort-Nachmias and Nachmias, 1996). The rationale for internal consistency is that the individual items or indicators of the scale are all measuring the same construct, and thus could be considered highly intercorrelated when the item-to-total correlations exceeded 0.5 (Hair *et al.*, 1998).

Table 8.4: Reliability analysis on the 10 mealtime task items

	Corrected item- total correlation	Alpha if item deleted
q1a-Give the menu card to patients	0.5757	0.8383
q1b-Assisting with patients' menu choices	0.6103	0.8357
q1c-Collecting and returning menu orders to the kitchen	0.5193	0.8439
q1d-Supervising the meal trolley	0.5265	0.8429
q1e-Serving food from the meal trolley	0.6004	0.8360
q1f-Checking patients' well-being at meal delivery	0.6305	0.8349
q1g-Assisting with eating problems as they occur	0.5580	0.8408
q1h-Collect discarded dishes	0.5024	0.8450
q1i-Observing returned meal trays	0.5288	0.8423
q1j-Helping patients with food related inquires	0.5757	0.8392
Alpha of the 10 items		0.8536

8.2.2.2 Underlying dimension of mealtime tasks

Since the reliability analysis has established the internal consistency of the mealtime task items, a factor analysis was conducted to determine the structure of the dimensionality. As mentioned in 6.4.1.2, seven steps of factor analysis were executed to ensure the technique was appropriate and satisfied the assumptions. In relation to the correlation matrix among the 10 items of mealtime tasks, the assumptions in factor analysis were satisfied (the value of Kaiser-Meyer-Olkin Measure of sampling adequacy of inter-correlation among the variables was 0.813 and the Bartlett test of Sphericity was significant ($\chi^2 = 1218.11$, $df = 45$, $p < 0.01$)). With the principal component analysis to summarise most of the original information (variance) in a minimum number of factors for prediction purposes, four factor solutions were extracted according to the criterion of an Eigenvalue of approximately 1 (Figure 8.2).

Figure 8.2: Scree plot of mealtime tasks (n=283)

With an orthogonal rotation method (varimax), the rotated factor matrix provided a meaningful pattern of variable loadings for mealtime tasks, separating the data into four dimensions that accounted for 77.63% of the common variances (Table 8.5). As the commonalities of each variable had satisfied more than the 0.5 of acceptable level of explanation, the factor loadings displayed in Table 8.5 only include the values exceeding the 0.35 cut-off point, as indicated by a sample size (283) of more than 250 in this survey. (Hair *et al.*, 1998)

Table 8.5: The factor loadings of mealtime tasks

Items/factors	Menu selection	Meal supervision	Cleanup/ Feedback	Food delivery	Commonalties
Give the menu card	0.878				0.823
Assisting choices	0.814				0.783
Collect and return menu to kitchen	0.773				0.668
Assisting eating problems		0.866			0.815
Checking patients		0.797			0.791
Observing returned meal trays			0.864		0.804
Collect discarded dishes			0.827		0.820
Food related inquires		0.553	0.575		0.758
Supervising the meal trolley				0.861	0.828
Serving food				0.801	0.675
					Total
% of Variance	22.492	19.604	19.000	16.536	77.633
Cronbach's α	0.8208	0.7851	0.7674	0.7603	

Note:

Extraction method: Principal Component Analysis

Rotation method: Varimax with Kaiser Normalization

Measure of sampling adequacy (MSA)=0.813

Bartlett test of sphericity is significant ($\chi^2=1218.11, df=45, p<0.01$).

As N=283>250, 0.35 as factor loading cut-off point.

The first dimension accounted for 22.49% of the common variance and was labelled *menu selection*. It consisted of the items involving menu functions - 'giving out the menu cards', 'assisting choices on the dishes', and 'collecting and returning menus to the kitchen'. The second dimension accounted for 19.6% of the common variance and was labelled *meal supervision*. It concentrated more on overseeing the provision of meal services - 'checking patients' well-being at meal delivery' and 'assisting with eating problems as they occurred'. The third dimension accounted for 19% of the common variances and was labelled *cleanup/feedback*. It focused on the services after patients finished the meal in terms of observing returned meal trays and collecting discarded dishes. One item, the task of 'helping patients with food related

enquiries', was found to have close factor loading scores in both the second and third dimensions. When considering the meal service process, it appears to be reasonable that patients asked food-related questions when they interacted with staff. The remaining items accounted for 16.53% of the common variance (fourth dimension), which was labelled *food delivery* and involved physically serving the food and supervising the meal trolleys.

Cronbach's α test was conducted to re-check the internal consistency of each subscale, and the results showed a satisfactory value for each dimension (Table 8.5) and validated the solution of the factor analysis.

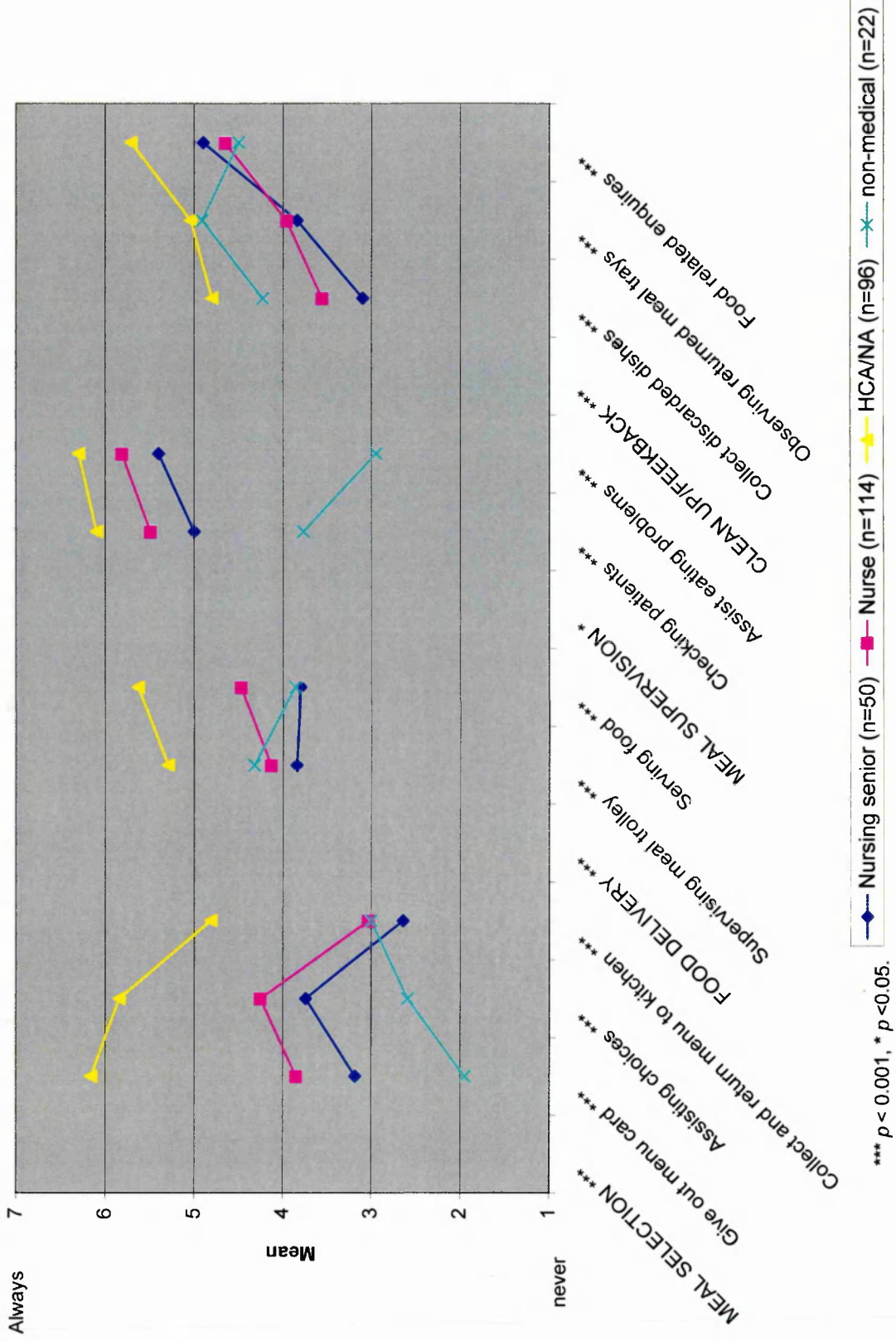
8.2.2.3 Effect of individual characteristics and contextual factors on mealtime tasks

A series of one-way analyses of variance and independent sample *t*-tests were performed to test the effect of individual characteristics and contextual factors (catering operation and ward types) on the level of involvement with mealtime tasks. Non-parametric tests (Man-Whitney test or Kruskal-Wallis test) were applied if the assumptions for the one-way ANOVA and the independent sample *t*-test were seriously violated.

◆ Job position

The results revealed that the degree of involvement in the four dimensions of mealtime tasks and every individual task was significantly different amongst senior nurses, nurses, HCA/NA, and non-medical groups. Figure 8.3 displays the mean differences between level of involvement in mealtime tasks amongst the different job positions (Appendix 8.1 shows details of the mean scores of each group). Each group seemed to have a different degree of involvement in the mealtime tasks, in the order of HCA/NA, nurses, senior nurses, and non-medical staff (most to least involvement).

Figure 8.3: Extent of involvement in mealtime tasks by job position



Through post-hoc multiple comparison tests, significant differences were found between HCA/NA and the other three groups in terms of the Menu selection dimension. The HCA/NA group was also found to have significantly higher involvement in the tasks of 'giving out menu cards', 'assisting choices', and 'collecting and returning menus to the kitchen' than the other groups. Moreover, the non-medical group was found to have significantly lower involvement in both the tasks of 'giving out menu cards' and 'assisting with choices'. It is suggested that while non-medical groups could be busy with their other duties, such as housekeeping or working in the kitchen, HCA/NA's were working on the ward, and were the first contact with patients about their menu orders.

The HCA/NA group was also found to have significantly greater involvement in the food delivery dimension than the senior nurses. They in turn had significantly more involvement with the tasks of 'supervising meal trolley' and 'serving food' compared with the senior nurses and nurses. The non-medical staff was found to have a significantly much lower involvement in serving food than HCA/NA. The non-medical group also had significantly lower participation in the meal supervision dimension than the other groups, as well as the tasks of 'checking patients' and 'assisting eating problems'. The non-medical staff also had significantly lower involvement in answering food-related enquiries than HCA/NA staff.

The HCA/NA group was found to have significantly higher involvement in the task of 'checking patients' than the other groups although the nursing staff did have higher scores on checking patients and assisting with eating problems. The HCA/NA and non-medical group had significantly higher involvement in the cleanup/feedback dimension than the nursing staff. The HCA/NA group had significantly higher involvement in the tasks of collecting discarded dishes, observing returned meal trays, and answering food related enquiries than the nursing staff. This could lead to some issues regarding patient's food consumption if no system is in place for the HCA/NA to report back to the nursing team. In summary, the HCA/HA generally appeared to have a much higher involvement in mealtime tasks of every dimension and every individual task than any other staff group.

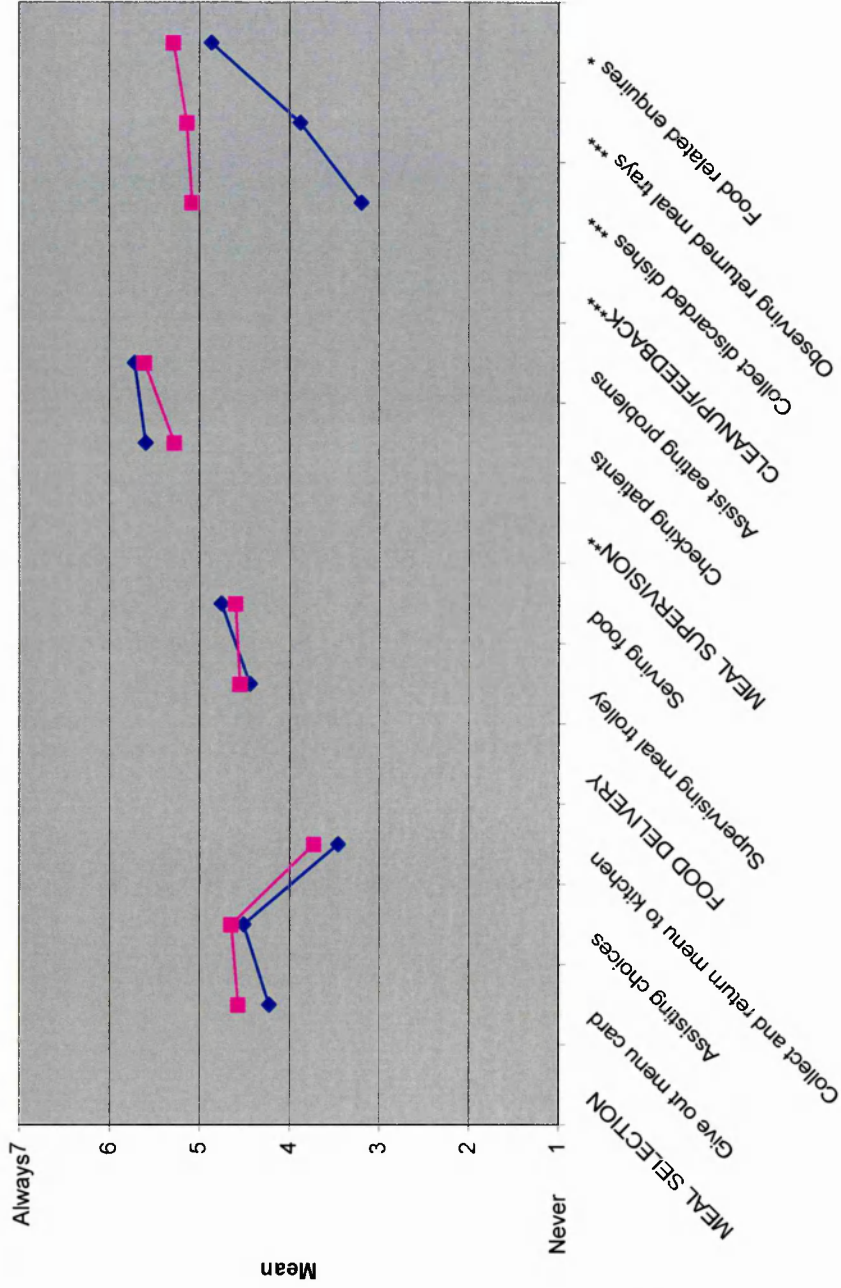
◆ Catering system

Two dimensions of mealtime tasks (Meal supervision and Cleanup/feedback) were found to be significantly different between hospitals with in-house and contracted-out catering systems (Appendix 8.4). Figure 8.4 shows the mean difference on the degree of involvement in mealtime tasks between the two catering systems. The respondents from the in-house catering system had significantly higher involvement in the meal supervision dimensions than the contracted-out one. However, the respondents from the contracted-out catering system had significant higher involvement in the Cleanup/feedback dimension, which included three individual tasks - 'Collecting discarded dishes', 'observing returned meal trays', and 'answering food related questions'.

◆ Types of ward

The one-way ANOVA analysis found that the levels of involvement in three mealtime tasks dimension (Menu selection, Meal supervision, and Cleanup/feedback) had significant differences amongst the different types of ward (Appendix 8.5). Figure 8.5 exhibits the mean differences of involvement amongst staff from four different departments (surgical, medical, and elderly care wards, and catering).

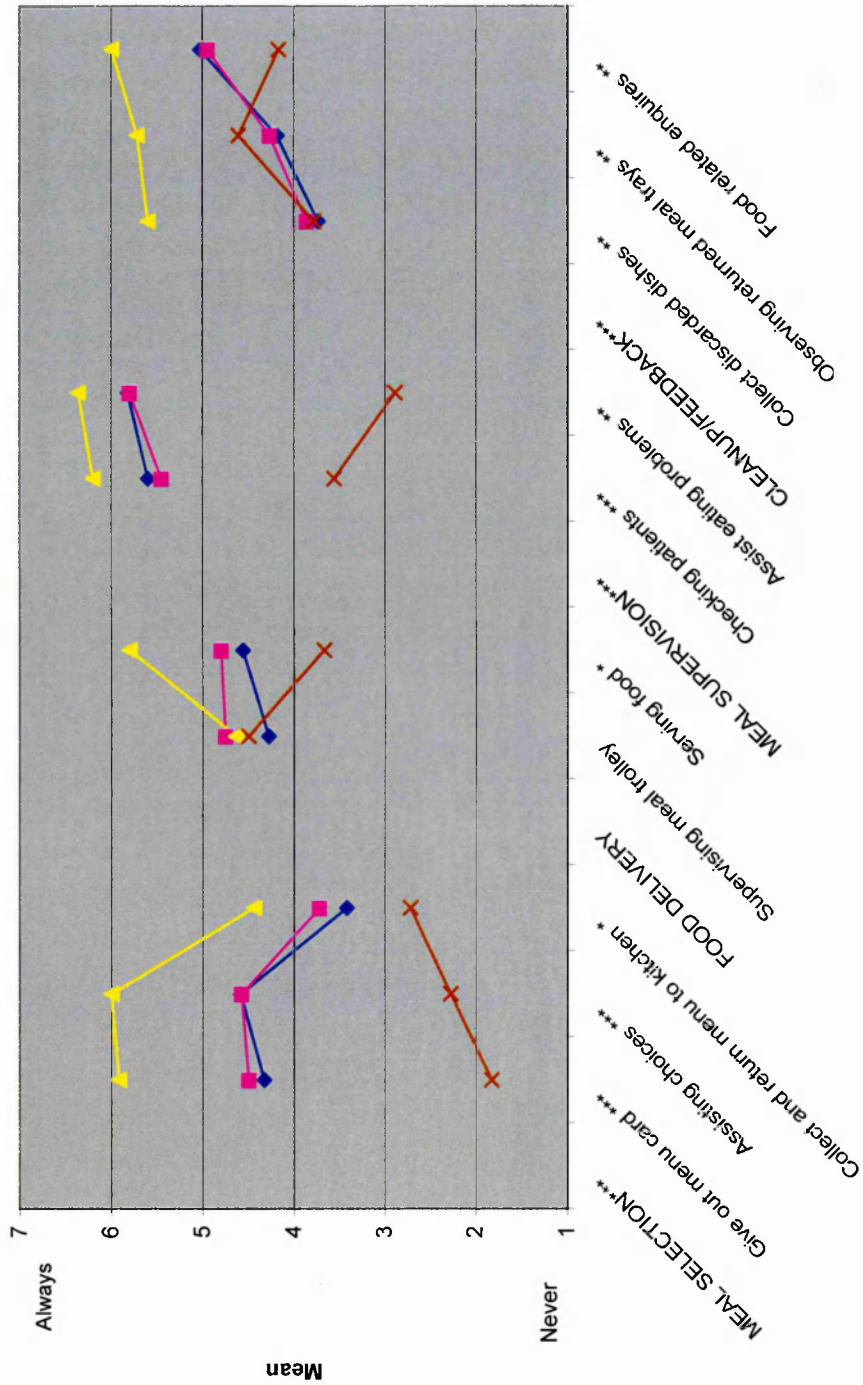
Figure 8.4: Extent of involvement in mealtimes tasks by catering system



◆ In-house (n=171) ■ Contracted-out (n=112)

*** $P < 0.001$, ** $P < 0.01$, * $P < 0.05$

Figure 8.5: Extent of involvement in mealtime tasks by types of ward



*** P < 0.001, ** P < 0.01, * P < 0.05

—◆— Surgical (n=144) —■— Medical (n=96) —▲— Elderly care (n=25) —×— Catering dept. (n=18)

The respondents from the catering department were significantly less involved in 'giving out the menu card', 'assisting choices', 'checking patients', and 'assisting eating problems' than the other three departments. This suggests that catering staff are less involved with eating consultation with patients, while the nursing staff and HCA/NA were in position to offer assistance.

The respondents from the elderly ward had a higher involvement overall as well as significantly higher involvement in 'giving out the menu card', 'assisting with choices', 'collecting discarded dishes', 'observing returned meal trays', and 'answering food related questions'. It appeared that staff in the elderly ward had more opportunity or perhaps a greater need to deal with meal services at the ward.

8.2.3 Question two: Service orientation factors

The results of Question two showed that the majority of the respondents agreed with the service orientation statements, as the mean scores of 14 out of 16 were greater than four on the seven point scale (Table 8.6). The highest mean response was 6.76 for the statement 'I ensure the patients get the meal that they ordered'. The lowest was for the statement 'I do not enjoy delivering meals trays to patients' (mean = 3.38); which means that to a small extent, respondents did enjoy delivering meals trays to patients. The second lowest scored statement was 'Delivering meal trays to patients is one of the most important responsibilities of my job' (mean = 3.63). That suggested that meal service had a lower priority compared with other responsibilities. When combined with the low mean scores in question 2g, 2h, and 2e, this implies the relationship with patients appears less than perfect. Furthermore, the lower the mean scores of agreement with the 16 statements, the higher the standard deviation became, showing that the staff were less convergent on their opinion.

Table 8.6: The mean and standard deviation of 16 service orientation statements

Service orientation statements	Mean	SD
<input type="checkbox"/> q2c-I ensure the patients get the meal that they ordered.	6.76	0.81
<input type="checkbox"/> q2a-Observing the amount of food eaten by a patient is an important part of patient care.	6.55	0.88
<input type="checkbox"/> q2b-Ensuring a patient eats enough of the right types of food is an important part of patient care.	6.47	0.94
<input type="checkbox"/> q2d-An important part of my job is to help those patients with eating difficulties.	6.42	1.17
<input type="checkbox"/> q2n-I am polite and pleasant when delivering meal trays to patients, even if they are grouchy.	6.26	1.08
<input type="checkbox"/> q2l-I will not collect the food tray without patients' permission.	5.88	1.34
<input type="checkbox"/> q2o-I will notice if a patient misses the regular meal service and make sure alternative food is provided.	5.81	1.59
<input type="checkbox"/> q2m- I ensure patients can reach the plates when I serve them	5.70	1.33
<input type="checkbox"/> q2g-Patients show their appreciation for individual care.	4.99	1.42
<input type="checkbox"/> q2f- Patients treat me with respect.	4.60	1.53
<input type="checkbox"/> q2i- In this hospital, patient meal service is given the same importance as most other procedure.	4.48	1.69
<input type="checkbox"/> q2k-I was trained to give good service to patients at meal times.	4.17	2.11
<input type="checkbox"/> q2h- Our meal service procedures make it easy for me to give excellent service.	4.12	1.66
<input type="checkbox"/> q2e-Patients show understanding and patience when we are really busy.	4.02	1.69
<input type="checkbox"/> q2j-Delivering meal trays to patients is one of the most important responsibilities of my job.	3.63	1.80
<input type="checkbox"/> q2p-I do not enjoy delivering meals trays to patients.	3.38	2.05

Note: Measured on a 7 point Likert scale; 1 being completely disagreeing with the statements and 7 being completely agreeing with the statements.

8.2.3.1 Reliability of scale for the service orientation factors

In assessing the internal consistency of measurement, Cronbach's coefficient α was considered satisfactory on the 16 statements at 0.731 (Table 8.7). Although the corrected item – total correlation was not as high as the guidelines suggested (0.5), the 'alpha if item deleted' measures were above 0.7 for each item. Therefore, the

reliability was satisfactory and indicated that these 16 service orientation factors measured the same phenomena on the beliefs toward meal services.

Table 8.7: Reliability analysis of the 16 service orientation factors

Service orientation factors	Corrected item-total correlation	Alpha if item deleted
<input type="checkbox"/> q2a- Observing the amount of food eaten by a patient is an important part of patient care.	0.242	0.7269
<input type="checkbox"/> q2b- Ensuring a patient eats enough of the right types of food is an important part of patient care.	0.2261	0.7276
<input type="checkbox"/> q2c- I ensure the patients can reach the plates when I serve them.	0.2056	0.7291
<input type="checkbox"/> q2d- An important part of my job is to help those patients with eating difficulties.	0.2399	0.7265
<input type="checkbox"/> q2e- Patients show understanding and patience when we are really busy.	0.3384	0.7180
<input type="checkbox"/> q2f- Patients treat me with respect.	0.4081	0.7106
<input type="checkbox"/> q2g- Patients show their appreciation for individual care.	0.3961	0.7124
<input type="checkbox"/> q2h- Our meal service procedures make it easy for me to provide excellent patient service.	0.4240	0.7082
<input type="checkbox"/> q2i- In this hospital, patient meal service is given the same importance as most other procedure.	0.4773	0.7019
<input type="checkbox"/> q2j- Delivering meal trays to patients is one of the most important responsibilities of my job.	0.4146	0.7090
<input type="checkbox"/> q2k- I was trained to give good service to patients at meal times.	0.3570	0.7179
<input type="checkbox"/> q2l- I will notice if a patient misses the regular meal service and make sure alternative food is provided.	0.3995	0.7126
<input type="checkbox"/> q2m- I ensure patients can get the meal that they ordered.	0.3301	0.7189
<input type="checkbox"/> q2n- I am polite and pleasant when delivering meal trays to patients, even if they are grouchy.	0.3563	0.7183
<input type="checkbox"/> q2o- I will not collect the food tray without patients' permission.	0.2835	0.7236
<input type="checkbox"/> q2p- I do not enjoy delivering meals trays to patients. *	0.1754	0.7417
Alpha of 16 items		0.7321

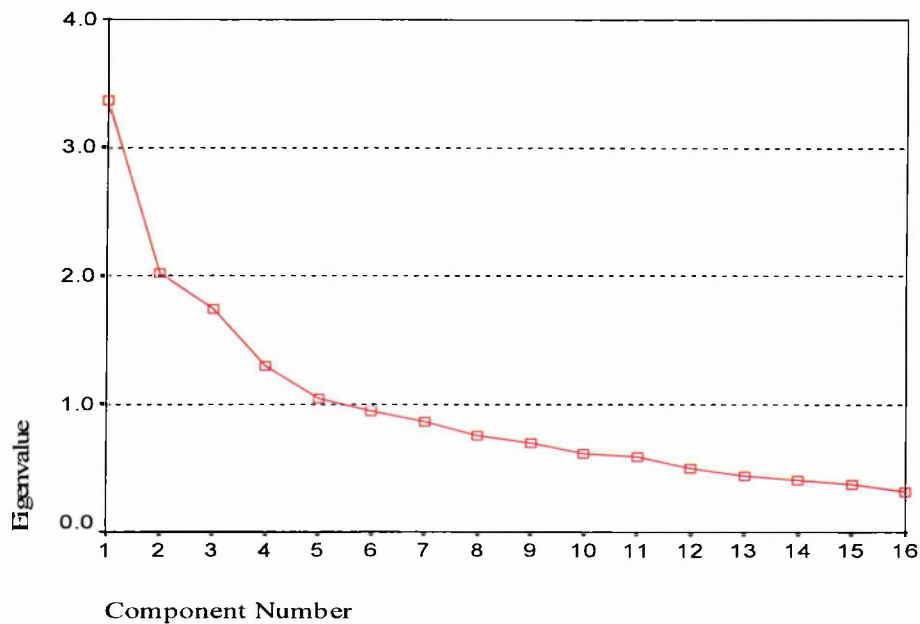
* The statement results have been inverted so that the phenomena are measured in the same direction.

8.2.3.2 Underlying dimension of service orientation factors

With the results of reliability analysis being highly interrelated, the 16 statements associated with service orientation were processed using the seven steps of factor analysis to determine the dimensionality. The assumptions of the factor analysis were satisfied (Kaiser-Meyer-Olkin measure of sampling adequacy = 0.716 of inter-

correlation among the variables, and significant correlation on Bartlett's test of Sphericity ($\chi^2=989.242$, $df=120$, $p<0.001$). After the factor model was derived from the principal component analysis, six factors were extracted with the latent roots criterion which considered that only factors having Eigenvalues approximately equal to 1 were significant in the scree plot (Figure 8.6).

Figure 8.6: The scree plot of Service orientation factors



With an orthogonal rotation (varimax method), the six factors with the best fit in the factor diagram explained 65.16% of the variables under examination. Table 8.8 illustrates the factor pattern matrix, with only factor loadings greater than 0.35 considered significant. Although four statements fell in to more than one single factor, the commonalities of the variables were approximately 0.5, meeting acceptable levels of explanation (Hair *et al.*, 1998). As a result, these four statements were located to the factor within which they had the highest factor loading.

Table 8.8: Factor loading of service orientation factors on meal services (n=282)

Statements/Factors	Patient appreciation	Service Procedure	Patient care	Assurance	Responsiveness and Training	Physical delivery	Communities
q2f- Patients treat me with respect.	0.860						0.761
q2g- Patients show their appreciation for individual care.	0.775						0.646
q2e- Patients show understanding and patience when we are really busy.	0.764						0.612
q2i- In this hospital, patient meal service is given the same importance as most other procedure.		0.754					0.705
q2h- Our meal service procedures make it easy for me to give excellent service.	0.422	0.685					0.688
q2i- I will not collect the food tray without patients' permission.		0.620		0.421			0.625
q2m- I ensure patients can reach the plates when I serve them		0.605			0.359		0.676
q2a- Observing the amount of food eaten by a patient is an important part of patient care.			0.812				0.697
q2b- Ensuring a patient eats enough of the right types of food is an important part of patient care.			0.812				0.706
q2d- An important part of my job is to help those patients with eating difficulties.			0.511	0.416			0.495
q2h- I am polite and pleasant when delivering meal trays to patients, even if they are grouchy.				0.808			0.720
q2o- I will notice if a patient misses the regular meal service and make sure alternative food is provided.				0.689			0.504
q2c- I ensure the patients get the meal that they ordered.			0.440	0.451			0.507
q2j- Delivering meal trays to patients is one of the most important responsibilities of my job.					0.717		0.624
q2k- I was trained to give good service to patients at meal times.					0.709		0.580
q2p- I do not enjoy delivering meals trays to patients.					0.917		0.882
% of Variance	13.939	12.244	11.814	11.508	9.03	6.626	65.161
Cronbach's a	0.760	0.673	0.593	0.514	0.517	n/a	

Note: Measure of sampling adequacy (MSA)=0.716

Extraction method: Principal Component Analysis
Bartlett's test of sphericity is significant ($\chi^2 = 989.242, df=120, p<0.001$).

Rotation method: Varimax with Kaiser Normalization
As $N=283 > 250$, the factor loading cut-off point was 0.35.

The first dimension accounted for 13.94% of the common variable and was labelled *patient appreciation*. These statements involved patients' respect, appreciation, understanding and patience toward staff. The second dimension accounted for 12.24% of the variances and was labelled *service procedure*. It consisted of four statements relating to the priority and ease of the service procedures for staff to perform the meal services, collecting the tray with patients' permission, and ensuring patients can reach the plates. The third dimension accounted for 11.81% of the variance and was labelled *patient care*. It concerned staff behaviour and empathy when dealing with patients' eating, such as observing the amount of food been eaten, ensuring enough of the right types of food for patients, and helping with eating difficulties. The fourth dimension accounted for 11.51% of the variance and was labelled *Assurance*. It focused on staff's empathy by being polite and pleasant, noting if alternative food could be provided to patients, and ensuring patients get what they ordered. The fifth dimension accounted for 9.03% of the variances and was labelled *Responsiveness and Training*. It includes delivering meals as part of staff responsibilities and receiving training on meal services. The last dimension point contains only one statement on the enjoyment of delivering meal trays to patients and was named *physical delivery*, which accounted for 6.63% of the variances.

Each sub-scale was assessed again with Cronbach's α to corroborate the internal consistency of each dimension. The results found only one dimension (patient interaction) had acceptable levels of reliability with values above 0.7 as their component items were unidimensional. However, the rest of dimensions did not have their unidimensionality confirmed. As well, five statements overlapped on more than one factor. It appears then that these 16 statements are not capable of being represented as multiple facets of a concept for additional analysis; therefore, the results of these factor solutions are not included in the following tests.

8.2.3.3 Effect of individual characteristics and contextual factors on the service orientation factors

Using a series of one-way analyses of variance and independent sample *t*-tests, the effect of individual characteristics (job position, gender, age) and contextual factors

(catering operation and ward types) were analysed to determine differences in relation to each service orientation factor. Non-parametric tests (Man-Whitney test or Kruskal-Wallis test) were applied when the assumptions of the one-way ANOVA and the independent sample *t*-test were seriously violated.

◆ **Job position**

The results showed significant differences in relation to 11 statements between senior nurses, nurses, HCA/NA, and non-medical groups, while some statements presented similar levels of agreement. Figure 8.7 illustrates the mean differences by job position on the 7 point Likert scale (Appendix 8.1 specifies the scores).

The non-medical staff group was found to have significantly lower levels of agreement on the statements:

- q2a- 'Observing the amount of food eaten by a patient is an important part of patient care.'
- q2c- 'I ensure the patients can reach the plates when I serve them.'
- q2d- 'An important part of my job is to help those patients with eating difficulties.'

than other groups. This may suggest that non-medical staff are not focused as much on patients' eating conditions as nursing staff and the HCA/NA group, although they still had a positive agreement.

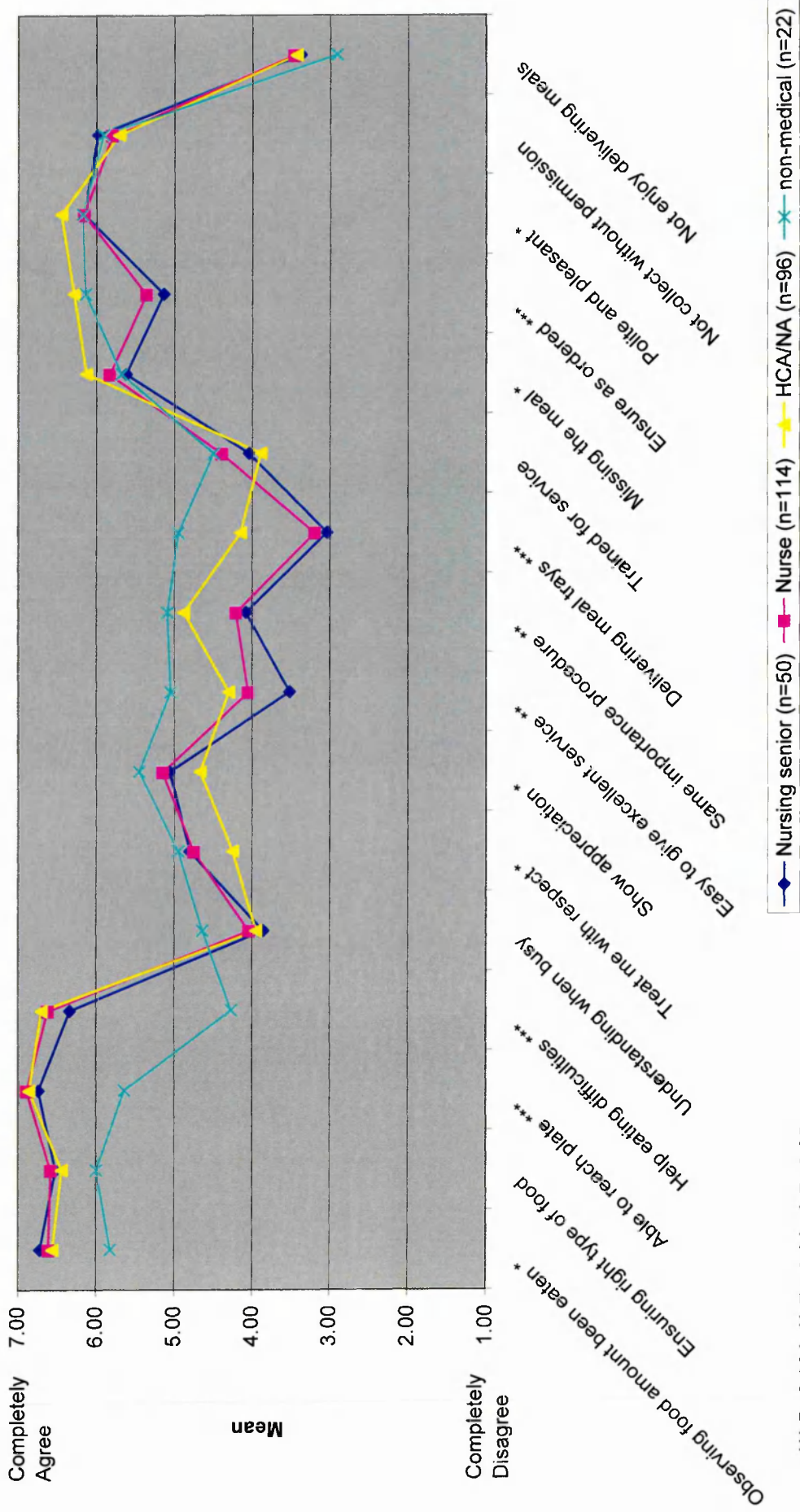
In addition, the nursing staff was found to disagree significantly more with the statement:

- q2h- 'Our meal service procedures make it easy for me to provide excellent patient service.'
- than HCA/NA and non-medical groups. The senior nurses were even more negative (a mean 3.52 of out of 7).

The HCA/NA staff was found to have a significantly higher level of agreement with the statement:

- q2i- 'In this hospital, patient meal service is given the same importance as most other procedure.'
- than nursing staff.

Figure 8.7: Mean of service orientation factors by job position



*** P<0.001, ** P<0.01, * P<0.05

Both the HCA/NA and non-medical staff had higher scores on the statements of

- q2j- 'Delivering meal trays to patients is one of the most important responsibilities of my job.'
- q2m- 'I ensure patients can get the meal that they ordered.'

than nursing staff. The nursing staff agreed less that delivering meals was one of their most important responsibilities suggesting that they believe that their job position should not be oriented to meal services.

◆ Gender

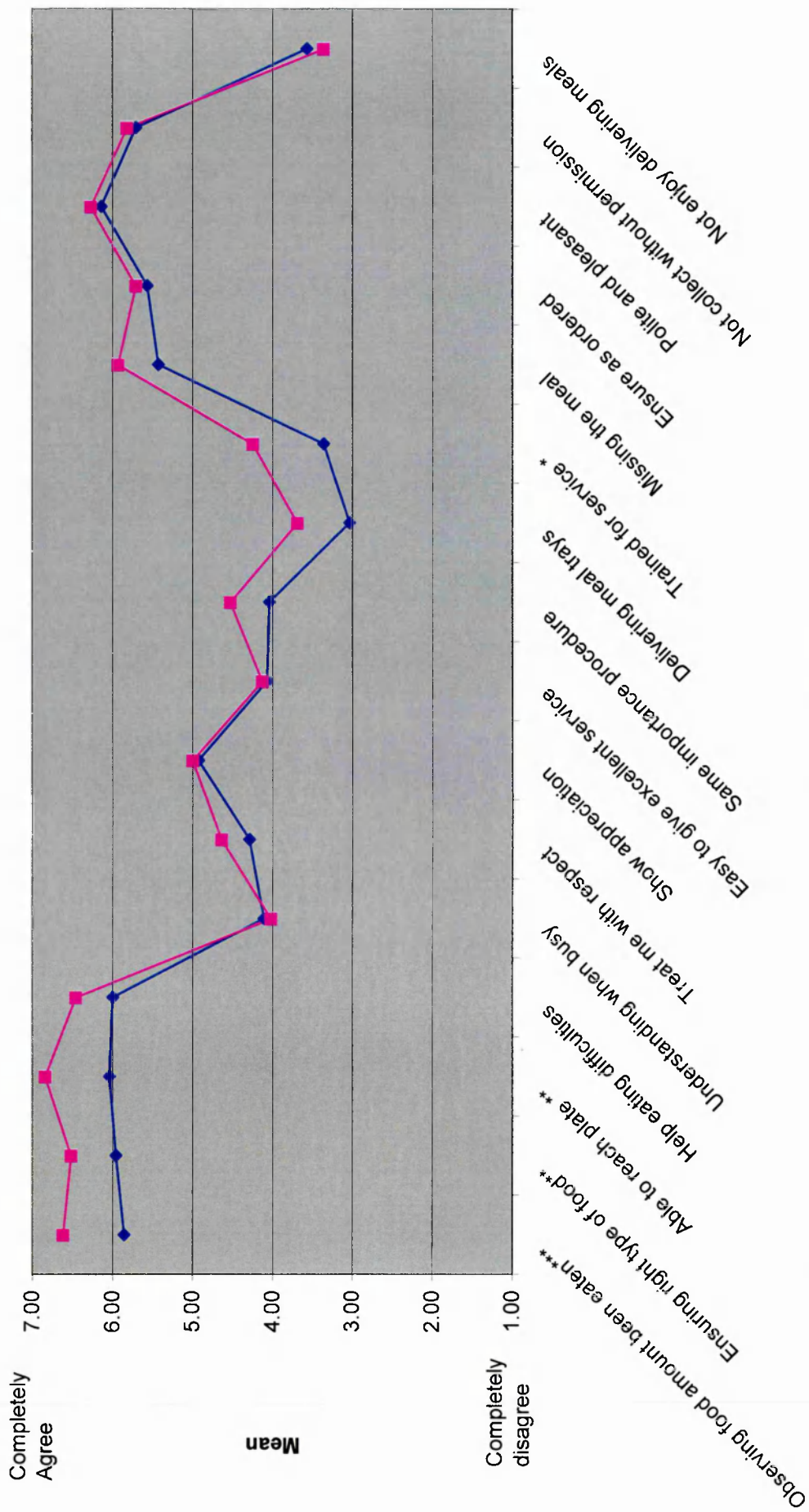
With the results of independent *t*-tests and the Mann-Whitney U test, four statements were found to differ significantly between female and male respondents (Figure 8.8).

Female respondents had higher agreement on

- q2a- 'Observing the amount of food eaten by a patient is an important part of patient care.'
- q2b- 'Ensuring a patient eats enough of the right types of food is an important part of patient care.'
- q2c- 'I ensure the patients can reach the plates when I serve them.'
- q2k- 'I was trained to give good service to patients at meal times.'

than male groups, suggesting that female respondents were more concerned about patients' eating and adequate diet.

Figure 8.8: Mean of service orientation factors by gender



*** P < 0.001, ** P < 0.01, * P < 0.05

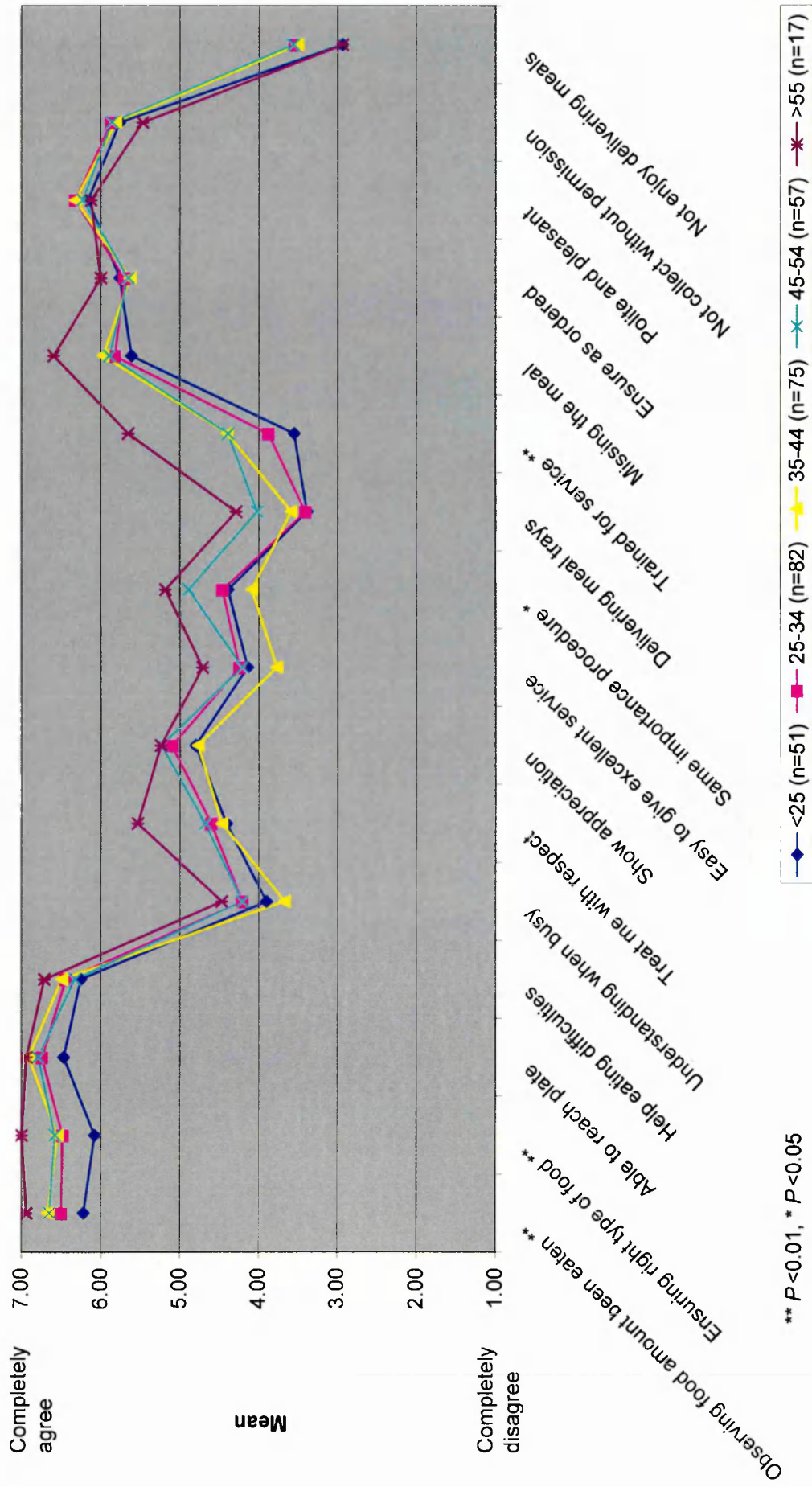
◆ **Age**

The respondents aged over 55 generally seemed to have higher scores on service orientation factors than other groups (Figure 8.9) but only four statements showed significant differences among the different age groups. They were:

- q2a- 'Observing the amount of food eaten by a patient is an important part of patient care.'
- q2b- 'Ensuring a patient eats enough of the right types of food is an important part of patient care.'
- q2i- 'In this hospital, patient meal service is given the same importance as most other procedure.'
- q2k- 'I was trained to give good service to patients at meal times.'

Respondents aged under 25 had significantly lower agreement on 'observing food amount eaten' and 'ensuring the right type of food' than respondents aged over 45. This suggests that younger staff were less concerned with what patients ate than older staff. The respondents aged over 55 had higher agreement on 'trained for service' than the respondents aged under 34.

Figure 8.9: Mean of service orientation factors by age



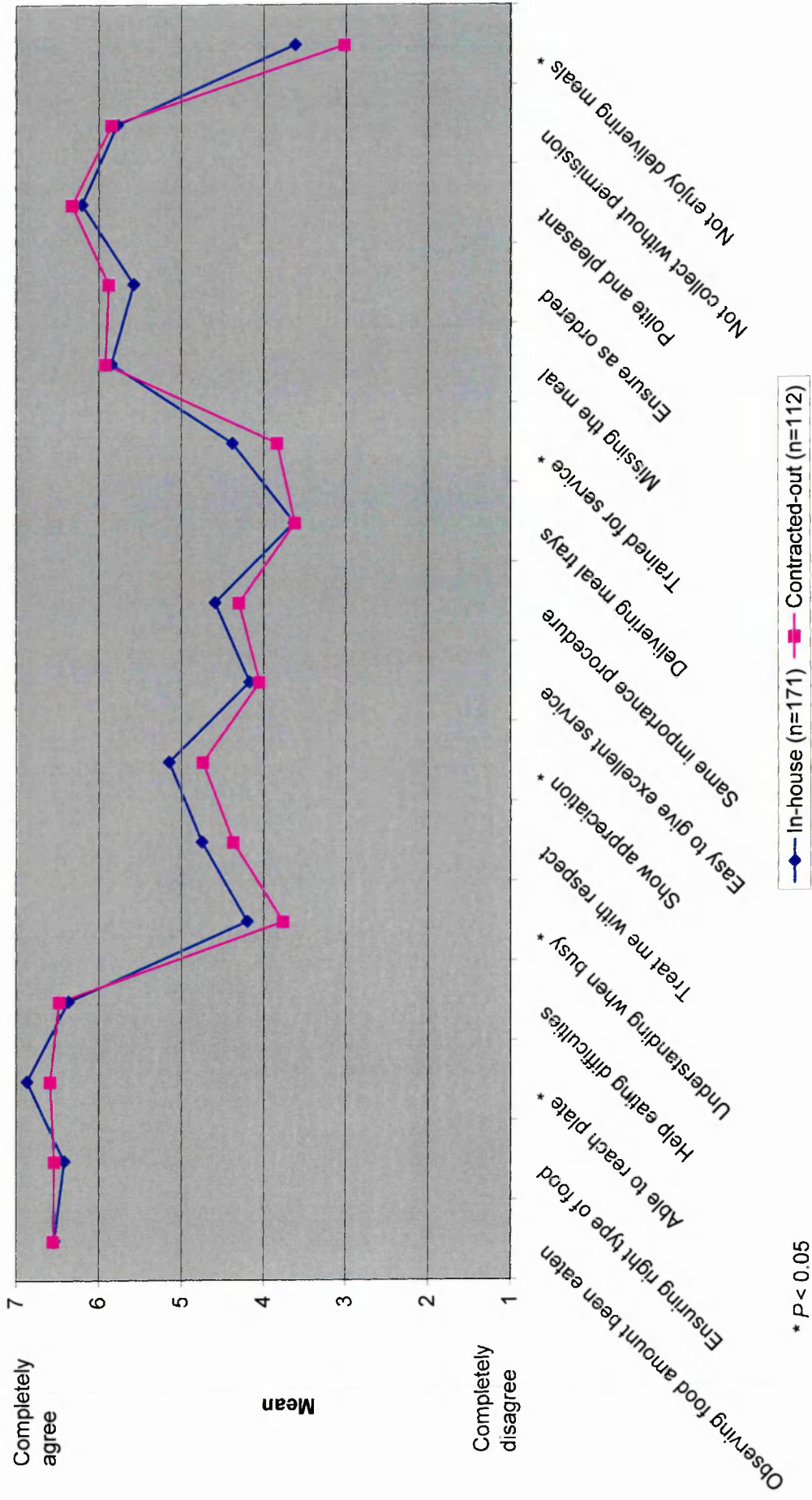
◆ Catering system

The respondents from hospitals with an in-house catering system showed significantly higher agreement on five statements than those with contracted-out catering systems (Figure 8.10). They are:

- q2c- 'I ensure the patients can reach the plates when I serve them.'
- q2e- 'Patients show understanding and patience when we are really busy.'
- q2g- 'Patients show their appreciation for individual care.'
- q2k- 'I was trained to give good service to patients at meal times.'
- q2p- 'I do not enjoy delivering meals trays to patients.'

As the last statement was negative, the respondents from the in-house catering system did not enjoy delivering meals to patients as much as those from contracted-out hospitals; this might explain the different orientation of the catering staff between the contracted-out companies and in-house ones.

Figure 8.10: Mean of service orientation factors by catering system



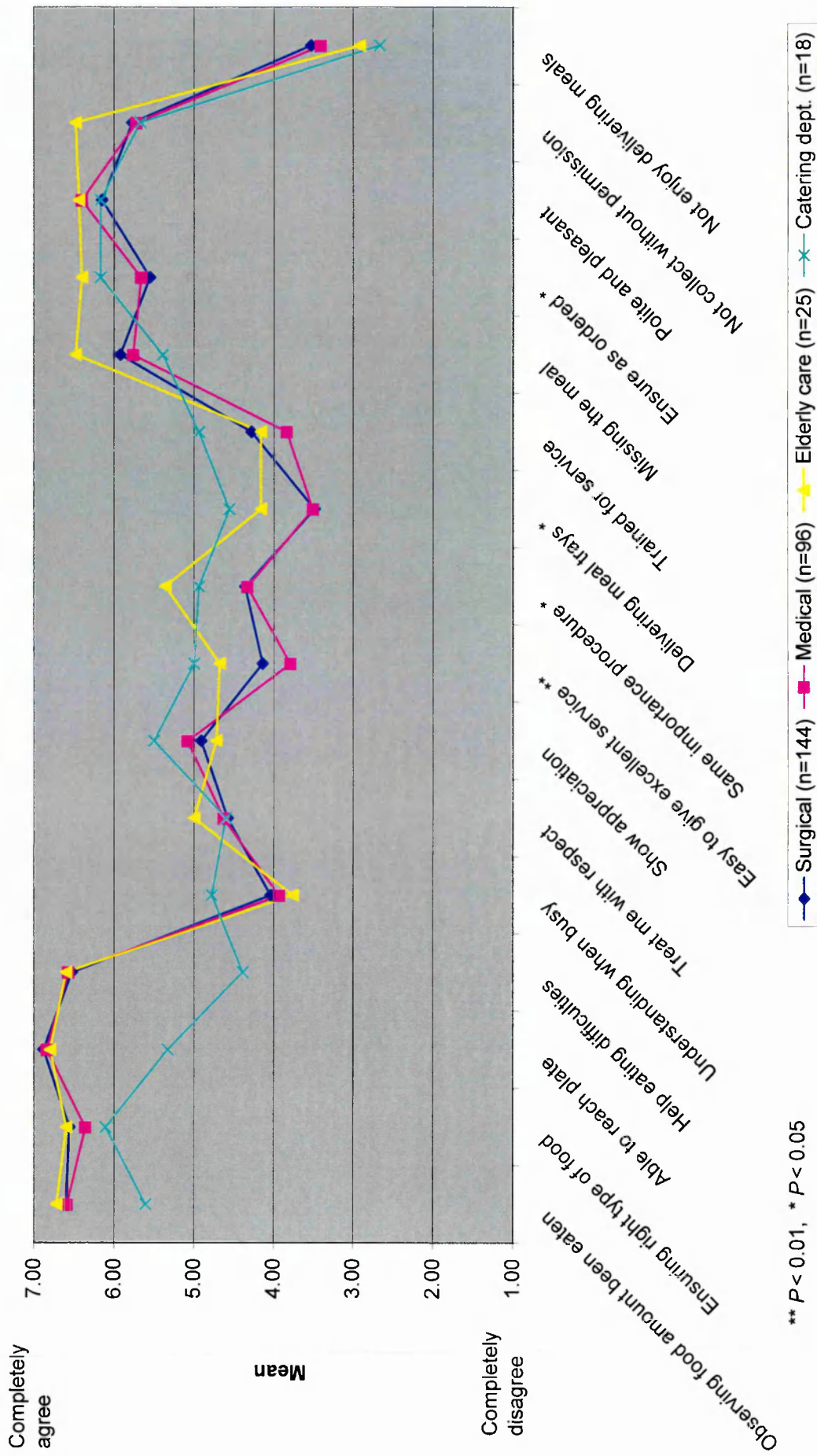
◆ Types of ward

The respondents from the catering department appeared to have higher orientation toward meal services than those from wards (Figure 8.11), but only four statements showed significant differences:

- q2h- 'Our meal service procedures make it easy for me to provide excellent patient service.'
- q2i- 'In this hospital, patient meal service is given the same importance as most other procedure.'
- q2j- 'Delivering meal trays to patients is one of the most important responsibilities of my job.'
- q2m- 'I ensure patients can get the meal that they ordered.'

