Hospital foodservice directors identify the important aspects when implementing room service in hospital foodservice

Zafrirah Mohd Nor
Iowa State University

Follow this and additional works at: http://lib.dr.iastate.edu/etd

Part of the Food and Beverage Management Commons, and the Health and Medical Administration Commons

Recommended Citation
Mohd Nor, Zafrirah, "Hospital foodservice directors identify the important aspects when implementing room service in hospital foodservice" (2010). Graduate Theses and Dissertations. 11588.
http://lib.dr.iastate.edu/etd/11588

This Thesis is brought to you for free and open access by the Graduate College at Iowa State University Digital Repository. It has been accepted for inclusion in Graduate Theses and Dissertations by an authorized administrator of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.
Hospital foodservice directors identify the important aspects when implementing room service in hospital foodservice

by

Zafirah Mohd Nor

A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

Major: Foodservice and Lodging Management

Program of Study Committee:
Susan W. Arendt, Major Professor
Catherine Strohbehn
Douglas G. Bonett

Iowa State University
Ames, Iowa
2010

Copyright © Zafirah Mohd Nor, 2010. All rights reserved.
DEDICATION

This thesis is dedicated to all my beloved ones for supporting me throughout all my studies. For my father, who taught me that the best kind of knowledge to have is that which is learned for its own sake. It is also dedicated to my mother, who taught me that even the largest task could be accomplished if it is done one step at a time. They raised me, supported me, taught me, and loved me. I would like to thank to my brother who provided extraordinary encouragement and for supporting me spiritually throughout my life. For my fiancé, thank you for helping me to get through the difficult times, and for all the emotional support, entertainment, and caring you provided.
# TABLE OF CONTENTS

LIST OF TABLES ................................................................................................................................. vi

ACKNOWLEDGEMENTS ....................................................................................................................... vii

CHAPTER 1: INTRODUCTION .............................................................................................................. 1
  Problem Statement .......................................................................................................................... 3
  Purpose of the Study ....................................................................................................................... 4
  Research Questions ......................................................................................................................... 4
  Significance of the Study ............................................................................................................... 4
  Definitions of Terms ....................................................................................................................... 5
  Thesis Organization ....................................................................................................................... 6

CHAPTER 2: REVIEW OF LITERATURE .............................................................................................. 7
  Introduction ................................................................................................................................... 7
  Foodservice Systems in Hospitals ................................................................................................. 7
  Role of Hospital Foodservice Directors ....................................................................................... 11
  Importance of Patients’ Satisfaction .......................................................................................... 12
  Problems Prior to Room Service Implementation .................................................................... 13
  Implementation of Room Service ............................................................................................... 16

CHAPTER 3: METHODOLOGY ........................................................................................................... 21
  Research Design ............................................................................................................................ 21
  Use of Human Subjects ................................................................................................................ 21
  Key Informant Interview .............................................................................................................. 22
    Participant Selection .................................................................................................................. 22
    Research Instrument .................................................................................................................. 22
    Data Collection .......................................................................................................................... 22
    Data Analysis .......................................................................................................................... 23
  E-mail Interviews .......................................................................................................................... 23
    Participant Selection .................................................................................................................. 23
    Research Instrument .................................................................................................................. 25
    Data Collection .......................................................................................................................... 25
    Data Analysis .......................................................................................................................... 26
  Web Questionnaire ....................................................................................................................... 27
    Participant Selection .................................................................................................................. 27
    Research Instruments ............................................................................................................... 27
    Pilot Study .................................................................................................................................. 29
    Data Collection .......................................................................................................................... 30
    Data Analysis .......................................................................................................................... 31
CHAPTER 4: ROOM SERVICE IMPLEMENTATION: IMPORTANT ASPECTS IDENTIFIED BY HOSPITAL FOODSERVICE DIRECTORS ............................................ 33
  Abstract ....................................................................................................................... 33
  Introduction ................................................................................................................. 35
  Methods ....................................................................................................................... 37
    Sample Selection ............................................................................................ 37
    Survey Instrument .......................................................................................... 37
    Data Collection ............................................................................................... 38
    Data Analysis .................................................................................................. 38
  Results ......................................................................................................................... 39
    Demographics of Hospital Foodservice Director Respondents ...................... 39
    Importance Ratings ........................................................................................ 41
  Discussion ................................................................................................................... 43
    Limitations ..................................................................................................... 47
  Conclusions ................................................................................................................. 47
  References ................................................................................................................... 49

CHAPTER 5: GENERAL CONCLUSIONS ........................................................................ 62
  Limitations of the Study .............................................................................................. 64
  Future Research ........................................................................................................... 64

