

Food service in hospital: development of a theoretical model for patient experience and satisfaction using one hospital in the UK NHS as a case study.

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Permission was sought and granted by the East Dorset NHS Trust Research Ethics Committee to conduct this research.

Abstract

Hospital food service does not operate in isolation but requires the co-operation and integration of several disciplines to provide the ultimate patient experience. The objective of this research was to explore the antecedents to patient satisfaction and experience, including the service element.

Accordingly, focus groups were conducted with doctors (n=4), nurses (n=5), ward hostesses (n=3), and patients together with their visitors (n=10) while open ended interviews were conducted with the food service manager, facilities manager, chief dietitian, orthopaedic ward dietitian and chief pharmacist.

Themes centred on 'patients', 'food service' and 'meal times' and results show that food quality, particularly temperature and texture, are important factors impinging on patient satisfaction, and the trolley system of delivery is an acceptable style of service. Service predisposition demonstrates little relevance to patient satisfaction towards the overall meal enjoyment. A theoretical model has been developed that identifies hospital food service in a cyclic relationship with the community Primary Health Care team.

Introduction

Patient meals are an integral part of hospital treatment and the consumption of a balanced diet, crucial to aid recovery. Even so, it is well established that up to 40% of

patients may be undernourished on admittance to hospital; a situation which is not always rectified during their stay (McWhirter and Pennington, 1994).

The importance of hospital food service and the use of food as treatment are not new and can be traced back to one of the earliest medical works, the '*Hwang Ti Nei-chang Su Wen*' (the Yellow Emperor's Classic of Internal Medicine, 722-721 B.C.) (Cardello, 1982). Concern with the role food may play in the recovery of patients was also highlighted by Florence Nightingale who wrote in her 'Notes on Nursing' in 1859, that '*The most important office of the nurse, after she has taken care of the patients' air, is to take care to observe the effects of his food*' (Nightingale, 1859).

The relevance and importance of patient meal service, when compared with many clinical activities, is not always appreciated and is often seen as an area where budgetary cuts will have least impact. The provision of a food service system which optimises patient food and nutrient intake in the most cost effective manner is therefore seen as essential. The budget for hospital food varies between National Health Service (NHS) Trusts¹ in England and Wales but ranges from £1.50 to £8.40 per person per day, for three meals, seven beverages and snacks if desired. Notwithstanding, patient satisfaction shows no relationship to the cost of providing and the type of food service method adopted, using criteria of extent of choice, whether meals are appetising and how they are served (Audit Commission, 2001).

Hospital food service can present especially complex features and is often considered to be the most complicated process in the hospitality sector with many interrelated factors impinging upon the whole (Wilson *et al.*, 1997). The siting of hospital wards, often at considerable distances from the kitchen, adds an additional logistics burden and in consequence, a long stream of possible delays between production, service, delivery and consumption (Kipps and Middleton, 1990). This stretched, continuous and staggered food cycle has potential negative effects on the safety and quality of food (Barrie, 1996) and presents a challenge to any hospital food service manager.

Access to a safe and healthy variety of food is a fundamental human right. Proper food service and nutritional care in hospitals has beneficial effects on the recovery of patients

¹ A Trust may be a single large hospital but generally incorporates a group of hospitals in a geographical area.

and their quality of life (Kondrup, 2004). The number of undernourished hospital patients is unacceptable and leads to extended hospital stays, prolonged rehabilitation and unnecessary costs to health care (Kyle *et al.*, 2005).

An essential component in successful catering management is customer satisfaction; however, in a hospital setting, this is a complex phenomenon and influenced by many factors. The public generally view hospitals as institutions and institutional catering has a reputation for being poor (Bender, 1984). The negative image of hospital food is widespread and is therefore not necessarily related to the food itself (Cardello *et al.*, 1996). This was demonstrated by assessing the anticipated acceptability and the expected quality of twelve food items commonly served in institutional and other food service settings. Food prepared and served at home received the highest rating while responses to hospital food clustered at the lowest ratings along with airline food (Cardello *et al.*, 1996). Food presentation, food variety and physical setting were the primary factors contributing to consumers' negative perception and attitude towards institutional food.

Hospitalisation can be traumatic and therefore personal interaction is important as opposed to simply having a meal 'dropped off' (Lavecchia, 1998). Positive attitudes expressed by staff can influence intake and significantly add or detract from a patient's mealtime experience (Engell, 1996). Bélanger and Dubé (1996) found that patients perceive and benefit from the emotional support they receive from staff. Moreover they transfer this 'added value' to their satisfaction judgements. Satisfaction is not a universal phenomenon and patients will derive differing amounts of pleasure from the same hospital experience. However, consumer satisfaction is in the customer's mind and may or may not conform to the reality of the situation.

The hospitality product does not just comprise 'goods' and 'services' but is an amalgam and other components are present that could be described as 'quality factors'. It could be argued that satisfaction really comes from the peripherals that surround the core service (Pine and Gilmore, 1999). Some studies report that food quality is the most important indicator for satisfaction (Dubé *et al.*, 1994; O'Hara *et al.*, 1997; Lau and Gregoire, 1998; Hwang *et al.*, 2003) while other studies suggest that 'interpersonal' or service aspects are the most pertinent (DeLuco and Cremer, 1990; Gregoire, 1994;

Bélanger and Dubé, 1996). In reality, satisfaction with a hospitality experience is a sum total of satisfactions with the individual elements or attributes of all the products and services that make up the experience. It could be said that consumers even make 'trade-offs', weakness in one attribute is compensated by strength in another (Pizam and Ellis, 1999).