The respondents from the surgical, medical, and elderly care wards reported similar agreement with service orientation factors. As would be expected, this suggests that staff from the catering department are more orientated toward meal services than those on the wards.

Figure 8.11: Mean of service orientation factors by types of ward



** P < 0.01, * P < 0.05

8.2.4 Correlation between meal tasks and service orientation factors

Pearson correlation analysis found that the meal service task dimensions were closely correlated with certain service orientation factors, while others showed weak correlations (Table 8.9).

The Meal selection dimension was found to have significant positive correlation with the statements:

- q2c- 'I ensure the patients get the meal that they ordered'
- q2d- 'An important part of my job is to help those patients with eating difficulties.'
- q2i- 'In this hospital, patient meal service is given the same importance as most other procedure.'
- q2j- 'Delivering meal trays to patients is one of the most important responsibilities of my job.'
- q2l- 'I will not collect the food tray without patients' permission.'
- q2m- 'I ensure patients can reach the plates when I serve them.'

The Meal supervision dimension had significant strong positive correlations with the statements:

- q2a- 'Observing the amount of food eaten by a patient is an important part of patient care.'
- q2b- 'Ensuring a patient eats enough of the right types of food is an important part of patient care.'
- q2c- 'I ensure the patients get the meal that they ordered.'
- q2d- 'An important part of my job is to help those patients with eating difficulties.'
- q2l- 'I will not collect the food tray without patients' permission.'
- q2n- 'I am polite and pleasant when delivering meal trays to patients, even if they are grouchy.'
- q2o- 'I will notice if a patient misses the regular meal service and make sure alternative food is provided.'

The Cleanup/feedback dimension had significant positive correlations with the statements:

- q2a- 'Observing the amount of food eaten by a patient is an important part of patient care.'
- q2h- 'Our meal service procedures make it easy for me to give excellent service.'
- q2i- 'In this hospital, patient meal service is given the same importance as most other procedure.'
- q2j- 'Delivering meal trays to patients is one of the most important responsibilities of my job.'
- q2l- 'I will not collect the food tray without patients' permission.'
- q2m- 'I ensure patients can reach the plates when I serve them.'

- q2n- 'I am polite and pleasant when delivering meal trays to patients, even if they are grouchy.'
- q2o- 'I will notice if a patient misses the regular meal service and make sure alternative food is provided.'
- q2p- 'I do not enjoy delivering meals trays to patients. '

The Food delivery dimension had significant positive correlation with the statements:

- q2c- 'I ensure the patients get the meal that they ordered.'
- q2e- 'Patients show understanding and patience when we are really busy.'
- q2g- 'Patients show their appreciation for individual care.'
- q2j- 'Delivering meal trays to patients is one of the most important responsibilities of my job.'
- q2m- 'I ensure patients can reach the plates when I serve them.'

From these results, it seems that to a large extent, the staff meal task dimensions generated from the factor analysis in question one produce positive correlations with related beliefs about service orientation; this reflects the discriminant-validity of the questions.

Table 8.9: Correlation Matrix between meal tasks dimensions and services orientation factors

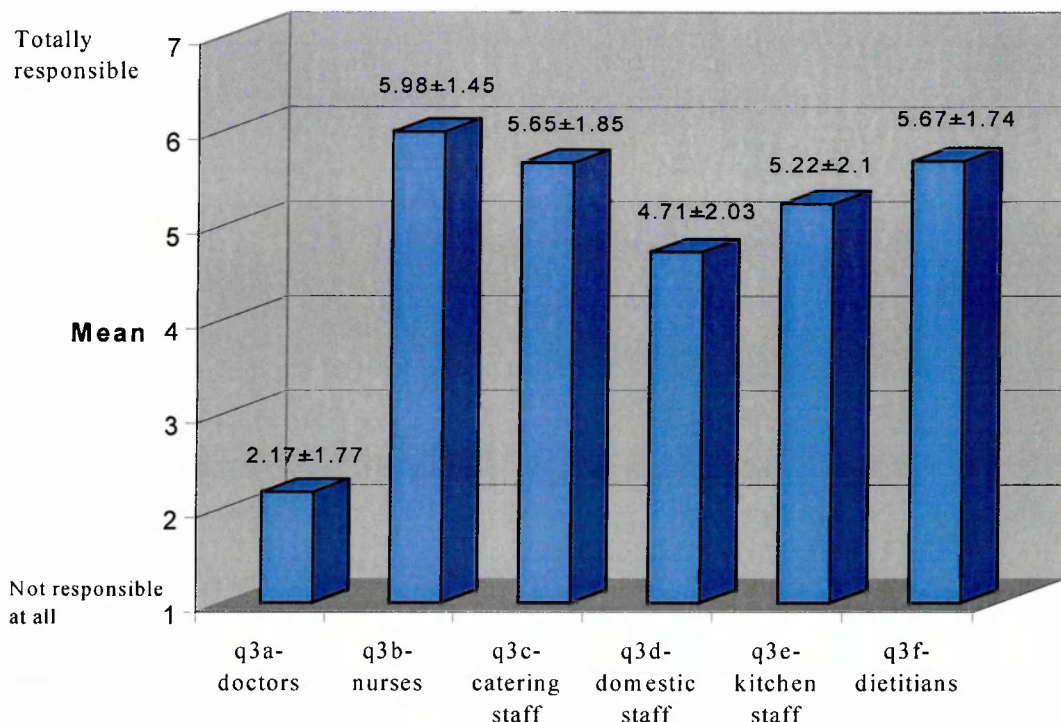
	F1-Menu selection	F2-Meal supervision	F3-Cleanup/feedback	F4-Food delivery
q2a-Observing the amount of food eaten by a patient is an important part of patient care.	0.69	0.237 ***	0.108 *	-0.063
q2b-Ensuring a patient eats enough of the right types of food is an important part of patient care.	0.074	0.172 **	0.057	-0.091
q2c-I ensure the patients get the meal that they ordered.	0.133 *	0.399 ***	-0.039	0.163 **
q2d-An important part of my job is to help those patients with eating difficulties.	0.212 ***	0.429 ***	0.026	0.003
q2e-Patients show understanding and patience when we are really busy.	-0.011	-0.076	0.048	0.102 *
q2f- Patients treat me with respect.	-0.056	-0.003	-0.005	-0.074
q2g-Patients show their appreciation for individual care.	-0.088	0.027	0.061	-0.117 *
q2h- Our meal service procedures make it easy for me to give excellent service.	0.076	0.016	0.126 *	0.063
q2i- In this hospital, patient meal service is given the same importance as most other procedure.	0.171 **	0.091	0.143 **	0.016
q2j-Delivering meal trays to patients is one of the most important responsibilities of my job.	0.172 **	-0.028	0.200 ***	0.146 **
q2k-I was trained to give good service to patients at meal times.	-0.005	0.055	0.036	-0.058
q2l-I will not collect the food tray without patients' permission.	0.115 *	0.248 ***	0.261 ***	-0.021
q2m- I ensure patients can reach the plates when I serve them.	0.216 ***	0.048	0.202 ***	0.148 **
q2n-I am polite and pleasant when delivering meal trays to patients, even if they are grouchy.	0.037	0.174 **	0.203 ***	0.133
q2o-I will notice if a patient misses the regular meal service and make sure alternative food is provided.	-0.05	0.107 *	0.256 ***	0.045
q2p-I do not enjoy delivering meals trays to patients.	0.091	0.002	-0.136 *	-0.011

Note: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

8.2.5 Question three: Responsibility for meal services

The results showed that the nurses, catering staff, domestic staff, kitchen staff, and dietitians were perceived to have similarly high levels of responsibility for mealtime care, with doctors thought to have much lower responsibility compared with the others. Figure 8.12 illustrates the mean and standard deviation among the different types of staff ranging from 1 -‘not responsible at all’ to 7 -‘totally responsible’. The staff with the highest level of responsibility for mealtime care, according to the respondents, was ‘nursing staff’; perhaps nurses on the ward were thought to have the most opportunity to interact with patients and offer initiative care. The second highest was dietitians, who could be interpreted to support professional opinion on patients’ nutrition and food intake issues. The catering and kitchen staffs were the next group, and the domestic staff were perceived to have the second lowest level of responsibility.

Figure 8.12: The levels of responsibility for meal services as perceived by the respondents



note: The value displayed is mean +_ standard deviation.

8.2.5.1 Effect of individual characteristics and contextual factors on the level of responsibility

Through a series of one-way ANOVA or independent sample *t*-tests, the effect of individual characteristics (job position, gender, age) and contextual factors (catering operation and ward types) was analysed to determine differences in perceived level of responsibilities for mealtime care amongst different types of staff. Non-parametric tests (Mann-Whitney test or Kruskal-Wallis test) were used when the assumptions of the one-way ANOVA and the independent sample *t*-test were not satisfied. (The actual tests used in each case can be seen in Appendix 8.1 to 8.5.)

The results revealed that overall doctors were perceived to have significantly less responsibility for meal service compared with nurses, catering staff, domestic staff, kitchen staff, and dieticians (Appendix 8.1). HCA/NA's appeared to have much lower scores in relation to perceptions of doctors responsible for mealtime care compared with the others ($p < 0.05$). Although opinions regarding the levels of responsibility that nurses, catering staff, domestic staff, kitchen staff, and dieticians should have varied to some extent, none was to a statistically significant degree. In addition, multiple comparison analysis did not find pairs with significant mean differences. In other words, the overall opinions regarding who should be responsible for meal service is remarkably similar for all job positions.

Compared by gender, female respondents rated nurses to have significantly higher levels of responsibility for mealtime care than the male respondents (Appendix 8.2) did. No further significant differences were found in relation to gender.

Compared by age, no significant differences were found except that the respondents aged 45-55 years believed Dieticians to have a significantly higher level of responsibility for mealtime care than the respondents aged 25-34 (Appendix 8.3).

Compared by catering system, the respondents from the contracted-out caterers thought that catering assistants and kitchen staff should have significantly higher levels of responsibility for mealtime care than those from the in-house ones (Appendix 8.4). Moreover, the results showed that the respondents from contracted-

out caterers rated 'catering assistants' as most responsible and the in-house respondents rated 'nurses' most responsible. This suggests that having contracted out catering firms has influenced staff's attitude regarding placing different personnel in varying levels of responsibility.

8.2.6 Question four: Staff comments regarding meal services

From the 283 valid returns, 136 respondents (48.1%) made comments or suggestions about meal services. Two comments were discarded as not being related to the question, leaving 134 valid responses (Appendix 8.6), which were coded into four themes: Food properties, Interpersonal services, Environmental presentation, and Managerial issues (Table 6.7). The comments were further divided into sub-groups, both positive and negative, to cluster the comments into a more meaningful structure.

8.2.6.1 Food properties dimension (Code: FOO. *. +/-)

Within the food properties dimension, staff comments were sub-coded into six attributes: overall impression, presentation, ordering, taste, temperature, and variety of food. The total number of comments relating to food properties was 135, which represented 47% of all valid responses. Of these, 79% were positive and 21% were negative.

The comments coded in FOO.OVA expressed general overall opinions on food properties issues (examples of comments are given in Table 8.10). Of the comments, 17 presented positive opinions about meal services, either by use of words, such as 'good' or 'excellent', or by reflecting the patients' enjoyment of food, by comments mentioning 'improved' meal service, or through details of food in optimistic tones. There were 8 negative food comments either using 'poor', or portraying meals in a negative way.

Table 8.10: Examples of comments regarding overall impressions of food properties

Codes	Description Examples
FOO: OVA + General comments about the meal services	'Food is always served promptly even when busy.' (#2017); 'The meal service is quite good. The meals only rarely look unappetising and the patients generally enjoy the food they are given.' (#2114); It is also served hot because of the heated trolley system and this is noticed by patients and appreciated (#4002); 'I have been nursing for 12 years and the standard of food and menus have improved. ' (#1155); 'Quality, content, presentation, and palatability definitely seems to have improved with hospital meals and service. ' (#4124); 'The meal service is very good, ensuring the meals are nutritious and well presented and are served at the correct temperature.' (#2121); 'Meals are sufficient in quantity and appealing to look at with nutritional value in mind always.' (#4125);
FOO: OVA -	Some of the food looks like something I wouldn't even give my dog to eat but sometimes food is really good.' (#1185); 'Poor.' (#2051)

Many negative comments (37) were given about food presentation and preparation and only a few expressed positive views. Table 8.11 lists some examples of staff comments on food presentation and preparation issues. The negative comments seemed to surround the topic of food being spilt or in disarray when appearing at the ward level. The ward staff consequently spent extra effort fixing the meals or felt some 'embarrassment'. Some suggested that the presentation of meals needed more work in order to stimulate patients' appetite. Others had problems with the competency of cooking skills as some cited incidents that showed food was neither carefully prepared nor properly cooked, or still in a frozen state when served to patients.

Table 8.11: Staff comments regarding to food presentation

Codes	Description	Examples
FOO.PRE +	Food presentation and preparation issues	'Appealing' (#4125)
FOO.PRE.-		'The condition and appearance of the meal trays is a constant source of embarrassment and additional work as they are delivered to the wards in very messy state.' (#1122); 'Occasionally meals do not look appetizing. The presentation does leave something to be desired. The delivery is sometimes erratic and the soup is SLOPPED all around the trays.' (#1027); 'Presentation - care should be taken with this, to encourage patients to eat and possibly increase of appetite (where loss occurs). (#2007); 'Patients who require puree should have their meals made more attractive to eat.' (#2133); 'LARGE THIN fish bones are found in patients pureed meals.' (#1017); 'On many occasional food, i.e. jelly are not set, it is very embarrassing to give water for pudding! Also, trifles and crème caramels will arrive at supper times still frozen!' (#3027);

Regarding food ordering, only negative comments (18) were given (Table 8.12). Problems occurred if the ward staff missed sending orders to the kitchen, the food did not arrive at the ward, or if the incorrect dishes were delivered on the tray through menu system failure. Single orders seemed to be forgotten easily. With the acute patients characteristically having a high turnover rate, the choice of food might be made not by patients but staff, or by the previous occupant of the bed.

Table 8.12: Staff comments on food ordering

Codes	Description	Examples
FOO.ORD-	Food ordering issues	'If a patient does not get a meal or the meal of their choice it is usually because it has not been ordered by the nursing staff, either because the eating instructions have changed or because the patient has been forgotten.' (#1140); 'We have problems with incorrect food coming up for the patient either in dietary needs or not what they have requested, which is what causes the main problem. We have problems sometimes getting pureed/ soft diet etc. from kitchen.' (#1005); 'Often wrong meals or no meals are sent for patients. ' (#2092); 'If something is specially ordered for one person we do not get it.' (#3037); 'With the quick turn over of patients a selection form menu cards are ordered rather than individual choice and completed by ward clerk or health care assistant.' (#4124);'

Comments on food temperature were both positive (5) and negative (13) (Table 8.13). The positive comments simply used words such as 'hot'. The negative comments complained that either the cold food like ice cream was not cool enough or the hot food was not hot enough.

Table 8.13: Staff comments on food temperature

Codes	Description	Examples
FOO.TEM+	Food temperature	'meals are hot' (#4003)
FOO.TEM-		'Perhaps COLD items, such as ice cream or salad, can be brought up either separate or in a trolley with a COLD compartment, or an ice box.' (#1001); 'cold food should be completely separate from hot food. Even through ice cream is in insulated pots, it is often very soft and melting.' (#2108); 'Sometimes we need to send the meals back as the temperature is not hot enough.' (#2134);

Regarding variety of food, the respondents had 30 negative comments, but only 3 positive ones. Table 8.14 gives some typical examples. The positive comments used

such terms as 'appealing', or 'good varied selection'. The negative comments expressed that the choices were poor or did not consider patients with specific needs for pureed or soft diets, or vegetarians. A repetitive and plain menu was thought to bore the longer stay patients. Some suggested more vegetables and variation on sandwiches.

Table 8.14: Staff comments on food variety

Codes	Description Examples
FOO.VAR+	Variety food 'Menus have a good, varied selection for people who have a good appetite.' (#1149); 'fairly varied menu' (#4003);'
FOO.VAR-	'Poor selection of different food for patient with special requirements.' (#2053); 'A better variety of food should be given to patients on special diets, i.e. soft, puree.' (#3037) 'Vegetarians is not catered for, all they have is baked potatoes and cheese when it is sent down. We now have full cream milk or an acute medical ward where the majority of patients healthy eating.' (#2051); 'Soft diets need to be changed, eggs 7 days a week- come on.' (#3038); 'Suppers are very boring, especially for long term people and some of the items are inappropriate.' (#3027); 'There should be more vegetables offered with each main meal- only one vegetable allowed at the moment with potatoes. More green vegetables would be healthier and help with in-patient toward problem.' (#2108); 'Soft meals for slow eaters and more choices. Plain meals for patients not to many spicier meals.' (#1128);

8.2.6.2 Interpersonal services aspect (Code: PER.*./-)

In the interpersonal service dimension, comments were allocated into four sub-groups: timing of meal services, staff help, individual care, and offering alternative meals. Of all of the valid responses, 42 (15%) were related to interpersonal services. Of these, 7% were positive and 93% were negative.

Regarding the timing of meal services, only negative comments (8) were made. These referred to the time period between dinner and the next breakfast being too long without nourishment and occasions when the meals arrived late at the ward (Table 8.15).

Table 8.15: Staff comments relating to the timing of meal services

Codes	Description	Examples
PER.TIM-		'meals on this ward frequently arrive late' (#1002); 'Also people who collect trays should also give elderly wards more time to eat! ' (#1062); 'Patients should not have to wait for unreasonable lengths of time for their meals.' (#3041); 'Patient in hospital (between 18:00 to 08:00 the following day without food). This is over half the 24:00 period without nourishment, which is badly needed.' (#3022);'I also think that a light snack should be provided for supply as it is 14 hours difference between supper to breakfast.' (#2044);'

A few negative comments (3) stated that help from staff to feed patient was limited and that food containers created difficulties for patients with eating difficulties (Table 8.16).

Table 8.16: Staff comments relating to help from staff

Codes	Description	Examples
PER.HEL-	Staff's help on feeding patients	Patients that are unable to feed themselves quite often in my experiences and assistant don't get their food because nurses have more important jobs to do!' (#1145); 'To often trays are just given to patients without any thought- then food is not eaten as patient cannot reach it/ open it, etc. trays then collected up and removed.' (#1172);'Many of the packages e.g. sandwiches are difficult to open.' (#4101);'

Both positive and negative comments were directed towards issues of individualism of care in relation to patient's needs (Table 8.17). Some respondents showed a passion for caring for patient's individual requirements. However, some of them found that the meal system was not designed, nor was adequate, for emphasising patients' specific needs; for example diabetic patients or patients in post-surgery condition. The special diets were often ignored or inconclusive within the system with the result that the patients might not eat at all.

Table 8.17: Staff comments on the individualism of meal services

Codes	Description	Examples
PER.IND+	For individual care	I always get involved in dietary advice as a lot of surgical conditions depend on changing diets- be it low fat, low residue, high fibre for instance' (#1155);'
PER.IND-		'meals are not always appropriate for sick people, and not always suitable food for particular diets, i.e. soft diets..' (#1127);'I find it difficult to find a suitable meal for patients who have had surgery and on a light diet there is not a selection for them.' (#1149);'the only grievance I have is these on special diet, low sodium and protein or whatever special diet is terrible they get the same as anybody else.' (#2049);'The requirement of diabetics should be taken into consideration when planning mealtimes.' (#3041);'

In addition, the comments suggested that ordering an alternative meal was a difficult procedure (Table 8.18). Since no food is stored at the ward level for staff to offer unsatisfied patients alternative foods, the ward staff was frustrated by the inflexibility when special requests to the kitchen required extra efforts and disappointed by the rude attitude from the kitchen staff.

Table 8.18: Staff comments on the alternative meal offerings

Codes	Description	Examples
PER.ALT-	Alternative meals being offered	'Also time giving out food when patients are seeing physios, OT's or going for X-rays or scans is difficult. There is no facility for anyone who comes in late or who needs a sandwich etc. outside normal kitchen hours or who might need just toast to quash hunger.' (#1063); 'There is no food on the ward to substitute or supplement if a meal is not satisfactory or inadequate.' (#1168); Sometimes special diets such as pureed do not arrive pureed when sometimes ordering an extra meal by telephone it either taken a long time to arrive and by then the patient doesn't want it and on occasion have never arrived.' (#1011); 'Getting food for patients out of set meal times is difficult. (#2112)

8.2.6.3 Environmental dimension (Code: ENV.*./-)

The comments coded in the environmental dimension were found to be associated with three attributes: social contact, surroundings, and quantity of food provision. The total number of comments relating to Environmental dimension was 29, which represented 10% of all valid responses. Of these, 3% were positive and 97% were negative.

Table 8.19 lists some examples of staff comments to illustrate opinions towards this aspect of meal services. The majority of comments were quite negative, except one comment stating that the quantity of food was 'generous'. A few (10.4%) mentioned that social hours for visitors should not include meal times, as these can cause disturbances. Some respondents expressed incidents of cutlery being short or that patients were not able to use them, trays being dirty, or finding human hairs in the food. Problems with the quantity of food involved portion sizes of food being either inconsistent or un-standardised. Some respondents stated that portions were either too small or too large and inappropriate to the patients' appetite.

Table 8.19: Staff comments on environmental aspects

Codes	Description	Examples
ENV.SOC-	Social contact with patients	'I feel there should be no visiting at mealtimes as sometimes patient's feel they cannot eat properly due to onlookers or visitors talking to them' (#1127); 'Visitors should not be visiting at meal times.' (#1128);'
ENV.SUR-	Patients' physical surroundings: i.e. facilities hygiene of cutlery, trays	'Kitchen staff quite often forget certain items of cutlery which becomes difficult keep chasing them up, i.e. spoon for soup and dessert.' (#1126); 'Wash cutlery properly- often dirty. ' (#2052);'Cutlery and trays to be a lot cleaner.' (#2127); 'Hygiene within the kitchen at the [XX Hospital] would be most appropriate, finding hairs in dinners is disgusting practicing what you preach would be an idea!?' (#2007);
ENV.QUA+	Quantities of food	'the portions are generous.' (#1122)
ENV.QUA-		'Portions can vary enormously in size, ... meals can be vastly different, also for e.g. a cottage pie can be all potatoes + no meat, those serving need to think about a balance' (#1165);'no difference between small or large portions.' (#1127); 'I think more care should be taken when the patient asks for a small portion to see that they get just that.' (#1148); 'Portions at this hospital tend to be quite small for the average person.' (#1162); the meals are sometimes small when they ticked the menu 'large' .' (#2049)

8.2.6.4 Managerial issues (Code: MAN.*./-)

Within the managerial issues, comments have been sub-divided into five categories: delegation of staff duties for meal services, departmental communication, staff workload on meal services, meal services procedures, and staff training. Of all of the valid responses, 83 (29%) were related to interpersonal services. Of these, 11% were positive and 89% were negative.

Both positive and negative comments were made in relation to the delegation of staff duties at the ward level (Table 8.20). The positive comments referred to the meal services tasks as multidisciplinary with nurses, catering, kitchen and dietician working as a team to serve the patients' best interests. The current job delegation (HCA in charge of physical serving and collecting menus and food, with trained nurses only dealing with specific diets and overseeing the meal process) seemed to be satisfactory

for some staff (5) and free nurses to spend more time on the drug distribution. However, many negative comments (19) disagreed with this. Some did not feel that domestic staff should be collecting patients' trays because they were not qualified to accept the responsibility of knowing what and how a patient had eaten. Even with proper training on reporting back to nurses, domestic staff would still struggle with the task of assessing patients' intake, or might relay inaccurate information to nurses or dietitians. Practically, nurses would not be available to look over the shoulder of domestic staff every time they took a tray away. Since the meal service is not their primary job specification, an attitude of treating meal services as a lower priority might cause some delay in serving meals. Questions remain over who would really be aware of patients' nutritional intake. In terms of food hygiene concerns, some suggested that catering staff should handle the food, not other hospital staff. No matter how staff had been allocated, a shortage of staff was raised as an issue. Because of this, some wards had planned to assign a dedicated staff to be responsible for the delivery, monitoring and ordering of patient's food and beverages.

Table 8.20: Staff comments on managerial staff duty

Codes	Description	Examples
MAN.DUT+	Managerial issues on the delegation of staff duty when serving meals to patients	'A trained nurse needs to always supervise but auxiliary nurses are more HANDS ON feeding and delivering trays. We have no difference between catering & kitchen staff.' (#1165); 'On my present ward the only responsibility, I really have regarding patient mealtimes is to help patients who cannot feed themselves. Occasionally I collect the menu cards although this is usually the responsibility of the HCA's while the domestic staff actually give out the food trays and collect them later. I feel this system works well as it gives the nurses more times for other important tasks such as drug rounds which are usually done at meal times.' (#1087); 'Housekeepers +HCA's are responsible largely for serving and collecting menu cards, and trained nurses only tend to get involved when special dietary needs are required.' (#1005);
MAN.DUT-		'Domestics collect the trays which I find inappropriate as either they collect to quick therefore not giving enough time for patient's eat or fail to report to nursing staff if patient's haven't eaten.' (#1127); 'I still disagree with housekeepers giving out meals.' (#1155); 'Sometimes the meal trolley is left too long before giving out meals due to domestic and housekeeping lack of staff.' (#1159); 'From a nursing part of view housekeepers deliver meals during the week, nursing staff at weekends. Sometimes trays are removed without nursing staff being able to see what has been eaten sometimes on an acute unit it is not always possible to assist patients as one might want to.' (#1004); 'I do not think auxiliaries should give out food because of hygiene. Should be catering.' (#2089); 'As a trained nurse, I do not always clear the trays and therefore do not always notice what patients have eaten. If I am particularly concerned about an individual patient I ensure that they are either supervised with meals if necessary, or that I liaise with the person who cleaned the tray depending on the level of my concern.' (#2017); 'It would be helpful if staff were made available to hand out meals and do menu cards, having been informed of dietary requirements by nursing staff. Due to staff shortages nursing staff find it very difficult to find times to do the meals.' (#4049); 'Would like to see one dietitians become more involved with patients actually at meal times and not just when ordering or 1st outing in one morning when they are not hungry. I think one hospital provides on overall good service.' (#4069); 'A more dedicated member of staff to be appointed to supervise overall care of the patients at meal times, reporting back to nursing staff when problems occurs would be an ideal situation in a ward setting.' (#4145); 'On our ward, we will be getting an assistant who will deal solely with meals. He/she will be trained and will fill out food charts and report to staff nurses. It will improve the service enormously and allow the nursing staff to do other jobs.' (#4141);

In terms of communication between departments, respondents gave both positive and negative comments (Table 8.21). The liaison between different departmental staff (nurses, dieticians, and catering) seemed to be a complicated relationship regarding meal service patient care. The function of linkage might still require a further effort as raised by 13 of the respondents. The ward staff appeared to believe that the kitchen staff were 'rude', 'not appreciative', or 'difficult' to communicate with, especially under the pressure of ensuring the prompt delivery of patient's choices at busy

mealtimes. The communication between staff, consequently, has sometimes broken down, and the patient might suffer as a result.

Table 8.21: Staff Comments on departmental communication

Codes	Description	Examples
MAN.COM+	Communication among departments	'Liaison between nurses and dieticians on this ward along with the SALT is very good. Patients progress is discussed and assessed by all three disciplines to allow the patients to progress with item treatment and improve upon their diets.' (#1012)
MAN.COM-		'Kitchen staff don't appreciate the need for specific diets regularly used on this ward for example, soft diet, textured diet, puree diet, smooth puree diet. These are all different stages of meals for stroke patients and they get very upset if for example had proceeded into a textured diet and kitchen sends up puree diet.' (#1012); 'Ward domestics as some other wards collect the meal trays which means that then sometimes someone not eating much if anything can be missed as their treaty and amount eaten is not noted.' (#1012); 'When you have to order a meal from the kitchen for patient it takes a very long to arrive or sometimes absent arrive at all.' (#1161); 'Kitchen staff need to be more approachable as seem rude, if we request an extra meal, or if they have forgotten to put something on tray!! Like it's a real effort!! ' (#1126); 'The kitchen staff need to learn more manners over the phone when we order special meals. They don't like it. Also we should have feed back from the kitchen when LARGE THIN fish bones are found in patients pureed meals, but above all the kitchen staffs RUDENESS!' (#1017); 'Improved communication system especially during busy (meal) times to ensure prompt issue of client choice.' (#4172); 'Kitchen run out of meals that have been ordered and served something else they do not phone the ward to let me know.' (#1179);

There are 21 respondents giving only negative comments with issues on the workload at meal times (Table 8.22). Battling against time with little available staff adversely affects their ability to feed patients properly or solve emergency problems at the same time as carrying out medical treatments (for example, drug rounds or medical investigation). Some respondents felt 'difficult', 'disappointed', or 'rushed' when performing their job with the result that patients might not receive assistance with eating their meals.

Table 8.22: Staff comments on staff workload during meal service

Codes	Description	Examples
MAN.STW-	Staff workload at meals services	It would be nice to have more time to be involved in meal services. It always seems to be a rush.' (#1118); 'Lunchtimes often coincide with drug times so we rely on other staff to inform us of relevant problems, i.e. not eating/ or not eating appropriately.' (#1119); 'In the evenings and at weekends due to lack of regular domestic staff the workload of collecting trays as well as nursing duties can cause problems for the staff.' (#1121); 'It is not unusual to have 6-8 patients that need feeding resources at times make their difficult.' (#1089); 'I still disagree with housekeepers giving out meals. I always notice if someone has no food, but never manages to assess if a patient is eating well or not-. This is merely now due to staff shortage rather than anything else. ' (#1155); 'I am quite disappointed that nursing staff do not have the TIME to feed patients properly.' (#1145); 'It is difficult to give out food, feed poorly patients and answer bells all at the same time.' (#1063); 'On very busy wards, I think that a housekeeper would be wonderful and would give auxiliary are trainee nurses more time with the patients and give them the help that they need! ' (#1062); 'Sometimes due to busy periods on the ward it is impossible to take around the menu the day before the meal.' (#3007); 'Responsibility for monitoring patient's dietary needs/ intake is down to nurses- it is an integral part of nursing care and should be overseen/documentated by trained staff, but there are insufficient nurses on wards to monitor adequately.' (#4030); 'overstretched nursing staff, who are unable to monitor patients' nutritional needs. ' (#4152);

In addition, the meal services procedure was not very smooth for staff. Table 8.23 shows examples the meal procedures eliciting both positive and negative comments. One respondent deemed the service quick and easy to use, but 15 felt some frustration with the system being 'inflexible'. Suggestions indicate that the ward routines and the design of the menu cards should be re-examined.

Table 8.23: Staff comments on meal service procedure

Codes	Description	Examples
MAN.PRO+	Procedure of meal services	Generally our trayed meal system works quite well.' (#1005);'The lunchtime meal service is a good way of delivering food. The hostess trolley ensures that the food is hot and not burnt. It also ensures that we can give the patient is one a light diet. The service is quick and easy to use.' (#3042);'
MAN.PRO-		'Considering the pressures that ward staff (I.e. nurses) are always under- the kitchen/ menu/ catering staff are very petty regarding the smallest irregularity on completed menus. Possibly this reflects problems in the processing procedure for menu cards.' (#1122);'I think that hospital ward routine needs examining to ensure that meal times receive the correct type of emphasis, i.e. drug rounds, investigation. There should be a return to having biscuits/cake, tea, coffee time and bread available on ward. ' (#1089);'It is inflexible' (#1168); 'I think it could be improved by reintroducing a bulk service.' (#2165); 'we end up not seeing and giving patient the time for the illness as so much time is used up sorting out catering problems.' (#3026);'it could be organised better with the trolleys they use.' (#4051);'

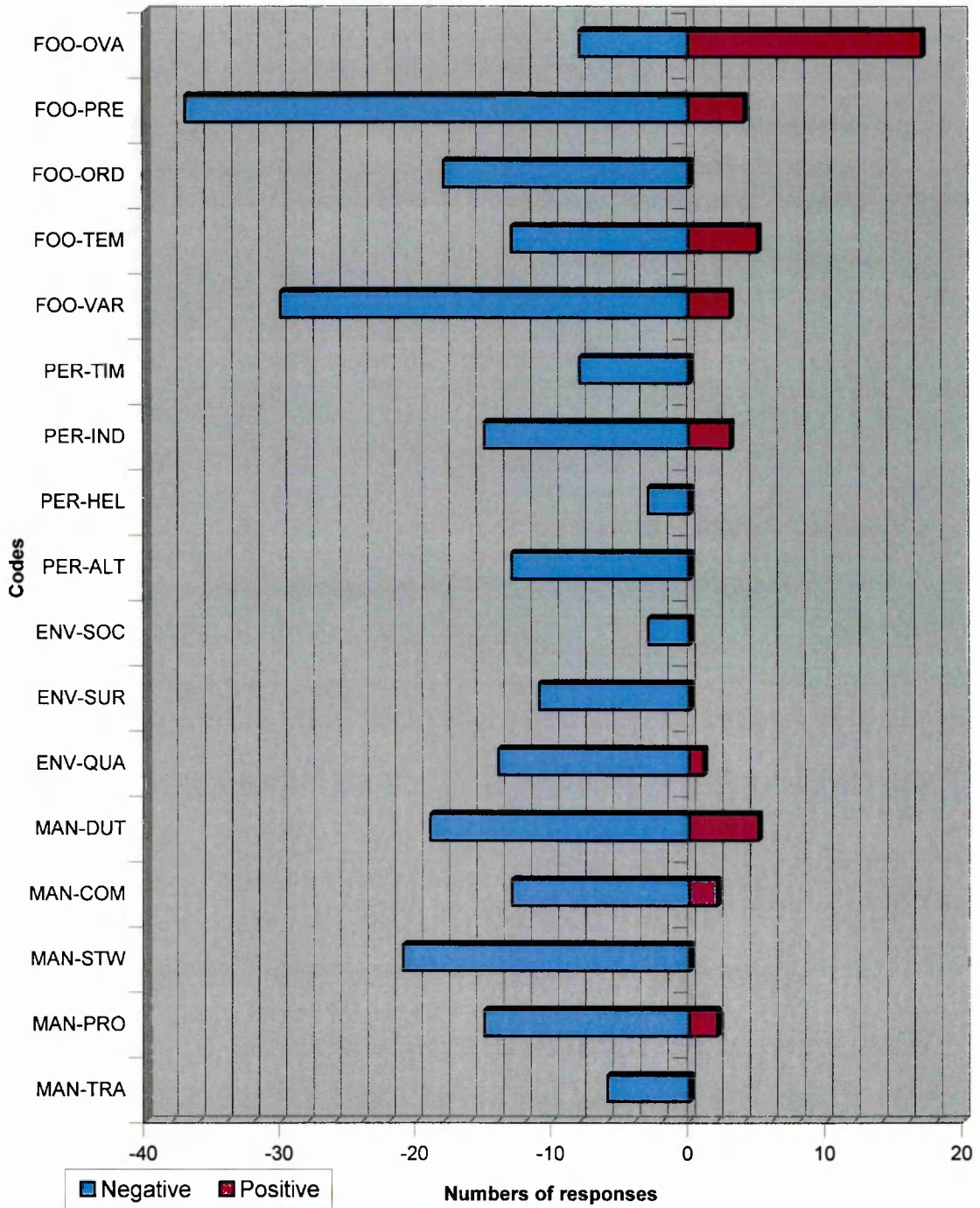
Of the issues raised above, training might provide part of a solution, but some untrained and incompetent staff worsened the situation (Table 8.24). Patients might not receive suitable assistance cutting their food, removing lids, unwrapping containers of food, or trays may not be placed within reach, never mind staff having a monitoring role in the feeding of patients.

Table 8.24: Staff comments on staff training

Codes	Description	Examples
MAN.TRA- Staff training on meal services		'I think that all members of the team should have knowledge and experiences in giving out meals etc. including the relatives.' (#1003);'Some staff training needed for new staff serving meals: ie. Cutting up food for patients who cannot manage, removing lids from food, undoing wrappers, meal plated where patients can reach them. To often trays are just given to patients without any thought- then food is not eaten as patient cannot reach it/ open it, etc. trays then collected up and removed.' (#1172);'You are not trained to have good service to patients at mealtimes.' (#1184);'It can prove difficult to monitor amount food patient eats if confused and tray removed but domestic/junior staff who don't are not trained, re: importance of nutrition meals tend to come up in same quantity as pre-plated- amount can seem daunting to elderly patient with small appetites.' (#4003);'

In summary, the results revealed the respondents expressed more negative comments (244 responses) than positive ones (40 responses) regarding meal services (Figure 8.13). Although the food property dimension and the managerial issues gave the impression of receiving many more negative comments than other themes did, some positive tones and suggestions were found to be encouraging regarding the feeding of patients and the performance of the meal service system.

Figure 8.13: Summary of staff comments on meal services



Key to Codes:

- >FOO-OVA: Overall impression about food
- >FOO-PRE: Receipt or cooking method of food
- >FOO-ORD: Food ordering
- >FOO-TEM: Temperature of food
- >FOO-VAR: Variety of food
- >PER-TIM: Timing of service
- >PER-IND: Individual attentiveness
- >PER-HEL: Help from staff
- >PER-ALT: Alternative meal been ordered
- >ENV-SOC: Social contact
- >ENV-SUR: Social surrounding
- >ENV-QUA: Meal size
- >MAN-DUT: Duties among staff with management operation
- >MAN-COM: Communication among departments
- >MAN-STW: Staff workload at meal services
- >MAN-PRO: Procedure of meal services
- >MAN-TRA: Staff training on meal services

8.3 Conclusion

Whereas the previous chapter had analysed the results of the patient meal service questionnaire, this chapter looks at the results of the service personnel survey, staff being the second aspect of the service encounter. The staff involvement in the different components of the meal service encounter was examined, with four factors (menu selection, meal supervision, cleanup/feedback and food delivery) being derived from the factor analysis. Of the four groups of staff HCA/NA was most involved in mealtime service, followed by nurses, senior nurses, and finally non-medical staff.

The second section of the questionnaire examined the opinions of the service personnel regarding 16 service orientation factors. The respondents had generally positive responses to the factors, and these opinions were largely consistent across the four job positions. The four meal task factors generated from question one correlate roughly with the statements of service orientation related to those meal service tasks.

The third section dealt with who the service staff believed should be responsible for meal services. Nursing staff were deemed the most responsible, followed closely by dietitians, catering staff, kitchen staff and domestic staff, while doctors were well down the list.

The final section dealt with comments from the staff regarding meal service. The comments could be generally divided into food properties, interpersonal service, environment and managerial issues categories. In general the responses were mainly negative, but there were enough positive comments to provide encouragement. The next chapter will carry forward from here and will deal with the opinions of the catering management gained through in-depth interviews and will touch on some of the issues raised in this and the previous chapter.

Chapter Nine

Chapter Nine:

Research Findings III- Catering Manager Interviews

9.1 Introduction

As previous chapters have examined both the patients' expectations and experiences and the views of service personnel, this chapter presents the results of the Phase III research - the perceptions of hospital catering managers toward meal services. Given that the Phase I patients survey and the Phase II service personnel survey were drawn from four hospitals, catering managers within the same hospitals would provide an in-depth explanation of the catering system and meal services and the gaps of meal services can be compared with previous surveys. The face-to-face interviews were captured with the assistance of an interview protocol to guide the discussion toward issues that emerged from both the literature reviews and the previous surveys.

With the aid of a tape recorder, the raw data from the interviews were transcribed into four verbatim transcripts with all references to the hospital name deleted (Appendix 9.1 for examples). Through content analysis, the data were inductively processed to identify, code, and categorise the emergent themes and patterns of meal services across these four hospitals into coherent patterns. The narrative descriptions and conceptually ordered displays explore the history of the catering operation, the meal service routine (including menu ordering, menu design and the relationships between meal service personnel and the catering department), and the quality assurance

measures used by the hospitals in order to further enhance the understanding of NHS meal services.

9.2 The catering operation

As the four hospitals were selected using the criteria of two private contracted-out catering operations and two in-house catering departments, some similarities and differences were found that might produce different implications during the meal services routines and on the quality of services. Table 9.1 displays the various catering systems used in the four hospitals.

Table 9.1: The catering operation systems used by the four hospitals

Hospital	HRB	HSR	HHC	HHW
# patients served per day per meal	550	400	550	380
Operation type	In-house	In-house	Contracted-out	Contracted-out
Years operation in place	15	10	3	2
Catering manager's years of experience	35	10	8	10
Cooking method	Batch cooking	Batch cooking	Batch Cooking	Cook-chilled; regenerated at the ward level
Delivery service	Plated	Plated	Plated	Bulk service to the wards with plated meal service
Delivery method	Insulated cover	Insulated cover	Heated-trolley	Heated-trolley

Compared with the hospitals using in-house catering operations, the managers of the two hospitals with the contracted-out catering had fewer years of experience with meal services in hospital. Less experience in hospitals might bring less familiarity with other hospital departments and later might create some disadvantages when communicating with related staff. One contracted-out catering manager expressed that the company itself had changed from 'Russell & Brand' to 'Gardner Merchant' and then to 'Sodexo' through a series of merges. For the Trusts, the changes in the

NHS regulations has meant that since 1996 catering services have been offered for tender every year, with all of the attendant uncertainties that it entails, as one manager stated:

'It's been quite a rough history. The hospital did their own catering before that. In 1996 it was released to the wide world for tendering and since then, in one form to another, it's been contracted by the company.' (HHC, p.1, line 20-21)

Nevertheless, the contracted-out catering hospitals appeared to have better equipment to maintain the food temperature from kitchen to wards (higher technology heated-trolleys) when delivering meals compared with only insulated covers on plates for the in-house ones. One in-house manager was frustrated with the difficulties of the meal system and stated:

'A tray-meal system relies on the food to be transported at ambient temperature, so it is not heated trolley. We rely on an insulated food base system, where we heat the metal bases and insulated dishes to very high temperature and then we put food inside that, and then transport it to the wards. It has to be served within or should be served within five minutes of receiving the trolley at ward level. That allows the food to stay hot for about 30 minutes, so the patients can actually then get through from their soup to their pudding without the food getting cold. If there is a delay in that distribution of service, then that will start to affect the temperature of that food that we served to the patient.' (HSR, pp.1-2, line28-37)

The four hospitals served a similar number of patients per day per meal. Three hospitals (two in-house and one contracted-out) used batch cooking and plated meals through the "Gannymede belt" system. One contracted-out hospital used the cook-chilled method and regenerated the food in bulk style at the ward level but served plated meals to patients. This seems to lose the 'point of service' advantages offered by bulk service since patients had little opportunity to oversee the serving and selection of the food as menu cards from the previous day have dictated the deliveries to the ward. However, the catering manager (HHW) placed a high degree of

confidence in their patient satisfaction as he explained the benefits of using the bulk service method:

'The average of stay of the patient is something just over 24 hrs, they're not ordering for the next days patient that's coming in after them. So, it's much better giving them a selection at the point of service.' (HHW, p.3, line72-74)

Two catering managers (HHC and HRB) currently using a plated meal service agreed that bulk service is a better system because the patient can choose at the time of the meal rather than having to choose two or three meals in advance. The kitchen can work on histories to predict the orders. In addition, the bulk service would provide a more 'personal' service than plated meals. As managers said,

'The personal system to my liking is a bulk system, which you provide at the point of service.'(HRB, p.3, line86-87)

'It 's much better for the patient who doesn't have to worry about ordering food or what they might feel like tomorrow. I certainly don't go home and think what should I eat tomorrow. They (patients) forget, which doesn't help. [...] Patients go home and another patient gets a meal that they don't really want. (HHC, p.3, line77-82)

One possible disadvantage of bulk service would be a higher level of food wastage. The HRB catering manager explained that 'unfortunately' the control issues involved in adding intangible services through added staff at the ward and the management of food wastage has discouraged him. As he said,

'It (bulk-service) becomes more personal but unfortunately you end up producing more to cater for that so therefore the waste can be greater and of course you then have additional service which is the manpower type of issues at ward level.' (HRB, pp.3, line 92-92)

The HSR catering manager believed his plated-meal system worked well, with the exceptions of communication with ward staff to ensure the food had been delivered

and the difficulties involved in food temperature control, which might impact on their meal service.

9.3 The meal service routine

9.3.1 Menu ordering system

The four hospitals used similar menu ordering systems - to meet the requirements of the Patients' Charter as emphasised by the catering managers. Three of them (HHC, HHW, and HRB) ordered one day in advance while HSR ordered one meal in advance. Menu cards were the tools to deliver the orders for all four hospitals. To date, the catering managers found the menu card system worked reasonably well, offering patients a choice while at the same time allowing the kitchen to monitor and control the food production. For example, one typical routine of serving meals would be:

'The menus are given to the patients via the housekeeping or ward staff at supper time for the next three meals, that's breakfast, lunch, and supper. The morning of the meals we get the menus delivered to us by the housekeeping staff. That's got lunch, supper and the next day's breakfast on it. We collect all those figures and that's given to the Chefs as production numbers, so we know how many we're producing for, although it's the wrong way round because we've already started production by the time we get the menus. So it is just to make sure we've got enough. Then the food's prepared. It's all prepared on-site here. We put it on to a belt service, the Gannymede belt, which is a plating service [...]. The menu card is ticked with what the patient wants and what size and we then put the correct items on the plate. Then it's put into the heated trolleys at the end and then one of our porter deliver it to the ward. The ward staff serves the food to the patients. We do daily ward visits to a couple of wards a day in rotation to check that everything's been done correctly. When they're finished, one of our porters brings the trolley back where it's put through the dishwasher. All the disposal are disposed off. The food is disposed off, too. And then it starts all over again for the next service- for the next meal. Supper they (patients) get slightly less choice. They do get a choice but

they get a salad and sandwich choice and soup as well in the evening, which they don't get at lunch time.' (HHC, p.2, line41-61)

However, staff issues have reduced the advantages of using the menu card system, as HRB believed that the pressure on ward staff created some problems. As he said,

'It's effective if it's being operated correctly at ward level. On the ward, sisters make sure that they're carrying out the correct distribution and collection of menu cards. So, sometimes it's not as effective as it should be because of the pressures that are placed upon the nursing staff. [...] Sometimes, it's just a case of education, getting them to understand that we have an obligation under the Patient's Charter to provide patients with a choice of menu as opposed to them choosing for the patient and the patient doesn't know anything about it or cards may be just being done too far in advance. [...] It's quite a nightmare.' (HRB, pp.7-8, lines 219-235)

The four catering managers, however, pursued different strategies toward alternative meals. Ringing in to the kitchen from the ward was the most common way to order additional food. But in each case the next step differed.

- The HSR catering manager expressed that they required the ward was first to redistribute any meals left in the trolley but if not, the kitchen would send an alternative from what had been left, which might not be the food the patients ordered or wanted. Patients would eventually have a choice for their next meal as long as they stayed in their bed before the meal services.
- The HRB catering manager had established a "Service Level Agreement" with the ward managers to deliver an order within half an hour to the wards. If a new patient arrives and has not booked a meal, the staff would offer them either the previous patient's choice or ring up the kitchen for another meal. All the wards after 8:15 p.m. provided their breakfast type of dry food stocked at the ward kitchen, so patients could have these alternatives if they did not like the food.

However, the system might not always work as proposed since the pressures on the ward nurse had caused some to partially pass the menu ordering job to volunteers who might not be aware of the system.

- The HHC catering manager said that the wards were aware of a supplementary, light menu for people as an alternative food. He was annoyed by ward staff who did not cancel the previous order and just re-ordered a new meal to cause “two meals with one bed”, increasing food wastage and costs.
- The HHW catering manager explained that such requests were ‘very occasional’ and were dealt with at ward level as they could not send out hot meals outside of normal service times because of ‘legislation’ (HHW, p.4, line 119-121). As a result, only sandwiches or toast would be offered. New patients would ‘inherit some meals on the menu card’, but when the trolley’s been around at the ward level, they would be offered ‘whatever’s left’ (HHW, P.5, line131-134). Even if the patients had ordered themselves, they might not receive their food if they were the last one to be served.

9.3.2 Menu design

Currently, the four hospitals all served three scheduled meals (breakfast, lunch, and dinner) and seven drinks. The breakfast was continental with no hot food provided, with the exception of porridge in some cases. The lunch menu offered a starter, two or three choices of main course, soft diets, vegetarian, or a choice of sandwiches, and then followed with a choice of vegetables and a choice of hot or cold desserts. The dinner menu was similar to the lunch one, with the exception that HHW hospital (a contract caterer) sent out only cold meals for dinner. The ward kitchens provided mainly drinks and additional snacks or bread upon request.

As the menu cycle was two weeks for in-house and three weeks for contracted-out caterers, a standardised menu was applied to most patients. The hospitals brought in special companies to offer alternative Halal and Kosher meals, rather than prepare on site. There was no special menu for elderly or orthopaedic patients, but three hospitals

did modify dishes for soft or diabetic food, whereas HHC offered only one standard menu for everyone designing items that would be widely appropriate to different patient's needs. When designing the menu, however, the catering managers had different priorities.

- The HSR catering manager firstly considered the patient's dietary needs. She investigated the type of patient they generally served and found a good balance between older and younger generations, so the variety of food came from a choice of fish, meat, and vegetarian meal per day. The nutritional value of the menu could be calculated to meet calorie requirements for the patients. Secondly, the cooking capabilities of the catering operation and the available equipment on the premises constrained the menu items that could be offered. The presentation and temperature of food would be other issues to be considered. Further, cost restrictions might limit use of some ingredients such as certain type of seafood and certain cuts of steak.
- The HRB catering manager looked at the 'popularity' of the dish (HRB, p.9, line 273), then the nutritional content and value are vetted by their dieticians under the full specification and diet codes on the menu. He also considered the type of patients and the local population with its mixed ethnic cultures (Asian/Afro Caribbean population and elderly European) to bring in casseroles, fricassees, or curry types of cuisine with soft texture. The variety of food would be acceptable for all groups. Next, the speciality of their chefs (from Italy and Egypt) to cook the dishes would improve the variety of the food choices.
- The HHC catering manager would first look at the nutritional value and then the presentation on the plate. He also considered the textures and tastes of the dishes.
- The HHW catering manager first emphasised that meeting the Trust's requirements was the first priority. He presumed that the menu was nutritionally balanced and checked by both the dieticians from their company and the Trust. Secondly he expressed that 'cost is paramount' (HHW, p.5, line 149) when selecting the dishes. Thirdly, identifying the types of patients and discovering the

acceptability of the food for a majority of patients was important for the purpose of ensuring they would eat the food. Last, the dietary requirements were also been considered.

When asked about “The National Food Guide” and “the nutritional guidelines for hospital catering”, all four catering managers were positive about the guidelines, but worried about the cost implications when selecting the menu. In a general way, they obtained clearance from a nutritional analysis from the dieticians from either their own company or the Trust. The HSR catering manager expressed frustration with trying to understand nutritional messages but tried to work closely with their dieticians to promote healthy diets, as they were one of the hospitals rewarded by a Heartbeat Award for healthy eating.

9.3.3 Food wastage at ward level

With menu card ordering and similar strategies on menu design, cost had often been cited by the catering managers. The four catering managers found the levels of the food wastage also varied: 1-2% from HHW, 5% from HRB, 10% from HSR, and one did not specify. The three catering managers utilising the plated-meal service style were bitterly disappointed with the ward staff over-ordering the meals without cancelling the old one when patients may have gone home or be in X-ray or waiting for medical tests when the doctor was around, or they are changed to ‘nil-by-mouth’ status or moved to another ward without notifying the kitchen. Wastage could also be caused by the meal ordering procedures. With the ordering a day before, patients may change their mind the next day.

HHC stated:

‘Some full meals, which have not been eaten, are returned [because of] over-ordering. That’s a big problem. [...] They (Ward staff) order completed meals, just in case they may get another patient in. If they don’t, it gets thrown away.’ (HHC, pp. 3-4, line 86-97)

HRB found that the procedure is difficult to control:

'because it's nursing issues they wouldn't think about food. The only time the wards think about food is when the food trolley arrives. Until that time they assume all the food's ordered and so they wouldn't cancel meals.' (HRB, p.4-5, line124-127)

HSR concluded that the cost of this food wastage would pay for one assistant as she said:

'We could properly save approximately 7,000 pounds a year if nurse staff cancel food when the patients are just going home.' (HSR, p.8, line252-254)

While some whole meals have been returned, the specific items of food left were potatoes and soup from HHW because the containers in the bulk service cannot provide the appropriate quantity levels. However, soup was the least food wasted item in HSR. The control of food wastage remained unsolved and continued to be a big challenge for catering managers.