REFERENCES ................................................................................................................... 66

APPENDIX A: HUMAN SUBJECTS APPROVAL ............................................................ 73

APPENDIX B: HUMAN SUBJECTS MODIFICATION FORM ......................................... 74

APPENDIX C: E-MAIL MESSAGE FOR KEY INFORMANT INTERVIEW ................. 75

APPENDIX D: INFORMED CONSENT DOCUMENT FOR KEY INFORMANT INTERVIEW ............................................................................................................................... 77

APPENDIX E: KEY INFORMANT INTERVIEW CODING AND THEMING ............... 80

APPENDIX F: FIRST E-MAIL MESSAGE: E-MAIL INTERVIEWS ......................... 87

APPENDIX G: SECOND E-MAIL MESSAGE: E-MAIL INTERVIEWS ....................... 88

APPENDIX H: THANK YOU/REMINDER E-MAIL MESSAGE TO HOSPITAL FOODSERVICE DIRECTORS: E-MAIL INTERVIEWS ......................... 89

APPENDIX I: FACTORS OF ROOM SERVICE IMPLEMENTATION QUESTIONNAIRE RESPONSES ............................................................................................................................... 90

APPENDIX J: PILOT TEST INTRODUCTORY MESSAGE AND FORM ....................... 95
LIST OF TABLES

Table 1. Demographic Information of Hospital Foodservice Director Respondents .......... 53
Table 2. Room Service Information Provided by DRS Respondents ................................. 56
Table 3. Importance Rating of Aspects When Deciding to Implement Room Service ....... 58
Table 4. Factor Loadings and Factor Scores of Room Service Factors ......................... 60
ACKNOWLEDGEMENTS

I offer my sincerest gratitude to Dr. Susan W. Arendt who has been the ideal thesis supervisor. Her sage advice, insightful criticisms, guidance, review, and patient encouragement aided the writing of this thesis in innumerable ways. I could not have imagined having a better advisor and mentor for my master’s study. I will be forever grateful for the number of hours she dedicated to my study.

I would also like to thank Dr. Catherine Strohbehn and Dr. Douglas G. Bonett whose steadfast support of this study was greatly needed and deeply appreciated. Dr. Strohbehn’s expertise and her constructive feedbacks helped me to develop ideas, think more critically, and add value to my work. Dr. Bonett’s statistical knowledge helped with analyzing the data, and his knowledge helped with analyzing the outcomes.

Lastly, I could have never finished this paper without the great encouragement from all my beloved friends in Ames as well as in my country.
CHAPTER 1: INTRODUCTION

Food served in hospitals has been found to be one of the major influences on overall patient satisfaction during a patient’s hospital stay. In a study of patients, McKinnon (2007) found that patients believe they do not have control over anything during their hospitalization. Food choice is one important area where patients may seek to have greater control. A study completed in two Swiss hospitals by Stanga et al. (2003) revealed the longer a patient stayed in the hospital, the greater his/her dissatisfaction with the food provided. Moreover, patients who stay longer in a hospital are more likely to have severe conditions, a higher tendency to lose their appetites, and to eat less food (Stanga et al.). In a conventional foodservice system, Kandiah, Stinnet, and Lutton (2006) found the amount of food discarded increased by 14.1% among patients who stayed longer in the hospital. Adequate meal consumption to meet patients’ dietary requirements is necessary and important to aid in recovery (Edwards & Hartwell, 2006; Stanga et al.). It is crucial for the hospital team to provide patients with foods desired to ensure treatment is successful (Huq, 2001; Norton, 2008; Sheehan-Smith, 2006a). Patients have the right to ensure their nutritional requirements are met during their stays in hospitals (Beck et al., 2001). Thus, it is the responsibility of foodservice teams to elevate the quality, delivery, and service of patients’ meals to ensure a standard of nutritional quality, balance, and palatability for foods hospitals serve.

Hospital foodservice directors (HFDs) face challenges in administering their foodservice systems. Ensuring patient satisfaction, hiring and retaining high-skilled employees, dealing with environmental issues, and controlling food costs are major components that HFDs must take into consideration (Foodservice Equipment & Supplies, 2007). In a trade journal, Shockey (2003) noted current patients are highly knowledgeable
and very concerned about their treatment plans and health care decisions. Therefore, these patients are more demanding, and they require better services during their hospitalization.