Hence, patient satisfaction is a complex phenomenon that is influenced by many factors but is an essential component in successful food service management in this environment. Subsequently, a conceptual model, presented at Figure 1, was devised to provide a framework for further investigation. **It was built from consideration of the literature and relationships are highlighted between the accountability of hospital management towards optimal nutrition and appropriate policy. Furthermore, patient satisfaction with foodservice is identified as a product of expectation and perception. Malnutrition is a factor increasing morbidity, length of stay and expense (Jeejeebhoy, 2003); hence any specific improvements in foodservice practices can be measured. Regardless of the serving system used, close collaboration between relatives; nursing, dietetic and foodservice staff is essential.** This study formed part of a larger research programme and was designed to enhance and validate information already gathered. A criticism of questionnaires within hospitals is that the positive responses received are sometimes belied by detailed dissatisfactions contained in patients' qualitative descriptions of their experiences (Avis *et al*, 1995). Therefore a case study approach was taken involving mixed methodologies which allowed elucidation of the complex nature of hospital food service and allowed investigation of the interactions and linkages involved in the process. The objective of this part of the research was to explore the antecedents to satisfaction and experience, including the service element.

Insert figure 1 here

Hospital food service does not operate in isolation but requires the co-operation and integration of several disciplines to provide the ultimate patient experience. Accordingly, stakeholders such as medical staff, food service staff, dietitians, hospital managers, pharmaceutical staff, patients and visitors were consulted to identify factors contributing towards patient satisfaction and to elucidate patient meal experience.

Methodology

A NHS hospital was identified in the South of England where a bulk trolley system of food delivery was in place. The hospital selected for the case study serves approximately 800 meals at each main meal using a four week menu cycle and was allowed £1.98 per patient per day (July 1999) for food and beverage costs.

At breakfast there was a choice of white or brown bread, the option of fruit juice, porridge and cereal. For lunch, the first course was characterised by 'home-made' soup or fruit juice. Main courses comprised sandwiches, meats, fish and vegetarian meals with carbohydrates as accompaniment. There were five choices of main course and a potato dish was offered every day; with creamed potato the most frequent option. 'Milky' puddings and ice cream were available for dessert at lunch time. For the evening meal, fruit juice or soup were offered, however this time, dried soup powder was used. There were five choices of main course, including a vegetarian option, followed by dessert, which could be a trifle/mousse/ice cream or cheese and biscuits.

Data were collected from the Orthopaedic ward. This ward was identified with the help of medical staff as the most suitable in that; these patients are more likely to stay longer, their medical condition would not interfere with food consumption, they are capable of independent judgement, and are highly critical, as evidenced by past surveys conducted by the food service manager. It was concluded that research findings would then have implications for the rest of the hospital as these patients are the most difficult to satisfy. The ward selected was also the final ward for trolley service delivery and therefore the research setting would constitute the worst case scenario for food acceptability.

Four discrete focus groups were conducted with doctors (n=4), nurses (n=5), ward hostesses (n=3), and patients together with their visitors (n=10) while open ended interviews were conducted with the food service manager, facilities manager, chief dietitian, orthopaedic ward dietitian and chief pharmacist. Sampling was purposive, that is directed towards stakeholders, and data collected until saturation point, thereby giving credibility to the study.

A research protocol, informed from a review of the relevant literature and the conceptual model, was developed with the main issues around patient satisfaction and

meal experience being explored. This is presented at Appendix 1. Spontaneous dialogue covered themes considered important to respondents and this information was incorporated into the theoretical model. Focus groups took place on the ward and lasted approximately half an hour due to operational issues in a busy working hospital, while open ended interviews were conducted in the respondent's office and again lasted for approximately half an hour. Patients were representative of the patient population on the orthopaedic ward and included males and females in the age range 66-84 years with length of stay > 7days. All managers had been in post longer than two years. Views and opinions were eagerly expressed and tape-recorded.

Data Analysis

Interviews were transcribed verbatim in their entirety to facilitate analysis. The analysis of text was completed by NUD*IST (Non-numerical Unstructured Data Indexing Searching and Theorizing)², a computer assisted qualitative data analysis software package together with the researchers own knowledge and understanding to confirm themes.

Unlike quantitative data analysis programs such as SPSS, which are widely accepted, concerns have been voiced regarding the appropriateness of using a computer to analyse qualitative script (Bryman, 2001). It has been suggested that the fragmentation process of coding text into sections risks decontextualising data and as a result the narrative flow of interview transcripts may be lost (Bryman, 2001). However, other researchers argue that this type of software makes coding and retrieval faster and more efficient; moreover it also allows the analyst to consider possible connections between codes (Creswell, 1998). It additionally enables less personal bias in interpreting data and allocating codes.

In essence, the NUD*IST program uses the philosophy of content analysis as a research tool and there are several examples within the context of hospitality research where this type of technique has been used (Brotherton, 1999; Jones, 2003). Content analysis is particularly relevant when trying to establish meanings and patterns within text. In this research, it was used to find factors relating to patient satisfaction, together with factors

² This programme can be downloaded from the distributor's internet site: <http://www.scolari.co.uk>

regarding hospital food service, that were most important to the people who are most involved.

Coding was directed by the literature and based on the conceptual framework, allowing for developing themes to be incorporated. A hierarchical flagging system was established from which theory was developed. Authenticity is ensured by including raw narrative within discussion.

Results

Transcripts were analysed and the tree diagram generated by NUD*IST is presented in Figure 2.

(insert figure 2 here)

Patient Care

All clinical stakeholders were in accord, that there should be a nutritional policy framework and that this should be under the auspices of the nursing directorate, *'...a clinical champion is needed for food' – chief pharmacist*

'...an advocate (voice) is required at directorate level' - dietitian and nurse

The two dietitians agreed that their function is more of an advisory service and they feel undermined in their role towards patient care. They have responsibility without authority as recommendations are made but not always implemented. It was agreed by medical staff that the management of nutritional care was not joined- up and communication was a problem particularly between hospital and primary health care teams. Patients are admitted to hospital, often compromised nutritionally, and discharge information is not always followed up. The failure to recognise malnutrition is exacerbated by the lack of nutrition screening including the regular weighing of patients on admission and discharge. Nursing staff expect the ward hostess to inform them of patients experiencing difficulties, however robust monitoring of patient food and fluid intake is compounded by the division of duties on the ward. The hostess delivers the meal and checks patient status but domestics collect the used trays with little

communication between the two. One solution suggested by a ward hostess was for these activities to be part of hand-over between duty teams so that they could be proactive in patient care. Nursing staff dismissed this idea as it was considered to be inappropriate and time consuming.