HRB suggested that catering management should take control at the ward level to reduce the level of food wastage, saying:

'You will not stop wastage. You can reduce it probably to a more acceptable level but you need to have ward based staff that are controlled by catering, or certainly trained by catering in ward hostess style duties which allow them to assist.' (HRB, p.6, line 181-184)

9.3.4 Meal service personnel

The four hospitals appeared to utilise different combinations of personnel to deliver the meals. Table 9.2 identifies the job title and department of these meal service personnel. The meal service routines blended both the nursing department and the catering department together. In order to accomplish a smooth service routine, these two departments have to work as a team; however, the differences between them were clear from the different viewpoints captured from the four hospitals.

Table 9.2: Meal service personnel

Hospitals	HRB	HSR	HHC	HHW
From kitchen to wards	porter	porter	Catering porter	Catering staff
Serving patients	Nurse	Domestic staff/Nurses	Nurse Auxiliary	Nurse
Reporting Department	Nursing department	Catering department	Nursing department	Nursing department and catering firm at the lunch time; Nursing at dinner time
Collecting the plates	Nurse	Domestic staff	Nurse auxiliary	Catering staff/nurses

- HSR said that questions about nursing staff as meal service personnel are:

"harder because they are obviously a different directorate. They're not anything to do with our department." (HSR, p.15, line 451)

Occasionally, the communication between the two departments broke down and a few heated discussions occurred due to the idea that:

"they [nursing department] think they're a little bit more important than the catering staff and the domestic housekeeping staff." (HSR, p.15, line 463-465)

She concluded that their overall relationships were good.

- HRB considered that differences appeared to come from "*accountability*", meaning the segmentation of duties between the two groups. He stated that:

'some believed that they should serve it [meals] to their patients and ensure that the patient had got the right food and eating it and helping where possible. That's probably where it finished. The rest of it becomes a burden when you've actually got to start clearing up, or where you've got to start setting up which is normally a

catering or ward hostess type role. There's a fine line of where the nurses start and the housekeeping and ward hostess stops.' (HRB, p.12, line371-376)

He then went on to explain that a caterer in a hospital runs counter to some catering principles as it was very rare to see their customers, since the food they prepared and cooked was handed over to other agencies who actually served the customer.

- HHC expressed frustration with losing control on the ward level, being treated as “*JUST contractors*” by the ward staff, and having the impression of being blamed for all sorts of problems with meal services. He stated that:

'We still get nurses who think everything is our fault when they're taking the wrong tray out of the trolley and that's a big problem.' (HHC, p.8, line 229-231)

- HHC seemed to have confidence in their relationship with the Trust, but just worried that the meal services would be affected when the nurses did not serve the food.

It is possible that staff training would prevent some difficulties. Although all of the catering managers claimed they provided training for the ward staff and correspondence had been issued between the departments, only HRB had an operational services training manager to handle basic food hygiene while the other three hospitals found their ward staff were not interested in this subject. Also, HHW mentioned part of the difficulties was a high turnover in the nursing staff and training was not mandatory, although the catering department had put forward ‘a quote’ for training ward staff, this had never been taken up.

9.4 Quality assurance measures

The results showed that all catering managers had similar approaches to measuring patients' feedback through personal visits with patients, regularly scheduled patient

surveys, or annual audits from their Trust. Table 9.3 displays the methods used by each hospital when handling patients' feedback regarding meal services.

Table 9.3: Methods of handling patient's feedback regarding meal services

Method	HSR	HRB	HHC	HHW
See patients	If required	If required	If complaint	If complaint
Patient survey	Available for patients to take on-site if interested	Yes/no questionnaire at the back of menu daily	Offer separate quantitative questionnaire weekly	Daily, four points scale questions at the back of menu; Weekly, Yes/no questionnaire on two selected wards
Ward visit	Not mentioned	Weekly Measured by the Service Level Agreement monitoring systems	Weekly	Weekly
Trust audit	Quarterly	Yes	Yes	Monthly
Local Health Council	Face-to-face interview and patient surveys annually for Heartbeat Award	Not mentioned	Yes	Not mentioned
Others	General generic comment card; Written letters to chief executive			

HSR indicated that working closely with their daily quality assurance document and a weekly department audit combined with a process plan provided tight controls on operations and prevented any outbreak of food poisoning. Each stage of food preparation and service flow has its own specific analysis in accordance with the Hazard Analysis Critical Control Points –HACCP procedures. Moreover, the results of an independent report from the local Health Council annually evaluating their

services had been beneficial in providing unbiased opinions and optimum recommendations for them.

HRB explained that the Service Level Agreements monitoring system agreed with their wards provided detailed service specification measurements of their meal service quality on weekly basis. The specifications were on quality of preparation, quality of services at the kitchen level, times, specifications of delivery schedules and collection schedules, management monitoring, and supervisory monitoring at the ward level.

HHC expressed frustration collecting their surveys (5% return rate) because the patients may have forgotten to return them or they suspected there had been incidents where the questionnaires had not been delivered or had been taken off the trays.

9.4.1 Patients survey

While all four catering operations utilised a catering service quality questionnaire, the design and contents of the questionnaire and auditing method differed (Appendix 9.2). They ranged from 4 to 19 questions in length. Three questionnaires were self-administered and consequently had extremely low response rates while HSR used face-to-face interviews though they were disruptive, costly and time-consuming. The questionnaire from HHC was found to be difficult to read because of poor printing and tiny fonts, but their graphics could draw the patients' interest. The question design from HRB and HHW was simple and clear.

Table 9.4 illustrates the meal service factors that the patient surveys investigated. Menu choices and food temperature were found in all surveys. The quality of food, presentation, and advice on choosing meals were the next most frequent. After that, each survey appeared to be focused on either food or service aspects.

Table 9.4: Comparisons of factors included in four patient surveys

Hospitals		HRB	HSR	HHC	HHW
Factors	Quality of food	√		√	√
	Menu choice	√	√	√	√
	Temperature	√	√	√	√
	Presentation		√	√	√
	Portion sizes		√	√	
	Meal times			√	
	Advice on choosing meals	√	√	√	
	Timing of service	√		√	
	Consistency of service			√	
	Overall rating on food and services	√		√	
	Get the chosen meal	√	√		
	Quality of beverage	√	√		
	Helpfulness of staff	√	√		
	Cutlery clean/correct		√		
	Placement of food		√		
	Nutritional supplements		√		
	Open comments		√		√
Background	Name	√	√	√	√
	Ward	√	√	√	√
	Type of diet	√	√	√	√
	Length of stay			√	

Note: √ means the factor appeared in the questionnaire.

9.4.2 Dealing with patients' complaints

All four caterers had procedures and guidelines to follow for either verbal or written complaints. The frequent complaints were on different issues from the four hospitals, such as:

- "I'm not getting the right meal." (HHC, p.10, line 303)
- Asked for 'Cooked breakfasts'; 'chocolate bars' (HHC, p.10, line312, 314)
- 'They did not like the food, or the food is cold' (HHW, p.9, line276-277)

- Ice cream and jellies were not as solid as they should be when presented in front of patients. (HSR)
- Range of choices. (HRB)

9.4.3 Patient satisfaction

Through the findings of their quality assurance measures, four catering managers exhibited different attitudes towards patient satisfaction expressed in varying tones:

- HSR confidently and repeatedly said patient satisfaction was “very good” and “very positive” (HSR, p.17, line 510) as evidenced by the published results of the catering surveys, and the ‘thank you’ letters received;
- HRB concluded their patients were “generally satisfied” (HRB, p.15, line 447) and justified in the attitude that “food is not necessarily their priority but it’s obviously very important in their well-being and in aiding their recovery” (HRB, p.15, line 452-453);
- HHC replied with “no major bad press about the food here. Considering we’re doing 550 meals a serving, it’s not bad.” (HHC, p.11, lin324-326);
- HHW avoided answering the question, but blamed their difficulties on the environment in which the patients are eating. The issues of money constraints, the nature of the business, and serving sick people were seen as tougher to handle by them.

9.5 The role of hospital staff in meal services

Regarding the role of hospital staff toward meal services, the results found that all of the catering managers had expressed quite similar opinions on the role different hospital staff should play in mealtime care. Table 9.4 described what the catering managers felt was the role of nurses, catering staff, domestic staff, kitchen staff, dieticians, and doctors in meal services.

Table 9.5: The role of hospital staff in meal services from the catering managers' point of view

Hospital staff	HSR	HRB	HHC	HHW
Nurses	Assist feeding the patients and ensuring that the patient eats the food and make assessments to maintain their nutritional status	Ensure the patient receives the meals that they've chosen and they are eating it. Give advice on correct diets	See the patients have eaten and it is what they are supposed to be eating	Oversee the meal services to be aware of what patients are or are not eating and make sure they do
Catering staff	Production of food to the point of delivery	Prepare, cook and serve the food	Deliver the food to the ward	Conform to legislation and make sure the patient is getting what they want
Domestic staff (Housekeeping staff)	Ensuring the patient orders the right meal, receives the right meal and assists with serving the drinks	Patient service role	No role in the meal services	No role in the meal services
Kitchen staff	As for catering staff	As for catering staff	Prepare the food	Assembling the food, cleaning and dishwashing duty
Dieticians	Help produce the menu to meet nutritional needs. Advise catering departments, nursing staff and patients.	Monitoring role from the nutritional value point of view	Visiting the patient and telling catering what the patient needs	Conforming to the nutritional requirements
Doctors	Recognising food is part of patient care	No role in the mealtime care	Be aware that food would help recovery	No role in the mealtime care

Each type of hospital staff tends to fall into certain areas of mealtime care to smooth the feeding patients' routine. Generally, nurses had been placed in an important role:

overseeing meal services, assisting with feeding the patient and assessing patient's eating patterns for further investigation. Catering staff completed food production and delivered meals to the ward door. It was thought that Domestic staff should not be involved in mealtime care, excepting HSR which heavily relied on housekeeping staff to collect meal orders, serve food, and clean the trays. Kitchen staff played a similar role to the catering staff. Dieticians were mainly thought to be responsible for monitoring patients' nutrition and offering suitable advice for other hospital staff related with food issues, but HHC noted that dieticians should take a more active role to meet patient's real needs rather than just giving out pamphlets. For doctors, HRB and HHW did not believe they should have any place in mealtime care, but HSR and HHC emphasised that a doctor should recognise the benefits of food provision in aiding patient's recovery.

9.6 The trends in hospital meal services

Regarding the future of hospitals meal services, several issues have been mentioned.

HSR would like to update the catering kitchen to provide access to the wards and to modernise the services with new equipment, as catering facilities did not qualify for assistance from the government's Private Financial Initiative (PFI) to build a new location. She felt very disappointed that the PFI was only available for primary patient care, not catering facilities as she stated that:

“the government do not see FOOD as a primary care when it comes to financing buildings” (HSR, p.5, line147-148).

On the nursing side, she continued to promote a culture for the recognition that “food is important” to gain more support from the nursing staff on patient feeding. On cooking methods, she expressed that no matter whether the food is traditionally produced or regenerated cook-chill, the quality of food can be maintained and procedures can also improve the service.

HRB considered that under the financial and operational constraints, catering should have full control from start to finish of the food production process - from the kitchen to patients feeding. He also pointed out that the development of an operating system that could offer feeding to anybody at any time of the day would assist with patient eating.

HHC insisted a bulk service would benefit them by offering patients more choices and also stimulate their appetite with a ward-based staff under the current conditions. In the future, meal service at the hospitals should provide more flexibility in ordering the food when the patient wants it or needs it, not necessarily when it is scheduled. Cook-chill from external food manufacturers could be delivered to the ward directly and regenerated in trolleys at the ward level without a full catering department. With such an operation, money could be saved by not operating a full catering department and more money could be put into patient care.

HHW considered that 'things go round in circles' between plated meal service and bulk service and that meal service would move back to conventional or semi-conventional as trends changed, and requirements and people's expectations for nutritional value improved. He was concerned with large fluctuations in meal budgets among different hospitals and with balancing the financial constraints within the country.

9.7 Conclusion

From the results of the four interviews with the catering managers the following general conclusions emerged:

- The closer the interaction with the nursing department, the better the meal services provided to patients. The In-house caterers appeared to have more advantages in closely co-operating with the nursing department since the meal services routines for both menu ordering and food services involved both departments.

- Although the culture of feeding patients is changing, the recognition of food as part of patient care was still perceived as a low priority, especially for nursing staff.

- The general concepts of quality assurance had been applied in all four hospitals. Patient surveys served to measure and evaluate meal service in a general sense. The challenge for the catering manager is how to effectively and efficiently interpret the questionnaire data in a timely manner under financial and social constraints to improve meal services for patients.

The routines and opinions of the catering managers represent the third corner of the hospital catering gap theory diagram. Now that the data have been compiled and analysed, the next chapter will integrate the three phases of the primary research within the theoretical framework in order to interpret the results with reference to the secondary data.

Chapter Ten

Chapter Ten:

Discussion of the results

10.1 Introduction

The previous chapters have examined the issue of meal service quality within England's NHS hospitals in some detail. After examining the NHS environment and culture and service quality theory and research, this study was designed, implemented and analysed using the most suitable methodology for the setting. Using gap theory, this chapter explores the results of the primary data from Chapter 5 through 9 and compares them with the findings from the literature review and the secondary data obtained in Chapters 2, 3 and 4.

The proposed theoretical framework was evaluated for hospital meal services. Thus, the service encounter was analysed among three different group with in interesting hospital food- patients, hospital staff, and catering managers (Figure 10.1), to generate a coherent and in-depth picture of the perceptions of the quality of meal services in NHS acute hospitals. Each of these three principals has their own priorities and concerns. Patients are likely to be interested more in what is being offered and whether they can get the meals they want when they want them. They want to feel comfortable and may expect friendly and helpful service from hospital staff. Meal delivery staff may be more interested in how the routine affects their schedule and their duties. The Catering department may have a greater interest in controlling costs, producing an efficient and effective workforce, and meeting the Health and Food Hygiene regulations. This can be expected to generate conflicting priorities from the differing interests among the three groups, with the result that patient satisfaction and intake are

likely to suffer inconsistencies and inefficiency of quality in terms of meal provisions in hospital (Figure 10.1). Communication between patients and meal delivery staff, patients and the catering department, or meal delivery staff and the catering department play a key role in determining service quality and the performance of high quality services.

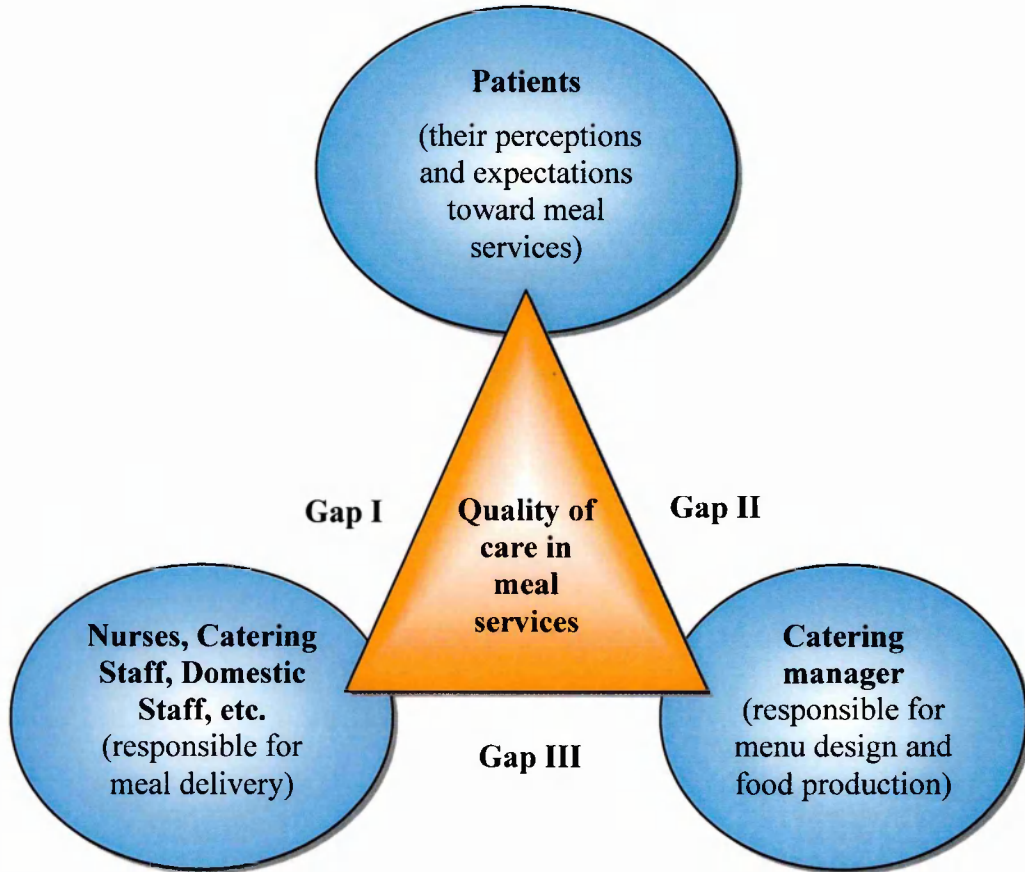
With gap theory serving as the basis of this research, Chapter 10 is organised around these gaps, with discussion of the attributes of meal services first, followed by a dialogue on the managerial issues and meal service quality assurance.

10.2 Gap I- The Service gap between patients and service personnel

10.2.1 Different priorities

The first gap to be examined is the one between the patients and the service personnel. In the patient and the staff questionnaires, there were eight questions relating to staff service that are directly comparable. The results from Chapter 7 and Chapter 8 appear to indicate an overall general agreement between patients' expectations and perceptions and what the service personnel believe to be important parts of their duties. Using the seven point Likert scale, the mean scores on patients' expectations and perceptions, and the staff's service orientations showed positive agreement with all the statements. Table 10.1 displays the mean scores of the comparable issues and statements applied in both the Phase I-patient survey and Phase II questionnaires-service personnel survey.

Figure 10.1: Competing interests (Gaps) in delivering the quality of meal service in hospital



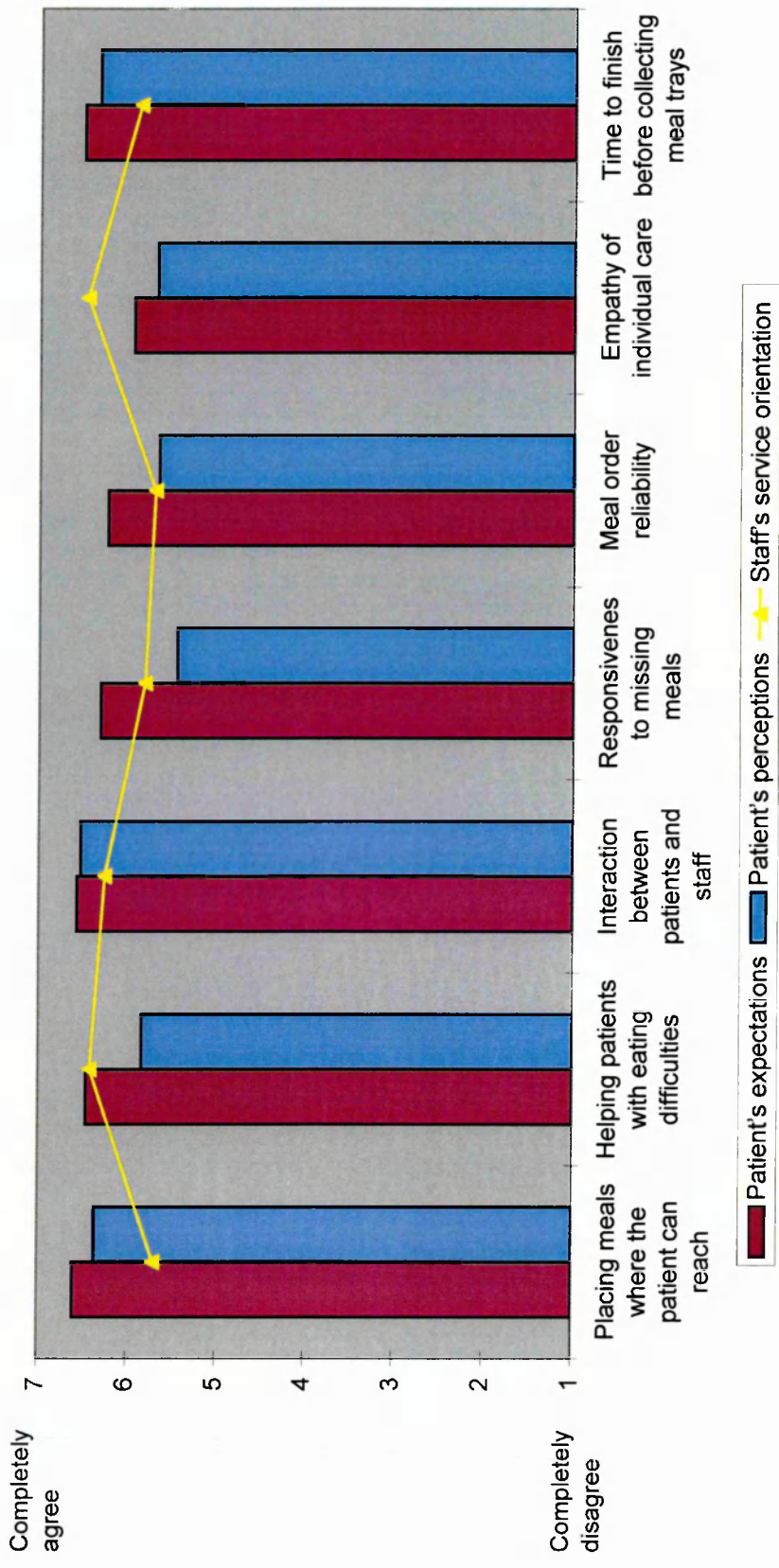
(Duplicated from Figure 5.2)

Table 10.1: Comparisons of the attributes of meal services between patients and meal service personnel

Issues	Statements in Phase I	Patient's expectations	Patient's perceptions	Statements in Phase II	Staff's service orientation
Placing meals where the patient can reach	'Staff should leave food within reach.'	6.6	6.36	'I ensure the patients can reach the plates when I serve them.'	5.7
Helping patients with eating difficulties	'Staff should always be willing to help patients with eating difficulties.'	6.46	5.84	'An important part of my job is to help those patients with eating difficulties.'	6.42
Interaction between patients and staff	'Staff should be polite and pleasant'	6.57	6.53	'I am polite and pleasant when delivering meal trays to patients, even if they are grouchy.'	6.26
Responsiveness to missing meals	'Other food should be provided when a patient misses the regular meal service.'	6.31	5.45	'I will notice if a patient misses the regular meal service and make sure alternative food is provided.'	5.81
Reliability of meal orders	'Meals should arrive exactly as ordered.'	6.23	5.66	'I ensure patients get the meal that they ordered.'	5.7
Empathy of Individual care	'Patients should be given personal attention.'	5.68;	5.63;	'Ensuring a patient eats enough of the right types of food is an important part of patient care.'	6.47
	'Meal sizes should be according to individual needs.'	6.21	5.73		
Time to finish before collecting meal trays	'Enough time should be given to eat the food.'	6.51	6.34	'I will not collect the food trays without the patients' permission.'	5.88

Note: Scale ranged from 1= completely disagree to 7 = completely agree

Figure 10. 2: Gaps between patients' expectations and perceptions compared with staff's service orientation



With Table 10.1 detailing the comparison of each issue, Figure 10.2 offers a graphic illustration of the differences between patients' expectations and perceptions against the staff's service orientation. Staff indicated that putting meal trays within reach, responsiveness to missing meals, meal order reliability and giving time for patients to finish were less important compared with patients' perceptions. Only on individual empathy did the staff's perceptions exceed those of the patients. This could suggest that hospitals had trained staff in this orientation of health care to be individually caring but that on a procedural basis this was not the case.

Yet of the statements that can be considered service related, the only noticeable gaps between the patients expectations and experiences were in responsiveness to missing meals, meal order reliability and helping patients with eating difficulties. This could indicate that the relatively lower importance placed on responsiveness to missing meals and meal order reliability could contribute to service gaps in those areas, whereas the gap in helping patients with eating difficulties is in spite of the importance placed on this task by both staff and patients. This may be attributed to some degree to a lack of emphasis on 'getting it right the first time' and being proactive for patients, rather waiting for complaints or bigger problems to occur before moving to resolve the issues.

The gaps of the responsiveness of missing meals and the reliability of meal orders between patients and service staff may reflect the staff's frustration with the different strategies utilised for offering alternative meals and meal procedure (discussed in Chapter 9). Results of Chapter 8 found the staff also expressed negative opinions on these three issues (refer to Figure 8.13), linked to concerns such as staff shortages, uncoordinated patient schedules, and frustration with getting co-operation from the kitchen. This finding is similar to the results of Mongold and Babakus (1994), in which patients had higher expectations on reliability and responsiveness than hospital staff (refer to Chapter 4). The concerns might also be related to the recent radical reform of the health care system and the continued failures within the system (discussed in Chapter 2). Missed or incorrect meals have an impact on undernutrition and recovery, and if the service staff do not place much importance on these issues, it reduces the chance that they will be monitored and dealt with in an effective manner.

The remaining two differences between patient and staff perceptions, putting meal trays within reach and waiting for patients to finish before collecting the tray, could indicate that while the staff might not think it was that important to do these things (relative to the patients perceptions), they still did them anyway, as reflected in the small service gap.

One additional item of note arises from a comparison of the involvement of the service staff in the various mealtime tasks from Phase II (Table 8.3) with the Weighted Gap Measures (WGM) of patient satisfaction from Phase I (Table 7.5). The three mealtime tasks that have the most involvement by all service personnel (assisting with eating problems, checking patients at meal delivery and helping patients with food related enquiries) can all be seen to be related to the meal service attribute of individual attentiveness which had the second smallest WGM, and thus the second highest level of satisfaction. It can then be said that all of the effort put into these tasks therefore has a positive effect, narrowing the gap between the patients and the service personnel in this area.

10.2.2 Attributes of meal services

The results of this research support previous investigations that found that patient assessment of meal service is **multidimensional**. Chapter 7 found three dimensions (Food properties, Interpersonal service and Environmental presentation) emerging from the factor analysis that separates the patients' evaluation of food characteristics from those related to the service procedure. This point also emerges from the Catering manager interviews in Chapter 9, where the hospitals' own assessment of meal services considered several items on separate aspects of food and staff services. It is similar to results of previous research (discussed in Section 3.3) and has verified Gregoire's (1994) conclusion that questionnaires assessing patient satisfaction with meal services should include items to allow patients to evaluate both the personnel delivering the food and the food itself. This indicates that care must be taken to avoid "tunnel vision" when designing hospital meal procedures to make sure that one aspect of meal service is not being improved to the detriment of another one potentially as important.

There was no agreement from the results of these three phases over the dimensionality of meal services on which dimensions should constitute which attributes. The three patient dimensions from the factor analysis (Chapter 7) were different than the proposed structure in Table 6.1, which consisted of eight dimensions (hospitalisation, availability, palatability, caring, communication, reliability, empathy, and responsiveness) amalgamated from the SERVQUAL model (discussed in Chapter 4) and food choice model (discussed in Chapter 3). This seems to agree with the conclusion of Chapter 4 that no consensus has been reached on the dimensionality to be used to measure quality, since varying factor-loading patterns and inconsistencies in the number of factors have emerged from previous research.

From the patients aspect, the Food properties dimension and Interpersonal service dimension at emerged from the factor analysis appear to have a similar pattern to two previous pieces of research. DeLuco and Cremer (1990), which separated the quality characteristics for hospital meals into Food characteristics and Services characteristics, and Gregoire (1994), which found two factors on patient's assessment of the quality of meal services to be meal tray delivery and food quality (These studies were discussed in Chapter 3). This may relate to Gronroos's concept that the two basic quality dimensions are what the patient receives and how the patient receives it (discussed in Chapter 4). This suggests that meal services should be measured as a product of both the meals themselves and the service process through which it was received.

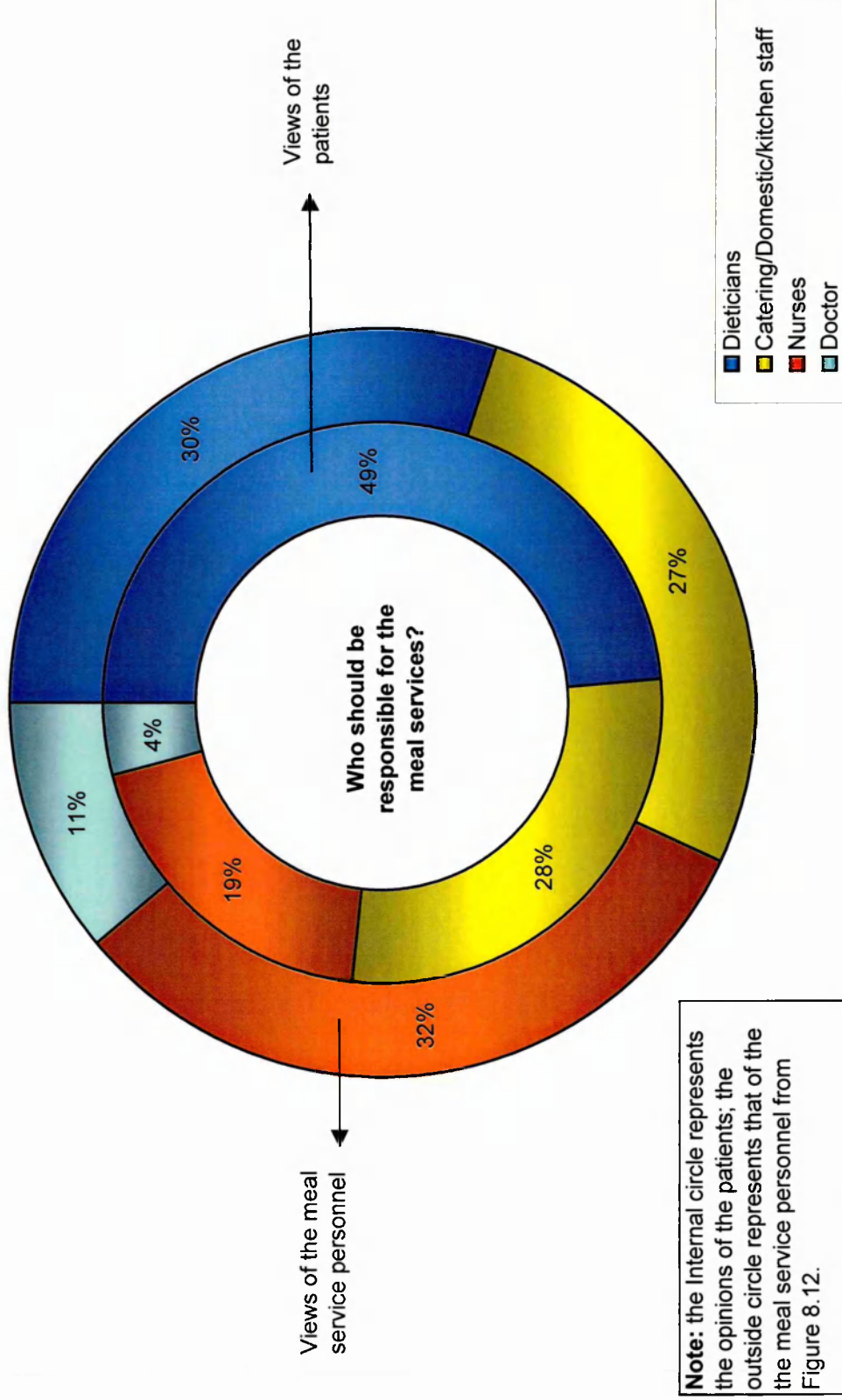
A high reliability of scale indicates the applicability of the scale. The nineteen attributes of patient meal services used in this research showed a high internal consistency for the scale instrument (Chapter 7). As discussed in Section 3.3, other researches assessing the quality of meal services used, for example, 21 items in DeLuco and Cremer (1990)'s study, 26 items in Dube *et al.* (1994), 16 items in Gregoire (1994), 7 items in Gregoire (1997), 11 items in Lau and Gregorie (1998), and 7 items in O'Hara *et al.* (1997), yet each demonstrated a high reliability of scale. The number of attributes does not seem to have an effect on the reliability of scale. This verifies the integrity of this research and reaffirms the value inherent in the theoretical structure and the method utilised.

10.2.3 Responsibility and role of staff in meal services

The results appeared to indicate that patients' views on which hospital staff should be responsible for meal services differed from those of the meal service personnel. Figure 10.3 presents a comparison on the involvement of responsibility for meal services as perceived by patients and meal services personnel. Section 7.3, the Phase I – patients survey, showed that patient thought that the staff responsible for meal service should be, in order, dieticians, catering/domestic staff, and nurses; however, section 8.2.5, the Phase II- meal service personnel survey found nurses, dieticians, catering/domestic should carry a fairly equal amount of responsibility. The catering manager also expressed that each staff on ward level carried out specific elements of meal services tasks to complement the meal routine (Phase III-interviewing catering manager). It could imply that when patients seek assistance on the subject of meal services, the staff they look to may not respond positively if they feel the responsibility is not theirs.

This discrepancy, especially among the service staff, on the issue of the responsibility for meal services also correlates with Maryon-Davis and Bristow (1999), who indicated that the precise role and responsibility of staff in feeding patients is often **confused and unclear** for the management of food and nutrition in hospitals (discussed in Chapter 2). With no clear agreement on who should be in charge, the likely outcome is that no group will end up with an overall responsibility for meal service. This could have one of two effects; either staff may notice something but think that another department will take care of it, in which case important patient information could be missed, or something is noticed and more than one department tries to do something about it in which case they could end up working at cross purposes. Regardless, whether each group thinks they should be responsible, or they think someone else should be responsible, the end result could have an effect on the efficiency of the meal service procedure and communication among the staff, patients and management.

Figure 10.3: Comparison on the levels of responsibility for meal services as perceived by patients and meal services personnel



The confusion over the responsibility for meal service can potentially be seen from the different results on the extent of involvement in mealtime tasks among nurses, HCA, and catering staff as compared with Bond's findings (1997) (discussed in Chapter 2). Catering staff in this research (refer to Figure 8.3 in Chapter 8) showed a uniformly lower involvement in most meal service tasks at the ward level as compared with Bond's results, where the catering staff appeared to be heavily involved in certain tasks: the preparation of the ward environment for meals, ensuring patients receive the correct meal/diet, the distribution of meals, and collecting plates. This may be influenced by the insistence of the nursing department in one hospital that no catering staff should be allowed to work at the ward level as they treat meal service as an integral part of patient care. Thus, the role of the catering staff is unclear, particularly their participation at ward level.

10.3 Gap II- Quality assurance gap between patients and catering managers

10.3.1 Patients satisfaction with meal services

Results of this research (refer to Chapter 7) found that patient's expectations exceeded their perceptions for hospital meal services; consequently, the gaps that existed between their expectations and perceptions serve to lower their satisfaction level. These findings can be linked to Parasaman et al. (1988) 's five gaps theory, where gap 5 is the consumer expectation-perception gap. This could suggest areas where the catering managers should focus to meet their patient's expectations.

Results of this study support previous research that overall satisfaction summarises **multiple dimensions** of fulfilment with foodservices (refer to Table 3.12 in Chapter 3). Satisfaction with meal services was associated with the food properties dimension (consisting of attributes on flavour, aroma, freshness, presentation, temperature, variety, description and ordering of food) and the environmental presentation dimension (consisting of the attributes on meal time surrounding and social contact during meal times, quantity of food, information about food and nutrition) (refer to the results of Section 7.9 predicting patients satisfaction and food intake). These

seem to substantiate previous research findings (discussed in Section 3.3, Chapter 3) that stress the multidimensional aspect of patient satisfaction with meal services.

The food properties dimension was the most powerful indication of patients' satisfaction toward meal services (refer to Figure 7.2 in Chapter 7). The greatest number of negative comments, which can be seen to be roughly analogous to a gap between expectations and perceptions, were on issues affiliated with food quality. This confirms previous research (DeLuco and Cremer (1990); Dube *et al.* (1994); O'Hara *et al.* (1997); Lau and Gregoire (1998) discussed in Chapter 3) that food quality is the best predictor of overall satisfaction. This suggests that food properties should be the most important area for catering managers to monitor and concentrate on.

The environmental presentation dimension had a causal relation with overall satisfaction of meal services, though not as strong as that of food properties. These findings were also supported by the comments of both the patients and the service staff. Environmental issues also had a number of negative comments, though not to the same extent. This also serves to confirm results from the study of Maller *et al.* (1980) that environmental factors are important when evaluating hospital food and foodservices. This further illustrates the three-cornered nature of the phenomenon, as satisfaction with meal services is thus dependant on influences outside of the catering managers control, as the environment is largely a product of the medical and institutional nature of the facilities and the atmosphere created by the ward staff. This suggests that efforts spent on improving the ward surroundings can have a direct impact on improving meal service satisfaction and therefore food intake.

Although meal service timeliness has not consistently been found to be significantly associated with satisfaction (discussed in Table 3.12, Chapter 3), the results of this research showed that the convenience of the meal timing was a strong predictor toward patients' satisfaction (Chapter 7). This confirms the findings of Dube *et al.* (1994) that meal service timeliness was associated with the patient satisfaction. The patients' appetite has been attributed as an intermediate agent between some meal service attributes and satisfaction. This research (refer to Figure 7.2 in Chapter 7)

found that the patient's appetite was partially correlated with both food properties and environmental presentation, had a causal relationship with the convenience of the meal service timing and had an impact on satisfaction. The findings were partially similar to Dube *et al.* (1994), where patients with positive appetites were more satisfied with the dimension of food quality, meal service reliability, and attitude of the staff who serve meals. Nevertheless, this research went further, finding that patient's appetite had a reciprocal relationship with how often the patient would finish their food. This suggests that patients' appetite can serve as an index of the food intake by patients. This in turn suggests that food wastage could be used as a rough measure of patient satisfaction, with decreases in food wastage serving to indicate an increase in satisfaction.

It was unclear from the secondary research whether aspects of a patients' background might be expected to have a certain association with the satisfaction when evaluating meal services. Results of this research (refer to Figure 7.2 in Chapter 7) found that most patients' individual characteristics (e.g. age, gender, length of stay, and the gross income of head of household) and their contextual factors (e.g. type of ward and diet) have no direct influence on the overall satisfaction. This appears run counter to the findings of Dube *et al.* (1994), that individual characteristics and contextual factors influence patient satisfaction, but to be similar to the results of O'Hara *et al.* (1997), who found that patient-specific characteristics were not related to overall satisfaction. While there was no direct connection to satisfaction, gender, the type of ward and the patient's appetite were associated with the regularity of finishing the food, and thus had an indirect influence on their overall satisfaction toward meal services. This then partially confirms that the results of Dube *et al.* (1994) as they indicated that many individual and contextual factors have the **potential** to influence satisfaction with patients diets. What this also indicates is that generalisations made regarding certain sectors of the patient population are not likely to be valid with respect to satisfaction.

Some results of this research did not agree with the findings from previous research. These results found that the interpersonal service dimension, which received generally positive comments, was not found to be a significant predictor of patient satisfaction toward meal services. This differs to the results of Belanger and Dube (1996) that

interpersonal aspects largely accounted for satisfaction, Greogoire (1994) that attributes of services are more important than food attributes, and Dube (1994) that attitude of the staff who deliver menus would influence satisfaction. This could suggest that the intangible factor of people service has satisfied patients in NHS hospitals.

10.3.2 Different emphasis on the attributes of meal services

Placing a different importance on attributes of meal services may create various reactions to meal service. Table 10.2 compares the importance of attributes of meal service gained from both patients and catering managers, and also with the results of DeLuco and Cremer (1990).

Freshness of food, temperature of food, and taste of food appear to be the three most important criteria when patients evaluate meal services. Results of this research on the importance of attributes of meal services showed similar patterns to the findings of DeLuco and Cremer (1990) (Table 10.2). The first three attributes from Chapter 7 were, in decreasing order, the freshness of food, temperature of food, and taste of food, which were the same as DeLuco and Cremer's. However, different emphases emerged in other areas. The attributes of 'get what you order', and the 'helpfulness of staff' have a much higher priority in this research than DeLuco and Cremer's. Perhaps this could be due to field differences, as Deluco and Cremer's samples were drawn from Canada and this research was carried out in England.

The different priorities on the attributes of meal service produced different outlooks between patients and catering managers. Table 10.2 also includes the frequency order of the meal service attributes looked at by the four internal surveys used by the catering managers as an indicator for their quality of meal service. Compared with the patients' rating on the importance of 19 meal attributes (in Phase I), the patient surveys that the catering managers rely on appeared to emphasise different areas (in Phase III), with the exception that both rated the food attributes as being of prime importance. Patients seem to place a greater importance on the attributes of the attitude of staff and getting the chosen meal than the catering managers does. Not

auditing the areas that are considered important by the patient may lead the catering manager to make ineffective decisions on how to improve their services.

Other attributes considered by patients but not mentioned by catering managers' patient survey were the issues of alternative food provision, description of food content on menu, individual care, and social contact during meal times. The Catering manager may not have control over these staff and arrangements (discussed in Chapter 2), but should consider any service aspect of the meal service to be part of the nature of their business.

Table 10.2: Different emphasis on the attributes of meal services between patients in Phase I, DeLuco and Cremer (1990) and the catering manager’s patients surveys from phase III

Phase I- patients	DeLuco and Cremer (1990)	Phase III-catering managers’ patients surveys
1.Freshness of food	1.Freshness of food	2.Quality of food
2.Temperature of food	6.Temperature of food	1.Temperature
3.Flavour of food	2.Taste of food	2.Quality of food
	11.Seasoning of food	
4.Attitude of staff	12.Pleasant greeting	3.Helpfulness of staff
5.Getting what you ordered	15.No missing food items on tray	3.Getting the chosen meal
6.Helpfulness of staff	17.Assistance with menu selection	2. Helpfulness of staff
7.Variety of food		1.Menu choice
8.Alternative food provided if a meal is missed	16.Prompt delivery	
9.Presentation of food	9.Appearance of food	2.Presentation
10.Aroma of food	10.Aroma of food	2.Quality of food
11.Description of food content on menu		
12.Quantity of food		3.Portion sizes
13.Placement of food	7.Placing food within reach	4.Placement of food
14.Length of meal times		3.Time of service
15.Timing of meal delivery	13.Dependable tray delivery	4.Meal times
16.Individual attentiveness		2.Advice on choosing meals
17.Information on nutrition & food	3.Nutrition of food	4.Nutritional supplements
	5.Nutrition counselling	
18.Mealtime surroundings		4.Cutlery clean/correct
19.Social contact during mealtimes		
	4.Tenderness of food	3.Quality of beverage
	8. Service quality of service characteristics	4.Consistency of service
	14.Food quality of service characteristics	3.Overall rating on food and services
	18.Importance in the selection of a hospital for medical care.	
➤ Scale ranged from 1= completely unimportant to 7= completely important.	➤ Measured in 4 point-scale: very important, moderately important, slightly important, or not important.	➤ Issues investigated in the catering managers internal surveys.
Note – The numbers represent the relative ranking of the attributes in each survey.		

Nevertheless, catering managers placed more importance on some attributes related to controlling the business aspect of meal services than the patients did. For instance, menu choice appeared to be the catering manager’s first priority, but for the patients it was only seventh. Moreover, catering managers mentioned three attributes (quality of beverages, consistency of service and overall rating on food and services), which were not in the survey given to the patients in Phase I. These elements could be included in

future studies to enhance the information on the attributes of meal services for catering managers.

10.3.3 Little support and effects on food audit

Although every catering manager has at least four different ways to regularly measure their quality assurance on meal services (Chapter 9), a lack of standardisation in the audit methods and the ineffective application of the collected information seem to squander the potential benefits of the monitoring. Catering managers can be seen to have an attitude assuming that a high non-response rate on patients surveys meant that patients have no problem with meal services, and no complaints meant that patients were satisfied, which limits the effectiveness of their audit. This agreed with Maryon-Davis and Bristow (1999), who concluded that the hospital quality assurance process has failed to firmly grasp the issue of providing nutrition and that patients satisfaction surveys have played only a small part in improving the quality of catering (discussed in Chapter 2). This mind-set of “turning a blind eye” can be harmful to both the patient and the catering manager, potentially missing areas for improvement. Under the current budgetary pressures, careful auditing could serve as a communication channel between these two interests, pinpointing areas to help reduce wastage of both food and resources.

10.4 Gap III- managerial gap between service personnel and catering managers

10.4.1 External contractors for meal services

The final factor that was found to have an effect on the level of satisfaction was the type of catering system, and to a lesser degree the hospital. The ratings of patient satisfaction with meal services from the patients survey in Chapter 7 showed that contract catering had lower satisfaction ratings than in-house operations, and that the satisfaction decreased from HRB to HSR (in-house) to HHC, and with a much lower rating, HHW (Table 7.21). The differences were rather striking, almost a full point on the Likert scale. These results were confirmed by the interviews with the catering

managers (Phase III), whose comments on how satisfied they thought their patients were with the meal services followed a similar sequence to the patients opinions themselves, decreasing from HRB to HHW, but in a much more optimistic attitude. The reasons underlying these results are potentially very complex, but are largely concerned with the third gap between the service personnel and the catering managers. The differences could be caused by the type of catering system, by the contractors, by the food preparation methods (HHW was the only one to use cook-chill), or by the hospital itself. Regardless, it has implications on the effectiveness of the NHS's policy toward using contract caterers. As discussed in Chapter 2, the trend of the Third Wave of NHS reform of the catering service contract tendering procedure to ward's external contractors appears to have produced a negative impact on the quality of meal services, especially from the patients' point of view. Contractors have structured their system with the purpose of fitting into the current NHS culture, but unfamiliar relationships and very separate service orientations have resulted in the catering department being treated as an alien group within hospital (Chapter 9); consequently, the meal service procedure may suffer in these uncoordinated working conditions. As the comments from the service personnel showed (Chapter 8), the communication between the catering department and the wards easily breaks down. The links between the departments are difficult to maintain, in a large part since meal service has been treated as a lower priority than other procedures (discussed in Chapter 2). The increase in the number of trusts utilising contract caterers can be traced to the budgetary pressures mentioned by all four catering managers. It can thus be said that the funding restrictions can be seen to potentially be connected to patient satisfaction and the regularity of finishing food, which in turn can impact on patient recovery times.

10.4.2 Attributes of service orientation of staff

The service orientation of personnel who deliver meal trays appears to have **several dimensions**, but inclusive of a number of factors. Results of this research found five dimensions (patient interaction, staff actions, meal delivery, patient care, and working environment). This appears to correlate with the results of Gregoire (1994)'s three

factors of service orientation statements (refer to Chapter 3), which were service procedures, personal delivery of service, and patient interaction.

Some aspects of the service orientation statements on the areas of the employee's personal motivation toward providing service and organisational support for providing good service differed among the different departmental staff. Results of this research found that nursing staff and others (HCA/NA, and non-medical staff) differed in their opinion of gaining the organisational support to provide for the quality of service from the service procedures (refer to Figure 8.7 in Chapter 8). This seems to be consistent with Gregoire (1994)'s conclusion, where it was found that nursing staff seemed to be less comfortable with the factors related to the service procedures for providing good service, but more comfortable interacting with patients.

Unfortunately, the factor analysis yielded only preliminary patterns for the service orientation statements as it suffered unconfirmed unidimensionality from unsatisfied results of the reliability indication of each dimension (refer to Chapter 8). This suggests that further research should explore the attributes of service orientation of staff and its dimensionality.

10.4.3 Responsibility and role of staff in meal services

Although both Phases I and II agreed that the nursing staff was accountable and responsible for the meal provision, nursing staff were found to have a much lower involvement in this research (Section one of Chapter 8). This differs when compared with Bond's results, where nursing staff was very engaged in the tasks of the preparation of patients for meals and ensuring patients receive the correct meal/diet. The HCA staff was found to be responsible for looking after the meal services in this research. This could suggested that nursing staff has placed different priorities in meal services

Notwithstanding the differences between this research and Bond's findings (1997), some similarities can be seen in that all of the various staff – the nurses, HCA's and catering staff, have played a role during the meal service cycle. Generally, nursing

staff was more geared toward the supervision of the meal provision, overseeing the problems which might occur with feeding difficulties and dealing with complaints. Physically, they are less involved in food delivery to patients and leave the more routine meal service tasks to the HCA's. The catering managers appeared to have some knowledge of the different roles of the meal service team. Results from Chapter 9 outlined their role in meal services, which appeared to follow the guidelines of hospital catering from the Health of the Nation (refer to Chapter 2). However, these suggested roles do not contribute to smoothing the meal service process since to a large extent the catering manager entirely loses control of the process as soon as the food has been sent out of the kitchen door (discussed in Chapter 9), and they must rely on whoever is in charge of the ward.

Although the literature review has only referred to medical staff, without specifically indicating the role of doctors toward meal services, results of this research as anticipated found that they play a small role in meal services as perceived by both patients and meal service personnel. Doctors were seen as the ones who should be responsible for meal service by 4.5% of patients in Phase I and 11% by meal services personnel in Phase II. Two catering managers also considered that doctors should play some role in aspects of '*food as therapy*'; which have been promoted in the most recent NHS Plan 2001.

10.5 Conclusion

This chapter has examined the relationships between the findings of the Phases of this research with respect to the secondary data. The main issues have been examined in the context of the gap theory which forms the framework for this research, specifically the gaps between the patients and the service personnel, the patients and the catering managers and the service personnel and the catering managers. Issues covered included the attributes of meal service, patient satisfaction factors such as food and environmental properties, and meal service timing and background attributes. Overall, the three-cornered fight between these competing interests defines the meal service encounter, with the gaps forming the basis for the measurement of service quality. These discussions have identified areas to concentrate on to make the

most direct impact on service quality, and thus resulting patient satisfaction. The next chapter concentrates on the conclusions arising from these discussions and the recommendations indicate for the direction of future work.

Chapter Eleven

Chapter Eleven:

Conclusions and Recommendations

11.1 Introduction

This thesis has investigated the quality of meal services in NHS acute hospitals. The first section of this chapter draws conclusions from the results of Chapter 7 (views from patients experiencing the service), Chapter 8 (opinions from the service personnel performing the service), and Chapter 9 (interviews with catering managers responsible for the service). The second section examines the managerial implications of the research and offers recommendations for future work, that can be undertaken to further improve the understanding of meal services.

11.2 Summary

Results of this research support previous research that patient assessment of meal services is multidimensional and has an impact on patient satisfaction. Three different views from patients, meal service personnel, and catering managers were collected and compared to comprehend their implications for meal services in NHS acute hospitals.

11.2.1 Patients' views on meal services

- 17 out of 19 attributes assessed by patients had significantly higher expectations than perceptions, particularly food freshly prepared, food temperature, and flavour which were also perceived as most important.

- The WGM on the food variables was found to be larger than on other issues.
- Patient satisfaction was found to have a high correlation with all 19 attributes and two dimensions (Food properties and Environmental presentation) derived from factor analysis.
- A path diagram (Figure 7.2) established various variables having sophisticated causal relations with patient satisfaction. Patient satisfaction appears to have an instantaneous reciprocal interaction with the regularity of finishing the food, which at the same time was found to have another reciprocal interaction with patient appetite. The Food dimension was found to be the best predictor of patient satisfaction among the three dimensions, but the Interpersonal Service dimension was not found to have any correlation with satisfaction.
- Having catering services contracted out appears to exhibit a negative impact on satisfaction, and also exhibits a significant impact on the Food Properties dimension and its individual attributes.
- The respondents most frequently expressed qualitative opinions on the issues of food characteristics.

11.2.2 Service personnel's views on meal procedures

- Staff worked as a team with various levels of involvement in ten mealtime tasks, but they had differing opinions on service orientation toward what constituted better practices for providing meal services in hospitals.
- Staff in the positions of Health Care Assistants/Nursing Assistants appeared to have a much higher involvement in mealtime tasks in all 4 dimensions (Menu Selection, Meal Supervision, Cleanup/Feedback, and Food Delivery) and every individual task than nurses and non-medical staff (such as catering staff).

- Many service orientation factors had significantly differing opinions among nurses, HCA/NA, and non-medical groups.
- The older staff appears to have a higher agreement with many service orientation statements than the younger staff.
- Staff perceived nurses, catering staff, domestic staff, kitchen staff, and dieticians should have significant and similarly high levels of responsibility for mealtime care, but doctors should have very little.
- Staff comments were mostly negative and related to food properties and managerial procedures such as unreliable communication regarding food ordering between the wards and the kitchen and confusion over the delegation of staff duties at mealtime.

11.2.3 Catering managers' views

- The choice of meal service procedures had implications at each stage of the meal service, with the advantages inherent in the use of, for example, cook-chill or batch cooking simultaneously associated with certain limitations.
- The complex meal routine involving more than one department (at least the nursing and catering departments) discouraged managers in producing consistent and reliable meal service to their NHS patients.
- Each hospital had implemented a patient survey and complaints procedure to assure the quality of the meal service, however the poor response rate and inadequate data analysis had discounted their value for improving the service and the long-term benefit of '*food therapy*'.

11.2.4 Significant outcomes arising from the three research phases

From the results of the three research phases above, it can be concluded that three gaps exist between the patients (who receive the service), the service personnel (who perform the service), and catering managers (who are responsible for the service).

Gap I is the service gap between patients and service personnel.

- Patients placed a different emphasis on what service attributes were more important to them as compared with the staff performing the services with regard to the responsiveness of missing meals, the reliability of meal orders, and giving time for patients to finish their meals.
- The system seems to be for the convenience of management control, rather than seeking out the patient's needs and wants per the service concept as indicated by the general lack of a culture of 'getting it right the first time' within the organisations.
- Staff have been trained to emphasise individual empathy.

Gap II is named the quality assurance gap between patients and catering managers.