Patients’ complaints, including meals delivered while sleeping or not in the room, foods served cold, and lack of appetite are categorized as major challenges for hospital foodservice operations (McLymont, Cox, & Stell, 2003). Patients care about meal choices, meal times, meal presentation, and overall satisfaction during their hospital stay (Schirg, 2007). Beck et al. (2001) determined patients should have the opportunity to become involved in their meal planning decisions and have some control over food selection while in the hospital. Also, they found immediate feedback from patients regarding hospital food is important to increase the quality of meals served. These challenges can be addressed by changing the way food is delivered, the level of service provided, the menu, and the staff (Cox, 2006). Thus, several hospitals have turned to room service as a method to overcome some of these challenges.

Approximately 40% of the 4,800 hospital members of the American Hospital Association had already or planned to incorporate a room service system in their hospitals by 2011 (cited in Severson, 2006). Likewise, in 2008 the National Society for Healthcare Foodservice Management surveyed its operator members, including healthcare food and nutrition professionals, across North America and found 37% of the operators had implemented room service. Twenty-five percent of these who had implemented it had done so in the previous year (cited in Buzalka, 2008). The sample size was not given, so response rate is undeterminable.

The changing trends in food and service, especially in hospitals and retirement facilities, provide a wide range of menu choices to patients and residents. Patients and
residents experience better service where they have opportunities to select their meal preferences like in a restaurant (Vasilion, 2004). The quality of food reportedly improved, specifically with regards to temperature control and the variety of selections to meet dietary restrictions.

Customer-oriented service (room service system) is being approached by a growing number of hospitals. At some hospitals implementing room service, culinary-trained chefs were hired to prepare appealing and higher quality food to enhance patients’ satisfaction (Norton, 2008; White, 2007). Also at some hospitals, employees are responsible for giving their full attention to assisting patients with their meal choices, taking menu orders, and delivering food. Patients feel very welcome when close interaction between employees and patients exist during patients’ hospitalization stay (Reynolds, 2003). Shockey (2003) wrote that employees built strong bonds with patients, and this made them enjoy and love doing their job. With room service implementation, foodservice staff satisfaction increased and morale improved. Employees felt motivated to complete their jobs and felt pride in serving the patient.

**Problem Statement**

A few research studies have been completed from patients’ viewpoints, especially on patients’ satisfaction with room service implementation. Most of these studies have focused on the impact after room service implementation. However, there are no known studies or scholarly research that has explored aspects needed for consideration from the hospital foodservice director’s viewpoint when implementing room service.

Traditionally, patients have had to select their meals 24 hours in advance for tray service the next day. Hospital room service is an innovative concept in patient meal delivery
service and its popularity seems to be expanding throughout the United States. As hospitals strive to achieve the highest level of patient care possible, room service gives the patient more flexibility.

HFDs are directly involved in the change-over process from more traditional delivery methods to room service. They are the best suited to share information on the different aspects of room service implementation. By examining these aspects, researchers can provide valuable information to hospital management whether room service implementation is planned or is already underway. Foodservice directors who do not currently have a room service system could obtain best-practice ideas before implementing room service in the hospital foodservice operation.

**Purpose of the Study**

The purpose of this study is to (a) identify the key aspects hospital foodservice directors consider when implementing a room service system and (b) assess the importance of each aspect considered by hospital foodservice directors when deciding whether to implement a room service system.

**Research Questions**

The research questions of this study are: (a) What are the aspects hospital foodservice directors considered when implementing a room service system? and (b) Which of these aspects are most important to hospital foodservice directors when implementing a room service system?

**Significance of the Study**

This study will provide useful direction for those who have already implemented a room service system as well as those who are considering implementation of room service.
Findings from this study will assist HFDs discover and identify implementation aspects that are most important and potentially provide direction in the allocation of resources prior to implementing room service. Administrators in hospitals with declining resources, who may be reluctant to implement room service because of perceived startup costs or increased operating costs, could develop strategies to focus on selected identified important aspects to improve food service for patients.

**Definitions of Terms**

The following terms and definitions are used in this study:

*Cook-serve*: a conventional or “traditional” system in which food is prepared for immediate distribution using a standard cycle menu (Schirg, 2007; Spears & Gregoire, 2006).

*Assembly-serve*: a convenience system in which food requires minimal cooking. Fully prepared foods are purchased, stored, assembled, and heated before being served (Payne-Palacio & Theis, 2001).

*Cook-chill-serve meal system*: a system in which foods are prepared; in one variation food is prepared either preplated or in bulk and held at refrigerator temperature until service. The rethermalization process is utilized before food distribution (Payne-Palacio & Theis, 2001; Schirg, 2007).

*Cook-freeze-serve meal system*: a system in which food is prepared and then frozen for use at a later time. A rethermalization process is utilized before food is distributed (Payne-Palacio & Theis, 2001; Schirg, 2007).