Patient Satisfaction

Medical and catering staff identified that patients are becoming more demanding and more critical. Generally though, patients thought the quality of food was better than expected and when asked to recount 'the best meal experience in hospital', answers reflected the importance to patients of correct temperature and food quality.

'...my best hospital meal experience was where the food was just like at home, hot, and we ate it sitting around a table' - patient

There was no mention in patient responses of empathy and/or service delivery attributes. The ward hostesses confirmed that the main complaints from patients refer to the temperature and texture of the food. Patients commented on their preference for traditional food, such as,

'...chicken and mushroom pie, fish and chips and roast dinner'

This was endorsed by the food service manager who said that a popular dish in this hospital is pilchard salad. Another idea under discussion within this hospital is the use of branded foods for items such as coffee and soup.

'...patients would feel safe and secure, know what they were getting – rather like a comfort blanket, hopefully this would improve satisfaction' – food service manager

Patients were quite enthusiastic about this suggestion and felt that they would have trust in a known product. Those patients who had experienced both the plate and trolley system of food delivery commented that they much preferred the latter.

'There is usually sufficient choice. I much prefer this method of distribution to the menu system because you cannot foresee how hungry you will be' – patient

There was also endorsement from dietitians and nursing staff who agreed that the trolley system of delivery did allow for greater patient/server interaction. A common theme from patients was their inability and difficulty in providing feedback to the catering staff. The perception was that food was prepared some distance away by anonymous people who rarely came on the ward. Dissatisfaction was also expressed with the menu system where items were described without interpretation.

'Description on the menu does not fit reality' - patient

'I don't understand what a B.L.T. sandwich is or macedione of vegetables'- patient.

Meal Times

The potential of protected meal periods, food service uninterrupted by medical staff, was greeted with enthusiasm by patients and hostesses,

'...we are all falling over each other in the morning – what with the blood lady, nurses and consultants' – hostess

but with caution by medical staff. Ambience of the ward was discussed and it was agreed by patients and medical staff alike that music would disturb,

'...patients may become confused particularly the elderly' - doctor

However, the opportunity to sit and eat a meal in company was welcomed especially by visitors,

'...eating with others is a good idea – a social thing, it's bad enough being in hospital' – visitor

Food Service Management

The main theme with regard to food service management was the fragmentary nature and difficulty of communication between the kitchen and wards. Food service managers have to rely on kitchen porters for the delivery of food to the ward, ward staff have difficulty in communicating with food service staff and dietitians/doctors are reliant on nurses to communicate any concern regarding patients. There was agreement that the

post of hospital food service manager was essential to oversee the whole meal process from kitchen to consumption.

Financial constraints are a prominent part of the concern of the food service and facilities managers, with budgets continually being reduced and not 'ring-fenced' (protected).

Patients are willing to make a payment towards the 'hotel facilities' that hospitals offer, if it would mean improved food provision. However, the food service manager is reluctant to agree as he felt that this would make the patient even more critical.

Food Service Staff

The food service manager was enthusiastic in the potential for dedicated food service staff who could be trained to,

'sell the product' 'reduce wastage' and 'tempt jaded palates'

Food wastage forms (ERIC – Estates Return Information Collection, 2001) (NHS Estates, 2001) are used as a measure of consumer satisfaction, and wards where there are hostesses, demonstrate less waste and greater patient satisfaction.

Hostesses see their role as carers and feel their allegiance is towards the ward, whereas paradoxically, the food service manager felt this role was 60% food service and 40% carer.

Discussion

A theoretical model of hospital food service has subsequently been developed and refined, reflecting data gathered during the case study and issues raised. This is presented at Figure 3 and discussion ensues relating primary and secondary research.

(insert figure 3 here)

Primary Health Care team

The monitoring of nutritional status should commence within the community with the Primary Health Care Team, to ensure 'medically fit' patients on admission for 'routine', elective surgery. Conversely, it is also crucial that patients are discharged nutritionally

robust and that this state is maintained within the community. Organised contact between hospital and community needs to be established and communication needs to be such, that the 'patient journey' is considered as a totality. Both the literature review and results from this study show that communication is fragmentary. A recommendation made within The Council of Europe Resolution (Council of Europe, 2003) identifies this concern and has advised that regular contact between the hospital and primary health care sector be established. It has been suggested within the literature, and this was subsequently built into the conceptual model, that the profile of hospital food service is linear in that input equals output. However, the present research would dispute this simplified approach and argues that the relationship proactively involves the Primary Health Care team. The association is more aligned to a cyclical relationship with admission to hospital a temporary bridge and input from the Primary Health Care team crucial.

Patient Monitoring

It is a fundamental right and expectation from both patients and their relatives that care will be monitored on a regular basis and this includes food intake and clinical status. Time commitments and the burden of paper work are poor excuses for absolving these duties which have been reinforced by the United Kingdom Central Council for Nursing (1997). Standards have been developed by ESPEN (European Society of Clinical Nutrition and Metabolism) that endorse the screening of all patients on admission together with continual monitoring. However, research demonstrates that these standards are not fulfilled and there is a large discrepancy between medical staff attitudes and reported practice (Mowe *et al*, 2006).

While in hospital, observation of the meal service should be undertaken on a routine basis and become part of the patient information record, stored in the case file. There is a need for an evidence-based screening tool which is easy to apply and easy to interpret. There needs to be a balance between a simple method, which may be less accurate but uncomplicated and therefore probably will be used, and a more accurate, but more complex method which might not be used (Council of Europe, 2001).