- Catering managers appeared to have a much more optimistic attitude of the level of satisfaction exhibited by their patients than was actually the case.
- Patients seem to place more emphasis on the attributes of the attitude of staff and getting the chosen meal compared with what the hospital meal surveys investigate, and which the catering managers rely on.
- Catering managers must continue controlling the business aspect of meal services, as per the nature of their role, but patient satisfaction should not be ignored since they are the ones consuming the food and experiencing the services, the customer.

- A lack of standardisation in audit methods and the ineffective application of the collected information appears to limit the understanding of the market demand with the catering managers potentially missing areas for improvement.

Gap III is called the managerial gap between service personnel and catering managers.

- The role of staff is to become a link between the patients and the catering manager. The stronger the link, the better the meal service provided. The responsibility for meal service is spread along this link.
- The fairly equal distribution of responsibility seen to be among the nurses, dieticians, and catering/domestic staff produces two extreme scenarios, either of all the staff working together equally to feed the patients or no one knowing what is going on with meal services. Job ambiguity and job confusion consequently appear to present significant obstacles to the management of meal services.

11.3 Managerial implications

In considering how to approach the challenges the future will bring in light of this research, businesses should remember:

- *Not to over-promise.* If the patients' expectations are raised beyond the level at which the catering department can deliver consistently, the manager should expect to have occasions when the product or service does not match up to what the patient believed he/she should be getting. Since the nursing staff are often the catering system's human face for the patients, it is important that the message should be coherent throughout all phases of the meal service cycle.
- *Meal service personnel are important.* This research recognises that the personnel - front-line employees and the support staff - are among the most vital to the success of any service organisation. Views of service personnel in Phase II, in fact, provide a voice for their patients needs and wants. It may suggest that satisfied staff make for satisfied customers. A significant effort should be devoted

to hiring the right personnel, developing them, providing them with needed support, compensating them, and devising ways of retaining the best among them. This requires training employees in both technical and interactive skills, empowering them, promoting teamwork, developing internal processes and supporting technology, and treating employees like internal customers to be valued for the job they perform.

- *Examine what your patient wants.* Too many businesses focus on their own production constraints rather than on seeking to find out what it is that the patient expects from their product or service. Additionally, some form of patient education is important in helping contribute to their satisfaction. At the service encounter level, or even before, patients have a role to play in the service delivery process. The hospital providers need to identify the key roles patients would play for a variety of services, translate this information in patient-terms, and embark on a patient education programme. At a broader level, it may assist patients with a better knowledge on food issues and life skills to take charge of their own health in a longer-term proposition.
- *Identify the gaps and minimise them.* Results suggest a relationship between the gaps between patient's expectations and perceptions and their satisfaction. The more the patients' gaps were minimised, the more satisfied they appeared to be. The hospital catering managers who are striving to improve patient satisfaction with their services should focus their efforts on clearly defining patient expectations and how service can be improved to better meet the expectations against their performance. Gap theory can assist the catering manager with more analytical techniques to identify the service areas in need of improvement.
- *Focus first on food properties.* Results found the food properties dimensions had the strongest causal relationship with patient satisfaction. The core business of meal service still revolves around food, and of the three meal service factors arising from the research, it remains the most influential.

- *Utilise the audit results.* Although catering managers utilised their own patient surveys to monitor their performance, the measurement system appears to be weak and low in quality for retrieving feedback. The measurement system should provide information on the level of satisfaction and its determinants for each significant sub-group of patient in a hospital. Effective resource planning decisions and constructive action plans in measuring systems would maximise the return on investment in patient satisfaction.
- *Food wastage serves as an instant index of patients satisfaction.* Results of this research found the regularity of the patient finishing their meal had a direct causal relationship with patient satisfaction. Perhaps, if no research assistance is available, the catering manager can simply measure food wastage to achieve a rough and quick index of the patient satisfaction for continuing improvements.
- *Emphasise delivering quality services and patient satisfaction through strong managerial orientations.* The situation may be attributed partly to the fact that the control of hospital management remains in the hands of physicians who are trained mainly to heal the afflicted, not to manage and administer hospital operations. Subsequently, the meal service suffers from much lower priorities than other procedures. To this end, it seems imperative that the field of health and hospital management envision a service-oriented hospital environment to better meet the needs of the afflicted.

11.4 Recommendations for future work

By developing industry-specific models, this research has overcome many issues surrounding the measurement of the service quality of hospital meal services. The SERVQUAL instrument is not the only method for assessing the underlying causes of the gaps and other quantitative and qualitative research can supplement the instrument. Theoretically, the model identifies several meal service dimensions that are important to hospital patients. While these five dimensions are largely perceptual rather than objective in nature (given the intangibility of the service and the difficulty

that patients may have in assessing its technical quality), they robustly explained patient satisfaction with hospital meal services in Phase I of this research. Their use in evaluating hospital meal service should help provide better care to the oft-neglected patients. However, additional research is needed to replicate and refine the model. With further validation or with the identification of additional service variables, it should be possible to introduce patient-driven quality standards to enable service providers to better address patients' needs.

Results of Phase III were based only on interviews with catering managers. Further studies can go beyond this research to seek the views of dietitians since both caterers and dietitians have direct responsibility for ensuring the provision of nutritionally adequate and appetising food within the constraints imposed by hospital meal services, and their collaboration is essential to successful patient feeding. It would also be useful to discover perceptions of meal services from a nursing manager or ward manager's position. In order to investigate the values, ideas, and beliefs of the various managers and how these are influenced by their qualifications, motivation, reality of practice, and perception within practice, the methodology of choice could apply either an in-depth interviews or a focus group approach to draw on the richness of experience expressed through the personal views of the subjects.

Bibliography

Bibliography

- Aaker, D. A., Kumar, V., and Day, G. S. (1995) *Marketing Research*. (5th edn.) New York: John Wiley & Sons, Inc.
- Aharony, L. and Strasser, S. (1993) "Patient Satisfaction: What we know about and what we still need to explore," *Medical Care Review*. Vol. 50(1), pp.40-79.
- Allison, S. P. (1996) "The Management of malnutrition in hospital," *Proceeding of the Nutrition Society*. Vol. 55(3), pp.855-862.
- Allison, S. P. (eds.) (1999) *Hospital Food as Treatment*. British Association for Parenteral and Enteral Nutrition (BAPEN): Maidenhead:
- Allison, S. P., Rawlings, J., Field, J., Bean, N., and Stephen, A. D. (2000) "Nutrition in the Elderly Hospital Patient- Nottingham studies," *The Journal of Nutrition, Health & Ageing*. Vol. 4(1), pp.54-57.
- Alreck, P. L. and Settle, R. B. (1995) *The Survey Research Handbook*. (2nd edn.) Chicago: IRWIN, Inc.
- Anderson, E. A. (1995) "Measuring Service Quality at a University Health Clinic," *International Journal of Health Care Quality Assurance*. Vol. 8(2), pp.32-37.
- Angeline, Burke (1997) *Health News Briefing: Hungry in Hospital?* Association of Community Health Councils for England and Wales: London.
- Anonymous (1996) "Contractors Chip Away at NHS Catering Market," *Cost Sector Catering*. June, p.17.
- Appleby, J. (1993) "Financing the NHS", In: National Association of Health Authority and Trusts. *1993/1994 NHS Handbook*. (8th edn.) JMH Publishing: Kent, pp. 44-53.
- Appleby, J. (1994) "The Reformed National Health Service: A Commentary," *Social Policy and Administration*. Vol. 28(4), December, pp. 345-358.
- Appleby, J. (1995) "Financing the NHS", In: National Association of Health Authority and Trusts. *1995/1996 NHS Handbook*. (10th edn.) JMH Publishing: Kent, pp. 77-84.
- Appleby, J. (1998) "Financing the NHS", In: National Association of Health Authority and Trusts. *1998/1999 NHS Handbook*. (13th edn.) JMH Publishing: Kent, pp. 73-80.
- Archer, C. (2000) "Nutrition As Part of Treatment," *Nursing Times Plus*. Vol. 96(8), 24 February, p.12.
- Arksey, H. and Knight, P. (1999) *Interviewing for Social Scientists*. London: SAGE Publications, Ltd.

- Arnetz, J. E. and Bengt, B. B. (1996) "The Development and Application of a Patient Satisfaction Measurement System for Hospital-wide Quality Improvement," *International Journal for Quality in Health Care*. Vol. 8(6), pp.555-566.
- Arrowsmith, H. (1997) "Malnutrition in Hospital: Detection and Consequences," *British Journal of Nursing*. Vol. 6(19), pp.1131-1135.
- Ashness, R. (1990) "NHS Catering in Crisis- a private sector partnership solution," *Hospital Caterer*. October, p.10.
- Asubonteng, P., McCleary, K. J., and Swan, J. E. (1996) "SERVQUAL revisited: a critical review of service quality," *The Journal of Services Marketing*. Vol. 10(6), pp.62-81.
- Axelson, M. and Brinberg, D. (1992) "The Measurement and Conceptualization of Nutrition Knowledge," *Society for Nutrition Education*. Vol. 24, pp.239-246.
- Babakus, E. and Boller, G. W. (1992) "An Empirical Assessment of the SERVQUAL Scale," *Journal of Business Research*. Vol. 24, pp.253-268.
- Babakus, E. and Mangold, W. G. (1992) "Adapting the SERVQUAL Scale to Hospital Services: An Empirical Investigation," *Health Service Research*. Vol. 26(6), February, pp.767-786.
- Babakus, E. and Mongold, W. L. (1989) "Adapting the SERVQUAL scale to health care environment: an empirical assessment," *American Marketing Association*. Vol. 55, pp.195.
- Babbie, E. (1998) *The Practice of Social Research*. (8th edn.) Belmont: Wadsworth Publishing Company.
- Bactawar, B. (1999) "Meal Priorities," *Nursing Times*. Vol. 95(48), December 1, pp.61-62.
- Baker, M. (1998) *Making Sense of the New NHS White Paper*. Radcliffe Medical Press Ltd.: Oxon.
- Bareham, J. (1995) *Consumer Behaviour in the Food Industry: a European perspective*. Butterworth-heinemann Ltd.: Oxford.
- Barker, M., Thompson, K. A., and McClean, S. I. (1995) "Attitudinal Dimensions of Food Choice and Nutrient Intake," *British Journal of Nutrition*. Vol. 74, pp.649-659.
- Barrie, D. (1995) "The Provision of Food and Catering Service in Hospital," *Journal of Hospital Infection*. Vol. 33(1), pp.13-33.
- Barrie, D. (1996) "Infection Control in Practice: The Provision of Food and Catering Services in Hospital," *Journal of Hospital Infection*. Vol. 33, pp.13-33.
- Barsky, J. D. (1992) "Customer Satisfaction in the Hotel Industry: Meaning and Measurement," *Hospitality Research Journal*. Vol. 16(1), pp.51-73.
- Beese, G. (1997) "Engery Crisis," *Nursing Times*. Vol. 93(49), 3 December, pp.55-57.

- Bélanger, M. and Dubé, L. (1996) "The Emotional Experience of Hospitalisation: Its Moderators and Its Role in Patient Satisfaction with Foodservice," *Journal of the American Dietetic Association*. Vol. 96(4), April, pp.354-360.
- Bell, R., Krivich, M. J., and Boyd, M. S. (1997) "Charting Patient Satisfaction," *Marketing Health Services*. Vol. 17(2), pp.22-29.
- Bernstein, L., Shaw-Stiffel, T.A., Schorow, M., and Brouillette, R. (1993) "Financial Implications of Malnutrition," *Clinics in Laboratory Medicine*. Vol. 13(2), June, pp.491-507.
- Bitner, M. J., Booms, B. H., and Tetreault, M. S. (1990) "The Service Encounter: Diagnosing Favorable and Unfavorable Incidents," *Journal of Marketing*. Vol. 54(1), January, pp.71-84.
- Black, T. R. (1999) *Doing Quantitative Research in the Social Science: an integrated approach to research design, measurement and statistics*. London: SAGE Publications Ltd.
- Blaikie, N. (2000) *Designing Social Research: the logic of anticipation*. Oxford: Blackwell Publishers Ltd.
- Bojanic, D. C. and Rosen, L. D. (1994) "Measuring service quality in restaurants: an application of the SERVQUAL instrument," *Hospitality Research Journal*. Vol. 18(1), pp.3-14.
- Bond, S. (1998) "Why eating matters," *Nursing standard*. Vol. 12(50), 2 September, pp.26-27.
- Bond, S. (eds.) (1997) *Eating Matters: a resource for improving dietary care in hospitals*. University of Newcastle, Centre for Health Service Research: Newcastle-upon-Tyne.
- Bourn, J. (1994) *National Health Service: Hospital Catering In England*. London: HMSO.
- Bowers, M. R., Swan, J. E., and Koehler, W. E. (1994) "What attributes determine quality and satisfaction with health care delivery?," *Health Care Management Review*. Vol. 19(4), pp.49-55.
- Brannen, J. (1992) "Combining qualitative and quantitative approaches: an overview," In: Brannen, J. (eds.) (1992) *Mixing Methods: qualitative and quantitative research*. Aldershot: Avebury Ashgate Publishing Limited., pp.3-37.
- Brown, R. B. and Bell, L. (1998) "Patient-centred audit: a user' quality model," *Managing Service Quality*. Vol. 8(2), pp.88-96.
- Bryman, A. and Cramer, D. (1999) *Quantitative Data Analysis with SPSS Release 8 for Windows: a guide for social scientists*. London: Routledge.
- Buttle, F. (1996) "SERVQUAL: review, critique, research agenda," *European Journal of Marketing*. Vol. 30(1), pp.8-32.
- Camilleri, D. and O'Callaghan, M. (1998) "Comparing public and private hospital care service quality," *International Journal of Health Care Quality Assurance*. Vol. 11(4), pp.127-133.

- Carman, J. M. (1990) "Consumer perceptions of service quality: an assessment of the SERVQUAL dimensions," *Journal of Retailing*. Vol. 66(1), pp.33-55.
- Carr, E. K. and Mitchell, J. R. (1991) "A Comparison of the Mealtime Care Given to Patients by Nurses using Two Different Meal Delivery Systems," *International Journal of Nursing Studies*. Vol. 28(1), pp.19-25.
- Carr-Hill, R. and Rudat, K. (1995) "Ethnic Minority Health: Unsound Barrier," *Health Service Journal*. 9 February, pp. 28-29.
- Chaston, I. (1994) "Internal customer management and service gaps within the National Health Service," *International Journal of Nursing Studies*. Vol. 31(4), pp.380-390.
- Chima, C.S. (1998) "Should hospital diets meet the dietary guidelines for healthy persons?," *Journal of the American Dietetic Association*. Letters to the editors. Vol. 98(12), pp.1400-1401.
- Christopher, M. G. and Elliott, C. K. (1970) "Causal Path Analysis in Market Research," *Journal of the Market Research Society*. Vol. 12(2), pp.112-124.
- Citizen's Charter Unit (1995) *The Patient's Charter and You: a charter for England*. Department of Health: London.
- Citizen's Charter Unit (1999) *The Patient's Charter and You: a charter for England*. Department of Health: London.
- Coakes, S. J. and Steed, L. G. (1997) *SPSS Analysis Without Anguish Version 6.1 for IBM & Macintosh users*. Milton: Jacaranda Wiley Ltd.
- Committee of Public Accounts (1994) *The Forty-nine Report: National Health Service: Hospital Catering in England*. Department of Health: London.
- Conway, T. and Willcocks, S. (1997) "The Role of Expectations in the Perception of Health Care Quality: Developing a conceptual model," *International Journal of Health Care Quality Assurance*. Vol. 10(3), pp.131-140.
- Cooney, M. and Griffiths, R. (1999) "Practice Still Imperfect," *Nursing Times*. Vol. 95(48), 1 December, pp.64-65.
- Cortis, J. D. (1997) "Nutrition and the hospitalised patient: implications for nurses," *British Journal of Nursing*. Vol. 6(12), pp.666-674.
- Cronin, J. J. and Taylor, S. A. (1992) "Measuring Service Quality: a re-examination and extension," *Journal of Marketing*. Vol. 56, July, pp.55-68.
- Cronin, J. J. and Taylor, S. A. (1994) "SERVPERF versus SERVQUAL: reconciling performance-based and perceptions-minus-expectations measurement of service quality," *Journal of Marketing*. Vol. 58(1), pp.125-131.

- Darby, D. N. and Daniel, K. (1999) "Factors that influence nurses' customer orientation," *Journal of Nursing Management*. Vol. 7, pp.271-280.
- De Carvalho, F. A. (1999) "Attribute importance in service quality: an empirical test of the PBZ conjecture in Brazil," *International Journal of Service Industry Management*. Vol. 10(5), pp.487-504.
- De Raeve, L. (1994) "To Feed or to Nourish? Thoughts on the Moral Significance of Meals in Hospital," *Nursing Ethics*. Vol.1 (4), December, pp.237-241.
- Dean, A. (1999) "The Applicability of SERVQUAL in Different Health Care Environments," *Health Marketing Quarterly*. Vol. 16(3), pp.1-22.
- DeLuco, D. and Cremer, M. (1990) "Consumers' Perceptions of Hospital Food and Dietary Services," *Journal of the American Dietetic Association*. Vol.90(12), December, pp.1711-1715.
- Dennison, C.M. and Shepherd, R. (1995) "Adolescent Food Choice: an application of the Theory of Planned Behaviour," *Journal of Human Nutrition and Dietetics*. Vol. 8, pp. 9-23.
- Denzin, N. K. (1989) *The Research Act: a theoretical introduction to sociological methods*. (3rd edn.) New Jersey: Prentice-Hall, Inc.
- Denzin, N. K. and Lincoln, Y. S. (1998) *The Landscape of Qualitative Research: Theories and Issues*. London: SAGE Publications, Ltd.
- Department of Health (1992b) *The Health of the Nation and You: Towards a better state of health*. Department of Health: London.
- Department of Health (1996b) *The National Health Service : a service with ambitions*. Department of Health: London.
- Department of Health (1992) *Health and Personal Social Service Statistics for England*. London: HMSO.
- Department of Health (1995a) *Nutrition Guidelines for Hospital Catering*. London: Department of Health.
- Department of Health (1995b) *Nutrition Guidelines for Hospital Catering: a checklist for audit guidance notes*. London: Department of Health.
- Department of Health (1996) *Health and Personal Social Service Statistics for England*. London: HMSO.
- Department of Health (1997a) *Health and Personal Social Services Statistics for England 1997*. The Stationery Office: London.
- Department of Health (1997b) *The New NHS: modern, dependable*. Department of Health: London.
- Department of Health (1998a) *The New NHS: modern, dependable. A National Framework for Assessing Performance*. Consultation document, Department of Health: Leeds.

- Department of Health (1998b) *A First Class Service: Quality in the new NHS*. Department of Health: London.
- Department of Health (1998c) *Our Healthier Nation: a contract for health*. Department of Health: London.
- Department of Health (1999) *Health and Personal Social Services Statistics for England 1999*. The Stationery Office: London.
- DeSilver, D. (1993) "Sick of Hospital Food," *Vegetarian Times*. February, pp.28-31.
- Desombre, T. and Eccles, G. (1998) "Improving Service Quality in NHS Trust hospitals: Lessons form the hotel sector," *International Journal of Health Care Quality Assurance*. Vol. 11(1), pp.21-26.
- Desombre, T.R. (1996) *The Role and Preparation of Executive Nurse Directors in the New National Health Service*. Ph.D. thesis, University of Reading.
- Devlin, B. (1995) "Acute Services," In: National Association of Health Authority and Trusts. *1995/1996 NHS Handbook*. (10th edn.) JMH Publishing: Kent, pp.196-204.
- Dhoot, R., Georgieva, C., Grottrup, T., Mahdavian, R., and Pob, R. (1994) *The Management of Clinical Nutrition in NHS Hospitals*. Lancaster University Full-time MBA Project 1994, Nutricia Clinical Care Cow and Gate Nutricia Ltd.: Wiltshire.
- Dixon, M. (1990) "Health Care: A critical comparison of Canadian and the UK," *International Journal of Health Care Quality Assurance incorporating Health Care Management*. Vol. 03(3), pp. 7-9.
- Donabedian, A. (1980) *The definition of quality and approaches to its assessment*. Michigan: The Foundation of the American College of Healthcare Executives.
- Drummond, M. (1994) "Output Measurement for Resource-Allocation Decision in Health Care," In: McGuire, A., Fenn, P, and Mayhew, K. *Providing Health Care: The Economics of Alternative Systems of Finance and Delivery*. Oxford Review of Economic: Oxford, pp.99-119.
- Dubé, L., Trudeau, E., and Bélanger, M. (1994) "Determining the Complexity of Patient Satisfaction with Foodservices," *Journal of the American Dietetic Association*. Vol. 94(4), April, pp.394-398.
- Eastwood, M. (1997) "Hospital Food," *New England Journal of Medicine*. Vol. 336(17), pp.1261.
- Edwards, J. S. A. and Nash, A. H. M. (1997) "Measuring the Wasteline," *Health Service Journal*. 13 November, pp.26-27.
- Edwards, J. S. A. and Nash, A. H. M. (1999) "The nutritional implications of food wastage in hospital food service management," *Nutrition and Food Science*. Vol. 2, pp.89-98.

- Ervin, J. and Edwards, J. (1995) *Hospital Catering 1995: The worshipful company of cooks centre for culinary research at Bournemouth University*. Poole, Dorset: The Worshipful Company of Cooks Centre for Culinary Research.
- Farrell, C. (1999) "The Patient Charter: a tool for quality improvement?," *International Journal of Health Care Quality Assurance*. Vol. 12(4), pp.129-134.
- Fenton, J., Eves, A., Kipps, M., and O'Donnell, C.C. (1995) "Menu Changes and their Effects on the Nutritional Content of Menus and Nutritional Status of Elderly, Hospitalised, Mental Health Patients", *Journal of Human Nutrition and Dietetics*. Vol. 8, pp.395-409.
- Field, J. (1998) "Appetite for Change," *Nursing Times*. Vol. 94(2), 14 January, pp.44-45.
- Field, J. and Wallis, S. (1999) "Starved of Attention," *Nursing Times*. Vol. 95(48), 1 December, pp.68-70.
- Fitzgerald, L. and Dufour, Y. (1997) "Clinical Management as Boundary Management: A comparative analysis of Canadian and UK health care institutions," *International Journal of Public Sector Management*. Vol. 10(1), pp. 5-20.
- Foddy, W. (1993) *Constructing Questions for Interviews and Questionnaires: Theory and practice in social research*. Cambridge: Cambridge University Press.
- Frankfort-Nachmias, C. and Nachmias, D. (1996) *Research Methods in the Social Sciences*. (5th ed.) London: Arnold, a member of the Hodder Headline Group.
- Friend, B. (1998) "All For A Guinea A Week," *Health Service Journal*. 23 April, pp.28-29.
- FT Healthcare (1997a) *1997 Directory of Hospitals and NHS Trusts*. London: A Division of Professional Ltd.
- FT Healthcare (1997b) *1997/1998 IHSM Health and Social Service Year Book*. London: A Division of Professional Ltd.
- Fuentes, C. M. (1999) "Measuring Hospital Service Quality: a methodological study," *Managing Service Quality*. Vol. 9(4), pp.230-239.
- Gabbott, M. and Hogg, G. (1995) "Grounds for Discrimination: Establishing Criteria for Evaluating Health Services," *The Service Industries Journal*. Vol. 15(1), pp.90-101.
- Garey, R. G. and Posavac, E. J. (1982) "Using patient information to identify areas for service improvement," *Healthcare Management Review*. Vol. 7(2), pp.43-48.
- Garrow, J. S. (1994) "Starvation in Hospital: Editorial and related correspondence," *British Medical Journal*. Vol. 308, pp.934-1369.
- George, D. and Mallery, P. (2000) *SPSS for Windows Steps by Step: a simple guide and reference 9.0 update*. (2nd edn.) Massachusetts: Allyn and Bacon.
- Gilbert, D. (1992) *Study of the Factors of Consumer Behaviour Related to Overseas Holiday from the UK*. Ph.D. thesis, University of Surrey.

- Girvin, J. (1991) "Deals on Meals," *Nursing Times*. Vol. 87(4), 21 August, pp.38-40.
- Gregoire, M. B. (1994) "Quality of patient meal service in hospitals: Delivery of meals by dietary employees vs delivery by nursing employees," *Journal of the American Dietetic Association*. Vol. 94(10), October, pp.1129-1134.
- Gregoire, M. B. (1997) "Do inpatients rate hospital food and nutrition services differently than discharged patients?," *Journal of Foodservice Systems*. Vol. 9, February, pp.245-250.
- Grogan, C.M. (1994) "Federalism and Health Care Reforms," In: Rosenau, P.V. (1994) *Health Care Reform in the Nineties*. Sage Publications, Inc.: California.
- Grönoos, C. (1990) *Service management and Marketing: managing the moments of truth in service*. Lexington: Lexington Books Ltd.
- Hair, J. E. Jr., Anderson, R., Tatham, R. L., and Black, W. C. (1998) *Multivariate Data Analysis with Readings*. (5th edn.) New Jersey: Prentice-Hall, Inc.
- Hancock, C. (1997) "Nurses are responsible for feeding patients," Letter from Register to all NHS trusts on May 23rd 1997, *Register*. Vol. 20, Summer, p.5.
- Hankey, C. R. and Wynne, H. A. (1996) "An Audit of Meal Provision in an Elderly Care Hospital," *International Journal for Quality in Health Care*. Vol. 8(4), pp.375-382.
- Harris, L. E., Swindle, R. W., Mungai, S. M., Weinberger, M., and Tierney, W. M. (1999) "Measuring Patient Satisfaction for Quality Improvement," *Medical Care*. Vol. 37(12), pp.1207-1213.
- Harrison, A. (1996) "Acute Care: Reviewing the Evidence," *British Journal of Health Care Management*. Vol.2(4), pp. 202-204.
- Harrison, A. (1996) "Acute Care: Reviewing the Evidence," *British Journal of Health Care Management*. Vol. 2(4), pp.202-204.
- Hart, J., Malinarski, Y., and Djaldetti, M. (1996) "Survey of Patient Satisfaction in a Community Hospital," *Israel Journal Medical Science*. Vol. 32(7), pp.551-554.
- Hart, M. (1996) "Incorporating outpatient perceptions into definitions of quality," *Journal of Advanced Nursing*. Vol. 24, pp.1234-1240.
- Heart, M. C. (1996) "Measuring perceptions of quality in NHS clinics using the SERVQUAL methodology," *Healthcare Computing*. pp.37-42.
- Heyden, V. (1993) "Never Mind the Quantity," *Health Service Journal*. 13 May, pp.21.
- Hoffman, K. D. and Bateson, J. E. G. (1997) *Essentials of Service Marketing*. Orlando: The Dryden Press.
- Holmes, A. and Holmes, S. (1991) "Food Production Towards the Year 2000: Implications for Hospital Feeding," *Journal of Hospital Infection*. Vol. 18 (Supplement A), pp.230-236.

- Holmes, S. (1998) "Food for Thought," *Nursing standard*. Vol. 12(46), 5 August, pp.23-27.
- Holmes, S. (1999a) *Hospital-related Malnutrition*. London: Nursing Times Books Emap Healthcare Ltd.
- Holmes, S. (1999b) *Nutritional Support in Hospitals*. London: Nursing Times Books Emap Healthcare Ltd.
- Hong, W. and Kirk, D. (1995) "The Analysis of Edible Plate Waste Results in 11 Hospitals in the UK," *Journal of Foodservice Systems*. Vol. 8, pp.115-123.
- Howell, D. C. (1997) *Statistical Methods for Psychology*. (4th edn.) Belmont: Wadsworth Publishing Company.
- Hurst, J. (1996) "The NHS Reforms in an International Context," In: Culyer, A.J. and Wagstaff, A. (1996) *Reforming Health Care Systems*. Edward Elgar Publishing Limited : Cheltenham, pp. 15-34.
- Hussey, M. K. (1999) "Using the Concept of Loss: An Alternative SERVQUAL Measure," *The Service Industries Journal*. Vol. 19(4), pp.89-101.
- Hwang, L.J.J., Desombre, T., and Eves, A. (1999) "An Analysis of Catering Options with in NHS Acute Hospitals," *International Journal of Health Care Quality Assurance*. Vol. 12 (7), pp.293-308.
- Hyde and Green (1993) "Evaluating Cook-chill," *British Food Journal*. Vol. 95(3), pp.12-15.
- Insight Research Group (1995) *Hospital Catering: How it works, how it is changing*. Insight Research: London.
- Jaloba, A. (1998) "Quality feedback," *Nursing standard*. Vol. 12(51), pp.24-25.
- Jick, D. T. (1979) "Mixing Qualitative and Quantitative Methods: Triangulation in Action," *Administrative Science Quarterly*. Vol. 24(12), December, pp.602-610.
- Joby, J. (1992) "Patient Satisfaction: the impact of past experience," *Journal of Health Care and Marketing*. Vol. 12(3), pp.56-64.
- Johns, N. and Howard, A. (1998) "Customer expectations versus perceptions of service performance in the foodservice industry," *International Journal of Service Industry Management*. Vol. 9(3), pp.248-265.
- Johns, N. and Tyas, P (1996) "Use of service quality gap theory to differentiate between foodservice outlets," *The Service Industries Journal*. Vol. 16(3), pp.321-346.
- Johns, N. and Tyas, P (1997) "Customer perceptions of service operations: gestalt, incident or mythology?," *The Service Industries Journal*. Vol. 17(3), pp.474-488.
- Johns, N., Tyas, P, Ingold, T., and Hopkinson, S. (1996) "Investigation of the perceived components of the meal experience, using perceptual gap methodology," *Progress in Tourism and Hospitality Research*. Vol. 2, pp.15-26.

- Johns, Y. (1995) *Hospitality and Catering GNVQ*. Oxford: Butterworth-Heinemann Ltd.
- Kaldenberg, D., Becker, B. W., Browne, B. A., and Browne, W. G. (1997) "Identifying Service Quality Strengths and Weakness Using SERVQUAL: a study of dental services," *Health Marketing Quarterly*. Vol. 15(2), pp.69-86.
- Kelliher, C. (1996) "Competitive Tendering in NHS Catering: a suitable policy?," *Employee Relations*. Vol. 18(3), pp. 62-76.
- Kelly, L. (1999) "Audit of food wastage: differences between a plated and bulk system of meal provision," *Journal of Human Nutrition and Dietetics*. Vol. 12, pp.415-424.
- Kiely, J. and Blyton, P. (1990) "Health Service Management: An introductory overview of Canada and the UK," *International Journal of Health Care Quality Assurance incorporating Health Care Management*. Vol. 03(3), pp. 4-6.
- King's Fund Centre (1992) *A Positive Approach to Nutrition as Treatment*. London: King's Fund Publishing.
- Kinnear, P. R. and Gray, C. D. (1997) *SPSS For Windows Made Simple*. (2nd edn.) Hove, East Sussex: Psychology Press Ltd.
- Kipps, M. and Middleton, V. (1990a) "Achieving Quality and Choice For the Customer In Hospital Catering," *International Journal of Hospitality Management*. Vol. 9(1), pp.69-83.
- Kipps, M. and Middleton, V. (1990b) "Hospital Catering," *Nutrition and Food Science*. Vol. 123, March, pp.5-7.
- Kipps, M. and Middleton, V.T.C. (1990c) "Achieving Quality and Choice for the customer in hospital catering," *International Journal of Hospitality Management*. Vol. 9(1), pp.69-83.
- Kivela, J., Inbakaran, R., and Reece, J. (1999a) "Consumer Research in the Restaurant Environment, Part 1: A conceptual model of dining satisfaction and return patronage," *International Journal of Contemporary Hospitality Management*. Vol. 11(5), pp.205-222.
- Kivela, J., Reece, J., and Inbakaran, R. (1999b) "Consumer Research in the Restaurant Environment. Part 2: Research design and analytical methods," *International Journal of Contemporary Hospitality Management*. Vol. 11(6), pp.269-286.
- Kotler, P. A. (1987) *Marketing for Health Care Organizations*. New Jersey: Prentice Hall, Inc.
- Kotler, P. and Clarke, R.N. (1987) *Marketing for Health Care Organizations*. New Jersey: Prentice-Hall, Inc.
- Kotler, P., Bowen, J., and Makens, J. (1996) *Marketing for Hospitality and Tourism*. New Jersey: Prentice Hall, Inc.
- Kowanko, I, Simon, S., and Wood, J. (1999) "Nutritional Care of the Patient: nurses' knowledge and attitudes in an acute care setting," *Journal of Clinical Nursing*. Vol. 8, pp.217-224.

- Kowanko, I. (1997) "The role of the nurse in food service: A literature review and recommendations," *International Journal of Nursing Practice*. Vol. 3(2), June, pp.73-78.
- Lam, S. S. (1997) "SERVQUAL: A tool for measuring patients' opinions of hospital service quality in Hong Kong," *Total Quality Management*. Vol. 8(4), pp.145-152.
- Lam, S. S. K. and Woo, K. S. (1997) "Measuring service quality: a test-retest reliability investigation of SERVQUAL," *Journal of the Market Research Society*. Vol. 39(2), pp.381-396.
- Lambert, L. G., Boudreaux, J., Conklin, M., and Yadrick, K. (1999) "Are New Meal Distribution Systems Worth the Effort for Improving Patient Satisfaction with Foodservice?," *Journal of the American Dietetic Association*. Vol. 99(9), September, pp.1112-1114.
- Lancaster, R. (1998) "Lifting the Lid," *Nursing standard*. Vol. 12(46), 5 August, pp.20-22.
- Lapicere, J. (1996) "Service Quality: the construct, its dimensionality and its measurement," *Advances in Services Marketing and Management*. Vol. 5, pp.45-70.
- Lapierre, J. and Filiatrault, P. (1996) "The Foundations of Research on the Quality of Professional Service to Organisations," In: Kunst, P. and Lemmink, J. (1996) *Managing Service Quality*. London: Paul Chapman Publisher., pp.97-108.
- Larsen, S. and Bastiansen, T. (1991) "Service Attitude in Hotel and Restaurant Staff and Nurses," *International Journal of Contemporary Hospitality Management*. Vol. 4(2), pp.27-31.
- Larson, C., Nelson, E. C., Gustafson, D., and Batalden, P. B. (1996) "The Relationship Between Meeting Patients' Information Needs and their Satisfaction with Hospital Care and General Health Status Outcomes," *International Journal for Quality in Health Care*. Vol. 8(5), pp.447-456.
- Lau, C. and Gregoire, M. B. (1998) "Quality Rating of a Hospital Foodservice Department by Inpatients and Postdischarged Patients," *Journal of American Dietetic Association*. Vol. 98(11), pp.1303-1307.
- Lawton, A. and Rose, A. (1994) *Organisation and Management in the Public Sector*. (2 edn.) London: Pitman Publishing.
- Ledger, D. (2000) "Ensuring that Your Patients Eat Enough," *Nursing Times Plus*. Vol. 96(8), 24 February, pp.2.
- Lee, Y. L. and Hing, N. (1995) "Measuring Quality in Restaurant Operations: an application of the SERVQUAL instrument," *International Journal of Hospitality Management*. Vol. 14(3/4), pp.293-310.
- Lee-Ross, D. (1999a) "A comparison of service predispositions between NHS nurses and hospitality workers," *International Journal of Health Care Quality Assurance*. Vol. 12(3), a, pp.92-97.

- Lee-Ross, D. (1999b) "Service quality? should nurses be serving food?," *Hospitality*. b, pp.23.
- Lennard-Jones, A. (1992) *King's Fund Centre: A Positive Approach to Nutrition as Treatment*.
London: King's Fund Publishing.
- Levitt, R., Wall, A., and Appleby, J. (1995) *The Reorganised National Health Service*. (5 edn.)
London: Chapman & Hall.
- Lin, B. and Kelly, E. (1995) "Methodological Issues in Patient Satisfaction Surveys," *International Journal of Health Care Quality Assurance*. Vol. 8(6), pp.32-37.
- Llosa, S., Chandon, J., and Orsingher, C. (1998) "An Empirical Study of SERVQUAL's Dimensionality," *The Service Industries Journal*. Vol. 18(2), pp.16-44.
- Mangold, W. G. and Babakus, E. (1991) "Service Quality: the front-stage vs. the back-stage perspective," *The Journal of Services Marketing*. Vol. 5(4), pp.59-70.
- Marsden, B. (1999) "Financing the NHS", In: National Association of Health Authority and Trusts. *Wellard's NHS Handbook 1999/2000*. (14th edn.) JMH Publishing: Kent, pp. -.
- Marsden, B. (2000) "Financing the NHS", In: National Association of Health Authority and Trusts. *Wellard's NHS Handbook 2000/20001*. (15th edn.) JMH Publishing: Kent, pp. 116-122.
- Marshall, C. and Rossman, G. B. (1995) *Designing Qualitative Research*. (2nd edn.) California: SAGE Publications, Inc.
- Marson, J. (1996) *Qualitative Researching*. London: Sage Publication Ltd.
- Maryon-Davis, A. and Bristow, A. (1999) *Managing Nutrition in Hospital*. Nuffield Trust: London.
- Maxwell, R. J. (1984) "Quality Assessment in Health," *British Medical Journal*. Vol. 288, 12 May, pp.1470-1471.
- McGlone, Dickerson, J. W., and Davies, G. J. (1995) "The Feeding of Patients in Hospital: A Review," *Journal of Royal Social Health*. Vol. 115(5), October, pp.282-288.
- McGlone, Dickerson, J. W., and Davies, G. J. (1996) "A Caterers' Perception of Feeding Patients in Hospital," *Process-Nutrition Society of London*. Vol. 56, December, pp.195A.
- McGlone, P., Dickerson, J., and Davies, J. (1997) "Conducting Dietary Surveys in Hospitals: Some practical considerations," *Nutrition and Food Science*. Vol. 97(3), May, pp.107-111.
- McKenna, S. (1990) "The Business Ethic in Public Sector Catering," *The Service Industries Journal*. Vol. 10(2), April, pp.377-399.
- Mears, E. (1996) "Outcomes of Continuous Process Improvement of a Nutritional Care Program Incorporating Serum Prealbumin Measurement," *Nutrition: the International Journal of Applied and Basic Nutritional Sciences*. Vol. 12(7/8), July/August, pp.479-484.

- Mels, G., Boshoff, C., and Nel, D. (1997) "The Dimensions of Service Quality: The Original European Perspective Revisited," *The Service Industries Journal*. Vol. 17(1), pp.173-189.
- Miles, M. B. and Huberman, A. M. (1994) *An Expanded Sourcebook- Qualitative Data Analysis*. (2nd edn.) California: SAGE Publications, Inc.
- Millar, B. (1998) "Dying for a good meal?" *Health Service Journal*. 23 April, pp.24-27.
- Miller, M.A. and Schiller, M.R. (1998) "Should hospital diets meet the dietary guidelines for healthy persons?," *Journal of the American Dietetic Association*. Letters to the editors. Vol. 98(12), p.1401.
- Ministry of Agriculture, Fisheries and Food. (1999) *National Food Survey 1998: Annual report on food expenditure, consumption and nutrient intakes*. London: The Stationery Office.
- Mitchell, H. (1999) "Nutrition Audit at a Community Hospital," *Journal of Human Nutrition and Dietetics*. Vol. 12, pp.425-432.
- Mohan, J. (1996) "Accounts of the NHS Reforms: Macro-, Meso-, and Micro- Level Perspectives," *Sociology of Health and Illness*. Vol. 18(5), pp.675-698.
- Moss, F. (1998) "Quality in Health Care: Getting to the heart of the matter," In: (1998) *The Quest for Excellence: what is good health care? Essays of in honour of Robert J, Maxwell*. pp.171-186.
- Mullen, P (1992) "Is there a future for planning a team," *Health Service Management Research*. Vol.5(3), pp.186-197.
- National Audit Office (1994) *National Health Services: Hospital Catering in England*. HMSO: London.
- Nettles, M. F. and Gregoire, M. B. (1993) "Operational Characteristics of Hospital Foodservice Departments with Conventional, Cook-chill, and Cook-freeze Systems," *Journal of the American Dietetic Association*. Vol. 93(10), October, pp.1161-1163.
- Nettles, M. F., Gregoire, M. B., and Canter, D. D. (1997) "Analysis of the Decision to Select a Conventional or Cook-chill System for Hospital Foodservice," *Journal of American Dietetic Association*. Vol. 97(6), June, pp.626-631.
- Neuman, W. L. (2000) *Social Research Methods: qualitative and quantitative approaches*. (4th edn.) Needham Heights: Allyn and Bacon: A Pearson Education Company.
- NHS (1996) *A Guide to the National Health Service*. West Yorkshire: Department of Health.
- NHS Executive (1997) *Hospital Catering: delivering a quality service*. London: Department of Health.
- NHS Executive (1996) *Management of Food Hygiene and Food Services in the National Health Service*. London: Department of Health.

- NHS Executive (1999a) *A First Class Service: Quality in the new NHS*. London: Department of Health.
- NHS Executive (1999b) *The NHS Performance Assessment Framework*. London: Department of Health.
- Norušis, M. J. (1997) *SPSS® 7.5 Guide to Data Analysis*. New Jersey: Prentice-Hall, Inc.
- Nunnally, J. (1978) *Psychometric Theory*. New York: McGraw-Hill.
- Nutritional Care Steering Group (1997) "An observation audit of meal provision in hospital wards," In: Bond, S. (eds.) *Eating Matters: a resource for improving dietary care in hospitals*. Centre for Health Services Research, University of Newcastle-upon-Tyne: Newcastle-upon-Tyne:.
- O'Connor, S. J., Shewchuk, R. M., and Carney, L. M. (1994) "The Great Gap: Physicians' perceptions of patient service quality expectations fall short of reality," *Journal of Health Care Marketing*. Vol. 14(2), pp.32-39.
- Oh, H. and Parks, S. C. (1997) "Customer Satisfaction and Service Quality: A critical review of the literature and research implications for the hospitality industry," *Hospitality Research Journal*. Vol. 20(3), pp.35-64.
- O'Hara, P. A., Harper, D. W., Kangas, M., Dubeau, J., Borsutzky, C., and Lemire, N. (1997) "Taste, Temperature, and Presentation Predict Satisfaction with Foodservices in a Canadian Continuing-care Hospital," *Journal of the American Dietetic Association*. Vol. 97(4), pp.401-405.
- Oliver, R. (1993) "A Conceptual Model of Service Quality and Service Satisfaction: Compatible goals, different concepts," *Advances in Services Marketing and Management*. Vol. 2, pp.65-85.
- Oliver, R. (1997) *Satisfaction: a behavioural perspective on the consumer*. New York: McGraw-Hill companies, Inc.
- Oliver, R.L. (1980) "A cognitive model of the antecedents and consequences of satisfaction decisions," *Journal of Marketing Research*. Vol. 17, pp.460-469.
- Oliver, R.L. (1997) *Satisfaction: a behavioral perspective on the consumer*. New York: McGraw-Hill Companies, Inc.
- O'Neill, M. A., Palmer, A. J., and Beggs, R. (1998) "The effects of survey timing on perceptions of service quality," *Managing Service Quality*. Vol. 8(2), pp.126-132.
- ONS (National Statistics) (2000) *Health in England 1998: Investigating the links between social inequalities and health- a survey of adults aged 16 and over in England carried out by Social Survey Division of ONS on behalf of the Health Education Authority*. London: The Stationery Office.

- Oppenheim, A. N. (1992) *Questionnaire Design, Interviewing and Attitude Measurement*. London: Pinter Publishers Ltd.
- Oyarzun, V. E., Lafferty, L. J., Gregoire, M. B., Sowa, D. C., Dowling, R. A., and Shott, S. (2000) "Evaluation of Efficiency and Effectiveness Measurements of a Foodservice Systems that Included a Spoken menu," *Journal of American Dietetic Association*. Vol. 100(4), April, pp.460-461.
- Parasuraman, A., Berry, L. L., and Zeithaml, V. A. (1991) "Refinement and Reassessment of the SERVQUAL Scale," *Journal of Retailing*. Vol. 67(4), pp.420-450.
- Parasuraman, A., Berry, L. L., and Zeithaml, V. A. (1993) "Research Note: More on Improving Service Quality Measurement," *Journal of Retailing*. Vol. 69(1), pp.140-146.
- Parasuraman, A., Berry, LL, and Zeithaml, V.A. (1988) "SERVQUAL: a multiple-item scale for measuring consumer perception of service quality," *Journal of retailing*. Vol. 64(1), pp.12-37.
- Parasuraman, A., Zeithaml, V. A., and Berry, L. L. (1985) "A Conceptual Model of Service Quality and Its Implications for Future Research," *Journal of Marketing*. Vol. 49, pp.41-50.
- Parasuraman, A., Zeithaml, V. A., and Berry, L. L. (1988) "SERVQUAL: A multiple-item scale for measuring consumer perception of service quality," *Journal of Retailing*. Vol. 64(1), pp.12-37.
- Parasuraman, A., Zeithaml, V. A., and Berry, L. L. (1994a) "Alternative Scales for Measuring Service Quality: a comparative assessment based on psychometric and diagnostic criteria," *Journal of Retailing*. Vol. 70(3), a, pp.201-230.
- Parasuraman, A., Zeithaml, V. A., and Berry, L. L. (1994b) "Reassessment of expectations as a comparison standard in measuring service quality: implications for further research," *Journal of Marketing*. Vol. 58(1), b, pp.111-124.
- Patton, M. Q. (1990) *Qualitative Evaluation and Research Methods*. (2nd edn.) California: SAGE Publications, Inc.
- Peters, D. A. (1991) "Measuring Quality: Inspection or Opportunity?," *Holistic Nursing Practice*. Vol. 5(3), April, pp.1-7.
- Powell, J., Lovelock, R., Bray, J., and Philp, I. (1994) "Involving consumers in assessing service quality: benefits of using a qualitative approach," *Quality in Health Care*. Vol. 3(4), pp.199-202.
- Press, G (1997) "Largest Survey of Hospital Patient Satisfaction," *Health Care Food and Nutrition Focus*. Vol. 13(12), August, pp.7-8.
- Puri, B. K. (1996) *Statistics in Practice: an illustrated guide to SPSS*. London: Oxford University Press, Inc.

- Qu, H. (1997) "Determinant factors and choice intention for Chinese restaurant dining: a multivariate approach," *Journal of Restaurant and Foodservice Marketing*. Vol.2(2), pp.35-49.
- Randall, L. and Senior, M. (1994) "A Model for Achieving Quality in Hospital Hotel Services," *International Journal of Contemporary Hospitality Management*. Vol. 6(1/2), pp.68-74.
- Rao, C. P. and Kelkar, M. M. (1997) "Relative Impact of Performance and Importance Ratings on Measurement of Service Quality," *Journal of Professional Service Marketing*. Vol. 15(2), pp.69-86.
- Rawlinson, D. (1998) "Audit of nutritional practice and knowledge," *Professional Nurse*. Vol. 13(5), pp.291-294.
- Reilly, J.J., Hull, S.F., Albert, N., Waller, A., and Bringardner, S. (1988) "Economic Impact of Malnutrition: A Model System for Hospitalised Patients," *Journal of Parenteral and Enteral Nutrition*. Vol. 12(4), pp. 371-376.
- Reisig, M. D. and Chandek, M. S. (2001) "The Effects of Expectancy Disconfirmation on Outcome Satisfaction in Police-citizen Encounters," *An International Journal of Police Strategies and Management*. Vol. 24(1), pp.88-99.
- Robinson, R. (1996) "The Impact of the NHS Reforms 1991-1995: a review of research evidence," *Journal of Public Health Medicine*. Vol. 18(3), pp. 337-342.
- Roemer, M (1994) "National Health Systems Throughout the World," In: Rosenau, P.V. (1994) *Health Care Reform in the Nineties*. Sage Publications, Inc.: California, pp. 8-23.
- Rose, D. and Sullivan, O. (1996) *Introducing Data Analysis For Social Scientists*. (2nd edn.) Buckingham: Open University Press.
- Ross, C. K., Frommelt, G., Hazelwood, L., and Chang, R. W. (1987) "The role of expectations in patient satisfaction with medical care," *Journal of Health Care Marketing*. Vol. 7, December, pp.16-26.
- Rowley, J. (1998) "Quality Measurement in the Public Sector: Some perspectives from the service quality literature," *Total Quality Management*. Vol. 9(2&3), pp.321-333.
- Royal College of Nursing (RCN) (1997) 'RCN statement on feeding and nutrition in hospitals'. *RCN*: London.
- Rust, R. T. and Oliver, R. L. (1994) *Service Quality: New Directions in Theory and Practice*. Thousand Oaks, California: SAGE Publications, Inc.
- Saleh, F. and Ryan, C. (1991) "Analysing Service Quality in the Hospitality Industry Using the SERVQUAL Model," *The Service Industries Journal*. Vol. 11(3), pp.324-343.

- Sampson, S. and Showalter, M. J. (1999) "The Performance-Importance Response Function: Observations and Implications," *The Service Industries Journal*. Vol. 19(3), pp.1-25.
- Scardina, S. (1994) "SERVQUAL: A tool for evaluating patient satisfaction with nursing care," *Journal of Nursing Care Quality*. Vol. 8(2), pp.38-46.
- SETRHA (1993) *Service Standards: Nutritional Guidelines: The food Chain*. Communications Department, South East Thames Regional Health Authority: East Sussex.
- Sheldon, T. (1993) "The Big C," *Health Service Journal*. 2 December, p. 13.
- Shepherd, R. (1988) "Food choice and Food Intake," In: Thomson, D.M. (eds.) (1988) *Food Acceptability*. Essex: Elsevier Applied Science Published Ltd.
- Shepherd, R. (1988) "Food choice and food intake," In: Thomson, D. M. (1988) *Food Acceptability*. Essex: Elsevier Applied Science Published Ltd.,
- Shepherd, R. (1996) "Psychological Aspects of food choice," *Food Science and Technology Today: Proceeding*. Vol. 9(3), pp.178-182.
- Shepherd, R. and Raats, M. (1996) "Attitude and beliefs in food habits," In: Meiselman, H.L. and MacFie, H.J.H. (eds.) *Food Choice, Acceptance and Consumption*. Blackie Academic and Professional-an imprint of Chapman & Hall: London, pp.346-362.
- Shepherd, R. and Sparks, P. (1994) "Modelling Food Choice," In: MacFie, H.J.H. and Thomson, D.M.H. (eds.) *Measurement of Food Preference*. Blackie Academic and Professional-an imprint of Chapman & Hall: London, pp. 202-223.
- Sidenvall, B., Fjellstrom, C., and Ek, A. C. (1994) "The meal situation in geriatric care-intentions and experiences," *Journal of Advanced Nursing*. Vol. 20(4), pp.613-621.
- Silverman, D. (1993) *Interpreting Qualitative Data: methods for analysing talk, text and interaction*. London: SAGE Publications Ltd.
- Silverman, D. (2000) *Doing Qualitative Research: a practical handbook*. London: SAGE Publications.
- Silverman, M. R., Gregoire, M. B., Lafferty, L. J., and Dowling, R. A. (2000) "Current and Future Practices in Hospital Foodservice," *Journal of American Dietetic Association*. Vol. 100(1), January, pp.76-80.
- Singer, A. J., Werther, K., and Nestle, M (1998) "Improvements are needed in hospital diets to meet dietary guidelines for health promotion and disease prevention," *Journal of the American Dietetic Association*. Vol. 98(6), pp.639-641.
- Smaje, C. (1995) "Race and Ethnicity: True Colours," *Health Service Journal*. 26 January, pp. 28-29.

- Smith, A. M. (1995) "Measuring Service Quality: is SERVQUAL now Redundant?," *Journal of Marketing Management*. Vol. 11, pp.257-276.
- Smith, A. M. (1999) "Some Problem When Adopting Churchill's Paradigm for the Development of Service Quality Measurement Scales," *Journal of Business Research*. Vol. 46, pp.109-120.
- Smith, J. (2000) "Acute Service", In: National Association of Health Authority and Trusts. *Wellard's NHS Handbook 2000/2001*. (15th edn.) JMH Publishing: Kent, pp. 183-186.
- Sparks, P. and Shepherd, R. (1994) "Barriers to Healthy Eating: a Examination of Perceived Behavioural Control and Unrealistic Optimism," *Appetite*. Vol. 23(3), p.290.
- Spreng, R. C. and Mackoy, R. D. (1996) "An Empirical Examination of a Model of Perceived Service Quality and Satisfaction," *Journal of Retailing*. Vol. 72(2), pp.201-214.
- Staniszewska, S. and Ahmed, L. (1999) "The concepts of expectation and satisfaction: do they capture the way patients evaluate their care?," *Journal of Advanced Nursing*. Vol. 29(2), pp.362-372.
- Steele, C. (1998) "The links in the food chain," *Nursing standard*. Vol. 12(49), pp.25-27.
- Steiber, S. R. and Krowinski, J. (1990) *Measuring and Managing Patient Satisfaction*. USA: American Hospital Publishing, Inc.
- Stephen, A. and Allison, S. (1997) "SIGMA: a study of food waste," In: Bond, S. (eds.) *Eating Matters: a resource for improving dietary care in hospitals*. Centre for Health Services Research, University of Newcastle-upon-Tyne: Newcastle-upon-Tyne.
- Stephoe, A., Pollard, T. A., and Wardle, J. (1995) "Development of a Measure of the Motives Underlying the Selection of Food: the Food Choice Questionnaire," *Appetite*. Vol. 25(3), pp.267-284.
- Stevens, P., Knutson, B., and Patton, M. (1995) "DINESERV: A tool for measuring service quality in restaurants," *Cornell Hotel and Restaurant Administration Quarterly*. Vol. 36(2), pp.56-60.
- Stocking, B. (1993) "Viewpoint: Technological Developments and the NHS," In: National Association of Health Authority and Trusts. *1993/1994 NHS Handbook*. (8th edn.) JMH Publishing: Kent, pp.9-14.
- Swain, S (1998) "Serving Suggestions: the ward sister's view," *Nursing Times*. Vol. 94(32), pp.27.
- Swan, J. E. and Bowers, M. R. (1998) "Services Quality and Satisfaction: the process of people doing things together," *Journal of Services Marketing*. Vol. 12(1), pp.59-72.
- Tabachnick, B. and Fidell, L. S. (1996) *Using Multivariate Statistics*. (3rd edn.) Northridge: Harper Collins College.