*Rethermalization*: the process of heating foods before distribution to patients for eating (Payne-Palacio & Theis, 2001).
Patient satisfaction: a measurement of the patient’s evaluation of quality and service provided by the hospital employees (Guadagnino, 2003).

Special diet: a patient diet, prescribed by a physician, that has certain requirements or restrictions (i.e., sodium content, calories, fat content; Mahan & Escott-Stump, 2000; Schirg, 2007).

Standard cycle menu: a menu planned for a specified period of time, offering a limited selection of menu items. Each menu is used for a specified period of time and then the cycle is repeated (Schirg, 2007; Sullivan & Atlas, 1998).

Spoken menu: a concept in which patients are told what is on the menu and the menu or order is filled out for each patient by a food and nutrition service representative who verbally describes the menu to patients. The spoken menu offers limited menu items and is delivered at a designated time (Puckett, 2004; Schirg, 2007).

Room service: for this study, an order, service, and delivery process. A meal is prepared at a patient’s request, including what and when the individual wants to eat, and offers a variety of food choices and flexible times to order the meal. Sometimes the term hotel-style room service concept is used instead (Norton, 2008; Reynolds, 2003).

Thesis Organization

Following this introductory chapter are four chapters. Chapter 2 contains a review of literature, Chapter 3 comprises a detailed methodology, Chapter 4 is a journal paper, and Chapter 5 presents general conclusions. References cited in Chapters 1, 2, 3, and 5 are listed following Chapter 5. References cited within the journal paper are listed within that chapter. Appendices are at the end of the thesis.
CHAPTER 2: REVIEW OF LITERATURE

Introduction

Shockey (2003) described patients as more demanding, specifically, wanting high quality services in the hospital. Upgrading hospital services and showing appreciation to patients influence patients’ overall perceptions of quality of care, increases their nutritional intake, and enhances their satisfaction (Freil et al., 2006). Thus, hospital administrators need to shift their services from provider convenience to customer-oriented services and ensure they meet patients’ future demands.

The first part of this review of literature explains common foodservice systems in hospitals and the role of hospital foodservice directors. The next part focuses on the importance of patients’ satisfaction, problems prior to room service implementation, and finally the implementation of room service.

Foodservice Systems in Hospitals

Traditionally, there were four types of foodservice systems used in healthcare facilities: (a) cook-serve, (b) assembly-serve, (c) cook-freeze-serve, and (d) cook-chill-serve. The cook-serve production system, also known as conventional or “traditional,” was the common system used in hospital foodservice operations (Spears & Gregoire, 2006; Sullivan & Atlas, 1998). The raw foods were purchased, prepared on the premises, and served directly after preparation, either plated or in bulk (Edwards & Hartwell, 2006; Payne-Palacio & Theis, 2001; Spears & Gregoire). Although, food preparation in this system was classified as on-site, not all foods were prepared from scratch. Payne-Palacio and Theis stated shortages of labor, high labor costs, and access to convenience food led to changes in the conventional system (Payne-Palacio & Theis). Hospital foodservice teams might purchase pastry items and
pre-processed (canned or frozen) fruits and vegetables instead of preparing raw foods on-site (Spears & Gregoire; Sullivan & Atlas).

In hospital facilities, meal assembly was another step between production and service in the foodservice system. Using centralized or decentralized meal assembly, food was served to the patients on trays. In centralized meal assembly, before the food was delivered to the patients, the trays were assembled close to the production area and distributed by carts or conveyors to patient units. Food was delivered in bulk for decentralized meal assembly (Spears & Gregoire, 2006). Schirg (2007) described a cook-serve system as one in which, using a 1- or 2-week standard cycle menu, food is assembled and served immediately, with a specific type of temperature control to the patients.

Hospitals and some healthcare institutions were noted as prime users of assembly-serve systems in their respective foodservice operations (Payne-Palacio & Theis, 2001). Sullivan and Atlas (1998) described assembly-serve as a convenience production system that requires minimal cooking. Basically, most of the foods are outsourced from commercial establishments, bought in a prepared frozen state in bulk form, and packaged in disposable pans. Spears and Gregoire (2006) noted that the food is purchased in three forms: bulk, preportioned, and preplated (requiring less preparation). Processed food items are purchased, stored, assembled, heated, and served (Payne-Palacio & Theis; Spears & Gregoire). Related to the assembly-serve production system, entrée meals require thawing, plating, and assembling processes. Moreover, frozen dessert items require only minimal food preparation process: food is thawed and portioned before delivery to patients (Sullivan & Atlas). However, for patients who require special diets, some of the readily available items may not always fit with their dietary requirements. Therefore, for hospitals utilizing this system, a
Combination system may be needed such that some of the menu items are prepared using conventional methods (Spears & Gregoire).