Weight for height, (BMI) is not a definite measurement of undernutrition, but it is a useful indicator, and measurement over time provides an indication of changes in

patient status (Vlaming *et al*, 1999). However, it is often extremely difficult to weigh patients particularly when they are infirm, unable to stand or bed-bound. The solution could be as simple as incorporating a ‘strain gauge’³ into a hospital bed. Sensitivity and resolution could be set to $\pm 0.5\text{kg}$ and when attached to a circuit, the device could continuously measure the weight of a patient whilst supine. This would be an efficient and non-invasive method of patient monitoring without impinging on staff time and resources. Changes in weight would be automatically recorded and patients would not be required to get out of bed (essential in the orthopaedic ward).

Food intake should also be recorded in the case notes of those patients who are considered vulnerable. For accurate information, the whole process needs to be supervised by one person from food delivery to plate collection. The suggestion from a ward hostess of being part of patient hand-over appears to be a logical, convenient and relatively simple way of ensuring good communication and it is unfortunate that the role of hostess is perceived as unskilled and lowly.

Patient monitoring has been highlighted in the literature as a crucial step in the detection of malnutrition and in the maintenance of patient status (Schwartz and Gudzin, 2000). Notwithstanding, screening should not be considered in isolation but should be linked to a pathway of care (Rasmussen *et al*, 2006).

Patient Satisfaction

The consideration of patient’s expectations and perceptions should have particular significance in shaping the objectives of any food service operation. Expectations were matched by the trolley service of delivery and hence a corresponding level of satisfaction was achieved.

Food Quality

Unfortunately hospital food service has an image problem, before even tasting it patients generally expect poor quality (Beck *et al.*, 2001); previously described as ‘institutionalised stereotyping’ (Cardello *et al.*, 1996). Food quality attributes, particularly temperature and texture have been demonstrated in this case study to have a critical effect on patient satisfaction. Although service features were not a high priority from a patient perspective, it has been suggested that staff attitudes can be as crucial as

³ strain-gauge - a device whose electrical resistance varies in proportion to the amount of strain or weight

food temperatures (Jackson, 1997). Results from this study agree with other research showing that the service predisposition of NHS staff is such that the food service experience is mostly satisfactory (Lee-Ross, 1999; Hwang *et al.*, 2003), and therefore it can be concluded that food quality is the driving factor for satisfaction.

Food Service System

Patients expressed satisfaction with the trolley style of delivery and certainly there is more opportunity for patient/staff interaction and nurture. However, one instance was observed in a 'close to discharge bay', where the presence of nursing staff is infrequent, a nurse performed a medical procedure during food service. The potential for cross-contamination is evident, adding weight to the argument of employing dedicated food service employees. The benefit of ward hostesses has also been demonstrated by factors such as reduced food wastage and less need for sip feeds (Waite *et al.*, 2000) together with increased patient satisfaction (Gledhill, 2000; NHS Estates, 2003).

In any food service programme, perceptions of freshness can greatly affect how patients rate the overall meal (Doucette, 1999). If patients can choose their food just before they eat it, this greatly enhances their perception of the item's freshness and influences satisfaction; perceived control and patient empowerment have also been shown to strongly influence patient satisfaction with food services (Bélanger and Dubé, 1996; Faulkner, 2001). This research supports the suggestion that where patients have increased involvement with the process of food service such as in the trolley system of delivery, satisfaction is increased.

Meals

The main problem, as observed in this study, is the lack of structure and priority given to food service both pre and post operative; clinical considerations taking precedence. In some hospitals, such as acute, prioritising clinical care might be appropriate. However, for rehabilitation and elective surgery, food should gain a higher priority and become embedded in the concept of an integral part of treatment. Meal times need to be protected so that meals can be enjoyed, free from interruption as one would expect in any hospitality situation. Much was made by patients regarding food that was easily recognisable and traditional. When in hospital, there is a need for familiar meals that remind patients of home; complicated, sophisticated dishes are not well received.

Interactive Menu

Menus are an important tool for the food service manager as they are the first point of contact with the patient and can be used both for communication and marketing purposes. However, if not easy to read or interpret, a negative message can be portrayed. A touch screen facility with a direct link to the catering facilities is being considered at the case study hospital, as all patients have access to bedside televisions. This will enable patients to preview dishes available and then select as required.

Feedback and Communication

Hospital food service requires a policy, framework, manager and representation at Trust Board level. There needs to be a continuum from kitchen to consumption, with emphasis on hospitality and quality. Feedback and communication in this hospital is fragmentary at best and not actioned at worst. There is a dependence on informal dissemination of information without structure, reflecting the multi-disciplinary nature of the service and stakeholders. Ultimately, it is the patients who are disadvantaged; whose health ironically, is the focus of attention. Poor communication and relationship conflict have been identified in the literature as a cause for concern (Riddiford *et al.*, 2000) and it has been suggested that organisational research should be conducted within hospital food service to assess and improve the communication between different staff disciplines (Council of Europe, 2003).

Hospital Food Service Manager

A lack of clearly defined responsibilities has been identified in the management of nutritional care together with fragmented cooperation between different staff groups (Council of Europe, 2001). There is insufficient description of responsibilities and as a consequence there is reliance on the task being achieved without a strategy in place for achievement. The uniqueness of hospital food service is that the primary objective is to provide direct, individualised, total nutritional care and as such it needs to be controlled and orchestrated. A failure at any point negates the system. Collaboration and co-operation needs a central co-ordinator, a hospital food service manager who has remit for the entire process from kitchen to consumption, and a position or voice at least at board level. Greater emphasis has been given to the role of food in clinical outcomes

and as such, needs to be reflected in the organisation of hospital management (Council of Europe, 2003).

Food service departments are usually seen as part of facilities in European hospitals rather than as an integral part of patient treatment and the trends are towards contracting this out. This emphasises the requirement for a competent purchaser who can verbalise and describe what is required. Guidelines and standards need to be developed with sufficient detail in contracts to encompass the requirements of all patients (Council of Europe, 2003).