- Taylor, S. A. and Cronin, Jr. J. J. (1994) "Modelling Patient Satisfaction and Service Quality," *Journal of Health Care Marketing*. Vol. 14(1), pp.34-44.
- Teas, R. K. (1994) "Expectations as a comparison standard in measuring service quality: an assessment of a reassessment," *Journal of Marketing*. Vol. 58(1), pp.132-139.
- The Chartered Institute of Management Accountants (1996) *Financial Management Fundamentals*. London: CIMA's Public Affair Department.
- Thompson, A. G. H and Sunol, R. (1995) "Expectations as Determinants of Patient Satisfaction: Concepts, Theory, and Evidence," *International Journal for Quality in Health Care*. Vol. 7(2), pp.127-141.
- Tolley, K. and Rowland, N. (1995) *Evaluating The Cost-effectiveness of Counselling in Health Care*. Routledge: London.
- Tomes, A. E. and Ng, S. C. P. (1995) "Service Quality in Hospital Care: the development of an in-patient questionnaire," *International Journal of Health Care Quality Assurance*. Vol. 8(3), pp.25-33.
- Towler, G. and Shepherd, R. (1990) "Development of a Nutritional Knowledge Questionnaire," *Journal of Human Nutrition and Dietetics*. Vol.3(4), pp.255-264.
- Traviss, K. and Hauchecorne, C. M. (1998) "Should hospital diets meet the dietary guidelines for healthy persons?," *Journal of the American Dietetic Association*. Letters to the editors. Vol. 98(12), p.1400.
- Tucker, H. N. and Miguel, S. G. (1996) "Cost Containment Through Nutrition Intervention," *Nutrition Reviews*. Vol. 54(4), pp.111-121.
- Van Campen, C., Sixma, H, Friele, R. D., Kerstens, J. J., and Peters, L. (1995) "Quality of Care and Patient Satisfaction: a review of measuring instruments," *Medical Care Research and Review*. Vol. 52(1), March, pp.109-133.
- Veal, A. J. (1997) *Research Methods for Leisure and Tourism: a practical guide*. (2nd edn.) London: Financial Times Management- Pearson Professional Limited.
- West, A., Walker, A., and Lawson, J. (1998) "The effects of food processing in hospital catering," In: Edwards, J. S. A. and Lee-Rose, D. (1998) *Culinary Arts and Science II: Global and National Perspectives*. Poole: Worshipful Company of Cooks Centre for Culinary Research at Bournemouth University., pp.283-289.
- West, A., Walker, A., and Lawson, J. (1998b) "The effects of food processing in hospital catering systems," *Culinary Arts and Science International Conference-Effects Food Processing*. Vol. 2, b, pp.275-283.
- Wheeler, E. (1992) "What determines food choice, and what does food choice determine?," *British Nutrition Foundation Bulletin*. Vol. 17(Supplement 1), pp.65-73.

- Whitfield, L. (1999) "Nutrition 'Should Be Key Part of Quality Agenda'," *Health Service Journal*. Vol. 109(5651), 22 April, pp.8.
- Williams, C. (1998) "Is the SERVQUAL model an appropriate management tool for measuring service delivery quality in the UK leisure industry?," *Managing Leisure*. Vol. 3, pp.98-110.
- Williams, P. G. (1996) "Vitamin Retention in Cook/Chill and Cook/Hot hold hospital food service," *Journal of American Dietetic Association*. Vol. 96(5), pp.490-498.
- Willis, J. (1998) "Unpalatable Options," *Nursing Times*. Vol. 94(32), pp.29.
- Wilson, R. (1998) "Serving Suggestions: the dietician's view," *Nursing Times*. Vol. 94(32), pp.28.
- Wood, S. (1998) "Full Service," *Nursing Times*. Vol. 94(32), 12 August, pp.24-26.
- Wood, S. (1999) "Nutrition on the Ward," *Nursing Times*. Vol. 95(11), 17 March, pp.54-55.
- Woodside, A. G., Frey, L. L., and Daly, R. T. (1989) "Linking Service Quality, Customer Satisfaction, and Behavioural Intention," *Journal of Health Care Marketing*. Vol. 9(4), December, pp.5-17.
- Youssef, F. N., Nel, D., and Bovaird, T. (1996a) "Health Care Quality in NHS Hospitals," *International Journal of Health Care Quality Assurance*. Vol. 9(1), pp.15-28.
- Youssef, F., Nel, D., and Bovaird, T. (1996b) "Service Quality in NHS Hospitals," *Journal of Management in Medicine*. Vol. 09(1), pp.66-74.
- Zeithaml, V. A., Berry, L. L., and Parasuraman, A. (1993) "The Nature and Determinants of Customer Expectations of Service," *Journal of the Academy of Marketing Science*. Vol. 21(1), pp.1-12.
- Zeithaml, V. A., Berry, L. L., and Parasuraman, A. (1996) "The Behavioural Consequence of Service Quality," *Journal of Marketing*. Vol. 60, April, pp.31-46.

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Appendix 2.1: A sample of patient satisfaction questionnaire by NHS Executive (1995)

Patient Catering Satisfaction Questionnaire

Dear Patient,

As part of a review of our catering arrangements, we would like to know how the hospital food service measures up to patients' standards, and what parts of it they would like to see improved.

I would be most grateful if you could spare a few minutes to complete the questionnaire, included below, by awarding marks out of 10 for each part of the service, and also making any comments you wish in the space provided.

Yours sincerely

Catering Review Manager

Hospital		Ward	
Name of Patient			

The following scale is a guide to help you in scoring the catering service										
Excellent	Near perfect	Very good	Good	Mostly good	Mixed	Mostly poor	Poor	Very poor	Bad	Really bad
10	9	8	7	6	5	4	3	2	1	0

	Marks out of 10
1. Overall (How would you score the catering standards?)	
2. Meal times (Acceptable? Flexible? When you want to eat?)	
3. Menus (Tempting? Acceptable? Foods you enjoy?)	
4. Meal ordering system (Given a choice? Get what you choose?)	
5. Cooking (Appetising? Tender? Tempting?)	
6. Temperatures (For hot food - hot enough?)	
7. Beverages TEA (For taste, temperature)	
Beverages COFFEE	
8. Service (Efficient? Hygienic? Courteous? Caring?)	
9. Nutrition (Eating enough? Right type of food? Wholesome?)	

Please add below any comments you may have.

Thank you for your views, which will help us to improve our service to you.

Appendix 2.2: Summary of UK reports and statements on Hospital food

Since 1994 several reports have been on tackling the problems of under-nutrition in hospitals. In general, the approaches being advocated were all consistent and the potential benefits were clearly set out. Although most of reports might have found more in fashion on Nutrition support, issues of normal diet in hospitals had been discussed.

Organisation	Report/action
King's Fund	<p>A Positive Approach to Nutrition as Treatment, 1992</p> <ul style="list-style-type: none"> • Improved awareness and understanding by doctors and nurses of under-nutrition and its consequences • Every adult's height should be recorded once in general practice and hospital. Patients should be assessed. A note about each patient's nutritional status should be mandatory in medical and nursing admission records • Whenever malnutrition is detected, the cause should be established, a plan of treatment made and its effects monitored • Every hospital should organise its nutritional services to link management, catering and all the clinical disciplines involved • The quality of nutritional support in acute medical (including elderly) and surgical wards should be the responsibility of a nutrition team (senior clinician, clinical nurse specialist, dietician, pharmacist) • In paediatric departments and intensive therapy units the quality of nutritional support should be the responsibility of one or more members of their staff • Records should be kept of the clinical indication for each course of nutritional treatment, its type, duration and clinical outcome, including any complications • A budget should be allocated to nutrition support teams based on this audit of their work load, outcomes, and costs • Managers should take account of the potential cost of complications and increased hospital stay due to malnutrition when assessing the cost of nutritional support • An organisation should be included which draws together and represents the common interests of patients, academic nutritionists, dietician, nurses, pharmacists, doctors and the pharmaceutical industry. This body should set standards for nutritional care, promote professional training and research, provide authoritative advice and foster public awareness of nutritional treatment in illness
BDA (NAGE)	<p>Standard of Care for the Older Adult in Hospital, 1993</p> <ul style="list-style-type: none"> • The dieticians advise on nutritionally adequate food which is acceptable to the patients and appropriate to patients' needs • The dieticians set up a screening system with other professional staff whereby patients admitted to hospital are screened to identify those at risk nutritionally • The dieticians advise on hospital policies that affect nutritional care of the older adult • The dieticians assess those patients identified as requiring nutritional intervention • The dieticians manage the diet therapy for patients referred to the service • The dietician co-ordinates the provision of nutritional support • The dietician completes a written record for all patients seen in dietetic care • Dietetic treatment is communicated to the care team • The dietician provides nutrition education to those involved in the care of the older person • The dietician provides appropriate and accurate information to clients concerning nutrition and diet therapy

RCN	<p>Nutrition Standards and the Older Adult, 1993</p> <ul style="list-style-type: none"> • The client has an initial assessment made of their food and fluid intake and eating and drinking patterns • The ward/unit team works towards ensuring that the organisation of the ward and staff is responsive to and meets the individual requirements of the client in order to satisfy their eating and drinking needs • The nutritional goals set for the client and the care received are continually evaluated and revised
South East Thames RHA	<p>Service Standards. Nutritional Guidelines: The food chain, 1993</p> <ul style="list-style-type: none"> • All NHS Guidelines on the quality of provisions purchased should be followed • All health districts and Trusts should actively participate in the contracting process for the supply of provisions • A named catering manager for each kitchen is responsible for provisions' purchase. A log book should be maintained for stores staff and kitchen staff to record occasions when ingredients required were not available • The catering manager charged with responsibility for provisions' purchase should be adequately trained in purchasing, reporting and returning procedures • Staff responsible for provisions stores should be dedicated to that role and be accountable to the catering manager • Kitchen serving 500 beds or more should have ingredients kitchens to support the implementation of standard recipes for patient needs • Standard recipes should be introduced for the production of patients' food • Batch cooking procedures should be introduced • A through review of communications systems in kitchens should be undertaken with a view to improving the timeliness and accuracy of internal communications and communications with the rest of the hospital • Each kitchen should have a log book to register communications. The log book should record the date, time of the message, who took the message and what action ensued. The book should be reviewed by the kitchen manager and the catering manager daily • Each ward should have a durable notice informing them of meal times, last order times for ad hoc requests, when trolleys will be collected, contact number/name for ad hoc requests, contact number/name for complaints • All kitchen should strive to ensure that food advertised is always provided • Food production staff should be trained in the proper presentation of food and have pride in how food leaves the kitchen • A review of the equipment required to present food properly should be undertaken • A through review of crockery, cutlery, trays, and service equipment presented to the patient should be undertaken • Every district and Trust should undertake a through review of the working conditions and remuneration package offered to its kitchen staff • The RHA should take an initiative to revitalise the training, development and career prospects of kitchen staff • Ward staff should familiarise themselves with the food service systems available and participate in choosing the system which is best suited to their patient group • Food distribution staff should be directly accountable to the catering manager • Trolley routes and timings for food distribution should be carefully planned • Food distribution staff should inform the nurse responsible when the food has arrived on the ward. A formal hand over of responsibility should take place • Regular audit of distribution routes and timing should carried out • All hospitals should make financial provision for the maintenance of equipment and have in place a functioning capital equipment programme • A minimum standard for ward provision should be set so that ward issues can be complementary to the patients' menu. All wards will be issued with a list of the provisions they are expected to hold • The budget for ward issue provisions should be devolved to ward

sisters/managers

- Assistance and contribution from the dietetic and catering departments in all districts and Trusts should be sought with regard to the development of programmes of in-service training for nursing staff
- Principals of Colleges of Nurse Education should review the nutritional content of nurse training curricula in light of the nursing role in the food chain, curriculum content should be up to date, appropriate and relevant
- A named nurse on each ward should be given overall responsibility for the co-ordination of all aspects of patient feeding
- Nursing staff should work with dietetic and medical staff to develop a system of nutritional risk screening to be carried out as part of the routine admissions procedure. Patients who are already malnourished or at risk of becoming malnourished can be identified and appropriate action taken
- Each hospital should develop a system of communication that enables accurate delivery of food to the wards. In particular the communication of details of admissions, discharges and patient transfers needs to be addressed and some operational policy produced
- Blanket referral arrangements should be sought with all consultant staff enabling nursing staff and other members of the multidisciplinary team to initiate action required to optimise patients' nutrition
- The named nurse should be responsible for ensuring that ward staff offers patients a choice of food. That nurse should also ensure that ward staff collate the information and communication it to the catering department
- All incidents of patients not receiving food they have chosen should be recorded and reported to the catering manager
- A log book should be kept at ward level to record any problems related to patients' food. This book, along with the kitchen book and the provisions book, should be reviewed regularly by the food service team
- Nursing staff should review the patients' day and ensure there is adequate free time before and after meals
- Where possible no clinical tests or procedures should be carried out at designated mealtimes. Nursing, medical and other staff must respect patient mealtimes.
- Some investment should be made in making the patients' environment a pleasant place to eat
- Nursing staff should participate in choosing the type of food service most appropriate for their patients
- Nurse managers and ward sisters/managers should effect food utilisation of nurse time so that skilled staff are available at the bedside at mealtimes, both to help dependent patients eat and observe the food intake of self-caring patients
- Nursing staff should work with other staff to optimise patient feeding
- Nursing and dietetic staff should provide a system for the accurate recording of food intake
- Ward staff and catering management in agreeing mealtimes should also agree when trolleys and service equipment are ready for return
- Catering management systems should be installed in all hospitals as a matter of urgency
- Catering management systems should be capable of integration with the hospital information system, so that there may be free flow of information between two.
- Catering management systems should be capable of dietetic management also. Nutritional management systems should be at the core of the software enabling nutritional accounting of patients' menus to take place
- The regional computer system should be commissioned to evaluate all catering systems software available in the UK and provide recommendations for purchase
- Systems should be installed which enable patients to choose their food as close to the time that food is to be served as possible
- All managers of hospital information systems should investigate patient meal provision and plan the integration of catering and dietetic services into the hospital information network

	<ul style="list-style-type: none"> • Medical schools should introduce students to the hospital food chain during their clinical placement • All new medical staff should be familiarised with a hospital's system of food service as a part of general induction on appointment • Medical staff should strictly observe mealtimes and try to ensure that no ward rounds or procedures interfere with mealtimes • Medical staff should carefully review all procedures involving patient starvation and keep such procedures to a minimum • Senior medical staff should ensure that they are in position to give an informed opinion when influencing the allocation of resources to food service • Senior managers should take on the implementation of nutrition guidelines at each point in the food chain • In light of NHS reforms and contractual obligations to purchasers, senior management should strategically review the allocation and re-evaluate the importance of hospital food provision • Expert catering, dietetic, nursing and medical advice should be available at a sufficiently high level within general management for effective hospital foodservice management to take place • In the light of the influence on provider unit efficiency and costs, senior management should review the allocation of resources committed to food service • Senior management should set up systems of quality control which involve all key members of the food chain, caterers, dieticians and nursing and medical staff
South East Thames RHA	<p>Service Standard, Nutritional Guidelines, 1993</p> <ul style="list-style-type: none"> • All patients' menus should be planned to provide the COMA recommended levels of nutrients and appropriate food energy for the patient group they are serving • The patients' menu should provide a healthy choice which complies with national or local food policy guidelines • The hospital menu should provide a minimum of 50g (and be capable of providing 90g) of protein per day • Each main protein item on the menu should provide between 12-18g of protein • The menu should be capable of providing a range of energy intakes-a minimum of 1200 Kcal per day • All patients' menus should be checked against the standards in this document for nutritional adequacy by a dietician at the planning stage • Menus should be planned using standard recipes of known nutritional composition • Every effort should be made to offer all patients a choice of food • All institutions should aim to have systems running which will enable patients to choose their food no further in advance than their next meal • The menu planner should be aware of the cultural, ethnic, religious and social diversity of the population he/she is planning for
The patient association	<p>Catering for Patients in Hospitals, 1993</p> <ul style="list-style-type: none"> • Meals should be served at times that reflect the normal eating patterns of the majority of patients. Availability of meals should be adjusted to allow for patients' day treatments, post-operative hunger or lack of appetite and where admission to the ward is made outside ward mealtimes • Patients should be able to order as near to the meal itself as possible • Menus should be based on a two-weekly cycle. There should be a choice of at least four main dishes, including vegetarian and salad dishes. Ethnic minorities should be catered for by providing authentic and traditional food, and all dishes should be described on the menu, listing ingredients • The children's menu should reflect the foods they are used to at home • Snacks should be available • There should be adequate staffing so that patients encouragement, have the full attention of a member of staff to be with them while food is still hot. The staff member should have responsibility to monitor and report on patients' intake of food and liquid

	<ul style="list-style-type: none"> • There should be:-attractive presentation of food,-choice of portion sizes, -hot and cold beverages available at all times • All dishes should meet minimum requirements of COMA reports 1984 &1991, with dietary reference of different patient groups • Nurses should receive appropriate training in nutrition and be capable of evaluating whether patients are receiving adequate nutrition • Nurses should collect trays form patients for monitoring of intake • Patients should be weighted on entering hospital and regularly during their stay • There should be a regular evaluation of food and catering services, looking at quality, content, and presentation • Food as presented to the patient should be tasted and evaluated by patient representatives and/or nurses • Routine collection of information from patients or staff should be reported back to catering staff for consideration by a multidisciplinary team of caterers, dieticians, doctors, nurses, patient representative • Opportunities should be made for members of the catering department to have occasional direct contact with patients
BAPEN	<p>Organisation of Nutrition Support in Hospitals, 1994</p> <ul style="list-style-type: none"> • All patients in UK hospitals who are diagnosed as malnourished or at risk of developing malnutrition should have access to a nutrition support team (NST) • All major UK hospitals or hospital groups should appoint a nutrition steering committee (NSC) to be responsible for setting standards for and delivery of catering services, dietary supplements and nutritional support • All NSCs should appoint at least one nutrition support to implement standards of nutritional support laid down by the NSC
Health of the Nation Nutrition Task Force	<p>Nutrition and Health a Management Handbook of the NHS, 1994</p> <p>Suggests approaches and offers examples- not definitive but intended as an aid to the consideration of possible local strategies and initiatives</p>
Health of the Nation Nutrition Task Force	<p>Nutritional Guidelines for Hospital Catering, 1995</p> <ul style="list-style-type: none"> • Each main meal should provide a minimum of 18g protein • Across the day the menu should be capable of providing a minimum of 1200-2500 Kcal (average: 1800-2200Kcal) • All menus should be planned to provide essential nutrients for the client group they are to serve • Mealtimes, food availability and suitability should be planned to be appropriate to patients' needs • All patient menus should be checked for nutritional adequacy at the planning stage by a dietician • There is a requirement for NHS catering to meet the nutritional requirements of patients • Standard recipes should detail a standard approach to the cooking and serving of each dish • Adequate numbers of ward staff should be available at mealtimes to ensure patients are fed • Those patients needing assistance with eating and drinking must be helped whilst their meal are hot and appetising • All patients should be weighted on admission • All patients should have an initial assessment made of their food and fluid intake and eating and drinking patterns. Any significant changes should be noted and acted on • A risk assessment programme should be incorporated as part of the normal admission process, in liaison with nursing, medical, and dietetic staff • Any relevant information should be incorporated into the plan of care for the patient • Patients should be weighed weekly

	<ul style="list-style-type: none"> • An identified nurses should co-ordinate all aspects of patient nutritional intake in a particular area, e.g. ward • There must be a locally agreed policy on the collection of a patient's tray. This must include identification of responsibility for assessing the percentage or proportion of the meal eaten and any plate waste • If more than one meal is missed the reason must be identified, any consequent problems addressed and action taken • Implementation locally needs to take into account and reflect each hospital's own specific circumstances • A guidance group should be set up to implement this guidance • Support form senior managers at Trust level is essential to allow time to carry out the development work on the menus and support any necessary changes to current policy or procedures • Consideration should be given at a senior level to the longer term remit and role of the implementation team in monitoring adherence to and progress towards implementing the recommendations • A package of monitoring systems should be set up that is evident at all stages of the food chain • There should be evidence of assessment of nutritional status on admission, or at pre-assessment clinics where appropriate • The policy covering who has responsibility for collection and serving meals should allow for documentation of the hand-over of responsibility and assessment
BAPEN	<p>Standards and Guidelines for Nutritional Support of patients in hospitals, 1996</p> <ul style="list-style-type: none"> • The purchasers of health care should insist on the adoption of standards for the organisation and provision of nutrition support • The standards used should be based on those in this document adapted to suit local needs • There is a management policy that all patients receive adequate and appropriate nutritional support as laid down by a quality assurance programme • There is an inter-departmental multidisciplinary NSC • There is a catering liaison group representing caterers, nurses, doctors, and dieticians • There is a nutrition support team available to advise on all aspects of nutritional support • Agreed and explicit arrangements are laid down for the organisation and funding of those patients continuing on artificial nutrition at home or else where in the community • There is a published policy for provision of artificial support • There is a policy for the assessment of nutritional status of patients • There are written guidelines to help identify those patients likely to benefits form referral to the nutrition support team • There are policies and procedures regarding to equipment • There are protocols and procedures relating to enteral feeding and paraenteral feeding • There are policies and procedures for the discharge of patients on nutritional support into the community • There is a continuing education programme on general nutrition and techniques of nutritional support for all those staff involved in the clinical care of patients • Appropriate patients may expect to receive care from the nutrition support team and to have all aspects of nutrition management explained, discussed and agreed with them • A clear and understandable explanation of the patient's nutrition management is provided to the patient, family, carers, ward staff and community health professionals • The patients, family and carers are appropriately advised and trained • The views of the patient, family, carers are considered • Patients on artificial nutrition have direct and immediate access to professional

	<p>advice</p> <ul style="list-style-type: none"> • Patients or their legally authorised representative have the right to accept or refuse nutritional support • There is a monitoring and recording system which allows audit • There is a system for assessing patient satisfaction with the service provided • The standards demonstrate effective and measurable benefits to the patients
NHS Executive	<p>Hospital Catering: Delivering a Quality Service, 1996</p> <ul style="list-style-type: none"> • Contractors should provide meals which meet patients' dietetic and nutritional requirements • Catering procedures should comply with the Nutrition Task Force's guidelines for hospital caterers • Patients should be advised on their dietary needs and on suitable choices • Chefs should be trained in nutrition to meet dietary needs • Contractors should keep prescribed records to demonstrate that nutrition and dietetic requirements are monitored and met • The Trust's dietetic manager should ensure that nutrition standards are satisfactory • An annual independent audit should be conducted to show meal quality to be satisfactory and to meet patients' needs • Food waste should be identified and controlled • A guide should be provided for each patient explaining the hospital's catering policies and catering services • A choice of dishes should be provided, including meals suitable for all dietary needs • A choice of portion sizes should be available • Patients' meals should not be ordered more than two meals in advance • The catering manager's name should be made available • Help should be readily available for patients where required to help them make use of the catering service
ACHCEW	<p>Hungry in Hospital?, 1997</p> <ul style="list-style-type: none"> • Accusations that patients are starving to death must be investigated • Roles and responsibilities at mealtimes must be defined • Existing guidance with regard to hospital catering must be enforced • The Patients' Charter for Wales should include the same standards as for England
BDA	<p>Malnutrition in Hospitals, 1997</p> <ul style="list-style-type: none"> • State-registered dieticians should be involved in training medical and nursing staff to identify patients at risk of malnutrition • Dieticians should be actively involved in menu planning to ensure that a nutritionally adequate diet is provided in hospital and that patients requiring special or therapeutic diets are catered for • Patients who require artificial nutritional support or a supplemented diet should have access to a dietician • Adequate resources should be available to ensure that high quality nutritional care, whether via the oral, Enteral or Parenteral route, can be delivered and monitored • Dieticians should foster close links with the other health care professionals involved in the detection and management of malnutrition • Dieticians should be involved with artificial nutritional support and keep abreast of current literature in this field.
Centre for Health Services Research, University of Newcastle-upon-Tyne	<p>Eating Matter, 1997</p> <ul style="list-style-type: none"> • Acting on patients' complaints • Identifying training needs, providing training and assessing competence of professional and support staff • Changing meals provision and ordering systems to make them more responsive • Offering special menus and enriched and attractive food for those with special needs

	<ul style="list-style-type: none"> • Asking patients for their opinions about the meals provided • Creating multi-disciplinary and cross-departmental dietary care groups • Employing special assistants and involving volunteers and families to assist at mealtimes • Stopping all other ward activities when meals are being eaten • Providing patients with better information about ordering food and the importance of eating and drinking • Introducing routine nutrition screening on admission and providing wards with the appropriate equipment to do so • Developing local protocols for the care of those 'at risk' of under-nutrition and including nutrition in 'pathways' • Conducting audits of dietary care and acting on the findings
<p>UKCC Registrar's letter</p>	<p>Responsibility for Feeding of Patients, 1997</p> <p>Nurses have an implicit responsibility for ensuring that patients are appropriately fed. This is reflected in the UKCC's code of professional conduct:-"while registered nurses may of course delegate the task of feeding patients, for example to unregistered practitioners, the overall responsibility remains with the registered nurse."</p>
<p>BDA</p>	<p>National Professional Standards for Dieticians practising in Health care, 1998</p> <ul style="list-style-type: none"> • Screening/appropriate referral • Developing and implementing a plan of care • Working co-operatively with others • Responsible for explicit quality of service • Communicating, nutrition education resources, education and training

(Maryon-Davis and Bristow, 1999: 74-105)

Appendix 3.1: Examples of the physical symptoms that may reduce the appetite and influence food intake in hospital

	Symptoms	Causes/ predisposing factors
Gastrointestinal	Altered taste (dysgeusia) or Diminished taste (hypogeusia) or loss of taste (ageusia)	<ul style="list-style-type: none"> • Cancer, chemotherapy, radiotherapy, • Vitamin deficiency (A, B), Zinc deficiency, • Neurological injury (stroke, head injury, tumours) • Drug treatment (lithium carbonate, metronidazole) • Effects of ageing • Poor oral hygiene, smoking
	Nausea, vomiting	<ul style="list-style-type: none"> • Fear, anxiety • Infection or other disturbances • Brain stem metastases, radiotherapy of head, neck; raised intracranial pressure (vascular, traumatic causes) • Severe constipation; metastatic distension of liver capsule; pharyngeal irritation by infection, sputum
	Anorexia	<ul style="list-style-type: none"> • Cachexia • Liver, renal disease • Depression, anxiety • Ageing • Side effects of opiate analgesics, antibiotics, cardiac glycoside and anti-neoplastic drugs • Uncontrolled pain, unpleasant sights, smells, excessive, noise, swallowing sputum, air
	Constipation	<ul style="list-style-type: none"> • Dehydration • Change in environment • Lack of dietary fibre, physical activity • Gut tumours, hypothyroidism, haemorrhoids, diverticular disease • Drug side effects • Forgetfulness, confusion, depression
	Diarrhoea	<ul style="list-style-type: none"> • Radiotherapy to gut • Gut infection, Inflammatory bowel disease, malabsorption • Side effects of NSAIDS, anti-biotics, cytotoxic drugs, laxatives • Post gastrectomy/ileal resection • Dietary excess of (e.g.) bran, spices, alcohol • Overflow associated with constipation
Physical and Neurological	Inability to maintain an upright posture at mealtimes	<ul style="list-style-type: none"> • Neurological deficits affecting posture/balancing, e.g. stroke, head injury, cerebral tumours • Scoliotic deformity • Orthopaedic trauma • Physical prostration and weakness associated with diverse acute/chronic medical conditions • Infective, inflammatory disorders affecting balance • Side effects of drug therapy

Inability to prepare food, load cutlery, transfer and insert food in mouth due to limited hand/arm movement	<ul style="list-style-type: none"> • Paralysis/paresis affecting arm movement following stroke, head injury, cerebral tumours • Muscle tremor, rigidity, lack of co-ordination in Parkinson's disease • Joint pain, loss of movement, deformity in acute/chronic arthritic conditions • Orthopaedic trauma limiting arm movement • Severe weakness and debility (any cause)
Dysphagia	<ul style="list-style-type: none"> • Neurogenic dysphagia following stroke, dementia, cerebral tumours, trauma may impair one or more of the stages of swallowing, i.e. preparatory stage, oral transport, pharyngeal transport including the swallowing reflex • Obstructive dysphagia of intrinsic origin, i.e. due to spasm, stricture, carcinoma, neurogenic features, can also underline this type of dysphagia. Severe oesophagitis, achalasia (intrinsic); mediastinal tumours (extrinsic)
Visual field impairment, affecting ability to locate food items on a tray, eat independently	<ul style="list-style-type: none"> • Disturbances of the visual field produced by neural lesions occurring at different points along the visual pathway • Impairment may result in loss of vision or variable loss, e.g. hemianopia, quareantopia (stroke, cerebral, tumours, etc.)
Leakage of food and fluids from the mouth Accumulation of food in the cheek pouch Inability to chew food	<ul style="list-style-type: none"> • Neurological deficits caused by stroke, dementia, cerebral, trauma • Bad (or loss of) teeth, poor dentures • Effects of ageing on mastication • Oral infections causing discomfort
Forgetfulness in eating, lack of attention to mealtime events; slow re-learning of eating skills	Dementia, stroke, other neurological disorders
Neglecting mealtray, food items places on one side (visual neglect)	Stroke- perceptual deficit manifest as lack of attention to half the visual space
Inability to select from menu, verbalise meal preferences, providing feedback on eating experience	Single or complex interaction of speech problems (e.g. dysphasia/aphasia/dysarthria) following stroke with visual field or perceptual problems and physical disabilities

(Bond, 1997:83-88)

Appendix 4.1: SERVQUAL original battery (22 items)

Reliability

- 1 Providing services as promised.
- 2 Dependability in handling customers' service problem.
- 3 Performing services right the first time.
- 4 Providing services at promised time.
- 5 Maintaining error-free records.

Responsiveness

- 6 Keeping customers informed about when services will be performed.
- 7 Prompt service to customers.
- 8 Willingness to help customers.
- 9 Readiness to respond to customers' requests.

Assurance

- 10 Employees who instill confidence in customers.
- 11 Making customers feel safe in their transactions.
- 12 Employee who are consistently courteous
- 13 Employee who have knowledge to answer customer questions.

Empathy

- 14 Giving customers individual attention.
- 15 Employees who deal with customers in a caring fashion.
- 16 Having the customer's best interest at heart.
- 17 Employees who understand the needs of their customers.
- 18 Convenient business hours.

Tangibles

- 19 Modern equipment.
- 20 Visually appealing facilities.
- 21 Employees who have a neat, professional appearance.
- 22 Visually appealing material associated with the service.

(Parasuraman *et al.*, 1994:207)

Appendix 4.2: DINESERV battery by Stevens, Knutson, and Patton (1995)

The restaurant...

Tangible

- 1 has visually attractive parking areas and building exteriors.
- 2 has a visually attractive dining area.
- 3 has staff members who are clean, neat, and appropriately dressed.
- 4 has a décor in keeping with its image and price range.
- 5 has a menu that is easily readable.
- 6 has a visually attractive menu that reflects the restaurant's image.
- 7 has a dining areas that is comfortable and easy to move around in.
- 8 has rest rooms that are thoroughly clean.
- 9 has dining areas that are thoroughly clean.
- 10 has comfortable seats in the dining room.

Reliability

- 11 serves you in the time promised.
- 12 quickly corrects anything that is wrong.
- 13 is dependable and consistent.
- 14 provides an accurate guest check.
- 15 serves your food exactly as you ordered it.

Responsibility

- 16 during busy times has employee shift to help each other maintain speed ad quality of service.
- 17 provides prompt and quick service.
- 18 gives extra effort to handle your special requests.

Assurance

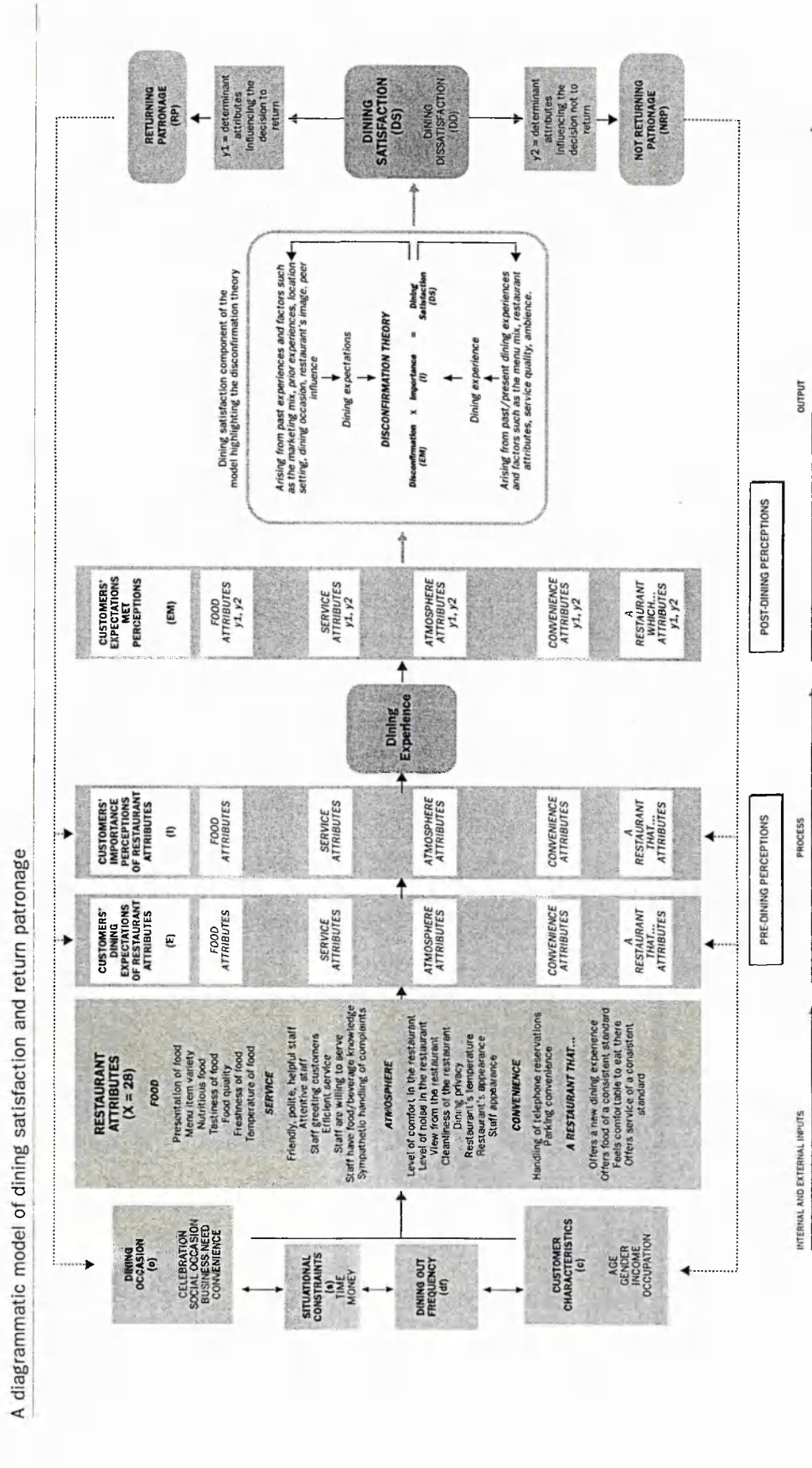
- 19 has employees who can answer your questions completely.
- 20 makes you feel comfortable and confident in your dealings with them.
- 21 has personnel who are both able and willing to give you informaiton about menu items, their ingredients, and methods of preparation.
- 22 makes you feel personally safe.
- 23 has personnel who seem well-trained, competent, and experienced.
- 24 seems to give employees support so that they can do their job well.

Empathy

- 25 has employees who are sensitive to your individual needs and wants.
- 26 makes you feel special.
- 27 anticipates your individual needs and wants.
- 28 has employee who are sympathetic and reassuring if something is wrong.
- 29 seems to have the customers' best interests at heart.

(Stevens, Knutson, and Patton, 1995: 59)

Appendix 4.3: A diagrammatic model of dining satisfaction and return patronage by (Kievla *et al.*, 1999)



Appendix 4.4: Tomes and Ng's (1996) 49 statements in assessing in-patient perceptions of service quality in a NHS hospital

Intangibles

Empathy

- 1 The nurses should get to know me better by spending time talking to me whenever they can.
- 2 Doctors and nurses should involve me when plans are made regarding my medical care.
- 3 On my arrival at the ward, the doctor should attend to me quickly.
- 4 Doctors should spend time with me discussing my fears and concerns about my condition.
- 5 Even if a doctor cannot cure me right away, he should make me feel more comfortable.
- 6 The nurses should attend to me quickly, whenever I ask for help.
- 7 My doctors should discuss with me my medical care following discharge from hospital.
- 8 Doctors should do their best to make me feel better emotionally.
- 9 Doctors should do their best to keep me from worrying.
- 10 My doctors should present me with choices when deciding my medical care.
- 11 Nurses should be polite when speaking to me and my family.
- 12 Doctors should be competent when performing tests and procedures on me.
- 13 My doctor should treat me with respect.

Relationship of mutual respect

- 14 Doctors should be courteous when speaking to me and my family.
- 15 A patient should have enough confidence in his doctor to discuss very personal matters, should the need arise.
- 16 I should be able to place complete trust in my doctor.
- 17 A doctor should not appear to be in a hurry when he is with me.
- 18 The hospital should have my best interest at heart.
- 19 The nurses should treat me as a person not just a bed number.
- 20 Nurses should explain to me the procedures and tests before they are done on me.
- 21 Doctors should ask me for permission before performing any tests on me.
- 22 My doctors should explain thoroughly to me the reasons for tests and procedures, which are carried out on me.
- 23 Nurses should ask me for permission before performing any procedures on me.
- 24 My doctors should take a real interest in me as a person and not just my illness.
- 25 The nurses should spend time with me discussing my worries regarding my stay in hospital.

Dignity

- 26 Nurses should explain to me the rules and regulations in the ward.
- 27 I should be treated with dignity and given adequate privacy during my stay in hospital.
- 28 Nurses should be kind, gentle and sympathetic at all times.

Understanding of illness

- 29 Doctors should give me medical advice in layman's language which I can understand.
- 30 Doctors should be very thorough in their dealings with patients.
- 31 Doctors should be very careful to check everything when examining me.
- 32 I should have a clear understanding of my current illness during this stay in hospital.
- 33 Doctors should go out of their way to make sure that I understand my condition and its treatment.

Religious needs

- 34 I should have access to a religious leader of my choice while in hospital.
-

Tangibles

Food

- 35 The meals should be well presented, i.e. the food should nicely arranged.
- 36 The meals should still be hot when they are served
- 37 After each meal the plates should be cleared immediately.
- 38 I should be given the food which I have ordered.
- 39 There should be a choice of food on the menu.
- 40 When the meal is served, I should be asked the size of portion that would like.

The physical environment

- 41 The bathrooms and toilets should always be kept clean and pleasant to use.
- 42 At night, noises occurring inside the ward should be kept to a minimum, e.g. TV, noisy equipment, staff talking.
- 43 The beds, pillows and mattresses should be conformable.
- 44 The screens should be drawn around my bed, whenever medical procedures and examinations are carried out.
- 45 The hospital should provide sufficient bathrooms and toilets in the ward.
- 46 Noises occurring outside the ward, e.g. ambulances, cars, should be kept to a minimum.
- 47 The ward should be clean at all times.
- 48 The ward should be kept well decorated.
- 49 The ward should be well ventilated, i.e. always fresh and well aired.

(Tomes and Ng, 1996:28-29)

Appendix 4.5: Babakus and Mongold's (1992) modified SERVQUAL model (15 attributes)

Reliability

- 1 Hospital should provide their services at the time they promise to do so.
- 2 When patients have problems, hospital employees should be sympathetic and reassuring.
- 3 Hospitals should be accurate in their billing.

Responsiveness

- 6 Hospital employees should tell patients exactly when services will be performed.
- 7 It is realistic for patients to expect prompt service from hospital employees.
- 8 Hospital employees should always be willing to help patients.

Assurance

- 10 Patients should be able to feel safe in their interactions with hospital employees.
- 11 Hospital employee should get adequate support from their employers to do their jobs well.
- 12 Hospital employee should be polite.
- 13 Hospital employee should be knowledgeable to answer customer questions.

Empathy

- 14 Hospital employees should be expected to give patient personal attention.
- 16 It is realistic to expect hospitals to have their patients' best interests at heart.

Tangibles

- 19 Hospitals should have up-to-date equipment.
- 20 Hospitals' physical facilities should be visually appealing.
- 21 Hospital employees should appear neat.

(Babakus and Mongold, 1992: 781-782)

Appendix 4.6: Youssef *et al.*'s (1996) modified SERVQUAL model for NHS hospitals

Dimensions	Statements
Tangibility	
	1 Excellent NHS hospitals would have up-to-date facilities (e.g. Buildings, equipment, X-ray department, laboratories, etc.)
	2 The physical facilities at excellent NHS hospitals would be visually attractive (e.g. Reception area, corridors, wards, outpatients department, signs, car park, etc.)
	3 NHS hospital staff would be neat in appearance (e.g. smart/clean uniform, well-groomed personnel)
	4 Materials associated with the hospital's service (e.g. appointment care, brochures, direction, documentation) would be visually appealing in an excellent NHS hospital
Reliability	
	5 Excellent NHS hospitals would provide their services at the time they promise to do so (e.g. time of the operation, investigation, medicine, food)
	6 When a patient has a problem, excellent NHS hospitals would show a sincere interest in solving it
	7 Excellent NHS hospitals would carry out services right the first time
	8 Excellent NHS hospitals would provide error-free documentation (e.g. keeping records correctly)
	9 Hospital staff in excellent NHS hospitals would tell patients exactly when services would be performed (e.g. date of operation, progress, laboratory results, etc.)
Responsiveness	
	10 Hospital staff in excellent NHS hospitals would give prompt service to patients (e.g. making appointment quickly, returning phone calls quickly, resolving problems quickly)
	11 Hospital staff in excellent NHS hospitals would be always be willing to help patients (e.g. willing to answer questions, provide advice)
	12 Hospital staff in excellent NHS hospitals would never be too busy to respond to patients' requests (e.g. be responsive to complaints, provide patient information)
	13 The attitude of hospital staff in excellent NHS hospitals would instill confidence in patients (e.g. honest, trustworthy, hospital name/image, reputation)
Assurance	
	14 Patients would feel secure in receiving medical care at excellent NHS hospitals
	15 Hospital staff in excellent NHS hospitals would always be courteous with customers (e.g. good telephone manners, showing consideration, pleasant and efficient service)
	16 Hospital staff in excellent NHS hospitals would have the knowledge to answer patients' questions (e.g. knowledge and skill of staff regarding medical and health information)
	17 Excellent NHS hospitals would be approachable (e.g. easy access to management, prompt telephone access, ease of contact)
Empathy	
	18 Excellent NHS hospitals would give patients individual attention (e.g. learning a patients' specific medical history, flexibility to accommodate individual patients' requirements, preferences, dislikes)

- 19 Excellent NHS hospitals would listen to patients and keep patients informed (e.g. listening to patients' ideas, new operations, general enquiries)
- 20 Excellent NHS hospitals would have 24-hour availability (e.g. evening appointments, 24-hour emergency availability)
- 21 Excellent NHS hospitals would have patients' best interests at heart (e.g. building long-term relationships, providing leading-edge medical care)
- 22 Hospital staff of excellent NHS hospitals would understand the specific needs of patients (e.g. recognising the importance of the patient, what the patient wants)

The relative importance of SERVQUAL dimensions by awarding points out of 100.

Tangibility	Clean and tidy hospital staff, modern equipment, visually appealing wards, furniture and buildings
Reliability	The ability of the hospital staff to perform promised service dependably and accurately
Responsibility	The willingness of the hospital staff to help patients and provide prompt service
Assurance	The knowledge and courtesy of the hospital patient staff and their ability to convey trust and confidence
Empathy	The caring, individualised attention the hospital staff provides its patients

(Youssef, Nel, and Bovaird, 1996:17-18)

Appendix 5.1 : 238 Acute Trusts in England under old regional boundaries 1997-1999

Acute Trusts	Hospitals	City	Post Code	Regions (O)
Addenbrookes NHS Trust	Addenbrookes Hospital	Cambridge	CB2 2QQ	Anglia & Oxford
Bedford Hospital NHS Trust	Bedford Hospital	Bedford	MK42 9DJ	Anglia & Oxford
Heatherwood and Wexham Park Hospitals NHS Trust	Wexham Park Hospital	Slough	SL2 4HL	Anglia & Oxford
Hinchingbrooke Health Care NHS Trust	Hinchingbrooke Hospital	Cambs.	PE18 8NT	Anglia & Oxford
Horton General Hospital NHS Trust	Horton General Hospital	Oxon	OX16 9AL	Anglia & Oxford
Ipswich Hospital NHS Trust	Ipswich Hospital	Ipswich	IP4 5PD	Anglia & Oxford
James Paget Hospital NHS Trust	James Paget Hospital	Norf.	NR31 6LA	Anglia & Oxford
Kettering General Hospital NHS Trust		Kettering	NN16 8UZ	Anglia & Oxford
Kings Lynn and Wisbech Hospitals NHS Trust	Queen Elizabeth Hospital	Norf.	PE30 4ET	Anglia & Oxford
Louth and District Healthcare NHS Trust	County Hospital	Lincs.	LN1 0EU	Anglia & Oxford
Luton and Dunstable Hospitals NHS Trust	Luton and Dunstable Hospital	Luton	LU4 0DZ	Anglia & Oxford
Milton Keynes General Hospitals NHS Trust	Milton Keynes General Hospital	Milton Keynes	MK6 5LD	Anglia & Oxford
Norfolk and Norwich Healthcare NHS Trust	Norfolk and Norwich Hospital	Norwich	NR1 3SR	Anglia & Oxford
Northampton General Hospital NHS Trust		Northampton	NN1 5BD	Anglia & Oxford
Nuffield Orthopaedic Centre NHS Trust		Oxford	OX3 7LD	Anglia & Oxford
Oxford Radcliffe NHS Trust	John Radcliffe Hospital	Oxford	OX3 9DU	Anglia & Oxford
Papworth Hospital NHS Trust	Papworth Hospital	Cambridge	CB3 8RE	Anglia & Oxford
Peterborough Hospitals NHS Trust	Edith Cavell Hospital	Cambs.	PE3 9GZ	Anglia & Oxford
Radcliffe Infirmary NHS Trust	Radcliffe Infirmary	Oxford	OX2 6HE	Anglia & Oxford
Royal Berkshire and Battle Hospitals NHS Trust	Royal Berkshire Hospital	Berkshire	RG1 5AN	Anglia & Oxford
South Buckinghamshire NHS Trust	Oakengrove	Bucks.	HP13 6PS	Anglia & Oxford
Stoke Mandeville Hospital NHS Trust	Stock Madeville Hospital	Bucks.	HP21 8AL	Anglia & Oxford
Basildon and Thurrock General Hospitals NHS Trust	Basildon Hospital	Essex	SS16 5NL	North Thames
Central Middlesex Hospital NHS Trust		London	NW10 7NS	North Thames
Chase Farm Hospital NHS Trust		Middlex.	EN2 8JL	North Thames
Chelsea and Westminster Healthcare NHS Trust	Chelsea and Westminster Hospital	London	SW10 9NH	North Thames
Ealing Hospital NHS Trust	Ealing Hospital	Southall	UB1 3HW	North Thames
East Hertfordshire NHS Trust	Queen Elizabeth II Hospital	Hertfordshire	AL7 4HL	North Thames
Essex Rivers Healthcare NHS Trust	Colchester General Hospital	Essex	CO4 5JL	North Thames
Forest Healthcare NHS Trust		Essex	IG8 8DB	North Thames
Great Ormond Street Hospital for Children NHS Trust		London	WC1N 3JH	North Thames
Hammersmith Hospitals NHS Trust	Hammersmith Hospital	London	W12 0HS	North Thames
Harefield Hospital NHS Trust	Harefield Hospital	Middlesex	UB9 6JH	North Thames
Harrow and Hillingdon Healthcare NHS Trust		Middlex.	HA4 9NJ	North Thames
Havering Hospitals NHS Trust	Harold Wook Hospital	Essex	RM7 0BE	North Thames
Hillingdon Hospital NHS Trust		Mddx	UB3 3NN	North Thames
Homerton Hospital NHS Trust		London	E9 6SR	North Thames
Mid Essex Hospital NHS Trust	Broom Field Court	Essex	CM1 57WE	North Thames
Moorfields Eye Hospital NHS Trust		London	EC1V 2PD	North Thames
Mount Vernon and Watford Hospitals NHS Trust	Watford General Hospital	Watford	WD1 8HB	North Thames
Newham Healthcare NHS Trust		London	E13 0DZ	North Thames
North Hertfordshire NHS Trust	Lister Hospital	Herts	SG1 4AB	North Thames
North Middlesex Hospital NHS Trust		London	N18 1QX	North Thames
Northwick Park and St. Mark's NHS Trust	Northwick Park Hospital	Middlex	HA1 3UJ	North Thames
Princess Alexandra Hospital NHS Trust	Princess Alexandra Hospital	Essex	CM20 1QX	North Thames
Redbridge Healthcare NHS Trust	King George Hospital	Essex	IG3 8YB	North Thames
Royal Brompton Hospital NHS Trust		London	SW3 6NP	North Thames
Royal Free Hampstead NHS Trust	Royal Free Hospital	London	NW3 2QG	North Thames
Royal London Homoeopathic Hospital NHS Trust	Royal London Homoeopathic Hospi	London	WC1N 3NR	North Thames
Royal National Orthopaedic Hospital NHS Trust		Middlesex	HA7 4LP	North Thames
Royal National Throat Nose and Ear Hospital NHS Trust		London	WC1X 8DA	North Thames
Southend Healthcare NHS Trust	Southend Hospital	Essex	SSO 0RY	North Thames
St. Albans and Hemel Hempstead NHS Trust	St. Albans City Hospital	Herts	AL3 5PN	North Thames
St. Mary's NHS Trust		London	W2 1NY	North Thames
Royal Hospitals NHS Trust	The Royal London Hospital	London	E1 1BB	North Thames
Royal Marsden NHS Trust		London	SW3 6JJ	North Thames
Tower Hamlets Healthcare NHS Trust	Mile End Hospital	London	E1 4DG	North Thames
University College London Hospitals NHS Trust		London	W1P 9LN	North Thames
Wellhouse NHS Trust	Barnet Hospital	Herts	EN5 3DJ	North Thames
West Middlesex University Hospital NHS Trust		Middlesex	TW7 6AF	North Thames
Aintree Hospital NHS Trust	Aintree House/Fazakerley Lane	Liverpool	L9 7AL	North West
Blackburn, Hyndburn and Ribbles Valley Health Care NHS Trust	Queens Park Hospital	Blackburn	BB2 3HH	North West
Blackpool Victoria Hospital NHS Trust	Blackpool Victoria Hospital	Blackpool	FY3 8NR	North West
Bolton Hospital NHS Trust	Royal Bolton Hospital	Bolton	BL4 0JR	North West
Burnley Health Care NHS Trust	Burnley General Hospital	Lancashire	BB10 2PQ	North West
Bury Health Care NHS Trust	Fairfield General Hospital	Lanc.	BL9 7TD	North West
Cardiothoracic Centre Liverpool NHS Trust		Liverpool	L14 3PE	North West
Central Manchester Healthcare NHS Trust	Machester Royal Infirmary	Manchester	M13 9WL	North West
Chorley and South Ribble NHS Trust	Chorley District Hospital	Lancashire	PR7 1PP	North West
Christie Hospital NHS Trust		Manchester	M20 4BX	North West
Clatterbridge Centre for Oncology NHS Trust		Merseyside	L63 4JY	North West
Countess of Chester Hospital NHS Trust	The Countess of Chester Health P	Chester	CH2 1UL	North West
East Cheshire NHS Trust	Macclesfield District General Hospi	Cheshire	SK10 3BL	North West
Furness Hospitals NHS Trust	Furness General Hospital	Cumbria	LA14 4LF	North West
Halton General Hospital NHS Trust	Halton General Hospital	Cheshire	WA7 2DA	North West

Lancaster Acute Hospitals NHS Trust	Royal Lancaster Infirmary	Lancaster	LA1 4 RP	North West
Liverpool Women's Hospital NHS Trust	Liverpool Women's Hospital	Liverpool	L8 7SS	North West
Manchester Children's Hospitals NHS Trust	Royal Manchester Children's Hospi	Manchester	M27 1HA	North West
Mid Cheshire Hospital NHS Trust	Leighton Hospital	Crewe	CW1 4QL	North West
North Manchester Healthcare NHS Trust	North Manchester General Hospital	Manchester	M8 6RL	North West
Oldham NHS Trust	District Headquarters	Oldham	OL1 2PN	North West
Preston Acute Hospitals NHS Trust	Royal Preston Hospital	Preston	PR2 4HT	North West
Rochdale Healthcare NHS Trust	Birch Hill Hospital	Rochdale	OL12 9QB	North West
Royal Liverpool and Broadgreen Unversity Hospitals NHS Trust	Royal Liverpool University Hospital	Liverpool	L7 8XP	North West
Royal Liverpool Children's NHS Trust	Alder Hey Children's Hospital	Liverpool	L12 2AP	North West
Salford Royal Hospitals NHS Trust	Hope Hospital	Manchester	M6 8DH	North West
South Manchester University Hospitals NHS Trust	Wythenshawe Hospital	Manchester	M23 9LT	North West
Southport and Formby NHS Trust		Merseyside	PR8 6PT	North West
St. Helens and Knowsley Hospital NHS Trust	Whiston Hospital	Merseyside	L35 5DR	North West
Stockport Acute Services NHS Trust	Stepping Hill Hospital	Chesh.	SK2 7JG	North West
Tameside and Glossop Acute Services NHS Trust	Tameside General Hospital	Lancs.	OL6 9RW	North West
Trafford Healthcare NHS Trust	Trafford General Hospital	Manchester	M41 5SL	North West
Walton Ctr. Neurology/Neurosurgery Trust		Liverpool	L9 1AE	North West
Warrington Hospital NHS Trust	Warrington District General Hospita	Cheshire	WA5 1QG	North West
West Lancashire NHS Trust	Ormskirk and District General Hos	Lancashire	L39 2AZ	North West
Westmorland Hospital NHS Trust	Westmorland General Hospital	Cumbria	LA9 7RG	North West
Whittington Hospital NHS Trust		London	N19 5NF	North West
Wigan adn Leigh Health Services NHS Trust	Royal Albert and Edward Infirmary	Lancs.	WN1 2NN	North West
Wirral Hospital NHS Trust	Arrowe Park Hospital	Wirral	L49 5PE	North West
Wrightington Hospitals NHS Trust	Wrightington Hospital	Lancashire	WN 6 9EP	North West
Airedale NHS Trust	Airedale General Hospital	Keighley	BD20 6TD	Northern & Yorkshire
Bishop Auckland Hospital NHS Trust	Bishop Auckland General Hospital	Co. Durham	DL14 6AD	Northern & Yorkshire
Bradford Hospitals NHS Trust	Bradford Royal Infirmary	West Yorkshire	BD9 6RJ	Northern & Yorkshire
Calderdale Healthcare NHS Trust	Calderdale Health Authority	W. Yorks.	HX1 2YP	Northern & Yorkshire
Carlisle Hospitals NHS Trust	Cumberland Infirmary	Carlisle	CA2 7HX	Northern & Yorkshire
Cheviot and Wansbeck NHS Trust	Wansbeck General Hospital	Ashington	NE63 9JJ	Northern & Yorkshire
City Hospitals Sunderland NHS Trust	Sunderland District General Hospita	Sunderland	SR4 7TP	Northern & Yorkshire
Darlington Memorial Hospital NHS Trust	Memorial Hospital	Darlington	DL3 6HX	Northern & Yorkshire
Dewsbury Health Care NHS Trust	Dewsbury District Hospital	Dewsbury	WF13 4HS	Northern & Yorkshire
East Yorkshire Hospitals NHS Trust	Castle Hill Hospital	North Humber	HU16 5JQ	Northern & Yorkshire
Freeman Group of Hospitals NHS Trust		Newcastle Upc	NE7 7DN	Northern & Yorkshire
Gateshead Hospitals NHS Trust	Queen Elizabeth Hospital	Gateshead	NE9 6SX	Northern & Yorkshire
Harrogate Health Care NHS Trust	Harrogate District Hospital	N. Yorks.	HG2 7SX	Northern & Yorkshire
Hartlepool and East Durham NHS Trust	Cleveland Hospital	Cleveland	TS24 9AH	Northern & Yorkshire
Huddersfield NHS Trust	The Royal Infirmary	Huddersfield	HD3 3HA	Northern & Yorkshire
North Durham Acute Hospitals NHS Trust	Dryburn Hospital	Durham	DH1 5TW	Northern & Yorkshire
North Tees Health NHS Trust	North Tees General Hospital	Stockton-on-T	TS19 8PE	Northern & Yorkshire
North Tyneside Health Care NHS Trust	North Tyneside General Hospital	North Shields	NE29 8NH	Northern & Yorkshire
Northallerton Health Services NHS Trust	Friarage Hospital	North Yorkshir	DL6 1JG	Northern & Yorkshire
Pinderfields Hospitals NHS Trust	Pinderfields General Hospitals	W. Yorks.	WF1 4EE	Northern & Yorkshire
Pontefract Hospitals NHS Trust	Pontefract General Infirmary	W. Yorks.	WF8 1PL	Northern & Yorkshire
Royal Hull Hospitals NHS Trust	Hull Royal Infirmary	North Humber	HU3 2JZ	Northern & Yorkshire
Royal Victoria and Association Hospitals NHS Trust	The Royal Victoria Infirmary	Newcastle upo	NG1 4LP	Northern & Yorkshire
Scarborough and NE Yorks. Healthcare NHS Trust	Scarborough Hospital	Scarborough	YO12 6QL	Northern & Yorkshire
South Tees Acute Hospitals NHS Trust	Middlesborough General Hospital	Cleveland	TS5 5AZ	Northern & Yorkshire
South Tyneside Healthcare NHS Trust	Harton Wing	Tyne and Wea	NE34 0PL	Northern & Yorkshire
St. James' and Seacroft University Hospitals NHS Trust	St. James' University Hospital	Leeds	LS9 7TF	Northern & Yorkshire
United Leeds Teaching Hospitals NHS Trust	Leeds General Infirmary	Leeds	LS1 3EX	Northern & Yorkshire
West Cumbria Healthcare NHS Trust	West Cumbria Hospital	Cumbria	CA28 8JG	Northern & Yorkshire
York Health Services NHS Trust		York	YO3 7BY	Northern & Yorkshire
Ashford Hospital NHS Trust	Ashford Hospital	Middlx.	TW15 3AA	South Thames
Brighton Health Care NHS Trust	Royal Sussex County Hospital	Brighton	BN2 5BE	South Thames
Bromley Hospitals NHS Trust	Farnborough Hospital	Kent	BR6 8ND	South Thames
Crawley Horsham NHS Trust	Crawley Hospital	W. Sussex	RH11 7DH	South Thames
Dartford and Gravesham NHS Trust	Joyce Green Hospital	Dartford	DA1 5PL	South Thames
East Surrey Healthcare NHS Trust	East Surrey Hospital	Surrey	RH1 6HA	South Thames
Eastbourne Hospitals NHS Trust	District General Hospital	East Sussex	BN21 2UD	South Thames
Epsom Health Care NHS Trust	Epsom General Hospital	Surrey	KT18 7EG	South Thames
Frimley Park Hospital NHS Trust	Frimley Park Hospital	Surrey	GU16 5UJ	South Thames
Greenwich Healthcare NHS Trust	Memorial Hospital	London	SE18 3RZ	South Thames
Guy's and St. Thomas's NHS Trust	Guy's Hospital	London	SE1 9RT	South Thames
Hastings and Rother NHS Trust		East Sussex	TN37 7QQ	South Thames
Kent and Canterbury Hospitals NHS Trust	Kent and Canterbury Hospital	Kent	CT1 3NG	South Thames
Kent and Sussex Weald NHS Trust	Pembury Hospital	Kent	TN2 4QL	South Thames
King's Healthcare NHS Trust	King's College Hospital	London	SE5 9RS	South Thames
Kingston Hospital NHS Trust		Surrey	KT2 7QB	South Thames
Lewisham Hospitals NHS Trust	Lewisham Hospital	London	SE13 6LH	South Thames
Mayday Healthcare NHS Trust	Mayday University Hospital	Surrey	CR4 7YE	South Thames
Medway NHS Trust	Medway Hospital	Kent	ME4 4NY	South Thames
Mid-Kent Healthcare NHS Trust	Maidstone Hospital	Kent	ME16 9QQ	South Thames
Mid-Sussex NHS Trust	The Princess Royal Hospital	W. Sussex	RH16 4EX	South Thames
Queen Mary's Sidcup NHS Trust	Queen Mary's Hospital	Kent	DA14 6LT	South Thames
Queen Victoria Hospital NHS Trust	The Queen Victoria Hospital	West Sussex	RH19 3DZ	South Thames

Royal Surrey County NHS Trust	The Royal Surrey County Hospital	Guildford	GU2 5XX	South Thames
Royal West Sussex NHS Trust	St. Richard's Hospital	West Sussex	PO19 4SE	South Thames
South Downs Health NHS Trust	Brighton General Hospital	East Sussex	BN2 3 EW	South Thames
South Kent Hospitals NHS Trust	William Harvey Hospital	Kent	TN24 OLZ	South Thames
St. George's Hospital NHS Trust	St. George's Hospital	London	SW17 0QT	South Thames
St. Helier NHS Trust	St. Helier Hospital	Surrey	SM5 1AA	South Thames
St. Peters Hospital NHS Trust		Surrey	KT16 OPZ	South Thames
Thanet Healthcare NHS Trust	Queen Elizabeth The Queen Mothe	Kent	CT9 4AN	South Thames
Worthing and Southlands Hospitals NHS Trust	Worthing Hospital	W. Sussex	BN11 2DH	South Thames
Andover District Community Health Care NHS Trust	War Memorial Community Hospital	Hants	SP10 3LB	South West
East Gloucestershire NHS Trust		Cheltenham	GL50 2QN	South West
East Somerset Hospital NHS Trust	Yeovil District Hospital	Yeovil	BA21 4AT	South West
Frenchay Healthcare NHS Trust		Bristol	BS16 1ND	South West
Gloucestershire Royal NHS Trust	Gloucestershire Royal Hospital	Gloucester	GL1 3NN	South West
Ise of Wight Healthcare NHS Trust		Ise of Wight	PO30 5TG	South West
North Hampshire Hospitals NHS Trust	The North Hampshire Hospital	Hants	RG24 9NA	South West
Plymouth Hospitals NHS Trust	Derriford Hospital	Plymouth	PL6 8DH	South West
Poole Hospital NHS Trust	Poole General Hospital	Dorset	BH15 2JB	South West
Portsmouth Hospitals NHS Trust	St. Mary's Hospital	Portsmouth	P63 6AD	South West
Royal Bournemouth and Christchurch Hospitals NHS Trust	The Royal Boumemouth Hospital	Bournemouth	BH7 7DW	South West
Royal Cornwall Hospitals NHS Trust	Treliske Hospital	Cornwall	TR1 3LJ	South West
Royal Devon and Exeter Healthcare NHS Trust	Royal Devon and Exeter Hospital (Exeter	EX2 5DW	South West
Royal National Hospital for Rheumatic Diseases NHS Trust		Bath	BA1 1RL	South West
Royal United Hospital Bath NHS Trust	Royal United Hospital	Bath	BA1 3NG	South West
South Devon Healthcare NHS Trust	Torbay Hospital	Torquay	TQ2 7AA	South West
Southampton University Hospitals NHS Trust	Southampton General Hospital	Southampton	SO16 6UD	South West
Swindon and Marlborough NHS Trust	Princess Margaret Hospital	Wiltshire	SN1 4JR	South West
Taunton and Somerset NHS Trust	Musgrove Park Hospital	Somerset	TA1 5DA	South West
United Bristol Healthcare NHS Trust		Bristol	BS99 1YF	South West
West Dorset General Hospitals NHS Trust	West Dorset Hospital	Dorset	DT1 2JY	South West
Weston Area Health NHS Trust	Weston General Hospital	Weston Super	BS23 4TQ	South West
Wiltshire Health Care NHS Trust	St. John's Hospital	Wiltshire	BA14 0QU	South West
Winchester and Eastleigh Healthcare NHS Trust	Royal Hampshire county Hospital	Hants	SO22 5DG	South West
Barnsley District General Hospital NHS Trust		S. Yorks.	S75 2EP	Trent
Bassetlaw Hospital and Community Health Services NHS Trust		Notts.	S81 0JN	Trent
Central Nottinghamshire Healthcare NHS Trust		Nottinghamshii	NG18 4HH	Trent
Central Sheffield University Hospital NHS Trust	Royal Hallamshire Hospital	Sheffield	S10 2JF	Trent
Chesterfield and North Derbyshire Royal Hospitals NHS Trust		Derbyshire	S44 5BL	Trent
Derby City General Hospital NHS Trust	Derby City Hospital	Derby	DE22 3NE	Trent
Derbyshire Royal Infirmary NHS Trust		Derby	DE1 2QY	Trent
Doncaster Royal Infirmary and Montagu Hospital NHS Trust	Doncaster Royal Infirmary	S. Yorks	DN2 5LT	Trent
Fosse Health NHS Trust		Leicester	LE5 0TD	Trent
Glenfield Hospital NHS Trust	Glenfield General Hospital	Leicester	LE3 9QP	Trent
Grantham and District Hospital NHS Trust	Grantham and Kesteven General H	Grantham	NG31 8DG	Trent
Grimsby Health NHS Trust	Grimsby Hospital	N.E. Lincolnshi	DN33 2BA	Trent
King's Mill Centre for Health Care Services NHS Trust		Notts.	NG17 4JL	Trent
Leicester General Hospital NHS Trust	Leicester General Hospital	Leicester	LE5 4PW	Trent
Leicester Royal Infirmary NHS Trust	Leicester Royal Infirmary	Leicester	LE1 5WW	Trent
Lincoln and Louth NHS Trust	County Hospital	Lincoln	LN2 5QY	Trent
Northern General Hospital NHS Trust		Sheffield	S5 7AU	Trent
Nottingham City Hospital NHS Trust	Nottingham City Hospital	Nottingham	NG5 1PB	Trent
Pilgrim Health NHS Trust	Pilgrim Hospital	Lincs.	PE21 9QS	Trent
Queen's Med. Centre, Nottingham University Hospital NHS Trust	University Hospital	Nottingham	NG7 2UH	Trent
Rotherham General Hospitals NHS Trust	Rotherham District General Hospita	Rotherham	S60 2UD	Trent
Scunthorpe and Goole Hospitals NHS Trust	Scunthorpe General Hospital	S. Humberside	DN15 7BH	Trent
Sheffield Children's Hospital NHS Trust	Sheffield Children's Hospital	Sheffield	S10 2TH	Trent
West Lindsey NHS Trust	John Coupland Hospital	Lincolnshire	DN21 2TJ	Trent
Weston Park Hospital NHS Trust	Weston Park Hospital	Sheffield	S10 2SJ	Trent
Alexandra Healthcare NHS Trust	Alexandra Hospital	Worcestershire	B98 7UB	West Midlands
Birmingham Children's Hospital NHS Trust	The Children's Hospital	Birmingham	B16 8ET	West Midlands
Birmingham Heartlands and Solihull (Teaching) NHS Trust		Birmingham	B9 5SS	West Midlands
Birmingham Women's Health Care NHS Trust	Birmingham Maternity Hospital	Birmingham	B15 2TG	West Midlands
Burton Hospitals NHS Trust	Queen's Hospital	Staffordshire	DE13 0RB	West Midlands
City Hospital NHS Trust		Birmingham	B18 7QH	West Midlands
Dudley Group of Hospitals NHS Trust	Wordsley Hospital	West Midlands	DY8 5QX	West Midlands
George Eliot Hospital NHS Trust	George Eliot Hospital	Warks.	CV10 7DJ	West Midlands
Good Hope Hospital NHS Trust	Rectory Road	West Midlands	B75 7RR	West Midlands
Hereford Hospitals NHS Trust	County Hospital	Hereford	HR1 2ER	West Midlands
Kidderminster Healthcare NHS Trust	Kidderminster General Hospital	Worc.	DY11 6RJ	West Midlands
Mid Staffordshire General Hospital NHS Trust	Stafford District General Hospital	Stafford	ST16 3SA	West Midlands
North Staffordshire Hospital NHS Trust		Stoke-on-Tren	ST4 6QG	West Midlands
Premier Health NHS Trust	St. Michael's Hospital	Staffordshire	WS13 6EF	West Midlands
Robert Jones and Agnes Hunt Orthopaedic and District Hospital NHS Trust		Shropshire	SY10 7AG	West Midlands
Royal Shrewsbury Hospitals NHS Trust	Royal Shrewsbury Hospital North	Shrewsbury	SY3 8XQ	West Midlands
Rugby NHS Trust	Brookfields	Warks.	CV22 5PX	West Midlands
Sandwell Healthcare NHS Trust	Sandwell General Hospital	West Midlands	B71 4HJ	West Midlands
South Warwickshire General Hospitals NHS Trust	Warwick Hospital	Warwick	CV34 5BW	West Midlands
The Princess Royal Hospital NHS Trust	The Princess Royal Hospital	Shropshire	TF6 6TF	West Midlands

Royal Wolverhampton Hospitals NHS Trust	New Cross Hospital	Wolverhampto WV10 0QP	West Midlands
Royal Orthopaedic Hospital NHS Trust		West Midlands B31 2AP	West Midlands
University Hospital Birmingham NHS Trust	Selly Oak Hospital	Birmingham B29 6JS	West Midlands
Walsall Hospitals NHS Trust	Manor Hospital	Walsall WS2 9PS	West Midlands
Walsgrave Hospitals NHS Trust	Walsgrave Hospital	Coventry CV2 2DX	West Midlands
Worcester Royal Infirmary NHS Trust	Newtown Branch	Worcester WR5 1JG	West Midlands

MATERIAL REDACTED AT REQUEST OF UNIVERSITY

Appendix 5.3: 32 Acute Trusts in South East Region according to the NHS Executive Regional Office Boundaries from 1 April 1999

Districts	Population * Trusts	Type of catering	Hospitals
Northamptonshire	610,300	Northampton General Hospital NHS Trust	Northampton General Hospital
		Kettering General Hospitals NHS Trust	Kettering General Hospital
		Radcliffe Infirmary NHS Trust	Radcliffe Infirmary
Oxfordshire	610,800	Oxford Radcliffe NHS Trust	The John Radcliffe Hospital Horton Hospital
Buckinghamshire	677,500	South Buckinghamshire NHS Trust	Wycombe Hospital
		Stoke Mandeville Hospital NHS Trust	Stoke Mandeville Hospital
		Milton Keynes General Hospitals NHS Trust	Milton Keynes General Hospital
Berkshire	797,500	Royal Berkshire and Battle Hospitals NHS Trust	Royal Berkshire Hospital
		Heatherwood and Wexham Park Hospitals NHS Trust	Wexham Park Hospital Heatherwood Hospital
North and Mid Hampshire	552,500	Andover District Community Health Care NHS Trust	War Memorial Community Hospital
		North Hampshire Hospitals NHS Trust	North Hampshire Hospital
		Winchester and Eastleigh Healthcare NHS Trust	Royal Hampshire County Hospital
Southampton and South West Hampshire	539,700	Southampton University Hospitals NHS Trust	Southampton General Hospital
Isle of Wight	125,900	Isle of Wight Healthcare NHS Trust	St. Marys Hospital
Portsmouth and South East Hampshire	544,400	Portsmouth Hospitals NHS Trust	St. Marys Hospital Queen Alexandra Hospital
East Surrey	418,400	Surrey & Sussex Healthcare NHS Trust (East Surrey / Crawley Horsham)	East Surrey Hospital Crawley Hospital Horsham Hospital
West Sussex	746,600	Mid-Sussex NHS Trust	The Princess Royal Hospital
		Royal West Sussex Trust	St. Richard's Hospital
		Worthing&Southlands Hospitals NHS Trust	Worthing Hospital
West Surrey	638,800	Ashford & St. Peter's Hospitals NHS Trust	The Croft (St. Peter's) Ashford Hospital
		Royal Surrey County Hospital NHS Trust Frimley Park Hospital NHS Trust	Royal Surrey County Hospital Frimley Park Hospital
East Sussex, Brighton and Hove	740,700	Brighton Health Care NHS Trust	The Royal Sussex County Hospital
		Eastbourne Hospital NHS Trust	Eastbourne District General Hospital
		Hastings & Rother NHS Trust	The Conquest Hospital
		South Downs Health NHS Trust	Brighton General Hospital
		Mid-Kent Healthcare NHS Trust	The Maidstone hospital
West Kent	976,900	Medway NHS Trust	Medway Hospital
		Dartford&Gravesham NHS Trust	Joyce Green Hospital
		Kent&Sussex Hospitals NHS Trust	Kent and Sussex Hospital
East Kent	598,000	Kent&Canterbury Hospitals NHS Trust Thanet Healthcare NHS Trust	Kent and Canterbury Hospital Queen Elizabeth the Queen Mother Hospital

* : Population are provided by National and Local Statistics, 1998 (01329)813281

Appendix 6.1: Schedule exploratory interview about the service quality of hospital catering

Convenience sampling:
3 patients for the pilot test
Evenly divided 30 patients will be selected from each ward and refereed by the ward nurse on extreme or deviant case sampling.

Introduction

Good morning/afternoon/evening, how are you today?

My name is Jessica. I am a university student doing a project about hospital food service quality. The purpose of this interview is to collect perceptions and ideas about hospital food and catering operations.

Two things I have to mention before we start. First, the answers you provide will be completely confidential. Nothing you say will ever be identified with you personally. As we go through the interview, if you have any questions about why I'm asking something, please feel free to ask. Second, the tape record will be used to record what you have to say so that I don't miss any of it.

Any questions before we begin?

To begin with, is this your first time in the hospital?

- Yes.
 No. (if no, what previous experiences have you with hospital food?)

- ◆ 1. What is your opinion of the hospital food?

Prompts

- Greeting the patients and introducing myself to reduce the boundaries.
- Explaining the purpose of the study.
- Showing confidentiality of the answers.

- Agreement should be made before talking to the patients. if no, select another patient.

- These questions will focus on three areas:
 - Past experience- image of hospital food before in hospital,
 - Current experience- right now or last meal been experienced,
 - Future expectation- what it should be like.

First, let's start with food quality.

- ◆ 2. What have you had to eat last 24 hours?
 - Re-opening the memory of eating.
 - Breakfast?
 - Lunch?
 - Dinner?

- ◆ 3. What did you think about the presentation of the food (visual appearance)?
 - Maybe drawing a rough sketch of the presentation of the food.
 - What were the things that you really liked?
 - What were the things that you didn't like so much?
 - Which one you didn't finish?
 - Why?

- ◆ 4. How were differences between what you ordered and what you actually eat?

- ◆ 5. What factors influence your appetite?

- ◆ 6. To what extent was the hospital food what you expected it to be?

The next questions focus on the topic of menu ordering.

- ◆ What have you ordered to eat tomorrow?
 - Breakfast?
 - Lunch?
 - Dinner?

- ◆ How did you decide what to pick from the menu?
 - List factors at least three.

- ◆ What did you think about the language on the menu?
 - Any difficulties?
 - If so, any assistance?

- ◆ What other things did you expect the menu to explain?

The next topic is related more with the hospital staff.

- ◆ How would you describe the way the meals were served to you?
 - Describing the flow of serving process.

- ◆ To what extent was the service what you expected?
 - Attitude?
 - Understanding individual's needs?
 - Friendly?
 - Helpful?

- ◆ What kinds of changes you would like to see regarding to hospital meal service?
 - List factors at least three.

Before we finish this interview, there are several general background questions I need to fill in for my analysis.

Background

Gender: Male, Female.

Age: under 16, 16-30, 31-50, 51-70, 70 and older.

Primary Language: English, others.

Education: University, College, Secondary School.

Occupation: Unemployed, Homemaker, Retired, Employed, (specify) _____.

Medical department at admission (according to diagnosis): Surgery, Cardiology, Gynaecology, Internal medicine, Pneumology, and haematology, Urology, Gastrology and endocrinology, Neurology, other.

Length of stay: 1-3 days, 4-7 days, 8-10 days, more than 10 days.

Records of patient's weights and heights: yes, no.

Thank you very much. You've been very helpful. Any other thoughts or feelings you might want to share with me to help me understand your experience with eating hospital food? Anything at all you'd like to add?

Bye-bye and take care.

➤ Depending the department setting of the selected hospital

➤ Checking the patient's diagnosis record.

Appendix 6.2: Initial questionnaire of Phase I



IN STRICTLY CONFIDENTIAL

**University
of Surrey**

Guildford
Surrey GU2 5XH, UK
Telephone
+44 (0)1483 300800
Facsimile
+44 (0)1483 259387

**School of
Management
Studies for
the Service
Sector**

April 1999

Dear participant:

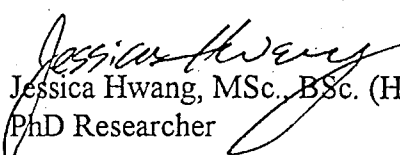
I am conducting postgraduate research on the subject "quality improvement of catering operations in NHS acute hospitals" in the School of Management Studies for the Service Sector at the University of Surrey. This survey deals with your opinions of the hospital meal service. Please complete the questions on the inside and on the back page by crossing the most appropriate answer. There is also a section for any comments you might wish to make about the catering system in general.

I hope that this will only take a few minutes of your time and I will collect the questionnaire personally next day. If you have any problem regarding with this questionnaire, I will be delightful to answer them when I come to collect the survey.

The answers you provide are **Confidential** and will only used for the purpose of this research. the results will be count in anonymous for each respondent. For confirmation of my research status, feel free to contact Dr T. Desombre, a Senior Lecturer in Healthcare Management at School of Management Studies for the Service Sector in University of Surrey on 01483-876367.

Thank you for participating in my survey. If you have any queries about my research in general or the questionnaire specifically, please do not hesitate to contact me.

Yours faithfully,


Jessica Hwang, MSc., BSc. (Hons)
PhD Researcher

Hospitality Management
Tourism Management
Food Management
Retail Management
Health Care Management



Questionnaire

Section one-Directions:

Please mark an **X** in the box next to the number you feel most relevant to your answer (for example, 3).

Q1 How often do you completely finish your meal?

Not often 1 2 3 4 5 6 7 Very Often

Q2 Who do you think should help patients with eating difficulties?

Doctors, Nurses, Catering Assistants, Others,
(Please specify)

Q3 How do you find the timing of the meals served in this hospital?

Very inconvenient 1 2 3 4 5 6 7 Very convenient

Q4 Overall, how satisfied are you with the meals served?

Completely dissatisfied 1 2 3 4 5 6 7 Completely Satisfied

Section two- Directions:

Below is a series of statements about the hospital meals offered in NHS hospitals and the level of service you might have expected to receive. Please mark an **X** to indicate to what extent you agree or disagree with these statements, ranging from completely disagreeing with the statement (1) to no opinion (4) to completely agreeing (7)

Scale:	Completely Disagree							Completely Agree
Q5 A pleasant eating surrounding should be offered to stimulate the appetite.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	
Q6 Social contact should be part of the mealtime routine.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	
Q7 Menu should offer a good selection of meals.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	
Q8 Meals should smell delicious.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	
Q9 Meal size should be according to individual needs.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	
Q10 The food should taste good.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	
Q11 The food should look good on the tray.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	
Q12 The food should be freshly prepared.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	
Q13 Food should be served at the correct temperature.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	
Q14 Staff should leave food within reach.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	
Q15 Staff should be polite and pleasant.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	
Q16 The menu should provide useful information on food and nutrition.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	
Q17 Enough time should be given to eat the food.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	
Q18 Each dish on the menu should be clearly described.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	
Q19 Meals should arrive exactly as ordered.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>	



Scale:	Completely Disagree						Completely Agree
Q20 Meals should be served around the same time each day.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q21 Other food should be provided when a patient misses the regular meal service	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q22 Patients should be given personal attention.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q23 Staff should always be willing to help patients with eating difficulties.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>

Section three- Directions:

Below is a series of statements about the hospital meals offered in NHS hospitals and the level of service you actually received. Please mark an X to indicate to what extent you agree or disagree with these statements, ranging from completely disagree with the statement (1) to no opinion (4) , to completely agreeing (7) .

Scale:	Completely Disagree						Completely Agree
Q24 A pleasant eating surrounding is offered to stimulate the appetite.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q25 Social contact is a part of the mealtime routine.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q26 The menu offers a good selection of meals.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q27 Meals smell delicious.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q28 Meal size is according to individual needs.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q29 The food tastes good.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q30 The food looks good on the trays.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q31 The food is freshly prepared.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q32 The food is served at the correct temperature.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q33 Staff leaves food within reach.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q34 Staff are polite and pleasant.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q35 The menu provides useful information on food and nutrition.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q36 Enough time is given to eat the food.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q37 Each item on the menu is clearly described.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q38 I received exactly what I ordered from the menu.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q39 Meals are served at the same time each day.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q40 Other food is provided when a patient misses the regular meal service.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q41 Patients are given personal attention.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q42 Staff are always willing to help patients with eating difficulties.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>

Please turn over.



Section four-Directions:

Please mark an **X** in the box next to the number from the scale to show how important each of these factors is to you when you judge a hospital's meal service.

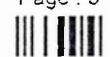
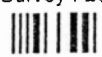
Scale:	Extremely Unimportant	Extremely Important
Q43 Mealtime surrounding	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
Q44 Social contact during the mealtime	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
Q45 Variety of food	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
Q46 Aroma of food, i.e. smell	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
Q47 Quantity of food, i.e. amount	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
Q48 Flavour of food, i.e. taste	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
Q49 Presentation of food	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
Q50 Temperature of food	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
Q51 Caring attitude of staff	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
Q52 Usefulness of information about food and nutrition	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
Q53 Description of food content	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
Q54 Timing of meal delivery	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
Q55 Getting what you order	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
Q56 Service reliability	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
Q57 Individual attentiveness	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>
Q58 Helpfulness of staff	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>

Section five- Directions:

Please mark an **X** in the box giving your answer to the followings:

<p>Q59 Gender:</p> <p>1 <input type="checkbox"/> Male</p> <p>2 <input type="checkbox"/> Female</p>	<p>Q60 Your age:</p> <p>1 <input type="checkbox"/> Under 16, 2 <input type="checkbox"/> 16-30, 3 <input type="checkbox"/> 31-50,</p> <p>4 <input type="checkbox"/> 51-70, 5 <input type="checkbox"/> 71-90, 6 <input type="checkbox"/> 91 and older.</p>	<p>Q61 Your occupation:</p> <p>(please specify)</p> <div style="border: 1px solid black; height: 40px; width: 100%;"></div>
<p>Q62 Expected length of stay (Approx.):</p> <p>1 <input type="checkbox"/> 1-3 days,</p> <p>2 <input type="checkbox"/> 4-7 days,</p> <p>3 <input type="checkbox"/> 8-10 days,</p> <p>4 <input type="checkbox"/> 11-14 days,</p> <p>5 <input type="checkbox"/> More than 15 days.</p>	<p>Q63 Type of diet:</p> <p>1 <input type="checkbox"/> Regular diet, 2 <input type="checkbox"/> Diabetic diet,</p> <p>3 <input type="checkbox"/> Low-salt diet, 4 <input type="checkbox"/> Modified diet,</p> <p>5 <input type="checkbox"/> Pureed diet,</p> <p>6 <input type="checkbox"/> Others </p> <p>(please specify).</p>	<p>Q64 Medical ward:</p> <div style="border: 1px solid black; height: 100px; width: 100%;"></div>
<p>Q65 Do you have any further comments regarding the meals and service that you received?</p> <div style="border: 1px solid black; height: 60px; width: 100%;"></div>		

Thank you very much for completing the questionnaire.



Appendix 6.3: A sample of an introduction letter

Jessica Hwang
Ph.D. Researcher
School of Management Studies for the Service Sector
University of Surrey
Guilford, Surrey
GU2 5XH

April, 1999

Dear Mrs []:

I am conducting postgraduate research on the topic of hospital catering service quality within NHS acute hospitals. In order to obtain a better understanding of patients' perceptions and expectations regarding food and service quality, I would like to conduct a survey at your hospital. I am, therefore, asking for your permission to hand out questionnaires to approximately 100 randomly chosen patients from your hospital. The questionnaire takes up only two sides of a single A3 size paper, and should take less than 15 minutes for each patient to complete. Please find enclosed a copy of the questionnaire to be used.

If you consider ethical approval to be required, I would be grateful if you could let me know the appropriate procedure. My phone number is (01483) 237471 or (01483) 876378 at office.

Any information released from your hospital will be treated with confidentiality and only used for the purpose of my research. Should you have any further queries, please do not hesitate to contact my supervisor, Dr. Terry Desombre, at (01483) 876367.

Thank you very much for your time. I am looking forward to hearing from you soon.

Yours sincerely,

[Miss] Jessica Hwang, MSc., BSc.(Hons)
Ph.D. Researcher

Enc.

MATERIAL REDACTED AT REQUEST OF UNIVERSITY

Appendix 6.6: A sample of introduction letter to ward

August 04, 1999

Ward Sister
St. Richard's Hospital
Chichester
West Sussex
PO19 4SE

Dear Ward Sister:

I am conducting postgraduate research on the subject "quality improvement of catering operations in NHS acute hospitals" at the School of Management Studies for the Service Sector at the University of Surrey. Following discussions with Ms. Anne Macallister and with permission granted from the Royal West Sussex Trust, I am asking for your assistance in handing out questionnaires to your patients.

This survey deals with the patients' opinions on the hospital meal service. The questionnaire takes up only two sides of a single A3 size paper, and should take less than 15 minutes for each patient to complete. Based on your recommendations for suitability, I will personally distribute the questionnaire to your patients in the morning and return to collect it in the afternoon. Patients with physical or mental difficulties, or on an intravenous diet, will be avoided.

With your approval, I will arrange a suitable time to conduct the survey. Any information obtained from your hospital will be treated with confidentiality and only used for the purpose of my research. Should you require further information regarding this research, or have any further queries, please do not hesitate to contact myself at 01483-876378, or my supervisor, Dr. Terry Desombre, at 01483-876367.

Thank you very much for your time. I am looking forward to talking with you soon.

Yours sincerely,

Jessica Hwang, BSc. (Hons) MSc.

Appendix 6.7: Piloting double interview of Phase I

Objective:

- To test the logic and the format of the questionnaire and the understanding of the wording.
- To discover any difficulties the respondents may have.
- To see if any questions were missing.

Questions

1. Time to finish the questionnaire? _____ minutes.
2. Does any question make you uncomfortable?
3. Is there any questions you think have been repeated?
4. Which questions were the most difficult or awkward for you to read?
5. Is there any word you are not sure what it means?
6. Any other suggestion?

Appendix 6.8: Final questionnaire of Phase I



STRICTLY CONFIDENTIAL

**University
of Surrey**

Guildford
Surrey GU2 5XH, UK
Telephone
+44 (0)1483 300800
Facsimile
+44 (0)1483 259387

**School of
Management
Studies for
the Service
Sector**

August 1999

Dear participant:

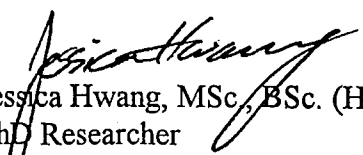
I am conducting postgraduate research on the subject "quality improvement of catering operations in NHS acute hospitals" in the School of Management Studies for the Service Sector at the University of Surrey. This survey deals with your opinions of the hospital meal service. Please complete the questions on both inside and back page by crossing the most appropriate answer. There is also a section for any comments you might wish to make about the catering system in general.

I hope that this will only take a few minutes of your time and I will collect the questionnaire personally in the afternoon. If you have any problem regarding with this questionnaire, I will be delightful to answer them when I come to collect the survey.

The answers you provide are **Confidential** and will only used for the purpose of this research, and the results will be counted anonymously for each respondent. For confirmation of my research status, feel free to contact Dr T. Desombre, a Senior Lecturer in Healthcare Management at School of Management Studies for the Service Sector in University of Surrey on 01483-876367.

Thank you for participating in my survey. If you have any queries about my research in general or the questionnaire specifically, please do not hesitate to contact me.

Yours faithfully,


Jessica Hwang, MSc, BSc. (Hons)
PhD Researcher



Questionnaire

For accuracy, please complete each and every question in the survey.

Section one directions: Please mark an X in the box next to the number you feel most relevant to your answer (for example, 3).

Q1 How often do you completely finish you meal?
 Not often 1 2 3 4 5 6 7 Very often

Q2 Who do you think should help patients with any food related enquires?
 Doctors, Nurses, Dieticians, Catering assistants.

Q3 How do you rate your own appetite during your stay ?
 Very poor 1 2 3 4 5 6 7 Excellent

Q4 How do you find the timing of the meals served in this hospital ?
 Very inconvenient 1 2 3 4 5 6 7 Very convenient

Q5 Overall, how satisfied are you with the meals served ?
 Completely dissatisfied 1 2 3 4 5 6 7 Completely satisfied

Section two directions: Below is a series of statements about the hospital meals offered in NHS hospitals and **the level of service you might have expected to receive BEFORE your current stay.** Please mark an X to indicate to what extent you agree or disagree with these statements, ranging from completely disagreeing with the statement (1) to neither agree or disagree (4) to completely agreeing (7).

Scale-	Completely Disagree		Completely Agree
Q6 Food should look good on the tray.	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	7 <input type="checkbox"/>
Q7 Food should taste good.	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	7 <input type="checkbox"/>
Q8 Meals should smell delicious.	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	7 <input type="checkbox"/>
Q9 Menus should offer a good selection of meals.	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	7 <input type="checkbox"/>
Q10 Food should be served at the proper temperature.	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	7 <input type="checkbox"/>
Q11 Food should be freshly prepared.	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	7 <input type="checkbox"/>
Q12 Enough time should be given to eat the food.	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	7 <input type="checkbox"/>
Q13 Each menu item should be clearly described.	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	7 <input type="checkbox"/>
Q14 Staff should be polite and pleasant.	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	7 <input type="checkbox"/>
Q15 Meals should arrive exactly as ordered.	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	7 <input type="checkbox"/>
Q16 Other food should be provided when a patient misses the regular meal service.	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	7 <input type="checkbox"/>
Q17 Patients should be given personal attention.	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	7 <input type="checkbox"/>
Q18 Staff should always be willing to help patients with eating difficulties.	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	7 <input type="checkbox"/>
Q19 Meals should be served around the same time each day.	1 <input type="checkbox"/>	2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	7 <input type="checkbox"/>

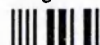


Scale-	Completely Disagree						Completely Agree
Q20 Staff should leave food within reach.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q21 Menus should provide useful information on food and nutrition.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q22 Meal size should be according to individual needs.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q23 A pleasant eating surrounding should be offered to stimulate the appetite.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q24 Social contact should be part of the mealtime routine.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>

Section three directions- Below is a series of statements about the hospital meals offered in NHS Hospitals and **the level of service you have actually received during your CURRENT stay.** Please mark an X to indicate to what extent you agree or disagree with these statements, ranging from completely disagreeing with the statements (1) to neither agreeing or disagreeing (4) , to completely agreeing (7).

Scale-	Completely disagree						Completely Agree
Q25 The food looks good on the tray.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q26 The food tastes good.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q27 Meals smell delicious.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q28 The menu offers a good selection of meals.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q29 The food is served at the proper temperature.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q30 The food is freshly prepared.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q31 I have enough time to eat the food.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q32 Each dish on the menu is clearly described for me.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q33 Staff are polite and pleasant to me.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q34 I received exactly what I ordered from the menu.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q35 Patients are provided other food when they miss the regular meal service.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q36 I have been given personal attention.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q37 Patients receive help from staff when they have eating difficulties.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q38 Meals are served around the same time each day.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q39 Staff leaves the food within reach.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q40 Menus provide useful information on food/nutrition	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q41 The size of the meals is right for my needs.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q42 I am in a pleasant eating surrounding when I have my meals.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
Q43 Social contact is part of the mealtime routine.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>

PLEASE TURN OVER.



Section four directions: Please mark an X in the box next to the number on a scale of 1-7 to show how **IMPORTANT** each of these factors is to you when you judge a hospital's meal service.

Scale-	Extremely Unimportant	Extremely important
Q44 Presentation of food	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	
Q45 Flavour of food, i.e. taste	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	
Q46 Aroma of food, i.e. smell	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	
Q47 Variety of food	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	
Q48 Temperature of food	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	
Q49 Freshness of food	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	
Q50 Length of meal time	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	
Q51 Description of food content on menu	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	
Q52 Attitude of staff	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	
Q53 Getting what you order	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	
Q54 Alternative food provided if a meal is missed.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	
Q55 Individual attentiveness	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	
Q56 Helpfulness of staff	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	
Q57 Timing of meal delivery	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	
Q58 Placing of food	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	
Q59 Information about food and nutrition	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	
Q60 Quantity of food, i.e. meal size	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	
Q61 Mealtime surroundings	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	
Q62 Social contact during mealtimes	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/>	

Section five directions: Please mark an X in the box giving your answer to the following:

<p>Q63 Gender:</p> <p><input type="checkbox"/> Male</p> <p><input type="checkbox"/> Female</p>	<p>Q64 Your age:</p> <p><input type="checkbox"/> Under 16, <input type="checkbox"/> 16-30, <input type="checkbox"/> 31-50,</p> <p><input type="checkbox"/> 51-70, <input type="checkbox"/> 71-90, <input type="checkbox"/> 91 and older</p>	<p>Q65 Medical ward:</p> <div style="border: 1px solid black; height: 40px; width: 100%;"></div>																					
<p>Q66 Expected length of stay (Approximately):</p> <p><input type="checkbox"/> 1-3 days,</p> <p><input type="checkbox"/> 4-7 days,</p> <p><input type="checkbox"/> 8-10 days,</p> <p><input type="checkbox"/> 11-14 days,</p> <p><input type="checkbox"/> more than 15 days.</p>	<p>Q67 Type of diet:</p> <p><input type="checkbox"/> Regular diet,</p> <p><input type="checkbox"/> Diabetic diet,</p> <p><input type="checkbox"/> Low-salt diet,</p> <p><input type="checkbox"/> Pureed diet.</p>	<p>Q68 Gross Income of Head of Household (Approximately):</p> <table border="0"> <tr> <td>Per Week</td> <td>Or</td> <td>Per Year</td> </tr> <tr> <td>£600 and over</td> <td><input type="checkbox"/></td> <td>£30,000 and over</td> </tr> <tr> <td>£300-£599</td> <td><input type="checkbox"/></td> <td>£15,000-29,999</td> </tr> <tr> <td>£150-£299</td> <td><input type="checkbox"/></td> <td>£7,500-14,999</td> </tr> <tr> <td>£50-£149</td> <td><input type="checkbox"/></td> <td>£2,500-7,499</td> </tr> <tr> <td>Less than £50</td> <td><input type="checkbox"/></td> <td>Less than 2, 500</td> </tr> <tr> <td>OAP</td> <td><input type="checkbox"/></td> <td>OAP</td> </tr> </table>	Per Week	Or	Per Year	£600 and over	<input type="checkbox"/>	£30,000 and over	£300-£599	<input type="checkbox"/>	£15,000-29,999	£150-£299	<input type="checkbox"/>	£7,500-14,999	£50-£149	<input type="checkbox"/>	£2,500-7,499	Less than £50	<input type="checkbox"/>	Less than 2, 500	OAP	<input type="checkbox"/>	OAP
Per Week	Or	Per Year																					
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£50-£149	<input type="checkbox"/>	£2,500-7,499																					
Less than £50	<input type="checkbox"/>	Less than 2, 500																					
OAP	<input type="checkbox"/>	OAP																					

Q69 Do you have any further comments regarding the meals and service that you received?

Thank you very much for completing the questionnaire.



Appendix 6.9: Initial questionnaire of Phase II

**University
of Surrey**

Guildford
Surrey GU2 5XH, UK
Telephone
+44 (0)1483 300800
Facsimile
+44 (0)1483 259387

**School of
Management
Studies for
the Service
Sector****STRICTLY CONFIDENTIAL**

October 1999

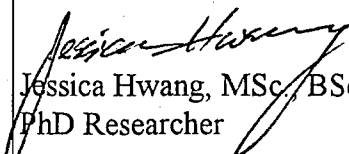
Dear participant:

I am conducting postgraduate research on the topic of "the quality improvement of catering operations in NHS acute hospitals" in the School of Management Studies for the Service Sector at the University of Surrey. This survey deals with your opinions of hospital meal service. Please complete the questionnaire by marking a **cross** against the most appropriate answer. Question 5 allows you to include any comments you wish to make about the catering system in general. Please turn over this page to start with section one. I hope that this will only take a few minutes of your time.

The answers you provide are **Confidential** and will only used for the purpose of this research, and the results will be counted anonymously for each respondent. For confirmation of my student status, feel free to contact Dr T. Desombre, a Senior Lecturer in Healthcare Management at School of Management Studies for the Service Sector in University of Surrey on 01483-876367.

Thank you for participating the survey. If you have any queries about my research in general or the questionnaire specifically, please do not hesitate to contact me. I will be around to collect the questionnaire after you have finished, or alternatively, you may send it to me Freepost using the envelope I will provide.

Yours faithfully,


Jessica Hwang, MSc, BSc. (Hons)
PhD Researcher

Hospitality Management
Tourism Management
Food Management
Retail Management
Health Care Management



MEAL SERVICE PERSONNEL QUESTIONNAIRE

Instructions: Please mark an **X** in the box next to the number you feel best represents your opinion of meal service (for example, 3). There is no right or wrong answer.

Question 1: How often do the following mealtime tasks form part of your daily routine (on a scale of 1-7)?

Scale -	Never						Always
<i>Q1 (a)</i> Giving menu cards to patients,	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
<i>Q1 (b)</i> Assisting with patients' menu choices,	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
<i>Q1 (c)</i> Collecting and returning menu orders to the kitchen,	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
<i>Q1 (d)</i> Supervising the meal trolley,	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
<i>Q1 (e)</i> Serving food from the meal trolley,	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
<i>Q1 (f)</i> Checking patients' "well-being" at meal delivery,	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
<i>Q1 (g)</i> Assisting with eating problems as they occur,	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
<i>Q1 (h)</i> Collecting discarded dishes,	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
<i>Q1 (i)</i> Observing returned meal trays,	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
<i>Q1 (j)</i> Helping patients with food related enquiries.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>

Question 2 instruction:

Below is a series of statements about hospital meal service offered in NHS hospitals. Please mark an **X** to indicate to what extent you agree or disagree with these statements, ranging from completely disagreeing with the statements (1), to neither agreeing nor disagreeing (4), to completely agreeing (7).

Scale-	Completely Disagree						Completely Agree
<i>Q2 (a)</i> Delivering meal trays to patients is one of the most important responsibilities of my job.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
<i>Q2 (b)</i> Our meal service procedures make it easy for me to give excellent patient service.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
<i>Q2 (c)</i> In this hospital, patient meal service is given the same importance as most other procedures.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
<i>Q2 (d)</i> I ensure patients get the meal that they ordered.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
<i>Q2 (e)</i> I ensure the patients can reach the plates when I serve them.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
<i>Q2 (f)</i> I will not collect the food tray without the patient's permission.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
<i>Q2 (g)</i> I was trained to give good service to patients at meal times.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
<i>Q2 (h)</i> I will notice if a patient misses the regular meal service and make sure alternative food is provided.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>
<i>Q2 (i)</i> I am polite and pleasant when delivering meal trays to patients, even if they are grouchy.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>



Scale-

Completely Disagree

Completely Agree

Q2 (j) I do not enjoy delivering meal trays to patients. 1 2 3 4 5 6 7

Q2 (k) Patients treat me with respect. 1 2 3 4 5 6 7

Q2 (l) Patients show understanding and patience when we are really busy. 1 2 3 4 5 6 7

Q2 (m) An important part of my job is to help those patients with eating difficulties. 1 2 3 4 5 6 7

Q2 (n) Observing the amount of food eaten by a patient is an important part of patient care. 1 2 3 4 5 6 7

Q2 (o) Ensuring a patient eats enough of the right types of food is an important part of patient care. 1 2 3 4 5 6 7

Q2 (p) Patients show their appreciation for individual care. 1 2 3 4 5 6 7

Question 3: Please indicate the levels of responsibility you believe each of the following staff should have for mealtime care on a scale of 1- 7?

Not responsible at all

Totally responsible

Q3 (a) Doctors 1 2 3 4 5 6 7

Q3 (b) Nurses 1 2 3 4 5 6 7

Q3 (c) Catering Assistants 1 2 3 4 5 6 7

Q3 (d) Domestic Staff 1 2 3 4 5 6 7

Q3 (e) Kitchen Staff 1 2 3 4 5 6 7

Question 4: Your Background Information

Q4 (a) Gender- Male , Female .

Q4 (b) Your age- Under 25 , 25-34 , 35-44 , 45-54 , 55 and over

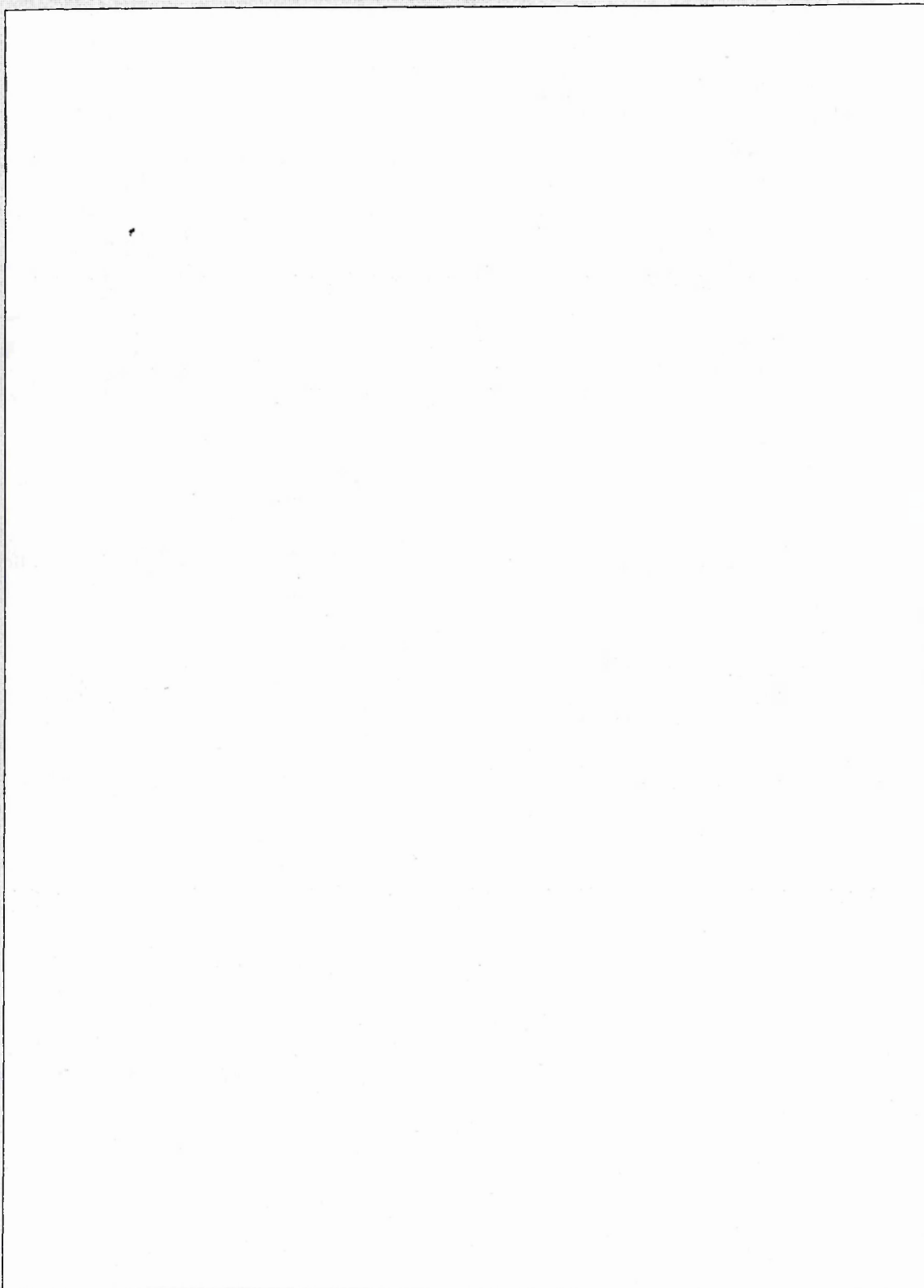
Q4 (c) Job Title-

Q4 (d) Years of experience involving meal tray delivery-

Please turn over the page.



Q5 Question 5: Would you like to make any comments or suggestions regarding the hospital meal service?



Thank you for completing this study.



MATERIAL REDACTED AT REQUEST OF UNIVERSITY

Appendix 6.13: Final questionnaire of Phase II

**University
of Surrey**

Guildford
Surrey GU2 5XH, UK
Telephone
+44 (0)1483 300800
Facsimile
+44 (0)1483 300803

**School of
Management
Studies for
the Service
Sector**

STRICTLY CONFIDENTIAL

February 2000

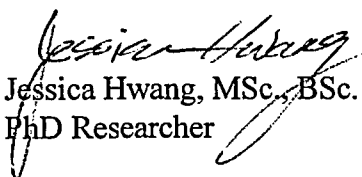
Dear participant:

I am conducting postgraduate research on the topic "the quality improvement of catering operations in NHS acute hospitals" in the School of Management Studies for the Service Sector at the University of Surrey. This survey deals with your opinions of hospital meal service. Please complete the questionnaire by marking a **X** against the most appropriate answer. Question 5 allows you to include any comments you wish to make about the catering system in general. Please turn over this page to start with section one. I hope that this will only take a few minutes of your time.

The answers you provide are **Confidential** and will only used for the purpose of this research, and the results will be counted anonymously for each respondent. For confirmation of my student status, feel free to contact Dr T. Desombre, a Senior Lecturer in Healthcare Management at School of Management Studies for the Service Sector in University of Surrey on 01483-876367.

Thank you for participating in this survey. If you have any queries about my research in general or the questionnaire specifically, please do not hesitate to contact me. I will be around to collect the questionnaire after you have finished, or alternatively, you may send it to me (preferably by the following week) in the Freepost envelope I will provide.

Yours faithfully,


Jessica Hwang, MSc., BSc. (Hons)
PhD Researcher



MEAL SERVICE PERSONNEL QUESTIONNAIRE

Instructions: Please mark an **X** in the box next to the number you feel best represents your opinion of meal service (for example, 3). There is no right or wrong answer.

Question 1: How often do the following mealtime tasks form part of your daily routine (on a scale of 1-7)?