Conclusion

If factors impinging on hospital food service are considered holistically, there is a cyclical relationship, in that responsibility for nutritional status commences and concludes in the community with the Primary Health Care team. Admission to hospital is a temporary occurrence and a bridge between the two, and as such it is important that complete nutrition is maintained. A simple screening tool together with regular monitoring would ensure that patient nutrition did not deteriorate. Towards this aim, a manager is required to orchestrate the process within the hospital environment and oversee the whole operation, if channels of open communication are to be achieved. Patient satisfaction and, therefore, morale is crucial in the healing process and, as has been shown, food quality attributes are important factors impinging on satisfaction together with the style of service. Other issues raised by patients during discussions are the welcoming of protected periods and branded products.

Feedback is a perceived problem, not just from a patient's perspective but from other stakeholders too. Communication needs to be more transparent and regular meetings held with representatives at an operational level. With more informed individuals and better hospital food service, the incidence of malnutrition could be decreased, the patient experience would improve and subsequently hospital stays could be reduced. A well managed patient would be discharged into the community 'medically fit' leading to a reduction in cost to the NHS.

Limitations

Case studies are attributed with the ability to enhance understanding and to establish cause and effect (Cohen, 2000). It is suggested that this methodology is eminently suitable for hospitality research because of the potential arising from the diversity of application and the inherent strength in accessing data about complex social situations (Gibson, 2003). Moreover, narrative from single case studies has been likened to 'virtual reality' and therefore presents a substantial advantage, which is the opportunity to inculcate authenticity and reality (Gomm, 2000; Gibson, 2003). Notwithstanding, a criticism of this type of approach is that recommendations cannot be made beyond the case studied and, therefore, there is restricted external validity (Robson, 1997).

Although this research constituted a relatively small qualitative study of patient and staff views on hospital food service issues raised are pertinent to other cases that represent similar theoretical conditions and can enable generalisations; it is a matter of analytical generalisation (using a single case study to illustrate, represent or generalise to a theory) (Yin, 1998; Stake, 2000).

References

- AUDIT COMMISSION (2001) *Acute hospital portfolio: review of national findings*, Wetherby: Audit Commission Publications.
- AVIS M., BOND M., and ARTHUR A. (1995) Satisfying solutions? A review of some unresolved issues in the measurement of patient satisfaction. *Journal of Advanced Nursing*, **22**, 316-322.
- BARRIE D. (1996) The provision of food and catering services in hospital. *Journal of Hospital Infection*, **33**, 13-33.
- BECK A.M., BALKNÄS U.N., FÜRST P., HASUNENK., JONES L., KELLER U., MELCHIOR J-C., MIKKELSEN B.E., SCHAUDER P., SIVONEN L., ZINCK O., ŘIEN H. and OVESEN L. (2001) Food and nutritional care in hospitals: how to prevent undernutrition -report and guidelines from the Council of Europe. *Clinical Nutrition*, **20**, 455-460.
- BÉLANGER M-C. and DUBÉ L. (1996) The emotional experience of hospitalization: It's moderators and it's role in patient satisfaction with foodservices. *Journal of The*

- American Dietetic Association*, **96**, 354-360.
- BENDER A.E. (1984) Institutional malnutrition. *British Medical Journal*, **288**, 92-93.
- BROTHERTON B. (1999) *The Handbook of Contemporary Hospitality Management Research*, Chichester: Wiley.
- BRYMAN A. (2001) *Social Research Methods*, Oxford: Oxford University Press.
- CARDELLO A. (1982) *Hospital Patient Feeding Systems*, Washington D.C.: National Academic Press.
- CARDELLO A., BELL R. and KRAMER M. (1996) Attitudes of consumers toward military and other institutional foods. *Food Quality and Preference*, **7**, 7-20.
- COHEN L., MANION L., and MORRISON K. (2000) *Research Methods in Education*, London: Routledge Falmer.
- COUNCIL OF EUROPE (2001) *Food and Nutritional Care in Hospitals: How to prevent undernutrition*, Draft report: Council of Europe.
- COUNCIL OF EUROPE (2003) *Resolution on food and nutritional care in hospitals*, www.bda.uk.com.
- CRESWELL J.W. (1998) *Qualitative Inquiry and Research Design*, London: Sage.
- De LUCO D. and CREMER M. (1990) Consumers' perceptions of hospital food and dietary services. *Journal of The American Dietetic Association*, **90**, 1711-1715.
- DICKERSON J.W.T. (1989) Hospital Catering - a Nutritional Challenge? *Nutrition and Health*, **6**, 147-153.
- DOUCETTE L. (1999) Healthcare Foodservice gets down to business. *Foodservice Equipment and Supplies*, **52**, 38-44.
- DUBÉ L., TRUDEAU E. and BÉLANGER M-C (1994) Determining the complexity of patient satisfaction with foodservices. *Journal of The American Dietetic Association*, **94**, 394-400.
- DUBÉ L. and MENON K. (2000) Multiple roles of consumption emotions in post-purchase satisfaction with extended service transactions. *International Journal of Service Management*, **11**, 287-304.
- ENGELL D., KRAMER M., MALAFI T., SALOMON M. and LESHER L. (1996) Effects of effort and social modeling on drinking in humans. *Appetite*, **26**, 129-138.

- FAULKNER M. (2001) A measure of patient empowerment in hospital environments catering for older people. *Journal of Advanced Nursing*, **34**, 676-686.
- GIBSON P. (2003) *Using case studies to examine complex research questions* In Ball S. (ed.) *Proceedings of the 12th Annual CHME Hospitality Research Conference*, Sheffield: Sheffield Hallam University.
- GLEDHILLI B. (2000) Perfect Hostess. *Target Healthcare*, **April**, 10-13.
- GOMM R., HAMMERSLEY M. and FOSTER P. (2000) *Case Study Method*, London: Sage.
- 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*, **94**, 1129-1134.
- HWANG LI-JEN J., EVES A. and DESOMBRE T. (2003) Gap analysis of patient meal service perceptions. *International Journal of Health Care Quality Assurance*, **16**, 143-153.
- JACKSON R. (1997) Meal Delivery. *Healthcare Food and Nutrition Focus*, **13**, 6.
- JEEJEEBHOY K. (2003) Hospital malnutrition: is a disease or lack of food? *Clinical Nutrition*, **22**, 219-220.
- JONES T. (2003) *What the books say - The use of content analysis to establish textbook 'normative theory'* in Ed Ball S. *Proceedings of the 12th Annual CHME Hospitality Research Conference*, Sheffield: Sheffield Hallam University.
- KIPPS M. and MIDDLETON T.C. (1990) Achieving quality and choice for the customer in hospital catering. *International Journal of Hospitality Management*, **9**, 69-83.
- KONDRUP J. (2004) Proper hospital nutrition as a human right. *Clinical Nutrition*, **23**, 135-137.
- KYLE U.G., SCHNEIDER S.M., PIRLICH M., LOCHS H., HEBUTERNE., PICHARD C. (2005) Does nutritional risk, as assessed by Nutritional Risk Index, increase during hospital stay? A multinational population-based study. *Clinical Nutrition*, **24**, 516-524

- LAU C. and GREGOIRE M. B. (1998) Quality ratings of a hospital food service department by inpatients and post-discharge patients. *Journal of The American Dietetic Association*, **98**, 1303-1307.
- LAVECCHIA G. (1998) Feeding patients with just-in-time systems. *Food Management*, **33**, 20-22.
- LEE-ROSS D. (1999) A comparison of service predispositions between NHS nurses and hospitality workers. *International Journal of Health Care Quality Assurance*, **12**, 92-97.
- McWHIRTER J.P. and PENNINGTON C.R. (1994) Incidence and Recognition of Malnutrition in Hospitals. *British Medical Journal*, **308**, 945-948.
- MOWE M., BOSAEUS I., RASMUSSEN H., KONDRUP J., UNOSSEN M. and ØIVIND I. (2006) Nutritional routines and attitudes among doctors and nurses in Scandinavia: A questionnaire based survey, *Clinical Nutrition*, **25**, 524-532.
- NHS ESTATES (2001) ERIC - Estates Return Information Collection.
www.nhsestates.gov.uk.
- NHS ESTATES (2003) *The Word on the Ward*. Ward Housekeeping Newsletter
www.nhsestates.gov.uk.
- NIGHTINGALE F. (1859) *Notes on Nursing - What it is and what it is not*, London: Century Company.
- O'HARA P.A., HARPER D.W., KANGAS M., DUBEAU J., BORSUTZKY C. and LEMIRE N. (1997) Taste, temperature and presentation predict satisfaction with food services in a Canadian continuing-care hospital. *Journal of the American Dietetic Association*, **97**, 401-405.
- PINE B.J. and GILMORE J.H. (1999) *The experience economy: work is theatre and every business a stage*, Boston, Mass: Harvard Business School.
- PIZAM A. and ELLIS T. (1999) Customer satisfaction and its measurement in hospitality enterprises. *International Journal of Contemporary Hospitality Management*, **11**, 326-339.
- RASMUSSEN H., KONDRUP J., STAUN M., LADEFOGED K., JORGENSEN L., JAKOBSEN J., KRISTENSEN H. and WENGLER A. (2006) A method for implementation of nutritional therapy in hospitals. *Clinical Nutrition*, **25**, 515-523.

RIDDIFORD S., GAZIBARICH B. and MILOSAVLJEVIC M. (2000) What is the role of dietetic support staff? A survey of dietetic managers in New South Wales public hospitals. *Australian Journal of Nutrition and Dietetics*, **57**, 215-220.

ROBSON C. (1997) *Real World Research*, Oxford: Blackwell Publishers Ltd.

SCHWARTZ D.B. and GUDZIN D. (2000) Preadmission nutrition screening: Expanding hospital-based nutrition services by implementing earlier nutrition intervention. *Journal of the American Dietetic Association*, **100**, 81-87.

STAKE R. (2000) *The Case Study Method in Social Enquiry In Gomm R., Hammersley M. and Foster P. (ed) Case Study Method*, London: Sage.

UNITED KINGDOM CENTRAL COUNCIL FOR NURSING, MIDWIFERY AND HEALTH VISITING. (1997) *Registrar's Letter*, London: UKCC.

VLAMING S., BIEHLER A., CHATTOPADHYAY S., JAMIESON C., CUNLIFFE A. and POWELL-TUCK J. (1999) Nutritional status of patients on admission to acute services of a London teaching hospital. *Proceedings of the Nutrition Society*, **58**, 119A

WAITE M.L., ANEIROS S., HUDSON D.I. and CARTWRIGHT A.F. (2000) Ward hostess study at Basildon and Thurrock General Hospitals NHS Trust. *Proceedings of the Nutrition Society*, **59**, 183A

WILSON M., MURRAY A.E., BLACK M.A. and McDOWELL D.A. (1997) The implementation of hazard analysis and critical control points in hospital catering. *Managing Service Quality*, **7**, 150-156.

YIN R. K. (1998) *The abridged version of case study research In Bickman L. and Rog D. J., (ed.) Handbook of applied social research methods*, U.S.A.: SAGE Publications Inc.