Scale -	Never								Always
<i>Q1 (a)</i> Giving menu cards to patients,	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>		
<i>Q1 (b)</i> Assisting with patients' menu choices,	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>		
<i>Q1 (c)</i> Collecting and returning menu orders to the kitchen,	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>		
<i>Q1 (d)</i> Supervising the meal trolley,	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>		
<i>Q1 (e)</i> Serving food from the meal trolley,	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>		
<i>Q1 (f)</i> Checking patients' "well-being" at meal delivery,	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>		
<i>Q1 (g)</i> Assisting with eating problems as they occur,	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>		
<i>Q1 (h)</i> Collecting discarded dishes,	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>		
<i>Q1 (i)</i> Observing returned meal trays,	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>		
<i>Q1 (j)</i> Helping patients with food related enquiries.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>		

Question 2 instruction:

Below is a series of statements about hospital meal service offered in NHS hospitals. Please mark an **X** to indicate to what extent you agree or disagree with these statements, ranging from completely disagreeing with the statements (1), to neither agreeing nor disagreeing (4), to completely agreeing (7).

Scale-	Completely Disagree								Completely Agree
<i>Q2 (a)</i> Observing the amount of food eaten by a patient is an important part of patient care.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>		
<i>Q2 (b)</i> Ensuring a patient eats enough of the right types of food is an important part of patient care.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>		
<i>Q2 (c)</i> I ensure the patients can reach the plates when I serve them.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>		
<i>Q2 (d)</i> An important part of my job is to help those patients with eating difficulties.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>		
<i>Q2 (e)</i> Patients show understanding and patience when we are really busy.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>		
<i>Q2 (f)</i> Patients treat me with respect.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>		
<i>Q2 (g)</i> Patients show their appreciation for individual care.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>		
<i>Q2 (h)</i> Our meal service procedures make it easy for me to provide excellent patient service.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>	7 <input type="checkbox"/>		



Scale-

Completely Disagree

Completely Agree

Q2 (i) In this hospital, patient meal service is given the same importance as most other procedures. 1 2 3 4 5 6 7

Q2 (j) Delivering meal trays to patients is one of the most important responsibilities of my job. 1 2 3 4 5 6 7

Q2 (k) I was trained to give good service to patients at meal times. 1 2 3 4 5 6 7

Q2 (l) I will notice if a patient misses the regular meal service and make sure alternative food is provided. 1 2 3 4 5 6 7

Q2 (m) I ensure patients get the meal that they ordered. 1 2 3 4 5 6 7

Q2 (n) I am polite and pleasant when delivering meal trays to patients, even if they are grouchy. 1 2 3 4 5 6 7

Q2 (o) I will not collect the food trays without the patient's permission. 1 2 3 4 5 6 7

Q2 (p) I do not enjoy delivering meal trays to patients. 1 2 3 4 5 6 7

Question 3: Please indicate the levels of responsibility you believe each of the following staff should have for mealtime care on a scale of 1- 7?

Not responsible at all

Totally responsible

Q3 (a) Doctors 1 2 3 4 5 6 7

Q3 (b) Nurses 1 2 3 4 5 6 7

Q3 (c) Catering Staff 1 2 3 4 5 6 7

Q3 (d) Domestic Staff 1 2 3 4 5 6 7

Q3 (e) Kitchen Staff 1 2 3 4 5 6 7

Q3 (f) Dietitians 1 2 3 4 5 6 7

Question 4: Your Background Information

Q4 (a) Gender- Male , Female .

Q4 (b) Your age- Under 25 , 25-34 , 35-44 , 45-54 , 55 and over

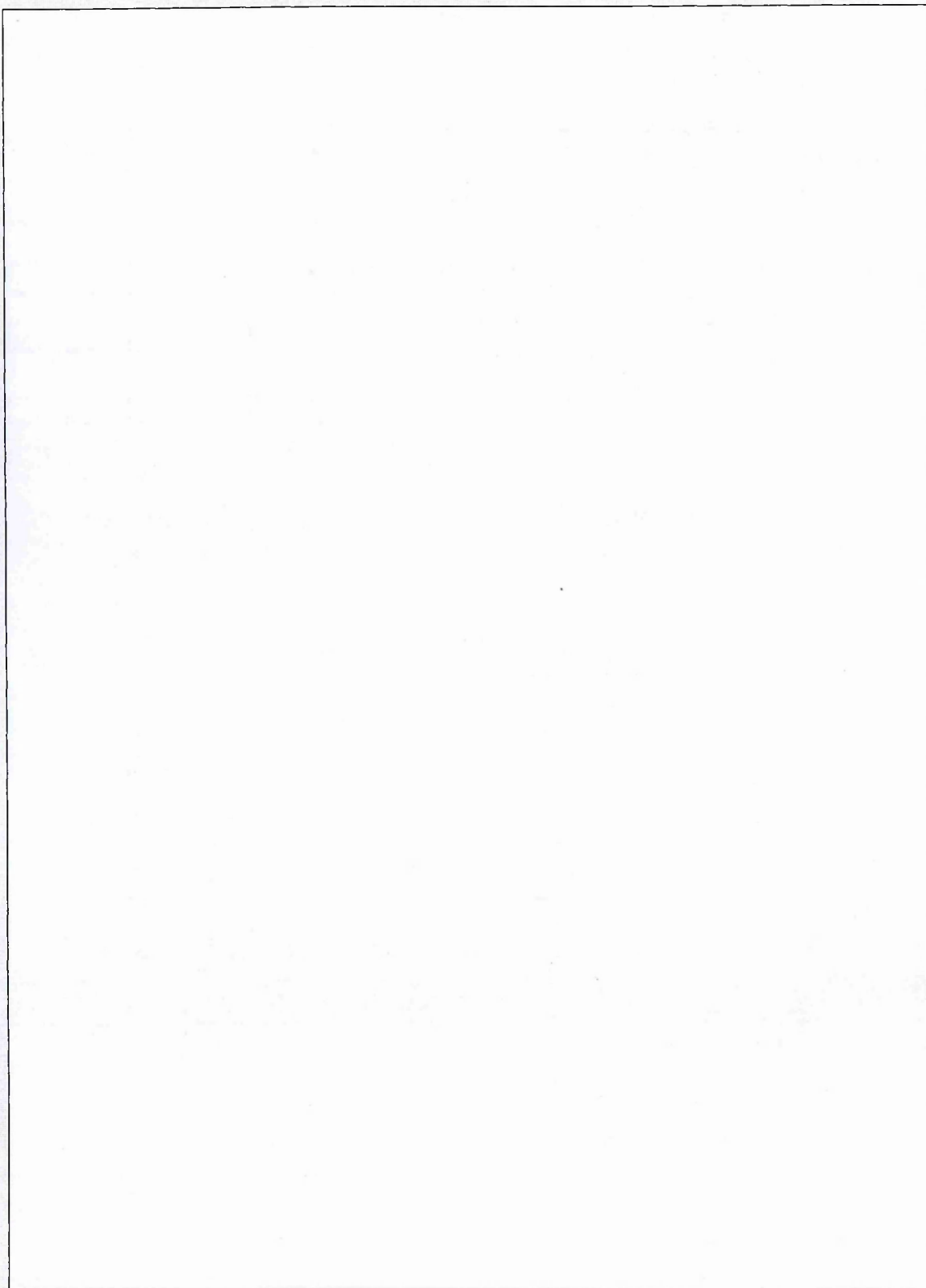
Q4 (c) Job Title-

Q4 (d) Years of experience involving meal tray delivery-

Please turn over the page.



Q5 Question 5: Would you like to make any comments or suggestions regarding the hospital meal service?



**Thank you very much for completing this questionnaire.
Please return it to me as soon as possible.**



Appendix 6.14: Initial interview protocol

Preamble:

After collecting the patients' perception towards the meal services, I found it would be helpful to sit down and talk with you. My main objective is to get some background information on how your catering outfit operates here at Mayday. Because I know little about this topic, your help will be greatly appreciated. Of course, your answers will be totally confidential, and not revealed to another person within this or any other organisation.

Section 1: Background of catering operation

'Could you please give me a brief history of the catering services provided to in-patients in Mayday Hospital?'

Prompts:

- How long ago was it established?
- How many people do you serve daily?
- Any more details of the catering operation here?

Section 2: Meal service routine

'I am aware that your menu has been changed since December 1998. Can you please briefly describe the current daily meal service routine?'

Prompts:

- Can you briefly describe the overall meal service process?
- How many days are meals ordered in advance?
- Which personnel deliver the meals? Nurses, porters, domestic staff, or special catering assistant?
- What method is used for food preparation?
- What method is used for meal delivery?

Section 3: Quality assurance

'Do you have any procedures set up to handle patients' feedback on catering services? If so, what?'

Prompts:

- Are comment cards given out?
- Is there a procedure for dealing with complaints?

Do you have any other comments?
Thank you very much for your time.

Appendix 6.15: Final interview protocol

Preamble:

Good afternoon, how are you today? (Opening the conversation)

After investigating the patients' perception towards meal service, I have found that it would be helpful to sit down and talk with you. I am looking for information on the history of the catering operation, the meal service routine, and your quality assurance measures. As the hospital catering field is not well understood, your help will be greatly appreciated. Of course, your answers will be totally confidential, and not revealed to another person within this or any other organisation.

Would you mind if I tape the interview? (Turn on the tape recorder)

Q1-' Could you please give me a brief history of the catering services provided to in-patients at this Hospital?'

Prompts:

- How long ago was it established? What was it before this contract?
- How many people do you serve daily?

Q2-' Could you please briefly describe the routine of current daily hospital meal service?'

Prompts:

Regarding the food preparation method,

- What method is used for food preparation? (Batch cooking, cook-chilled, cook-freeze)
- What system of food service to patients is used? (Bulk service, plated service)
- What do you think of this arrangement?
- What do you think is the average percentage of food wastage at the ward level? What are the main sources of food being wasted? Has there been any action taken on this? If so, what?

Regarding the menu ordering system,

- How many days are meals ordered in advance?
- How are the menu orders sent to kitchen? (By individual menu card? Or telephone to kitchen based on total meal requirements of the ward?)
- How effective do you think this arrangement is?
- What happens if a patient requires a meal outside of the routine serving times?
- What about new patients on the day of their arrival?

Regarding the menu design

- How long is your menu cycle?
- What are your considerations when designing a menu?
- What do you think about the nutritional guidelines for hospital catering? How about 'The National Food Guide'?

- What different menus do you have for special patient groups? (Orthopaedic patients, elderly patients, or ethnic groups)

Regarding the meal service personnel-

- Who delivers the meals to the ward? (Nurses, porters, domestic staff, or special catering assistants?)
- Who serves the meals to patients? (Nurses, porters, domestic staff, or special catering assistants?)
- Which department do they belong to? Is there any training support provided?
- What kinds of departmental conflicts have happened here?

Q 3- 'How do you handle patients' feedback regarding catering services?

Prompts:

- Is there an audit carried out by you or by another department? If so, what feedback have you received?
- Are comment cards given out?
- Is there a procedure set out for dealing with complaints?
- What frequent complaints are you aware of?

***Q 4-In your opinion, how satisfied are your patients with the current meal service?
How do you discover this?***

Prompts:

- On what evidence do you base this opinion? (through audits, comments, feedback from the wards, or patient contact)

Q 5 -What do you believe is the role of the following hospital staff in mealtime care?

For Nurses?

For Catering staff?

For Domestic staff?

For Kitchen staff?

For Dieticians?

For Doctor?

Q 6- For the purpose of analysis, may I ask how many years of experience that you have involving hospital catering?

Q 7- Last but not least. What would you like to see happen in the future to improve hospital catering?

Any other comments?

Thank you very much for your time.

Appendix 7.1: Mean differences by length of stay

	1-3 (n=76)		4-7 (n=203)		8-10 (n=120)		11-14 (n=73)		>14 (n=136)		Statistic test		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	F ratio	Chi-square	Sig.
Regularity of finishing the food	4.224	2.290	4.379	2.113	4.142	2.276	3.740	2.267	4.110	2.237	1.182		0.318
Appetite	4.000	1.855	4.148	1.760	3.967	1.892	3.932	1.828	4.125	1.990	0.337		0.853
Convenience of timing of meal served	5.132	1.660	5.384	1.659	5.217	1.691	5.507	1.573	5.324	1.664	0.671		0.612
Satisfaction of meal served	4.763	1.889	5.089	1.645	4.842	1.983	4.973	1.683	4.971	1.850		1.475	0.831
F1-Food properties	-0.137	1.018	0.050	0.988	-0.066	1.054	0.033	0.931	0.036	1.000	0.678		0.607
F2- Interpersonal services	-0.090	0.895	-0.042	1.076	0.047	0.790	-0.063	1.120	0.105	1.041	0.750		0.558
F3-Environmental presentation	0.224	0.879	-0.091	0.991	0.106	1.047	0.076	0.920	-0.120	1.058	2.322		0.056

Note:

Measured on seven-point scale.

The result of one-way ANOVA and Kruskal-Wallis test

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$ (at 2 tailed).

Appendix 7.2: Mean differences by types of diets

	Normal diet (n=496)		Other special diet (n=113)		Levene's test for equality of variances				
	Mean	SD	Mean	SD	F ratio	Sig.	t	df	Sig.
Regularity of finishing the food	4.127	2.205	4.416	2.263	0.421	0.517	-1.251	607	0.211
Appetite	4.052	1.781	4.124	2.159	13.085	0.000	-0.327	148,609	0.744
Convenience of timing of meal served	5.331	1.624	5.274	1.784	1.281	0.258	0.326	607	0.744
Satisfaction of meal served	4.938	1.770	5.062	1.901	2.607	0.107	-0.665	607	0.506
F1-Food properties	-0.003	0.995	0.012	1.028	0.480	0.489	-0.145	607	0.885
F2- Interpersonal services	0.004	1.010	-0.018	0.958	0.001	0.971	0.206	607	0.837
F3-Environmental persentation	0.037	0.992	-0.161	1.025	0.186	0.666	1.896	607	0.058

Note:

Measured on seven-point scale.

The result of independent t-test.

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$ (at 2 tailed).

Appendix 7.3: Q66:patients' comments regarding the meals and services		
Series#	Comments	Type
1002	Nurse staff have limited time for caring the patients in health and food. They have to care patients. It is difficult to do so.	4
1003	Nurse should do only nursing duty and overseeing the meals giving the right food to right patients. The cook should cook and serve the food together. They should be a team together between them.	n/a
1006	Service is normally pretty good as well as the meals.	1+3
1007	Well everyone has a different taste. To me, the food never taste nice, but eatable when you cannot get anything else.	2
1010	I find the meals adequate and the staff are quite helpful. Notwithstand, financear restruictions the catering is quite satisfactory.	1+3
1011	We get excellent service.	3
1013	Would be more salads, not spices and reasonably heated.	2
1015	very good and helpful service.	3
1022	The food leaves a lot to be desired!!	2
1027	Meal service is quite good.	3
1030	I am very satisfied with all meals that we served up at this hopsital, presentation, good meals, very tasty.	1
1031	The NHS does it best and 9 respect and admire it. Food is one problem amongs many and is handled ok at Wycombe.	1
1033	More choice, not everthing served with sauces/ pickles and decent portions.	2+6
1034	menu is sometimes altered after you've chosen.	2
1036	Very good. No complaints though would like more fresh vegetables. Plastic cutlery could be a little more robust.	1
1038	The standard of the meals and the service have been very good !	1+3
1039	Food great. Staff very pleasant and helpful.	1+3
1042	On average, standard of meals received have been adequate, you can't come to hospital for exciting food, but mainly to set well. If it is good, it is a bonus.	1
1044	Have only been a patient for 24 hours- have not have a main meal yet, but breakfast and tea was good.	1
1050	On a completely fat free diet there is nothing appetising! It is the some for people on gluten-free, etc. They offer no substitute! I have had all my food brought in from home.	2
1051	No idea about above diet. Salads seems to be the alternative which is no good. Gluten-free bread and cakes would be nice not yoghurt in its place.	2
1053	a little more of special foods and less bread.	2
1054	A little better than last year. Why no fresh in season vegetables?	1
1058	We do not expect 5 star menue's, but it can be made a whole lot better.	2
1065	Unfortunately the food here is poor quality- often cold + unappetising. Pity. It can't be better.	2
1066	The nursing staff do their very best to please all patients, but are limited is food provided + number od staff on duty.	2+3
1069	Food cold usually.	2
1070	I don't agree with all food come on tray as same time.	2
1072	Only if the meal could be served on hot plate.	2
1074	It is difficult to comment from a hospital bed. The food is hospital average + staff good.	3
1075	Whatever was on my plate today cooked like cat sick. So I seemed to have lost my appetite. (my mum bought me a kabab!)	2

1076	no complaints.	1
1078	Satisfactory and sufficient	1+5
1081	From & regular patient. Take it or leave good food spoilt. It attitude.	1
1082	Overall satisfied with meals and staff attentiveness.	1+3
1084	no complaints.	1+3
1085	not enough salads.	2
1088	no taste, I can't even eat it. Don't feel hungry. Years ago, traditional food is better. Timing between B & L is to closed.	2
1089	Service was good although meals could be improved greatly.	2+3
1090	I would prefer meals made at the premises & not brought in by caterers.	2
1092	Dirty utensils to eat with.	4
1093	consider the waste of time and NHS money.	n/a
1095	Sometimes on the menu do not come on the ward. Insufficient amounts of some items (breakfast fruit) are sent to cover orders.	2+6
1096	generally poor.	2
1097	would appreciate more than one portion of vegetables.	6
1099	I like it.	1
1103	Much better food and well cooked than before.	1
1104	Nurses are friendly + polite. They do what they can to help you !	3
1106	would like toast for breakfast.	2
1112	I would like fresh herbs for nutrition & colour (or dried herbs). I would like garlic added to meals for taste + more fresh fruits and salads.	2
1118	The health department advised us to have a healthy diet for cornary safeguards. The suppliers od NHS food rely upon can and packet foods, very poor for health.	2
1124	Pleasantly surprised in the quality of food at Wycombe. Compared to other NHS hospitals, taste is the big improvement. Room for improvement still on the temperature od the meals still too cool!!! (remember a patient cnot always eat immediately. It is served so timing is so important.	1
1137	Personaly I would have enjoyed larger portions and possibly a hot breakfast.	2
1138	I have been happily surprised at the quality and presentation of meals.	1
1141	Too salty. Lack of freshness to vegetables. Overcooked vegetables.	2
1142	I feel the catering contractors couldn't care less some of the meals offered to patients is a disgrace.	2
1146	High Wycombe hospital: meals are of a high standard: well presented, hot and tasty. Staff are always polite and helpful. Unfortunately, meals taken on the ward measn that is not a particularly condusive eating enviornment. Also social opportunities are limited.	1+3+6
1150	could be better.	2
1151	When one is ill, it is important to be able to look forward to mealtimes. I have enjoyed the variety served food.	1
2001	I think that I am just too picky!!	2
2005	everything ok. Mealwise, other disrupted patient not very helpful.	1+6
2008	I find the selection and presentation of food very good considering the number of patients to be fed.	1
2010	I think they do their best with limited funds.	1
2012	Food should be liquidised for elderly without teeth causes problem for some.	2
2014	For a short stay, I think the food is a less important factor. However, the quality of food/service, I find completely ok and consequently have cooked forward to meal times.	1+3
2017	Light diet cold soup with warm ice cream- different...	2
2019	I'm a bit finitty with food, but the choice is so good there is a choice for everyone, it and the staff etc. are excellent.	1+3

2022	Overall, I have been very impressed by the quality of variety of food on offer. In addition the staff have been pleasant & helpful.	1+3
2024	Catering is a hard task. Cater can never be 100 % to everyone here at St. Richards. They set a high standard of choice/ quality service.	1+3
2026	excellent	1
2027	I can find no fault whatever (excellent)	1
2029	very good with food + Attendance	1+3
2030	very good service + choice under the surcumstances. Very satisfied.	1+3
2031	all very good.	1+3
2034	It would be better if such things as Jelly and ice cream where not brought up in the hote cabines.	2
2035	very good..	1
2038	Food here is pretty food, but it has been realistic, right hot, service quickly are most considered.	1+3
2040	what they given is good.	1
2041	The seasonality is not very good (only salt and peper).	2
2044	very good indeed.	1
2048	Service & qualtiy very good considering.	1+3
2049	Food is better than expected (Frist time stay in hosp.)	1
2052	I dislike the bland tastelessness and old fashioned receiples. Normal people don't eat falvourless stews and mash- I would like to see more pasta, jacket potatoes, curried, and pizza. The shodgy puddings are out-dated too.	2
2053	quite satisfied.	1
2054	I don't have a good appetite anyway. But I rearely find anything I really like on menu, so often have to go hungry.	2
2059	My frist time in hospital for 30 years and I was extremely pleased with the standard of food.	1
2062	Good. They are very kind.	1+3
2076	Too ill to appreciate- apprtite poor.	n/a
2077	Meals are uninspiring and mainly aimed at the older generation. Greater variety of tastes on the menu, e.g. pasta, bolognese, and more vegetarian options. Some days there are no choices for vegetarian with nut allergy!! Nut roast.	2
2078	I was very grateful to have all meals provided.	1
2080	I am quite satisfied with services. I did not eat the food if it is not liquid enough smooth.	2+3
2081	pleasently surprised quality and quantity of meals.	1+5
2086	As a vegetarian, I have had very limited choice. Food is often cold/tepid or late.	2
2088	I am very pleased with the food and the service that I am receiving.	1+3
2090	Service, presentation and quality of food have been good.	1+3
2091	Larger serving of side orders, ie. Potatos.	6
2092	This is very boring you answer the question three times. Howels can they be answered.	n/a
2094	sometimes very nice.	1
2097	Bigger portions better choices.	2+6
2101	Re q 62 in wards where 70% of patients are bed 'tied' social eating is virtually non-existent surely?	6
2104	Soup should be hotter.	2
2105	I am happily satisfied with the service but not so much with meals.	2+3
2106	My frist stay in an NHS hospital favourably impressed.	1

2107	I am delighted with the food & also the service. My only criticism- helpings are sometimes too big. Small appetites should be provided for. The size of food should have more detail on below.	1+3+6
2109	Food never very hot.	2
2110	So far so good only here 3 days.	1
2112	Range of choice becomes monotonous after 5 weeks.	2
2114	The menu is very well presented. No complaint.	1
2116	very good.	1
2117	excellent service	3
2118	overall very good- for those able would be nice to sit at table.	1+6
2119	It is very excellent service, the staff is good to me. They are very polite. NHS service is excellent.	3
2121	I think that the amount of food you have to serve is very good and most of the time very well presented and the staff very helpful.	3+5
2126	Satisfied.	1
2128	Some names on menus should be described on reverse of menu as use to be, to know what you may be eating.	2
2130	Hospital needs toaster towards patients dietary needs as meals available are quite restrictive. E.g. low or high fat dietary needs. Light diet etc. not enough choices.	2
2134	Even if "small portion" ticked, quite often it is too large for an invalid & a lesser amount would be more tempting.	6
2138	Many patients would like toast at breakfast.	2
2139	extremely good service they provided.	3
2144	too much food.	6
2145	The food here has always been up to standard, and very well presented.	1
2146	Why I had to wait 37 hours for any food due to operation?	2
2148	Food generally very good.	1
2151	I have been pleasantly surprised with the whole meal service and have enjoyed it all.	1+3
2153	Food is as good as can be expected in circumstand.	1
3005	no, actually the meals are very palatable.	1
3006	Quite good, but sometimes a trifle stodgy.	1
3007	Generally very good indeed, but have sometimes been served a little too much when I have requested small portions.	6
3008	I am happy with the food I receive.	1
3012	The quality of food is inconsistency.	2
3013	People serve the food should seat beside me to experience the food.	2
3014	most meals are under cooked cold.	2
3015	meals generally satisfactory but occasionally vegetables aren't cooked and pastry undercooked.	1
3017	Due to the limited budget per person for meal etc., the best is being done.	1
3018	Do their best under circumstances and financial restrictions.	1
3020	Soup and meals very seldom HOT. Food tastes reheated. Ordered a salad with sandwiches/ not received & crossed out on order.	2
3024	very good.	1
3025	These answers are relevant at the moment only.	n/a
3031	Extremely good.	1
3033	My menus requires that I receive barreerhursind in a side room, so the questions are not really appropriate to me. I have answered as I think should were I a regular patient.	n/a
3035	late evenings are a gap.	2

3037	Varies so much from excellent to very poor, I would prefer reasonable food all the time.	2
3039	No complaints bearing in and bulk catering.	n/a
3042	I think the food is very good and I enjoy eating it.	1
3043	The meals in this hospital are not too bad.	1
3045	Salads should be fresher and fat taken of meal & cooked properly.	2
3046	It would be nice for individual dishes for people have a acid stomach problem. If the food is not too spice or salt in food it would be all right. It would be help to give some option for people cannot digest properly.	2
3047	Very very good, they've all been very helpful.	1+3
3049	did not like way they boiled the suds.	2
3050	The above comment might be different if my stay had been longer.	n/a
3051	none at all. They are very good.	3
3053	very good.	1
3055	very good- too much sometimes.	1+6
3061	I seem to have not mostly one naturally expects good all round service. One does not require surroundings other than bed!!	3
3063	My answer to q1 was due to my stomach not the food.	n/a
3067	Considering the number of meals provided throughout the day, and the allowances the catering staff receive for each meals, this hospital does remarkably well.	1
3068	quite happy. The thing would be better, but there's a lot of people to eat.	1
3070	questions are rather ambiguous.	n/a
3074	Staff all most helpful and I have no complaints.	3
3077	No specific policy /menu for vegetarians- presentation, even the quality + colour of crackerly hav important impact.	2
3079	Lovely good, but spoilt by under cooking (pots). Vegs cooked too much, espically cabbage & other greens. Pastry & grumbles horribles, but all sponges excellent.	2
3083	I think they do very well. Considering the vastness of the hospital and having to please people of many nationalities, young & old, rich & poor!	1
3084	For myself I was impressed and was satisfied.	1
3098	Considering all the difficulties fo providing meals in an 'institution'. I have been very satisfied with the meals I received.	1
3100	Extremely good.	1
3101	Food was quite palatable if a little greasy excellent porridge. Thank you.	1
3103	Very satisfied with the amount and menu selections.	1+5
3104	Meals should given a balanced diet.	2
3110	All meals seem to taste salty.	2
3111	As far as I am concerned everything I have been involved in has been excellent.	1
3112	It is eatable & perhaps all right for bulk cooking, but for the individual leaves a lot to be desired.	2
3115	Very poor choices and knowledge of vegetarian foods and requirements.	2
3116	Meals and service has been very good.	1+3
3117	Cannot fault food or service in any way.	1+3
3118	Meals could be more interesting and more colourful, even though they are tasty and nutritious. Well done Conquest hospital.	1
3119	I am vegetarian and always find it difficult, not only in hospital but hotels.	2
3122	very good.	1
3125	The meals were often too large for me.	6
3126	Excellent in this hospital in every way.	1
3128	I have no fault to find, I think the catering service is excellent in all ways.	1+3

3134	very good.	1
3138	The dietary care at the Conquest hospital is the same as far as I can see- as the phylosophy of care to highest standard. Many thinks.	1
3140	bearing in mind the sign of the job it is done very well.	1
3144	To much food.	6
3147	Meals and service are excellent.	1
3148	During my stay the food was unsatisfactory.	2
3150	very good.	1
3152	very good.	1
3153	It is a long time between evening meal and breakfast.	2
3154	Many thinks for the service provided . The human element is warming.	3
3159	Everything satisfactory. So much kindness.	1+3
3160	Overall sataff (service) are really good. As this ward is for elderly medical their patience & caring attitude is lovely.	3
4003	Food here is ok. Staff are very good.	1+3
4010	Far to much salt in meals.	2
4015	I have enjoyed my meals here, and found them adequate for my needs while a patient here.	1
4020	More of selection.	2
4022	Excellent.	1
4024	It all depends on how you are at the time.	n/a
4026	There is always room for improvement. However, the standard of food available & its quality of presentation in hospital surrounds is good. Hot food is always served hot. Variety good.	1
4033	Generally speaking the food is palatbale, eatable. Supper is too early. No complaints.	1
4035	The staff is brillant whatever you ask you get.	3
4036	Staff were helpful at the first time when I had not ordered anything. Were prepared to give me anything form menu.	3
4037	Very good in what the staff service. Great. Excellent.	1+3
4048	Taste could be improved.	2
4050	The food appears to be hotter now then when I was in hospital 2 year ago.	1
4051	no complaints.	1
4055	Food is excellent. Very very good soups.	1
4060	Sandwiches dry and uninteresting could be improved with adding salad to them. On a whole the menu is varied and the food is always served piping hot.	2
4062	I have found the food in this hospital to a very high standard.	1
4063	nutirtional information incorrect sometimes, eg. Food supposed to be high protein...	2
4066	chill out.	n/a
4072	meals for me were not very tasty. Service-good!	2+3
4079	Because the kitchen is a long distance, hot meals were slightly overcooked, but overall food and choice of menu are good.	1
4081	Overall very satisfied with everything.	1
4088	With budget constraints, they managed quite well. Everyone is happy. They try the best to provide what they can.	1
4091	No food available on the evening of admission- on the second evening only a plain, rather dry ham sandwiches was available.	2

4092	Staff attitude was excellent and so was the provision of special diet. Menu is rather old-fashioned and stodgy- move fresh and healthy foods need to be provided, for example, yoghurt. My impression is that the kitchen at this hospital does well on a very limited budget. Nursing staff were very helpful. I think the hospital ought to encourage a healthier attitude to diet instead it is rather old-fashioned.	1+3
4093	Overall, I am impressed the quality, better than! Expected wrrrently have gastroenteristis therefore a poor appetite.	1
4094	Very impressed, they shoulde offer buttered toast in between meals. Thank you.	1
4097	The meals have been very good!	1
4099	Small portion should be really small. Possibly little more imagenation beeded in variety + presentation - otherwise, fairly good for a hospital of this size + complexity.	6
4100	Food is kept warm for a lengthy period before it is eaten, therefore it is not so appetising.	2
4103	very good.	1
4109	They were fine for a 'strapped' service.	1
4115	Menu not always available on time to be sent down in time for us to receive what we have ordered. Pureed or soft diet not always paid attention to soft regular diet is sent up this. I have notice a number of time when being here and upset the patient.	2
4118	Food poor- need to tempt appetite.	2
4119	People are really helpful.	3
4121	The meals are nicely presented, very tasty generally and extremely food quality for a hospital.	1
4136	Soups are made from packets and cauliflower cheese.	2
4137	only second day taking meals.	n/a
4139	Given their budget- the NHS was very well. I have seen an improvement over the last 10 years.	1

	Type of comments	Food properties	Interpersonal service	environment
	note:			
	Positive	1	3	5
	Negatvie	2	4	6

Appendix 8.2: Mean Difference between Groups of Respondents by Gender					
Q1- mealtimes tasks as part of daily routine			Statistic Test ^b		
Items	Male (n=28)	Female (n=255)	T-test	Mann-Whitney Test	Significance (Pvalue)
MEAL SELECTION			-1.143		0.254
Give out menu card	3.86	4.42	-1.33		0.186
Assisting choices	3.89	4.64	-2.09		0.037 *
Collect and return menu to kitchen	3.07	3.62		31133.50	0.281
FOOD DELIVERY			-0.23		0.815
Supervising meal trolley	4.21	4.52	-0.72		0.473
Serving food	4.07	4.76		3044.50	0.191
MEAL SUPERVISION*				2664.50	0.028 *
Checking patients	4.71	5.56		2821.50	0.058
Assist eating problems **	4.64	5.79		2441.00	0.004 **
CLEANUP/FEEDBACK			-1.02		0.308
Collect discarded dishes *	3.18	4.03	-2.07		0.040 *
Observing returned meal trays	3.96	4.43	-1.19		0.237
Food related enquires	4.50	5.09	-1.81		0.071
Q2- Attitude statements					
Items	Male (n=28)	Female (n=255)			
Observing food amount been eaten***	5.86	6.62		2328	0.000 ***
Ensuring right type of food**	5.96	6.52	-3.01		0.003 **
Able to reach plate **	6.04	6.84		2756	0.001 **
Help eating difficulties	6.00	6.46		31.65	0.212
Understanding when busy	4.11	4.02	0.27		0.787
Treat me with respect	4.29	4.64	-1.15		0.251
Show appreciation	4.93	5.00	-0.24		0.812
Easy to give excellent service	4.07	4.13	-0.18		0.861
Same importance procedure	4.04	4.53	-1.46		0.146
Delivering meal trays	3.04	3.69	-1.83		0.068
Trained for service *	3.36	4.25	-2.15		0.032
Missing the meal	5.43	5.93	-1.88		0.061
Ensure as ordered	5.57	5.71	-0.54		0.591
Polite and pleasant	6.14	6.27	-0.59		0.554
Not collect without permission	5.71	5.82	-0.33		0.739
Not enjoy delivering meals	3.57	3.36	0.52		0.606
q3: the levels of responsibility for mealtime care					
Items	Male (n=28)	Female (n=255)			
Doctors	2.50	2.13	1.04		0.300
Nurses **	5.43	6.04	-2.11		0.036 *
Catering assistants	5.96	5.62	0.94		0.350
Domestic staff	4.57	4.73	-0.39		0.697
Kitchen staff	5.79	5.16		3039	0.179
Dietitians	5.86	5.65	0.61		0.545
note:					
Measured on seven-point scales					
* P<0.05, ** P<0.01, *** P<0.001					
^b Scores obtained by Independent sample t-test, but if the level of homogeneity of variances is significant, the scores then obtained by Mann-Whitney test.					

Appendix 8.3 : Mean Difference between Groups of Respondents by Age									
Q1- mealtimes tasks as part of daily routine									
Items	<25 (n=51)	25-34 (n=82)	35-44 (n=75)	45-54 (n=57)	>55 (n=17)	Statistic Test ^a		Significance (P value)	
						F Ratio	Chi-Square		
M EAL S ELECTION**						3.786			0.005 **
Give out menu card	4.73	4.06	4.00	4.74	5.18	2.377			0.052
Assisting choices	4.96	4.46	4.25	4.63	5.12	1.671			0.157
Collect and return menu to kitchen *	3.57	3.45	3.09	3.91	5.00	3.237			0.013 *
FOOD DELIVERY						1.377			0.242
Supervising meal trolley	4.53	4.62	4.53	4.40	3.82	0.53			0.714
Serving food	4.84	4.82	4.64	4.61	4.24	0.332			0.856
M EAL S UPERVISION							1.193		0.879
Checking patients	5.45	5.46	5.53	5.61	4.94	0.548			0.701
Assist eating problems	5.53	5.72	5.67	5.74	5.82	0.179			0.949
CLEANUP/FEEDBACK						0.54			0.707
Collect discarded dishes	4.02	3.89	3.89	4.07	3.94	0.091			0.985
Observing returned meal trays	4.59	4.34	4.21	4.58	4.06	0.541			0.706
Food related enquires	5.06	4.90	4.76	5.54	5.24	2.104			0.081
Q2- Attitude statements									
Items	<25 (n=51)	25-34 (n=82)	35-44 (n=75)	45-54 (n=57)	>55 (n=17)				
Observing food amount been eaten **	6.22	6.50	6.67	6.65	6.94		15.31		0.004
Ensuring right type of food **	6.08	6.48	6.55	6.58	7.00		19.58		0.001
Able to reach plate	6.47	6.74	6.91	6.79	6.94		9.15		0.057
Help eating difficulties	6.25	6.44	6.49	6.33	6.71		0.66		0.617
Understanding when busy	3.90	4.21	3.67	4.21	4.47		1.62		0.170
Treat me with respect	4.41	4.60	4.47	4.68	5.53		8.91		0.063
Show appreciation	4.80	5.10	4.77	5.23	5.24		1.30		0.269
Easy to give excellent service	4.14	4.24	3.77	4.21	4.71		1.51		0.201
Same importance procedure *	4.39	4.46	4.09	4.89	5.18		2.66		0.033
Delivering meal trays	3.39	3.41	3.59	4.02	4.29		1.78		0.132
Trained for service **	3.55	3.88	4.40	4.39	5.65		4.12		0.003
Missing the meal	5.61	5.82	5.97	5.89	6.59		9.28		0.054
Ensure as ordered	5.76	5.70	5.63	5.65	6.00		0.32		0.864
Polite and pleasant	6.16	6.32	6.32	6.23	6.12		0.31		0.870
Not collect without permission	5.76	5.87	5.81	5.86	5.47		0.24		0.915
Not enjoy delivering meals	2.94	3.54	3.51	3.56	2.94				
Q3: the levels of responsibility for mealtime care									
Items	<25 (n=51)	25-34 (n=82)	35-44 (n=75)	45-54 (n=57)	>55 (n=17)				
Doctors	2.33	2.30	2.13	1.86	2.00		0.71		0.585
Nurses	5.75	6.07	5.91	5.91	6.71		6.58		0.160
Catering assistants	5.33	5.66	5.87	5.68	5.53		0.65		0.628
Domestic staff	4.47	4.76	4.92	4.70	4.29		0.56		0.691
Kitchen staff	5.47	5.30	5.20	4.93	5.12		0.50		0.739
Dietitians *	5.69	5.29	5.75	6.18	5.35		10.44		0.034 *
note:									
Measured on seven-point scales									
* P<0.05, ** P<0.01, *** P<0.001									

* Scores obtained by One way ANOVA, but if the level of homogeneity of variances is significant, the scores then obtained by Kruskal-Wallis test.

Appendix 8.4 : Mean Difference between Groups of Respondents based on types of catering system

Items	Q1- mealtimes tasks as part of daily routine		Statistic Test ^b		Significance (Pvalue)
	In-house (n=171)	Contracted-out (n=112)	T-test	Mann-Whitney Test	
MEAL SELECTION					
Give out menu card	4.23	4.57		8708.00	0.346
Assisting choices	4.51	4.65		9030.50	0.189
Collect and return menu to kitchen	3.46	3.73		9029.00	0.409
FOOD DELIVERY					
Supervising meal trolley	4.44	4.55	-0.42	8736.00	0.212
Serving food	4.76	4.60	0.60		0.673
MEAL SUPERVISION**					
Checking patients	5.60	5.28	2.96		0.546
Assist eating problems	5.72	5.61		8944.00	0.003**
CLEANUP/FEEDBACK***					
Collect discarded dishes ***	3.20	5.08	-8.61	9183.50	0.000***
Observing returned meal trays ***	3.88	5.14	-5.55		0.540
Food related enquires *	4.87	5.29	-2.08		0.000***
Q2- Attitude statements					
Items	In-house (n=171)	Contracted-out (n=112)			
Observing food amount been eaten	6.54	6.55	-0.09		0.928
Ensuring right type of food	6.42	6.54	-1.00		0.318
Able to reach plate *	6.87	6.59		8582.50	0.011*
Help eating difficulties	6.37	6.48	-0.76		0.447
Understanding when busy *	4.2	3.76	2.15		0.032*
Treat me with respect	4.75	4.37		8340.50	0.081
Show appreciation *	5.15	4.74		8040.50	0.021*
Easy to give excellent service	4.17	4.05	0.57		0.567
Same importance procedure	4.59	4.3		8763.00	0.220
Delivering meal trays	3.63	3.62		9358.50	0.743
Trained for service *	4.38	3.84	2.12		0.035*
Missing the meal	5.85	5.92	-0.40		0.688
Ensure as ordered	5.58	5.88	-1.81		0.072
Polite and pleasant	6.21	6.33	-0.91		0.363
Not collect without permission	5.78	5.85	-0.33		0.738
Not enjoy delivering meals *	3.62	3.02	2.44		0.015*
q3: the levels of responsibility for mealtimes care					
Items	In-house (n=171)	Contracted-out (n=112)			
Doctors	2.15	2.20	-0.205		0.837
Nurses	6.01	5.92		9336	0.698
Catering assistants ***	5.37	6.09		7374.5	0.000***
Domestic staff	4.78	4.61		9497	0.905
Kitchen staff *	4.99	5.58	-2.342		0.020*
Dietitians	5.58	5.80	-1.062		0.289
note:					
Measured on seven-point scales					
* P<0.05, ** P<0.01, *** P<0.001					

^b Scores obtained by independent sample t-test, but if the level of homogeneity of variances is significant, the scores then obtained by Mann-Whitney test.

Appendix 8.6: Staff comment on meal services			
	initial#	wards	comments
101	1002	s	meals on this ward frequency arrive late and patients choices often run out.
102	1011	m	Food is often spilt on the meal trays when they arrive on the ward. Sometimes special diets such as pureed do not arrive pureed when sometimes ordering an extra meal by telephone it either taken a long time to arrive and by then the patient doesn't want it and on occasion have never arrived.
103	1012	m	1) kitchen staff don't appreciate the need for specific diets regularly used on this ward for example, soft diet, textured diet, puree diet, smooth puree diet. These are all different stages of meals for stroke patients and they get very upset if for example had proceeded into a textured diet and kitchen sends up puree diet. 2) Patients don't place enough importance I feel an patients that aren't eating. Patients can often go for days are aware but don't seems to do anything quickly. 3) Liaison between nurses and dieticians have on this ward along with the SALT is very good. Patients proper is discussed and assessed by all three dis..plness to allow the patients to progress with item treatment and improve upon their diets. 4) ward domestics as some other wards collect the meal trays which means that then sometimes someone not eating much if anything can be missed as their treaty and amount eaten is not noted.
104	1013	m	Think that kitchen staff should take more care when plating up meals.
105	1026	m	Trays often have food spilled on them this should be rectified.
106	1165	m	A trained nurse needs to always supervise but auxiliary nurses are more HANDS ON feeling and delivering trays which is not clear in this Q. We have no different between catering kitchen staff. Portions on vary enormously in size, occasionally to supposed () meals can be vastly different, also for e.g. a cottage pie can be all potatoes + no meat, those serving need to think about a balance.
107	1028	m	non
108	1132	s	non
109	1039	m	non
110	1040	m	Sauces could make the meals more appealing and eatable for elder patients.
111	1163	s	non
112	1161	m	When you have to order a meal from the kitchen for patient it takes a very long to arrive or sometimes absent arrive at all.
113	1071	m	non
114	1072	m	non
115	1073	m	non
116	1074	m	non
117	1086	m	non
118	1087	m	On my present ward the only responsibility, I really have regarding patient mealtimes is to help patients who cannot feed themselves. Occasionally I collect the menu cards although this is usually the responsibility of the HCA's while the domestic staff actually give out the food trays and collect them later. I feel this system works well as it gives the nurses more times for other important tasks such as drug rounds which are usually done at meal times.
119	1088	m	non
120	1116	s	non
121	1117	s	Soup no upset all over trolley at meal time.
122	118	s	It would be nice to have more times to be involved in meal services. It always seems to be a rush.
123	1119	s	Domestics remove meal trays, making it difficult for us to assess how much is eaten, when we have other jobs and responsibilities. Lunchtimes often coincide with drug times surely on other staff to inform us of relevant problems, i.c.. not eating/ or not eating appropriately.
124	1120	s	non

125	1121	s	I the evenings and at weekends due to lack of regular domestic staff the workload of collecting trays as well as nursing duties can cause problems for the staff.
126	1122	s	1) The condition and appearance of the meal trays is a constant source of embarrassment and additional work as they delivered to the wards in very messy state. 2)Considering the pressures that ward staff (i.e. nurses) are always under-the kitchen/ menu/ catering staff are very pretty regarding the smallest irregularity on completed menus. possibly this reflects problems in the processing procedure for menu cards. 3)portions are generous. Quality is good.
127	1154	s	non
128	1106	s	non
129	1127	s	1) meals are not always appropriate for sick people. 2) not always suitable food for particular diets, i.e. soft diets. 3) no difference between small or large portions. 4) could do with a cold trolley as well as hot as very often ice cream has melted or soft. 5) not always sufficient staff to feed patients due to slow eaters, several feeders, etc. 6) domestic's collect the trays which I find inappropriate as either they collect to quick therefore not giving enough time for patient's eat or fail to report to nursing staff if patient's haven't eaten. 7) I feel there should be no visiting at mealtimes as sometimes patient's feel they cannot eat properly due to an looker or visitors talking to them.
130	1105	s	non
131	1128	s	Visitors should not be visiting at meal times. Soft meal for slow eaters and more choices. Plain meals for patients not to many spicier meals.
132	1126	s	Kitchen staff need to be more approachable as seem rude, if we request an extra meal, or if they have forgotten to put something on tray!! Like it's a real effort!! Also delivery when we ring on order up takes for too long to arrive. Sloppy trays from soups etc. when arrive on ward due to travelling, but it leaves us with a messy trays and usually the serviette is soaked, and we haven't the time to keep cleaning them all the time, bit we do!! Kitchen staff quite often forget certain items of cutlery which becomes difficult keep chasing them up , i.e. spoon for soup and dessert.
133	1137	s	Kitchen staff should be polite and easy to talk to when discussing a patients meals. This is very often not the case; otherwise the service is fine.
134	1103	s	non
135	1141	s	The kitchen staff could be more polite and understanding as most of the time they are not.
136	1104	s	non
137	1134	s	non
138	1027	m	Occasionally meals do not look appetizing. The presentation does leave something to be desired. The delivery is sometimes erratic and the soup is SLOPPED all around the trays. SOME of the meals are pleasantly presented and patients seem to enjoy the majority of meals.
139	1089	m	I think that hospital ward routine needs examining to ensure that meal times receive the correct type of emphasis, i.e. drug rounds, investigation. There should be a return to having biscuits/cake , tea, coffee time and bread available on ward. It is not unusual to have 6-8 patients that need feeding resources at times make their difficult.
140	1133	s	non
141	1136	s	non
142	1152	s	non

143	1155	s	I have been nursing for 12 years and the standard of food and menus have improved. I still disagree with housekeepers giving out meals. I always notice if someone has no food, but never manages to assess if a patient is eating well or not. This is merrily now due to staff storage rather than anything else. I always get involved is dietary advice as a lot of surgical conditions depend on charging diets- be it low fat, low residue, high fibre for instance.
144	1131	s	non
145	1033	m	non
146	1149	s	Menus have a good, varied selection for people who have a good appetite. I find it difficult to find a suitable meal for patients who have had surgery and on a light diet there is not s selection for them, the meals are spray and too large that the patients cannot eat them.
147	1150	s	non
148	1125	s	non
149	1156	s	non
150	1124	s	non
151	1148	s	I think more care should be taken when the patient asks for a small portion to see that they get just that.
152	1139	s	As domestic serve trays out as meal times, it would be nice if patients tables were clean and tidy. It is a nurses duty to know how much food a patient has eaten before trays are taken away. As a light-diet for some patients instead of salad, scrambled egg would be nice. Packets of soup would be nice for patients who has missed a meal as their is no kitchen service from 7 p.m. Some patients have to much or to little on their plates depending on age and many other factors of a patient.
153	1135	s	non
154	1138	s	non
155	1140	s	The hospital menu service probably works as with us it is able to considering the amount of money allocated per head. If a patient does not get a meal or the meal of their choice it is usually because it has not been ordered by the nursing staff, either because the eating instructions have changed or because the patient has been forgotten. In my opinion it would be useful, in this instance, if we could keep some bread rolls, cup-a-soups etc. on the ward.
156	1129	s	That the kitchen stop writing stupid notes on the menu cards and that they supply the CORRECT meals ordered with the correct cutlery; otherwise they do very well with the menus and quality of food.
157	1159	s	Sometimes the meal trolley is left too long before giving out meals due to domestic and housekeeping lack of staff.
158	1017	m	The kitchen staff need to learn more manners over the phone when we order special meals. They don't like it. Also we should have feed back from the kitchen when LARGE THINK fish bones are found in patients pureed meals, but above all the kitchen staffs RUDENESS ! The staff meals are a lot to be desired.
159	1102	s	Excellent service provided.
160	1145	s	I am quite disappointed that nursing staff do not have the TIME to feed patients properly. Patients that are unable to feed themselves quite often in my experiences don't get their food because nurses have more important jobs to do!
161	1123	s	For patients that take a long time to feed themselves would be good as it would keep the food warmer longer. Therefore, being more appetizing.
162	1130	s	non
163	1070	s	non
164	1069	s	non
165	1068	s	non
166	1058	s	non

167	1065	s	non
168	1063	s	It would be ideal to have someone to give out meals, i.e.-housekeeper. It is difficult to give out food, feed poorly patients and answer bells all at the same time. Also time giving out food when patients are seeing physios, OT's or going for X-rays or scans is difficult. There is no facility for anyone who comes in late or who needs a sandwich etc. outside normal kitchen hours or who might need just toast to squash hunger.
169	1061	s	It would be nice to have a housekeeper, especially when we are busy.
170	1057	s	I feel that we would benefit from someone being free to help with giving out meals ordering etc.
171	1060	s	non
172	1062	m	1) On very busy wards, I think that a housekeeper would be wonderful and would give auxiliary or trainee nurses more time with the patients and give them the help that they need! 2)Also people who collect trays should also give elderly wards more times to eat! 3)Kitchen staff seem to think that delivering food to wards is a race! leaving trays flooded with soup!
173	1008	s	non
174	1004	s	From a nursing part of view housekeepers deliver meals during the week, nursing staff at weekends. Sometimes trays are removed without nursing staff being able to see what has been eaten sometimes on an acute unit it is not always possible to assist patients as one might want to.
175	1003	s	I think that all members of the team should have knowledge and experiences in giving out meals etc. including the relatives.
176	1001	s	Perhaps COLD items, such as ice cream or salad, be brought up either separate or in a trolley with a COLD compartment, or an ice box.
177	1006	s	non
178	1007	s	non
179	1005	s	Generally our trayed meal system works quite well. We have problems with incorrect food coming up for the patient either in dietary needs or not what they have requested, which is what causes the main problem. Housekeepers +HCA's are responsible largely for serving + collecting menu cards, + trained nurses only tend to get involved when special dietary needs are required. Have problems sometimes getting pureed/ soft diet etc. from kitchen.
180	1168	m	It is inflexible. Small meals or large appear to all be the same. There is no food on the ward to substitute or supplement if a meal is not satisfactory or inadequate.
181	1162	m	Portions at this hospital tend to be quite small for the average person.
182	1171	m	Should be more to choose from the menus. When we ask for small meals, we should get them.
183	1166	m	non
184	1172	s	Some staff training needed for new staff reserving meals: i.e.. Cutting up food for patients who cannot manage, removing lids from food, undoing wrappers, meal plated where patients can reach them. To often trays are just given to patients without any thought- then food is not eaten as patient cannot reach it/ open it, etc. trays then collected up and removed.
185	1173	s	non
186	1174	s	non
187	1175	s	non
188	1169	s	non
189	1184	c	You are not trained to have good service to patients at mealtimes. You should be polite anyway ever to the most difficult patient, that 's how to earn your respect and trust I enjoy my work and working with patients, I like the satisfaction of being able to help, even when it is not my job to do so sometimes.
190	1188	c	I think there should be a second choice of vegetarian meal and salad.

191	1190	c	non
			Meal trolley is not always on time. Soup is always sloped over the trays. Kitchen run out of meal that have been ordered and served something else they do not phone the ward to let me know. They also so miss food that has been marked on the cards, such as potatoes or veg. If we have extra patients and phone for a meal it takes about 30 minutes before it arrives.
192	1179	c	
193	1185	c	Some of the food looks like something I wouldn't even give my dog to eat but sometimes foods is really good.
194	1178	c	non
195	1182	c	non
196	1186	c	non
201	2001	m	no comment! Meals without hair would be good!
202	2003	m	non
203	2004	m	Patient choice is often very poor, i.c.. limited selection for pureed diet.
204	2005	m	no comment
205	2006	m	I think the kitchen staff should able check prepared meals before sending it off to the wards to avoid patients eating the wrong meals, staff on the ward should do the same as well especially with cooked meals.
206	2007	m	Presentation- care should be taken with this, to encourage patients to eat and possible increase of appetite (where loss occurs). Hygiene within the kitchen at the conquest would be most appropriate, finding hairs in dinners is disgusting practicing what you preach would be an idea!?
207	2012	m	non
208	2014	m	non
209	2015	m	There should at least a nice plate presentation, to encourage patient to eat.
210	2046	m	non
211	2047	m	non
212	2056	ec	non
213	2057	ec	Better presentation of meals.
214	2060	ec	Menu choices are appalling. Food presentation could be better.
215	2061	ec	Meal trays are not covered up when serving. Food hygiene is very poor. Food preparation is without care. Food looks sometimes uneatable.
216	2062	ec	meal service is fine as for what I just observed.
217	2063	ec	non
218	2064	ec	More choice for pureed and soft mashable diet. More flexibility on the day of serving for alternative choice.
219	2065	ec	1)Presentation- food should look appetizing and very well presented. 2)special diets should look more real food rather than just a bluff of colour. 3) There should be sandwiches Variety in one setting- not single filling in a serving, i.e.. Cheese, egg, ham in a servings. 4)different type of salad- maybe 2-3 times- instead of just the conventional- lettuce, tomato, or cucumber. 5)poor hygiene. 6)i.e. cream- should be sent in s special container as they melt inside the hot trolley.
220	2066	ec	Specific people should be in charge of it. Nurses have more important things to form not beside from giving/ fishing out meal trays.
221	2068	ec	Hospital meal service is good for the members they have to cook for. As a rehab ward, we proud ourselves on the way we encourage our elderly patients to eat- substitute are always available.
222	2067	ec	non
223	2090	s	Meals should be given out by catering staff.
224	2089	s	I do not think auxiliaries should give out food because of hygiene should be catering.
225	2110	s	non
226	2111	s	1)better alternatives to be provided. 2) improve on presentation. 3) have a healthy option.