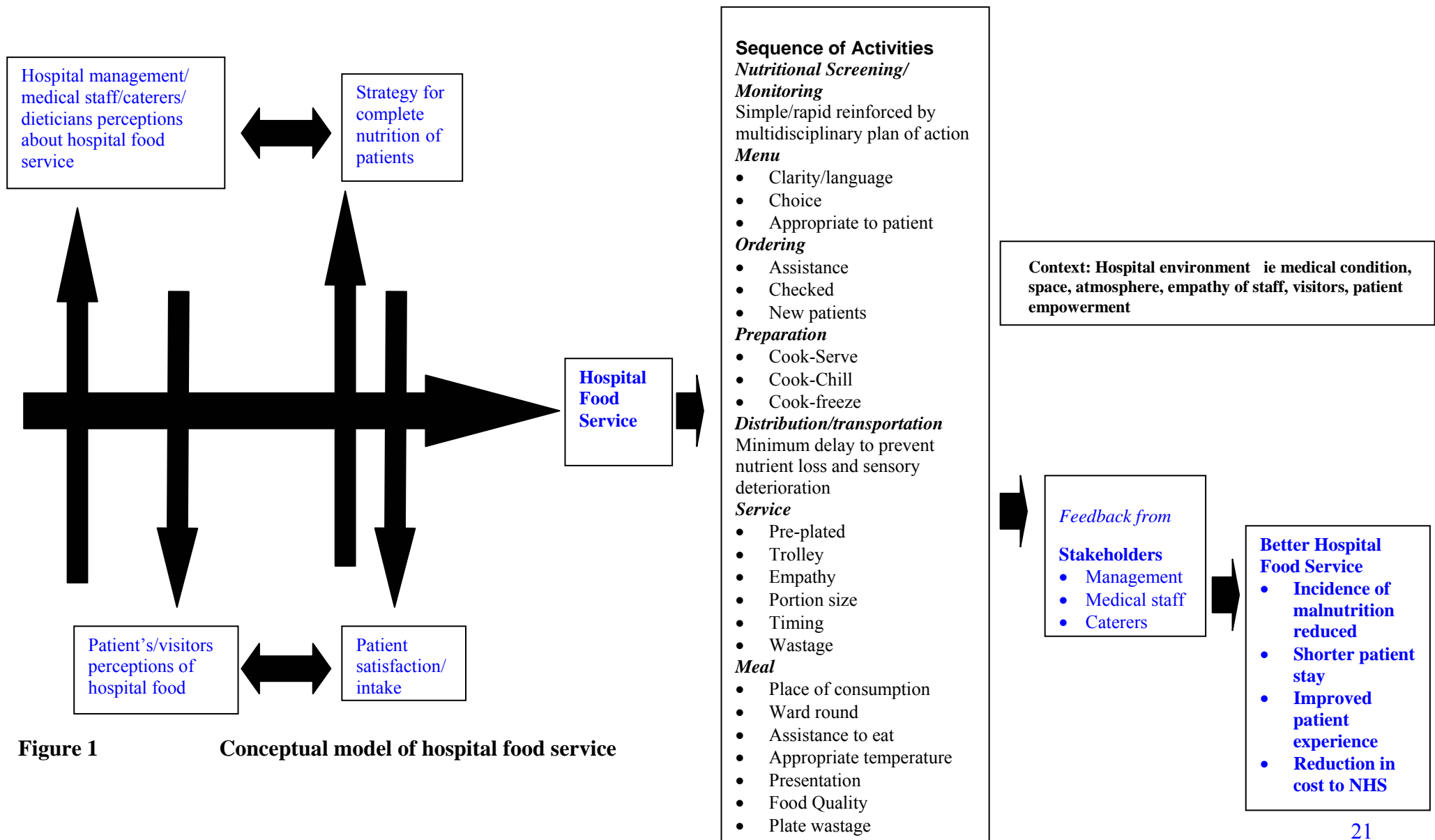


Figure 1 Conceptual model of hospital food service

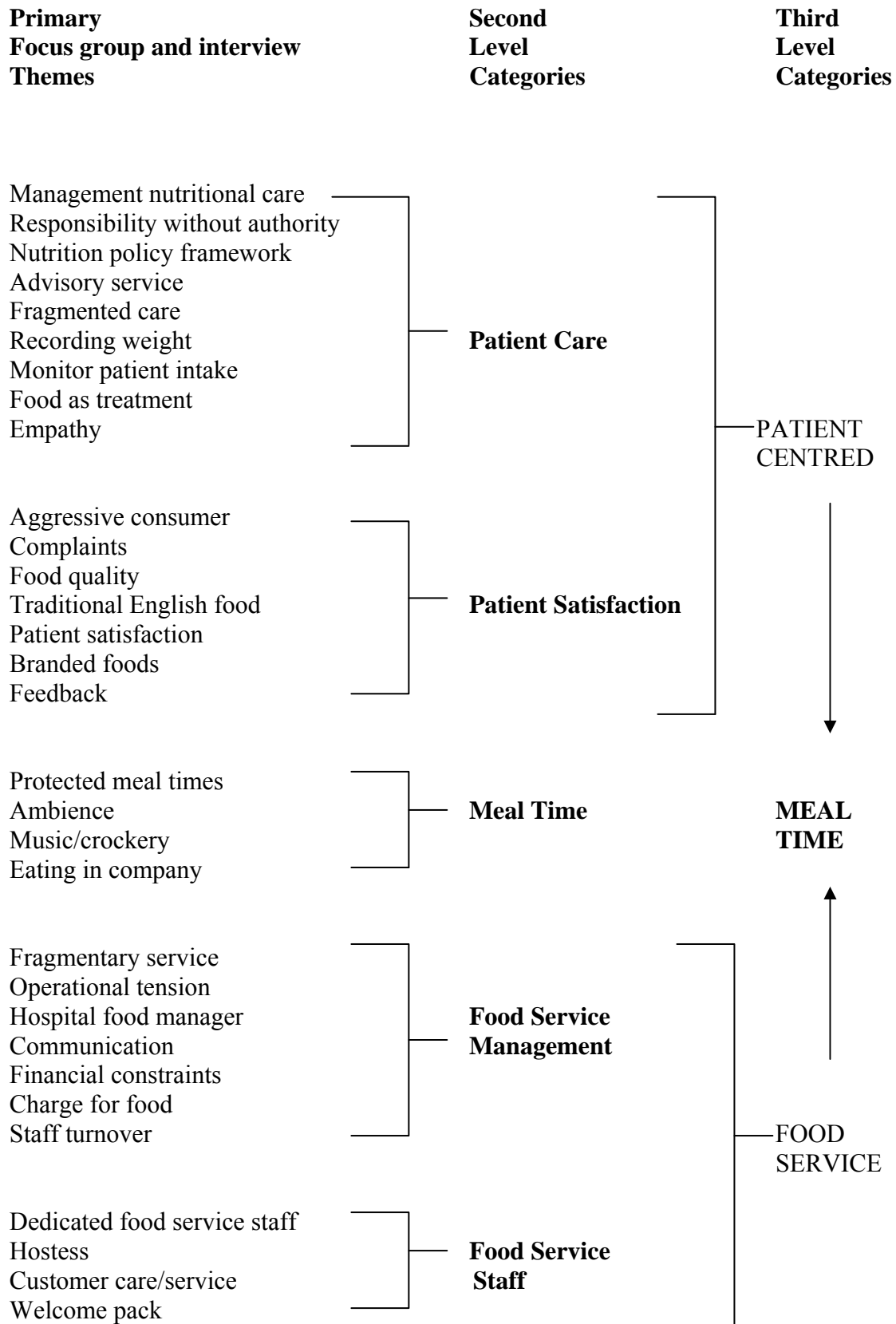


Figure 2 Tree diagram for hospital food service using NUD*IST software program

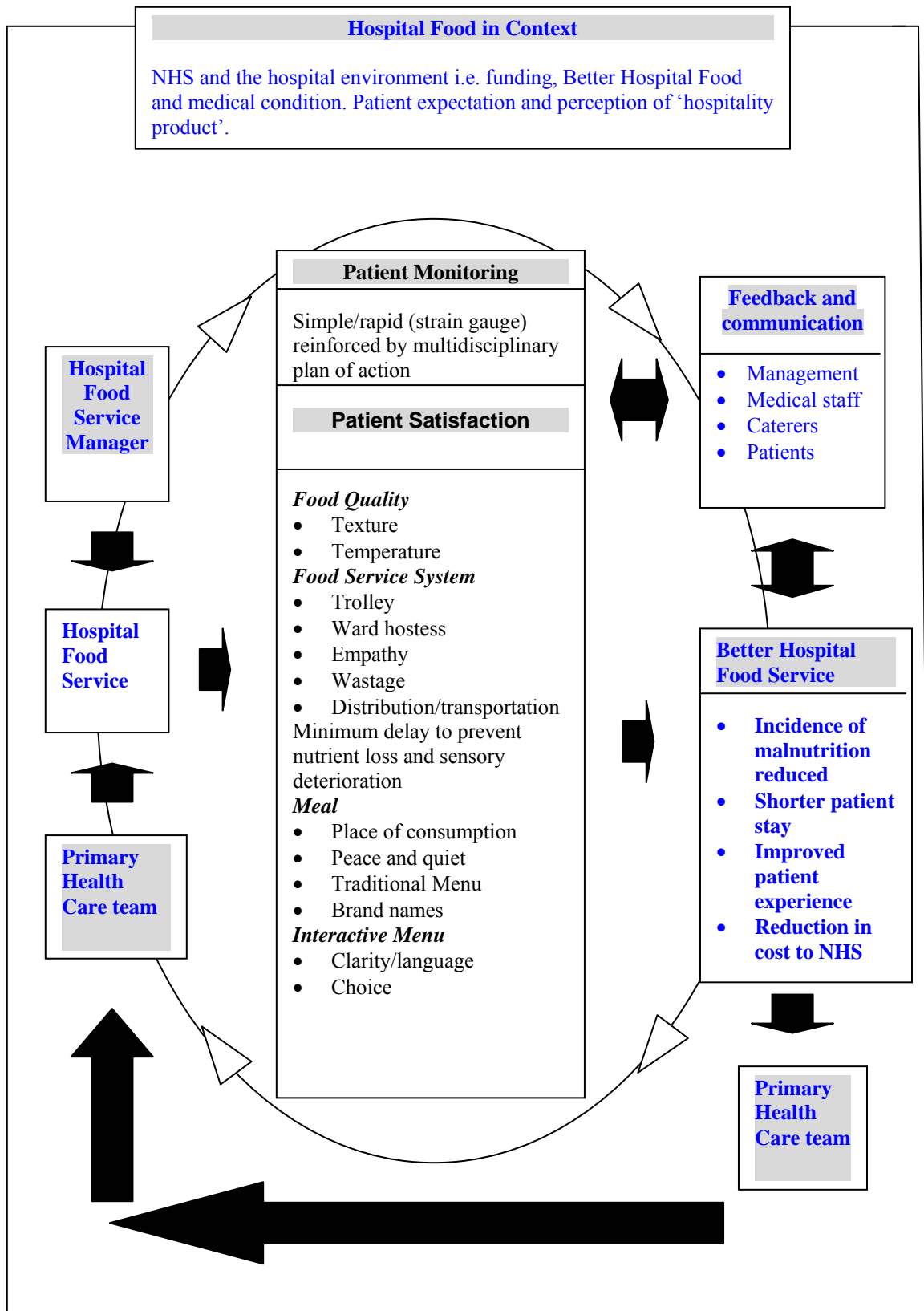


Figure 3 A theoretical model of patient experience and satisfaction with hospital food service

Appendix 1

Research Protocol for focus groups/interviews

- Monitoring: mandatory recording of weight on admission/pre-admission and discharge (feeding regime for those identified ‘at risk’)
- Menu clarity and choice
- Nurses to monitor food consumption/food wastage
- Food as treatment?
- Dedicated food service staff?
- Assistance for vulnerable patients?
- Interruption free mealtimes?
- Food service system – dedicated food service staff?
- Food quality – budget?
- Visitors bring in extra food?
- Food service environment
- Cooperation/operational tension
- Clearly defined responsibility in planning and managing nutritional care?
- Empathy/nurture/anticipation
- Patients more demanding – aggressive consumer? The patient is king?
- Contact with Primary Health Care team?