227	2112	s	getting food for patient out of set meal times is difficult, e.g. post op patients trauma admissions.
228	2114	s	The meal service is quite good. The meals only rarely look unappetising and the patients generally enjoy the food they are given.
229	2116	s	non
230	2121	s	The meal service is very good, ensuring the meals are nutritious and well presented and are served at the correct temperature.
231	2133	ec	Plates placed on top of plated should not be used as they do not reads the correct temperature. Patients who require puree should have their meals made more attractive to eat.
232	2134	ec	Sometimes we need to send the meals back as the temperature is not hot enough.
233	2135	ec	I think that the meals need to be served with garnishes. Also the temperature of the meals needs to be hotter, often we have to send the meals back to the kitchen as they are not hot enough. The appearance of the meals could be made more appetising.
234	2137	ec	They have just changed the menus again and occasionally they do not have anything suitable for puree, i.e. jacket potato, salad or sandwiches! The all menu's offered more choice!
235	2136	ec	non
236	2008	m	It would be a good idea if kitchen staff gave out the meals to the patients. As this is time consuming for staff. There appears more importance in ensuring patients set as balanced diet and checking what they are eating which is a nurse's responsibility.
237	2141	ec	On the whole the service is good, but is would not be the 1st time all meals have been sent back to the kitchen because the meals were cold.
238	2059	ec	non
239	2104	s	yes, I think we ought to keep instinct gravy granules as the ward, so that gravy can be made in a jug if required, as many of the elderly patients need extra gravy with their meals. I also think that sometimes, when patients are post go, we should be able to order a cold meal from the kitchen, to be kept in the refrigerator and re-heated in the microwave when the patient is sufficiently recovered to eat their lunch/ dinner.
240	2140	ec	non
241	2105	s	non
242	2106	s	non
243	2101	s	non
244	2009	s	The food is not always bot enough and not enough care has gone into making the food look appietising to the patient.
245	2102	s	non
246	2058	ec	On the Egertin unit, we need a better menu for soft mashable, sandwiches etc. are not appropriate.
247	2002	m	Soup too thin, salad as greenish on some meals, more hot meals, breakfast, scrambled egg, etc.
248	2100	s	non
249	2122	s	Food choices available do not suit all patient tastes. Do not always look very appetising. Difficult obtaining alternatives to menu. Ward workload does not allow trained staff to serve meals and assess how much have been eaten before trays are removed. diet intake charts helpful but not always accurate. This causes difficulty in assessing whether dietary intalke is adequate. It is not through choice that my daily routine does not involve serving meals but the workload, ward rounds, etc.
250	2117	s	non
251	2113	s	non
252	2118	s	non
253	2115	s	non

254	2034	m	Improvements have been made recently, but the food is still not as good as it could be. I am also surprised to see that meal trolleys and trays come down from the kitchen dirty. So I think that they should take more care with hygiene.
255	2092	s	Often wrong meals or no meals are sent for patients. Dietary are not well catered for and sometimes the kitchen is very inflexible regarding requests.
256	2072	ec	non
257	2070	ec	Food could be served presented better. Trays are sometimes not cleared very well-hygiene!
258	2069	ec	non
259	2010	ec	non
260	2011	m	non
261	2049	m	I feel that the meal service at this hospital is like hot and cold water in never runs the same. Constant the meals are sometimes small when they are ticked the menu large in the same size as everything. Get my drift the menu alternate rota so what they get 3 weeks ago comes round again -the only grievance I have is these on special diet , how sodien and protein or what ever special the diet is terrible they get the same as anybody else. on normal diet- which I feel doubt do there could be any good. I hope this will be ok. sorry about spelling.
262	2039	m	non
263	2041	m	non
264	2108	s	1) There should be more vegetables offered with each main meal- only one vegetable allowed at the moment with potatoes. More green vegetables would be healthier and help with in patient toward problem. 2) cold food should be completely separate from hot food. Even through ice cream is in insulated pots, it is often very soft and melting.
265	2091	s	non
266	2044	m	Although the meal trolley is supposed to be with use at certain times, due to staff shortages it is not always possible to give out meal as soon as it arrives. I also think that a light snack should be provided for supper as it is 14 hours difference between supper to breakfast.
267	2050	ec	The menu's in this hospital have recently been changed, I think for the hotter, in general they have mostly have very good.
268	2051	m	Poor. They say patients can order alternative but it does not happen. Vegetarians is not catered for, all they have is baked potatoes and cheese when it is sent down. We no have full cream milk or an acute medical ward where the majority of patients healthy eating. you have to order semi-skin milk daily.
269	2052	m	Wash cutlery properly- often dirty. More choices for special diets, I.e. diabetics. Catering staff serve food.
270	2053	m	Poor selection of different food for patient with special requirements. Quality of food, including presentation poor, method of serving, pre-plated, not appropriate.
271	2199	c	non
272	2170	c	non
273	2165	c	I think it could be improved by reintroducing a bulk service.
274	2162	c	non
275	2166	c	non
276	2174	c	Bulk service provided on all wards would provide. Patients with better service able to choose at mealtimes and have portion size more suitable catering staff to serve meals would give us greater controller over hygiene issues.
277	2171	c	non
278	2182	c	non
279	2177	c	non

280	2163	c	non
			Meal could be hotter when arriving on ward. Cutlery and trays to be a lot cleaner. Presentation of meals could be better as this sometimes depends on weather the patient is going to eat or not.
281	2127	s	
282	2027	m	non
283	2023	m	non
284	2036	m	non
			The delivery of meals is largely dealt with by our nursing auxiliaries as meals generally arrive when trained nurses are administering medications. The quality of food and service from the kitchen has improved greatly over the recent months. Food is always served promptly even when busy. (medical emergencies the exceptional). Patients' level of nutrient are always assessed on admission to the ward and supplements are given if needed. As a trained nurse, I do not always clear the trays and therefore do not always notice what patients have eaten. If I am particularly concerned about an individual patient I ensure that they are either supervised with meals if necessary, or that I liaise with the person who deaned the tray depending at the level of my concern. Despite problems with the kitchen on the whole the service is good (it has not always been this way!)
285	2017	m	
286	2013	m	non
287	2019	m	non
			Due to the constraints on the catering service ,i.e. amount of people to be catered for and limited money it is sometimes difficult to ensure patients receive a diet of their choice if they change their minds about what they wish to eat or are finicky eaters or have a limited choice of food which can not eat due to religions or medical grounds.
288	2020	m	
289	2016	m	non
		m	
			Sometimes due to busy periods on the ward it is impossible to talk around the menu the day before the meal. Catering therefore sent us a variety of meals, but it is often not enough of what patients like.
301	3007	m	
302	3008	m	non
303	3009	m	non
304	3030	s	non
			I feel not enough attention is paid to what the patients have ordered at meal times not enough food is provided.
305	3016	m	
306	3017	m	More availability of soft diet, i.e. scrambled egg or omelet all the time.
			It would be better to see more money allocated to each patient for food so that the variety, quantity and quality of food could be improved.
307	3018	m	
308	3019	m	non
309	3020	m	non
			Quite often there is not enough choice, patients will have to go for a second choice, not always what they like. On many occasion food, i.e. jelly are not set, it is very embarrassing to give water for pudding! Also, trifles and crème caramels will arrive at supper times still frozen! I think you need to completely over see the whole system, i.e. waste, etc. as so much does get thrown away and perhaps have nurses on the panel as more often them not we are the ones left to sent out the mess and it's very time consuming and is violet times, we end up not seeing and giving patient the come for the illness as so much time is used up sorting out catering problems.
310	3026	s	
			Although we tell the patients they have a choice and are asked what they would like, in reality, the kitchen only have a certain amount of each type of food. We are at the sharp end- having to deal with patients complaints when cannot have what they want. Suppers are very boring, especially for long term people and some of the items are inappropriate.
311	3027	s	

312	3029	s	1) More available choice. 2) Food ordered, is the food that is provided. 3) More time spent on presentation, i.e. add colour- the food looks too bland. 4) choice of hot meal/sandwich in the evening. 5) nursing staff to assist with menu choice but catering staff to serve. 6) something/anything but what we have now.
313	3042	s	The lunch time meal service is a good way of delivering food. The hostess trolley ensures that the food is hot and not burnt. It also ensures that we can give the patient is one a light diet. The service is quick and easy to use. The supper's are left on a trolley which we distribute on the ward.
314	3045	s	non
315	3041	s	Meals cards should be completed kitchen + catering staff should ensure that food for particular diets are available ALWAYS when requested. Patient should not have to wait for unreasonable length of time for their meals. The requirement of diabetics should be taken into consideration when planning mealtimes.
316	3044	s	non
317	3043	s	non
318	3038	m	Menu cards are sent down to kitchen everyday, but they do not seem to read them, more often than a phone call is needed to the kitchen to request meals, e.g. (puree/soft) that are not sent up, even though ordered on menu's. An English understanding/ speaking server would be nice, as having to point to meals, just slows us up, and very embarrassing at time, also some servers just throw the meals on the plate, as meals are unappetising most of the time, just slopped, will put most people offsetting. Soft diets need to be changed, eggs 7 days a week- come on. Why no try Jacket Potatoes for a change- with a variety of fillings.
319	3037	m	A better variety of food should be given to patients on special diets, i.e. soft, puree. Especially at suppertimes instead of scrambled egg, omellettes and mushily puree. The serving of meals on plates at lunchtime sometimes leaves a lot to be desired how it is presented. Most of the hostess staff cannot speak any English and do not always know what food they are serving out. We have to tell them. Although we do menu cards and kitchen staff ring up, we still don't get the correct amount or if something is specially ordered for one person we do not get it. Most days if we have to phone the kitchen because we have not enough food or they have forgotten something. also they lose menu cards and we have to go around again for each individual menu from patients.
320	3023	s	non
321	3022	s	Poor nutrient regarding food at dinner time(18_00) only soup and sandwiches available. Soup resembles coloured water and does not taste any better. Sandwiches are inadequately filled with filling. Patient in hospital (between 18:00 to 08:00 the following day without food). This is over half the 24 0 period without nourishment which is badly needed. Poor nutrition leads to slow wound healing, resulting patient staying longer in hospital and costing the NHS more money. also the patient is occupying a valuable bed for seriously ill patient in A+E. I would like to see NHS managers poleticians sceenning in hospital on the meal service provided and nothing else.
322	3024	s	non
323	3025	s	non
401	4001	s	non
402	4002	s	non

403	4003	s	It can prove difficult to monitor amount food patient eats if confused and tray removed by domestic/junior staff who don't are not trained, re: importance of nutrition meals tend to come up in same quantity as preplated- amount can seem daunting to elderly patient with small appetites. I have also have experience of serving individual meals on ward. so, catering to individual needs more easily and less wastage. meals are hot and catering/kitchen staff do well as they care catering for large numbers of people. fairly varied menu.
404	4014	s	non
405	4102	s	non
406	4103	s	non
407	4141	m	On our ward, we will be getting an assistant who will deal solely with meals. He/she will be trained and will fill out food charts and report to staff nurses. It will improve the service enormously and allow the nursing staff to do other jobs. I do feel that there is a massive wastage of food in hospitals. I think that any food left over after patients have been fed should be offered to the staff on duty (it's impossible to get to the staff canteen during our meal breaks) alternatively or as well, it should be offered to the homeless or poor. It should not be thrown away. There are starving millions in this world and to simply throw food away is scandalous. At the moment, it is a sackable offence for staff to eat left over food, how ridiculous!
408	4155	s	non
409	4156	s	non
410	4071	s	non
411	4051	s	it could be organised better with the trolleys they use.
412	4050	s	Better breakfast facilities should be offered, i.e.. hot porridge.
413	4049	s	It would be helpful if staff were made available to hand out meals and do menu cards. Having been informed of dietary requirements by nursing staff. Due to staff shortages nursing staff find it very difficult to find times to do the meals.
414	4048	s	non
415	4047	s	non
416	4046	s	non
417	4045	s	non
418	4044	s	non
419	4043	s	non
420	4	s	This service has improved over the past 2 years with regard to a) meal(hot) tray with heated trolley and b) I think the standard of food has improved regarding quality and variety, Patient comments confirm this,
421	4198	s	Food is usually hot but sometimes tipped over plate and tray due to transportation of trolley.
422	4197	s	Food always hot. Food sometimes slopped over due to driving of trolleys from the kitchen.
423	4200	s	Generally the food is good, but the choice for lunch could be improved , i.e. more choice. Because the meals are plated there is not a lot of flexibility for size of portion. Now patients frequently go () or have no choice of food the kitchen are frequently increasing and unhelpful.
424	4	s	Generally I think the food is of good quality. It is also served hot because of the heated trolley system and this is noticed by patient and appreciated.
425	4101	s	I would prefer to serve food rather than have plated food. Many of the packages e.g. sandwiches are difficult to open. Patients do not always get what they ordered when system of returning cards fails.
426	4199	s	non
427	4	s	non

428	4113	m	The hospital meal services is a joint great between the catering and ward staff. Although logical for catering staff to be accountable a responsible for the meals they provide in practice this is difficult because they do not deliver it to the patient, i.e. they do not complete the whole process. However, from a nursing responsibility, it is really an important aspect of care and we need to know what patients are eating or not eating. to ensure all staff have the right accountability, the process of delivery needs to change. This however, is extremely difficult as each ward area want differently.
429	4069	s	Would like to see one dietitians become more involved with patients actually at meal times and not just when ordering or 1st outing in one morning when they are not hungry. I think one hospital provides on overall good service. The meals are always not and reasonably well presented. However, going out, assisting, collecting (and on serving patients are ordering what they actually require) menus is very times consuming and very often not done effectively. This means sometimes we get a half empty trolley full of meals that patients don't want.
430	4151	m	non
431	4154	m	A more dedicated member of staff to be appointed to supervise overall care of the patients at meal times, reporting back to nursing staff when problems occurs would be an ideal situation in a ward setting.
432	4142	m	non
433	4033	s	I often feel catering staff not aware of what a nutritional meal should consist of. It is often difficult to get an amendment to a meal due to language barrier of staff when you phone kitchen. Meals come to ward at a time which is not related to normal home eating times. Ice cream are sent in hot trolley, so often 'melted' more training should be done for all grades staff involved with meals.
434	4031	s	non
435	4032	s	non
436	4029	s	non
437	4150	m	I feel that sometimes the meals when they come up on the trolley are served very badly. Ice cream is always runny.
438	4030	s	Responsibility for monitoring patient's dietary needs/ intake is down to nurses- it is an integral part of nursing care and should be overseen/documentated by trained staff, but there are insufficient nurses on wards to monitor adequately.
439	4086	s	Needs more variety, i.e. sandwiches, soups, juice. Also more variety for people who have special diet needs, i.e.,: diabetics.
440	4146	m	non
441	4144	m	non
442	4152	m	On West ward at present the service involving patients nutritional needs is extremely poor. This is caused by many factors, overstretched nursing staff, who are unable to monitor patients' nutritional needs. Domestic staff serve trays and provide drinks, obviously therefore no one is measuring amount eaten by patient, etc. With the assistance of my senior dietician, I have created and post (money taken from nursing budget) of support worker X 2. These workers will be responsible for the delivery, monitoring and ordering of patients food and beverages, we are auditing what we do at present, will re-audit those and six months once in post (they start this week) Hopefully, with the full training, we intend to provide, the quality of service to patients will improve. If you would like to know any more about this projects, please feel free to contact me. Mary Williams
443	4153	m	non
444	4143	m	Difficult if patients are not in the ward and food cannot be heated up.
445	4145	m	non
446	4115	m	non
447	4116	m	non
448	4117	m	non

449	4119	m	non
			Being on CCU we advise on low fat diet and as it is promoted generally would like to see more low fat products being used, as well as low sugar and salt. It would be useful to have some indication if foods have been prepared in this way to inform patients. With the quick turn over of patients a selection form menu cards are ordered rather than individual choice and completed by ward clerk or health care assistant. Not everyone's preference is therefore available or the most suitable choice. Quality, content, presentation, and palatability definitely seems to have improved with hospital meals and service. However, I would like to see more variety of low fat meals and products and low calorie drinks in the staff canteen, trolleys and vending machines. Throughout the hospital the vending machines offer mostly high fat/ calorie food, snacks and drinks not conducive to promoting healthy eaten.
450	4124	m	The lack of staff often means meals are given to patient and patient are not fed adequately. Time spent for feeding patient is limited.
451	4120	m	non
452	4122	m	non
453	4123	m	non
454	4126	m	non
455	4127	m	non
456	4137	m	non
			Being a great distance from the kitchen, many times soup is completely slopped all over the trays, very disappointing for those patients who really enjoy soup. For typical stays for patients with special diets , it would be better if there was more soup to begin with.
457	4129	m	non
458	4128	m	non
459	4132	m	non
			More fresh fruit cut up in bowls rather than an orange or an apple, especially for old people who cannot manage to peel their fruit.
460	4130	m	non
461	4133	m	non
462	4131	m	I found a lot of this survey ambiguous and not applicable to me or my job.
			Many of the questions were very vague and I felt a more specific set of questions would come elicited a more meaningful set of information. Moreover, maybe this was part of the summary of the ambiguity was intertutorial. Anyway, I hope this provide useful in your research. goo luck.
463	4134	m	1) Improved communication system especially during busy (meal) times to ensure prompt issue of client choice. 2)wider choice on menu's including request for individual preference.
464	4022	s	1)Hospital meals are improving. 2)Some dietician ordered meals do not always find their way to the ward and the patients. 3) wide choice of meals for specific diets.
465	4172	s	non
466	4173	s	non
467	4174	s	non
			The hospital meal service in general is a ver good service. Meals are sufficient in quantity and appealing to look at with nutritional value in mind always. It look a good service.
468	4125	m	I believe that mealtime care is a multidisciplinary task with nurses/catering/kitchen and dieticians all taking equal respobonsiblity. Delivery of food to patient is reasonably good, the quality of the food is not good bearing in mind the important of nutrition and healing.
469	4165	s	Lunch at 12:00, supper at 5:00, then nothing till 07:30 next day! supper needs to be later.
470	4020	s	non
471	4092	s	non
472	4096	s	non
			Porters came to collect trolley too fast. Not always enough time to help patients with eating.
473	4098	s	non
474	4169	s	non

Appendix 9.1: An Example of a Transcript

Note:

All interviews were taped and transcribed, with any specific names was removed and replaced with a bracket or a code. The raw data were then coded in words or phrases, and grouped in themes- the catering operation, the meal service routine, quality assurance measures, the role of hospital staff toward meal services, and the trends in hospital meal services. Content analysis was applied and the data displayed in a matrix style. Each summarised conclusion was draw with supporting quotes from the interviewed catering managers.

(The remaining three transcripts can be provided upon request.)

1 Appendix 9.1: An Example of Transcripts of Phases III-Interviewing

2 Catering Manager from Hospital (HRB)

3 (I = interviewer, M = catering manager in HRB)

4

5 **Preamble:**

6 *I: Good afternoon, how are you today? After investigating the patients' perception towards meal*
7 *service, I have found that it would be useful to sit down and talk with you. I am looking for*
8 *information on the history of the catering operation, the meal service routine, and your quality*
9 *assurance measures. As the hospital catering field is not well understood, your help will be greatly*
10 *appreciated. Of course, your answers will be totally confidential, and not revealed to another person*
11 *within this or any other organisation.*

12

13 *I: Q.1 Can you please give me a brief history of the catering services provided to in-patients in this*
14 *hospital?*

15

16 M.: I've been here 9 years and in that time we provide a plated meal service to the 550 beds of this
17 hospital. We provide a bulk service to paediatrics - to our children's wards. So the remainder of
18 the hospital is on a plated tray service. It's a conventional system whereby all the produce is
19 freshly purchased through national contracts and produced daily on site. The style of service is
20 based on three meals a day - breakfast, lunch and supper. The breakfast is a continental style -
21 there's no hot breakfast at all - which is provided from ward level provision so it's not actually
22 provided from the kitchen. Lunch and supper is provided from the main kitchens and there we
23 operate a multi-choice menu with a choice of starter, a main course choice of two hot items, one
24 protein and one vegetarian, and a multi choice of assorted type sandwiches. We provide also a
25 choice of carbohydrate through potato or rice or pasta, and then a choice of vegetables, and then a
26 choice of hot and cold desserts. Accompaniments for those are held at ward level so if people
27 wanted bread and butter, for example, with their soup or even if they wanted it with their main
28 course or after their main course with jams or preserves, again that is held and provided by the
29 wards on request. We also provide provisions for 7 hot drinks a day which are provided again
30 from ward level starting from 7 o'clock in the morning through till 9.30 in the evening. With those
31 drinks we also provide snacks in the form of biscuits or toast on request. So that's the current food
32 service.

33

34 *I.: How long ago was this catering service established?*

35

36 M.: This style of service would have been established certainly for the last 15 years. Prior to that there
37 would have been a similar service whereby they would have had the opportunity to have a cooked

38 breakfast. I think that was stopped some 15 years ago - well before my time. And so therefore the
39 variation of choice would have been that much greater 15 years ago but now of course they've
40 decided that **people's eating habits have changed quite a lot**. Not many people eat a cooked
41 breakfast - probably most of us once a week, twice a week, maybe at weekends or on holiday but
42 **generally people have a healthier breakfast which is generally toast, cereals**. It's probably **more**
43 **cost effective and cheaper to operate** in that way because to provide cooked meals you need a lot
44 more staff to do that over a longer period of time.

45

46 *I: How many people do you serve daily?*

47

48 M.: With patients, if you take lunch and supper, about 530, 550. So you're talking about 1,000, 1,100
49 in-patients. We also supply food to the staff restaurants and to the customers out on site through
50 trolley services, to theatres. I suppose daily we average somewhere in the region of 1,500.

51

52 *I: Q.2. Could you please briefly describe the routine of current daily hospital meal service?*

53

54 M.: It's a **plated meal service**.

55

56 *I: What do you think about this arrangement?*

57

58 M: The two styles of services that you're going to get is the plated service and a bulk service. **I**
59 **personally think that a plated service is a little bit impersonal and a bulk service is more personal**
60 **and it's a person making a choice at the point of service**. The advantage to a plated service is,
61 providing you are not making the patient make the choice too far in advance, that the patient has a
62 choice, it's recorded, that choice is what should be served to the patient and it will be a standard
63 portion size unless they specifically ask for something large or something small. There is **less**
64 **waste** because you're actually going to produce to the exact number of choices that is required.
65 You always over-produce because there's always through history a 10% fluctuation in your patients
66 moving around and coming in and out on a daily basis. But of course what you've chosen today
67 might not be to your liking tomorrow. For example the menu card, if you're a patient, will be given
68 out at supper this evening for tomorrow. Between supper this evening and tomorrow breakfast you
69 have the time to make your choice and then we'll collect the menu card in. But of course if, for
70 example, you wanted to have salad tomorrow evening and you chose that tonight, tomorrow night
71 you may not fancy a ham salad. You may fancy something cooked. That's the impersonal side of
72 it. You've already made your choice and that's what you get and sometimes when you get it you
73 don't like what you see. **But that's human nature as well but it becomes a little bit impersonal. The**
74 **personal system to my liking is a bulk system which you provide at the point of service**. So it
75 would come up in a trolley form, you opened it up and it's sat up like a little hot plate, and then you
76 ask the patient what they want. They also have the choice at that stage whether they're hungry or

77 not hungry. They may only want a very small portion of potato whereas if you've chosen it the day
78 before you're going to get a standard portion of potato. So it becomes more personal but
79 unfortunately you end up producing more to cater for that so therefore the waste can be greater and
80 of course you then have the additional service which is the manpower type issue at ward level. I
81 personally believe the bulk service is better but you've got to have the right staffing levels to do it
82 and you have to accept that there is an element of wastage with that but depending on your
83 management of that wastage depends on how great or how small it's going to be.

84

85 *I: Do you think the organisation is very big?*

86

87 M.: Yes, and we are getting bigger. Within 3 years we'll be 860 bedded hospital. Because the other
88 hospital shuts down and it all comes on to this site and it becomes that much bigger, it becomes the
89 super hospital for [...(City)] and we go from 550 beds up to 860. So therefore the problems
90 become that much greater. But it's nothing that you can't overcome. It is big and we just have to
91 be prepared to meet those changes and those demands.

92

93 *I.: What do you think is the average percentage of wastage at ward level?*

94

95 M.: I would say as an average across the whole hospital would be around 5% at ward level. Some are
96 better than others.

97

98 *I.: What are the main sources of food being wasted?*

99

100 M.: I think it's the change in circumstances, patients discharging, new patients coming in - and
101 particularly on the surgery side maybe nil-by-mouth because they're waiting for operations. But
102 meals have possibly been ordered for the bed as opposed to the patient and the patient going out
103 may well have been recovering and eating but the patient coming in may be for elective surgery in
104 which case they wouldn't be eating prior to it. You get a lot of discharges at ward level and the
105 discharges may well be at 11 o'clock. They've already booked their meal and you've already
106 cooked it and you're about half an hour away from serving it and because it's a nursing issue they
107 wouldn't think about food. The only time the wards think about food is when the food trolley
108 arrives. Then it becomes an issue. Until that time they assume all the food's ordered and so they
109 wouldn't cancel meals. And even then, at that late stage, if you cancelled them from the kitchen
110 they'd still be made. If you had the perfect system and they would cancel at ward level, they would
111 be cancelling so late that you will have cooked it in any case so the wastage would have been not at
112 ward level but at kitchen because you've already catered for that. That's if you had the perfect
113 system but nobody's ever got that. All you do is transfer that wastage. At the moment in this
114 hospital all our beds are full so they're ordering the right amount but it doesn't mean to say they're
115 all eating. And at the same time you've actually got people who again will change their mind and

116 what they fancy today they may not fancy tomorrow. You add all these little things together and
117 you end up with wastage and you always will.

118

119 *I.: What are the main sources of food being wasted - are they a particular type of food?*

120

121 M.: It's complete meals. They've ordered a meal and they're not there to eat it any more - they've
122 been discharged or they've been moved to another ward. And the person that's coming in to fill
123 their bed may be not eating. Obviously they offer those meals first but generally speaking that's
124 normally what it is. It's not necessarily a specific type of food, whether they leave the potato or
125 they leave the soup, it's the whole meal. That's what will happen on a plated service in any case.
126 You choose a meal and then you decide not to eat it tomorrow. Maybe that's slightly unfair
127 because if anything it will be the main meal and pudding that will be left. Some people only feel
128 themselves well enough to eat the soup, even if they have chosen a complete meal. So soup is the
129 most popular food that a person would take, even if they're really poorly. That is the least wasted
130 item of food.

131

132 *I.: Has there been any action taken on this?*

133

134 M.: We've tried a number of ways of monitoring wastage. We have call-back systems. We have a
135 patient meal line which is dedicated purely to patients. There's an ansaphone system. People can
136 ring in to the wards to cancel meals, they can ring in to change the meals because a patient may be
137 moving from one ward to another so the opportunity is there for them to transfer their meal. The
138 opportunity is there for specific wards that are on take, so they're taking in accident and
139 emergencies, they're taking in elective operations, to ring down and increase that service. That
140 system also at meals times is transferred into the main kitchen and in the main kitchen we have the
141 operator who is running the Gannymede Belt - the belt service - we have operators there who have
142 mobile phones so even whilst they're serving and the phone goes, they do not have to stop. A ward
143 can say "Can you give me four extra meals" etc - those four extra meals are sent down immediately
144 and sent off to the wards and recorded so that we up-grade our production for the next time. So
145 we've tried that system. It's reasonably effective but people don't use it as well as maybe they
146 should do. We've tried the manual management system where you're going out and checking
147 physically wastage and we've also used the system of counting uneaten meals at the plate wash area
148 when the trolleys are returned. We always come up with the same. The figures are always going to
149 be about the same, whichever way you do it.

150

151 M.: I suppose the questions that's going to come is How do you think you're going to solve it? I don't
152 think you'll never solve it. I think you can improve it but you need to be able to be in control.
153 Catering needs to be able to be in control at ward level. That's where you can reduce it. You
154 won't stop it, not with a hospital and the way that it works. You will not stop wastage. You can

155 reduce it probably to a more acceptable level but you need to have ward based staff that are
156 controlled by catering, or certainly trained by catering in ward hostess style duties which would
157 allow them to assist. The nurses have an obligation to provide the right nursing quality to the
158 patient and included in that nursing quality, included in that recovery, is the provision of food and
159 ensuring that patients are taking their food and eating their food. But sometimes their role is
160 stretched too far and may be getting the food to their patients should be revolved round a
161 housekeeper-type of duty and what would happen, that housekeeper would also be the person that
162 has the link with the kitchen. Hopefully with the right training, with good team work that when a
163 patient comes in, once they've settled the patient in and the nurses have done all their thing, then
164 that housekeeper would be then addressing the role of catering or with the nurse concerned with the
165 patient. Then coming back to catering and making sure that instead of sending a meal up for this
166 particular patient, they know this patient only wants a bowl of soup so that's all they send up. So
167 that would help reduce it down and then the kick-back from that long-term would be that when you
168 do your historical figures, they are more accurate than they are currently. You won't get it 100%
169 but you would improve it.

170

171

172 I.: Regarding the menu ordering system, how many days are meals ordered in advance?

173

174 M.: It is ordered no more than one meal in advance to the day. So for example, the menus will be given
175 out at supper and then they would be made out for tomorrow. So they could still be making the
176 menu out tomorrow at 7 o'clock in the morning - that would be for lunch and supper.

177

178 I.: How are the menu orders sent to the kitchen?

179

180 M.: By menu card and collected daily. That's 7 days a week. Some hospitals only have a 5 day a week
181 menu card so on Friday you give in menu cards for Saturday, Sunday and Monday.

182

183 I.: How effective to you think this arrangement is?

184

185 M.: It's effective if it's being operated correctly at ward level. The onus then is on the ward Sisters to
186 make sure that they're carrying out the correct distribution and collection of menu cards. So
187 sometimes it's not as effective as it should be because of the pressures that are placed upon the
188 nursing staff. I come back to my reasoning that if you had ward hostesses, it would be what I
189 would consider much more effective. The majority of the wards in this hospital are very good at it
190 but there is a minority that are not that good at it because of the pressures. Sometimes it's just a
191 case of education, getting them to understand that we have an obligation under the Patients Charter
192 to provide patients with a choice of menu as opposed to them choosing for the patient and the
193 patient doesn't know anything about it or cards may be just being done too far in advance. Some

194 people will try that. The sad part about that also is that you have a **voluntary service** in hospitals
195 and they get involved in many hospitals with menu cards and the problem is that you give them the
196 menu card and say make sure these go out daily and they will be doing menu cards on a Thursday
197 for the next Monday. They're doing it with the best will in the world but in actual fact the patient
198 that they're doing the card for probably won't even be here on Monday. Thankfully that doesn't
199 happen too much in this hospital but it does in one of the other hospitals I've seen and it's quite a
200 nightmare.

201

202 *I.: What happens if a patient requires a meal outside of the routine serving time?*

203

204 M.: We operate our kitchen from 6am until 8.15pm. So between 6am and 8.15pm we would provide a
205 meal on request from an authorised person at ward level within half an hour. That's part of our
206 **Service Level Agreement**. During meal period times we will **provide that within 15 minutes** so if
207 you were a patient, for example, who hadn't chosen a meal, 15 minutes later you would get a meal.
208 If it was after 2pm, for example, between 2pm and 4pm, we're preparing meals but we're not
209 producing meals. If you wanted a meal for the same patient at, say, 2.30pm, we would say yes, we
210 have up to 30 minutes to provide it. That's what our specification is to the wards. That can happen
211 from 6am till 8.15pm. **All the wards, after 8.15pm, carry their own ward provisions because they**
212 **do their breakfasts, so they hold stocks of ward provisions** - cereals, toast, sandwich making type
213 facilities, soups (cup a soup). So again, if for example you wanted something at 10pm, they have
214 the ingredients to make sandwiches, toast, cereals and soups and that type of thing - **snack-type**
215 **items** but enough to fill that particular need in the evening.

216

217 *I.: How about a new patient, on the day they arrive? How do they order their meal?*

218

219 M.: What should happen is of course a newly arrived patient should be given a choice. They should be
220 shown a menu card and the ward should ring down on the patient meal line. That would be
221 transferred on to a card, added to the cards for the next meal, and they should get that. That's what
222 should happen and it does happen in some wards. In other wards they only think about food when
223 the trolley arrives. If somebody is new and they haven't booked a meal, the **staff would offer them**
224 **the previous patient's choice**. If they don't fancy that, the ward staff **will ring up the kitchen and**
225 **we will provide another meal but of course the first one is wasted**. If the patient isn't well enough
226 to make the decision, the staff can make the decision for them, ring it through to the patients meal
227 line, and it will be added to the cards going down.

228

229 *I.: Regarding the menu design, how long is your menu cycle?*

230

231 M.: We currently operate a change every six months. But it's not a major change, it's only a minor
232 change. There are certain recipes we take off and replace and again, it's based on **popularity**. It's

233 based on nutritional content and values because all our menus obviously are agreed and passed by
234 our dieticians. They have our full specification. They diet code all our menus. They give the
235 nutritional values to all our menus.

236

237 I.: *What's the menu cycle?*

238 M.: Two weeks.

239

240 I.: *What are your considerations when designing a menu?*

241

242 M.: There's nutritional content. There's obviously local cultures - ethnic cultures which we take into
243 consideration. A lot of the dishes we try to choose are suitable for basic therapeutic diets so we
244 don't end up with too little choice for people who are on basic therapies and diets so the majority
245 of menus revolve around basic therapeutic diets wherever practically possible incorporated in the
246 menu.

247

248 I.: *What do you mean about local culture?*

249

250 M.: [... {City}] has a large Asian/Afro Caribbean population so we tend to try to incorporate dishes that
251 are acceptable to those as well. There's also quite a few elderly European population so therefore
252 the style of menu tends to border on a lot of casseroles and fricassees which is acceptable to all
253 these groups. Not over spicy but not bland. Also a lot of them are soft and delicate dishes when
254 you're doing casseroles and fricassees and curry type things. So that's what we mean by looking
255 after local culture because there is a requirement, certainly from some of the early days when I was
256 here when we were putting out surveys to patients on likes and dislikes that they liked fricassees,
257 stews, casseroles, but they liked them with a little bit of spice and variety to them. I think there's a
258 mixture in the local cultures which has been brought about by the large Asian/Afro Caribbean
259 population and a mixture of the locals as well.

260

261 I.: *Have you considered pizza on the menu?...*

262

263 M.: We used to do a lot of pasta - we still do quite a few because again when you look at culture, not
264 just culture but it's the type of Chefs that you have. For example my head chef is Italian so
265 therefore the pasta dishes are quite popular and you expect your head chef to be at the front,
266 leading the way, when we are dealing with our menu groups and choosing. My assistant head chef
267 is Italian and I have an assistant head chef who is Egyptian. So therefore there's quite a mixture
268 there of different flavours between Italians and Egyptians. You have to take that into consideration
269 as well because if people are happy providing that sort of thing - pizza not so much because pastry
270 items we try to keep away from as much as possible. We used to do a lot of pies years ago and
271 they were very good but again wherever pastry is involved it affects a diabetic and a diabetic is a

272 basic therapeutic diet. So although we do apple pies and things like that, obviously the alternative
273 to an apple pie with a diabetic is that they can have stewed apple - they just don't get the pastry.
274 What can you do with a pizza? You just can't give them the cheese and tomato filling. So those
275 are the types of things we have to take into consideration. Pizza used to be on the menus in the
276 evenings but weren't very popular. People preferred pasta type dishes as opposed to pastry type
277 dishes.

278

279 *I.: What do you think about the nutritional guidelines for hospital catering?*

280

281 M.: I find them acceptable. I can't see anything totally wrong with them. Personally I work towards
282 those and so do all my staff. We try to use them as they are designed. It's not the be all and the
283 end all and it does allow you degrees of flexibility. But I don't see them as a problem at all.

284

285 *I.: Do you think it's practical, handy, for you to use?*

286 M.: Yes.

287

288 *I.: How about the 'National Food Guide' which was published 4 years ago?*

289 M.: HSG 96 something? Again, no problems with that.

290

291 *I.: No, not that one. The general one about what people should eat.*

292 M.: You've seen something I haven't! What is it called?

293

294 *I.: The National Food Guide.*

295 M.: Well it's certainly not in my pack. Caught me out on that one!

296

297 *I.: What other menus do you offer for special patient groups?*

298 M.: Halal and Kosher.

299

300 *I.: Anything specific for elderly patients?*

301 M.: No. The elderly menus have been incorporated. Most of the dishes are soft and a lot of the elderly
302 eat soft and easily digestible food and our menu is geared around that as well.

303

304 *I.: What about orthopaedic patients?*

305 M.: Not specifically, no. The normal menu.

306

307 *I.: Regarding the meal service personnel, who delivers the meals to the ward?*

308 M.: It varies. In maternity it would be housekeeping, in the wards it's general nursing staff.
309 Housekeeping in the wards tend to set up all the trolleys, ready, but the nurses serve it.

310

311 *I.: Is there any training support?*

312 M.: We have an Operational Services Training Manager who deals with the training for all catering and
313 housekeeping staff - food hygiene training - and to ward based staff where it is considered
314 necessary. By that we mean anybody who is serving food other than with the tray system - you're
315 not serving food, you're just taking a tray to a patient. Anybody who is dealing with food service,
316 from a container on to a plate on to a tray, which is really for our bulk systems, is trained in basic
317 food hygiene. Most of the nurses are trained in basic food hygiene.

318

319 *I.: What kinds of departmental conflicts have happened?*

320 M.: I don't think it's a conflict, it's accountability. It's segregation of duties. The nurses will go so far
321 with food, i.e. by serving it. Some believe that they should serve it to their patients and ensure that
322 the patient has got the right food and eating it and helping where possible. That's probably where
323 it finishes. The rest of it becomes a burden when you've actually got to start clearing up, or where
324 you've got to start setting things up which is normally a catering or ward hostess type role. There's
325 a fine line of where the nurses start and the housekeeping and ward hostess stops. I've never seen a
326 great conflict between the two groups. At ward level they respect what each other does. In
327 catering you tend to be further back down the line. Hospital catering is not natural for a caterer.
328 There's two catering establishments in this industry whereby a customer doesn't want to be there
329 and that's a hospital and a prison. Both those people who are going to eat caterer's food do not
330 want to be there. So straight away you have a battle on your hands. They don't want to like what
331 you're going to give them because they don't want to be there. You go into a restaurant, you want
332 to be there because you're hungry or because you want good company, and you're prepared to pay
333 for that. So the caterer is half way to pleasing you because you want to be there. But a person in
334 hospital or in prison doesn't want to be there, they don't want your food. In fact they don't want
335 anything, they'd rather be at home. So it becomes difficult from a caterer's point of view. But the
336 basic principles of catering is to prepare, cook and serve. In a restaurant or a cafeteria I would do
337 that. I would prepare and cook it and serve it to you. In hospital and in prison you prepare and
338 cook it and then you hand it over to other agencies who serve your 'customer' so it's against the
339 principles of a caterer. It's very rare that you get to see your customer.

340

341 TAPE TWO, SIDE TWO

342 *I.: Q.4. How do you handle patients' feedback regarding catering services?*

343

344 M.: There's a number of audits that are carried out. We have on the back of the patients' menu card a
345 questionnaire. We have a hospital audit which incorporates catering. We also have our Service
346 Level Agreements monitoring systems.

347

348 M.: The Service Level Agreements have been set up to provide a specific service against specifications
349 agreed with the wards in such detail as quality of preparation, quality of service at kitchen level,

350 times and specifications of delivery schedules and collection schedules, management monitoring,
351 supervisory monitoring at ward level. Ward visits by management. Then you have satisfactory
352 sheets from that and they are marked. It's a self-assessment type marking system that are produced
353 on a weekly basis to enable us to demonstrate that we are meeting specific targets against the
354 specification.

355

356 *I.: Are there any procedures for dealing with complaints?*

357

358 M.: Yes. We have our own hospital procedure which gives us 28 days to reply to specific complaints.
359 We also have the catering complaints procedure which are two-fold. One is a verbal or written
360 complaint against the quality of food or service with regard to catering. We also have the patients'
361 questionnaire which is on the back of a menu. What happens there is in the boxes you've got YES
362 or NO. If we get one or more ticks in boxes of NO, then we have procedure in place where they all
363 come back to one person, she will ring the ward immediately and say there is patient who has
364 ticked more than one box for dissatisfaction for specific catering services. Do they wish to see the
365 catering manager or supervisor? They're given the opportunity to speak to myself. But also on
366 that menu card is my name and telephone number if they want to ring me personally. Either myself
367 or [...(staff)] would visit that patient within, normally, 2 hours of receiving that complaint. That's
368 the latest. Normally we go up straight away but sometimes if a patient's made a complaint on a
369 card, you ring up the ward and ask if they want to speak to the catering manager. They may say yes
370 but they're waiting for the doctor to come round or a visitor so we have to wait until afterwards.
371 So there are systems in place.

372

373 *I.: What frequency of complaints are you aware of?*

374

375 M.: For every two complaints, we get 20 compliments. Specific? Range of choice is probably the most
376 specific one. I think there's sufficient choice but in this particular industry people just don't want
377 to be here. They're also frightened - for many of them it's the first time they're coming to hospital
378 and it's quite frightening. There are two types of patient. There's one that is very very frightened
379 prior to an operation and that's quite understandable. They're quite agitated, quite negative. They
380 complain - food will always come into it. But if you see that patient three days later, once they've
381 had their operation and they're recovering, they're a different person and all of a sudden they're
382 actually complimenting you. You can please some people some of the time but you can't please all
383 the people all the time, particularly when you're dealing with 550 at a time. It's really the range of
384 choice as opposed to quality.

385

386 *I.: How satisfied are your patients with the current meal service?*

387

388 M.: I think the patient is generally satisfied. I think the majority of people are pleasantly surprised with
389 hospital food because of people's perception, of what they hear about hospital food, is fairly negative
390 and they come in with that thought. Then when you're actually talking to them they say it isn't that bad.
391 They'd never complain about nursing staff or the way that they've been treated because people come to
392 hospital to get better. Food is not necessarily their priority but it's obviously very important in their
393 well-being and in aiding their recovery.

394

395 *I.: How do you discover this?*

396

397 M.: It's based on regular ward visits, on letters, patient surveys that are returned. That's where you get
398 your information.

399

400 *I.: Q.6. What do you believe is the role of the following hospital staff in mealtime care:*

401

402 *I.: for Nurses?*

403

404 M.: I believe that they should ensure that their patient is receiving the meals that they've chosen, that
405 they're eating it. I'm not quite sure what else they should be doing - in assisting patients in
406 choosing the correct meals, correct diets. I don't think they need to be involved in much more.
407 They've got much more important roles to perform than consumption of food.

408

409 *I.: How about catering staff?*

410 M.: It's the preparation and cooking and serving of food.

411

412 *I.: For Domestic staff?*

413 M.: Domestic staff should have a patient services role.

414

415 *I.: For Kitchen staff?*

416 M.: As for catering staff.

417

418 *I.: For Dieticians?*

419 M.: They should have a monitoring role from the nutritional value point of view.

420

421 *I.: For Doctors?*

422 M.: In the mealtime care, probably Doctors don't have a role. There are obviously exceptions. If you
423 had a very very awkward patient who wasn't eating, and some patients only respond to what the
424 doctors tell them, then the doctor could take the meal to this one particular patient and get them to
425 eat. But these are exceptional circumstances and not the norm.

426

427 *I.: Q.7. For the purpose of analysis, may I ask how many years of experience you have with*
428 *catering.*

429 M.: I've been in catering 35 years.

430

431 *I.: Q.8. Last but not least, what would you like to see happen in the future to improve hospital*
432 *catering?*

433

434 M.: I'd like to see catering controlling food from start to finish. I would like to be able to believe that
435 we could move away from being sole traditionals, having to have meals at a set time (two or three
436 times a day), that we could operate a service whereby you could order a meal any time you liked
437 from 6am till 8pm. But I guess that's totally impractical from a financial and obviously operational
438 point of view. With people that are ill food revolves around medicines and drugs being taken at
439 certain times and it relates to nursing times as well and their operational procedures. It would be
440 nice to think that you could operate a system that could feed anybody any time of day. I would like
441 to control it from start to finish. So when it comes in through the back door as a raw ingredient to
442 actually being able to serve it out to the patient and then let the nurse and patient carry on. And
443 then recover that meal and check with the nurse or patient that they're satisfied or not. That is
444 catering - prepare, cook and serve to your customer. That's what's missing in hospital catering.
445 You actually hand it over to other agencies and in between that things can go wrong but you've
446 actually lost control of it and all of a sudden it's not yours any more, it's somebody else's.

447

448 *I.: Do you have any other comments?*

449 M.: No!

450 (The end of the interview)

451

Appendix 9.2: Examples of patient surveys employed in the four hospitals

Name Ward

Comment Card

Dear Patient,

To enable us to operate and maintain the hospital catering service to the highest possible standard, it would be very helpful if you could use this card to express any opinions you have about the food service.

You may wish to:

1. Make suggestions for improvement.
2. Express compliments.
3. Provide criticisms of a particular meal.

All feedback from you will be treated in strict confidence and will be followed up by the Catering Manager.

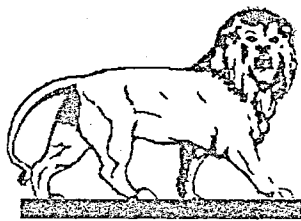
Please mark the relevant box with a cross

	Excellent	Good	Fair	Poor
1. HOW DO YOU RATE THE QUALITY OF YOUR FOOD?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. HOW DO YOU RATE THE MENU CHOICE?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. HOW DO YOU RATE THE TEMPERATURE OF YOUR FOOD?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. HOW DO YOU RATE THE QUALITY OF MEAL PRESENTATION?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

OTHER COMMENTS

Thank you for helping us to improve our service.

PATIENTS MENU



PLEASE NOTE

Products on the menu marked with an asterix (*) contain ingredients produced from genetically modified soya and/or maize.

CATERING SERVICES QUALITY QUESTIONNAIRE

Dear Patient,

This questionnaire is designed to help us provide you with the best quality of food service.

Please complete the appropriate boxes and leave the form on the tray to be returned to us.

If you have any queries, please do not hesitate to contact the Catering Manager via the switchboard.

		Please Tick	
		YES	NO
1	On admission, were you advised how to order meals ?	<input type="checkbox"/>	<input type="checkbox"/>
2	Did you receive your chosen meal ?	<input type="checkbox"/>	<input type="checkbox"/>
3	Did you find the meal Hot (or Cold) enough ?	<input type="checkbox"/>	<input type="checkbox"/>
4	Do you find the quality of the food good ?	<input type="checkbox"/>	<input type="checkbox"/>
5	Do you find the range/choice of food adequate ?	<input type="checkbox"/>	<input type="checkbox"/>
6	Do you find the quality of beverages good ?	<input type="checkbox"/>	<input type="checkbox"/>
7	Do you find the range/choice of beverages adequate ?	<input type="checkbox"/>	<input type="checkbox"/>
8	Are the staff helpful ?	<input type="checkbox"/>	<input type="checkbox"/>
9	Do you find the meal times satisfactory ?	<input type="checkbox"/>	<input type="checkbox"/>
10	Do you have sufficient time to eat your meal ?	<input type="checkbox"/>	<input type="checkbox"/>
11	Overall, are you satisfied with the Catering Services provided ?	<input type="checkbox"/>	<input type="checkbox"/>

PLEASE ANSWER AND
 LEAVE IN
 300
 MEI
 VT



8. SPEED OF SERVICE

Are the meals served promptly without delay?

ALWAYS MOSTLY RARELY NEVER

At which meals are delays most common?

None

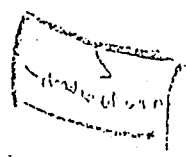


9. TODAY'S SERVICE

How has today's catering service compared with the rest of your stay?

VERY MUCH BETTER: BETTER: (THE SAME) WORSE:

In which ways has it differed?



10. TO SUM UP

Finally, if you were asked by your friends what sort of meals you had in hospital, how would you describe them?

THE VERY BEST: HOTEL STANDARDS: AS GOOD AS ONE HAS AT HOME: RATHER INSTITUTIONAL: BEST FORGOTTEN:

AND

Catering for Health
 PATIENTS SATISFACTION QUESTIONNAIRE
 THE FOOD SERVICE

HOSPITAL: HANS BAIRD DATE:

QUESTIONNAIRE

The purpose of this questionnaire is to find out how far the hospital catering service meets the individual needs of patients.

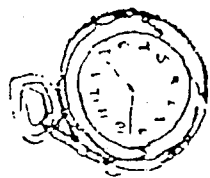
Please tick the answers, and add any comments you wish in the space provided.

PATIENT PARTICULARS: Name _____

Length of stay: _____

Type of diet: Normal: _____ Special: _____





1. MEAL TIMES

Do you find the times at which meals are served satisfactory?

Yes

No

Please write the time at which you would prefer meals to be served.

Morning	Breakfast	Morning	Lunch	Evening	Late
Tea	4	Coffee		Meal	Evening
					Snack

2. MENU

Does the menu include the type of foods you enjoy?

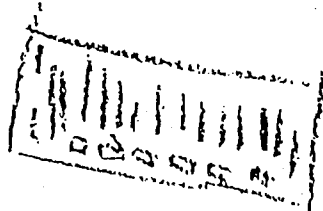
ALWAYS:
 MOSTLY:
 RARELY:
 NEVER:

What foods would you prefer:

at breakfast?

at lunch?

at the evening meal?

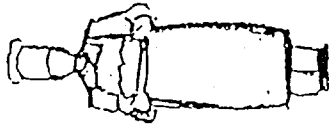
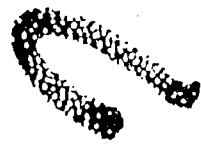


3. CHOOSING MEALS

Do you choose your own meals?

ALWAYS:
 MOSTLY:
 RARELY:
 NEVER:

Which meals don't you choose?



4. COOKING

Are your meals cooked as you like them?

ALWAYS:
 MOSTLY:
 RARELY:
 NEVER:

Which meals would you want improved:

Breakfast	Soup	Main	Sauces	Vegetables	Potatoes	Sweet
Dishes	Courses					

5. TEMPERATURE

Are your meals as hot as you would wish?

ALWAYS:
 MOSTLY:
 RARELY:
 NEVER:

Is any cooked meal cooler than another?

Breakfast?

Lunch?

Evening Meal?



6. APPEARANCE

Does the food look appetising on the plate?

ALWAYS:
 MOSTLY:
 RARELY:
 NEVER:

7. PORTION SIZES

Do you get the size of portions you want?

ALWAYS:
 MOSTLY:
 RARELY:
 NEVER:



Are they: too large?

5. *Do you receive adequate portion size? If the answer is NO do you know you can request a large/small portion? If the answer is YES have you informed the nurse that the meal size was incorrect?*

Yes 106 No 5

Sometimes
Mostly
Choice on trolley all one size
Just right (Petworth)
Sometimes portions too big (15)
Portions too small
Salad portion too small
Lack of potatoes to compensate for low fat diet.

6. *Are the variety of choices satisfactory for breakfast/lunch/supper? Are there any other variations you would like to see provided?*

Yes 101 No 11

Breakfast

Would like a choice of grapefruit.
Where's the porridge?
Could improve choices - fish
I would like boiled egg & soup
Cooked breakfast - (5)
I would like toast (2)
Croissant would be nice.
No choice only cereals & bread
More cereal choices

Lunch

Yes 08 No 4

Excellent selection, even though I am vegetarian
Plenty of choice
More choices needed
Very good choices/good choice
Spaghetti bolognese would be nice.(3)
Would like choice of fruit/of vegetables/With potatoes
More plain food(2) - baked beans on toast
Asked for jelly - received rice
For someone who has been in a long time the menu is predictable (49 days)

Supper

Yes 102 No 8

Good choices
More plain food.
Little variation for diabetic patient
Would like choice of fruit
Mixed grill!...
Difficult to understand terms used on menu
Prefers own sandwich
Occasionally selection is not satisfactory.
More fish dishes
Soups cold (2)

7. *Do the HOT dishes you choose arrive hot?*

Yes 98 No 14

7/10 not always / mostly
Sweet warm when i got around to it.
Soup cold / food warm (6) + (Howard 3)
Ice cream & jelly melted

8. *Do the COLD dishes you choose arrive cold?*

Yes 91 No 13

Not cold but not hot

9. *Is the cutlery you receive always clean?*

Yes 106 No 6

Apart from soup spillage's
Sometimes dirty

10. *Is the cutlery you receive always correct?*

Yes 106 No 6

Occasionally another knife needed
Plastic teaspoon horrible (2)
Occasionally soup & sweet spoon missing

11. *When you receive your meal do you also receive your completed menu card?*

Yes 96 No 14

Not always

12. *If you are bedridden are your meals placed so that you can reach them comfortably to eat and drink?*

Yes 106 No 6

Always

13. *Are you able to unwrap or uncover your food? If you require assistance does the nursing staff assist you?*

Yes 108 No 4

Help is available
No help offered
Sometimes help is offered
Has improved recently

14. *Is the quality of the coffee you receive satisfactory? If your answer is NO how can it be improved?*

Yes 54 n/a 45 No 10

Coffee not drunk
Too strong
Brings own in
Not hot
Too strong - alternative offered
Too strong - a bitter taste
No flavour (2)
Not same as home

15. *Is the quality of the tea you receive satisfactory? If your answer is NO how can it be improved?*

Yes 74 n/a 20 No 13

Reasonable
Tea not drunk
Not properly brewed
Good/adequate
Own decaff tea
Lack of flavour
Blackcurrant too weak

juice not a good taste
 good flavour cannot define
 I prefer better brand
 Poor quality/lousy
 It's never hot
 Too much milk in
 Not provided with a spoon

16. *Do you receive a beverage at the following times:*

In the majority

Yes	96	No
Early morning	<input type="checkbox"/>	3
Breakfast	<input type="checkbox"/>	6
Mid morning	<input type="checkbox"/>	4
Lunchtime	<input type="checkbox"/>	10
Mid afternoon	<input type="checkbox"/>	3
Supper time	<input type="checkbox"/>	4
Late night drink	<input type="checkbox"/>	5

The 'no' numbers are where patients said they did not receive a beverage

17. *Do you ever get refused a beverage if you request one?*

Yes	4	No	108
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18. *If you order a nutritional supplement with your meals do you receive them?*

Yes	18	n/a	No	1
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For majority
 Sometimes run out

19. *What is your overall verdict on the catering services at St Richard's Hospital?*

Thank you for completing this survey. Your comments will help us greatly in improving the catering services at St Richard's Hospital.

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