Spears and Gregoire (2006) stated that ready-prepared foodservices in hospitals consist of cook-freeze-serve and cook-chill production systems. In these systems, menu items are not produced for immediate service. Fundamentally, in a cook-freeze-serve system, food is prepared on-site, is bulk packaged (although sometimes individual-portion packaging is used), blast frozen, preserved, stored in a frozen state, thawed in advance, assembled, distributed cold-plated to wards, rethermalized on wards, and delivered to patients as meals (Payne-Palacio & Theis, 2001; Spears & Gregoire; Sullivan & Atlas, 1998). In the cook-chill meal system, the cooks prepare the food in a traditional way in advance of service, then bring the food down to the appropriate temperature, and store it under refrigeration until ready for use. A rethermalization system is used to reheat the food before serving to the patients (Payne-Palacio & Theis; Schirg, 2007; Sullivan & Atlas).

Studies have been done on several aspects of foodservice systems. Hwang, Desombre, Eves, and Kipps (1999) determined the quality of food texture would deteriorate due to the freezing or thawing process in a cook-freeze system. They added that, when utilizing a cook-chill system, lack of temperature control would also have an effect on the safety and nutritional content of the food. McClelland and Williams (2003) explored differences between cook-serve and cook-chill systems in a study of 80 hospitals in Australia. They reported hospitals using a cook-chill system provided a greater choice of hot menu items than did those using a cook-serve system. However, hospitals with cook-chill systems were less likely to offer the patients a choice of serving size and also the nutritional information was not included in their menu. In a study by Mibey and Williams (2002), 93
hospitals utilizing either cook–serve or cook–chill systems reported using a fixed-cycle menu; none of them reported using a restaurant-style menu.

Little research has been completed on different types of meal distribution systems in hospital foodservice specifically related to patients’ satisfaction. Lambert, Boudreaux, Conklin, and Yadrick (1999) explored the levels of satisfaction among patients, employees, and foodservice directors with food and service quality in hospitals using different types of meal distribution systems. Meal delivery service, for this study, comprised four types: (a) meals directly served to patients by foodservice employees, (b) meals directly served to patients by nursing service employees, (c) meals served to patients by foodservice employees with specific training on meal-service procedures, and (d) meals served to patients by hospital employees focused on patient-care services.

In Lambert et al.’s (1999) study, three sets of questionnaires were delivered to 395 patients with specific traits, 161 employees, and 19 foodservice directors in 19 healthcare facilities that used different types of meal delivery service. Results indicated food quality was higher with meal delivery by foodservice employees than with meal delivery by nursing employees. There were no differences in employees’ ratings among the four of types of meal distribution, but least satisfaction was shown in foodservice directors’ ratings on meals served by nursing employees compared to others. The authors concluded that to implement new meal delivery service, health care facilities need to consider various aspects, such as energy, time, and resources, to improve patients’ satisfaction.

Today, hospital foodservice operations have changed to meet patients’ demands. Most hospitals are focusing on food delivery systems to improve the quality of hospital foodservice. Jones and Lockwood (1995) defined a food delivery system as involving little or
no food production and focusing only on service. Hospitals are providing excellent meal-delivery service to enhance and retain patients’ satisfaction (Cox, 2006), for example, the spoken menu concepts in which foodservice workers present verbally the menu choices to patients prior to each meal. Schirg (2007) further explained that patients’ meals are sent immediately to the kitchen by orders taken by a spoken menu system. Recently, patients have had opportunities to choose their meals from a restaurant-style menu and meals are prepared to order and on demand in hospital foodservice operations (Mandell & Sparke, 2008; McLymont et al., 2003; Schirg).

Role of Hospital Foodservice Directors

Sullivan and Atlas (1998) noted that directors of hospital foodservices, handling diverse and complex managerial roles, play an important role both externally and internally in a hospital setting. Hartwell, Edwards, and Symonds (2006) also emphasized HFDs are responsible for overseeing the whole meal process in the hospital, from kitchen to consumption. Gregoire, Sames, Dowling, and Lafferty (2005) reported that both foodservice directors and hospital executives indicated that leadership and managerial skills are the most important competencies needed in hospital foodservice. It is essential for HFDs to possess these skills to ensure the accomplishment of organizational goals.

Sullivan and Atlas (1998) stated that HFDs also need to focus more on managing the complexity of the foodservice system, which includes “menu planning, equipment, food and materials, finances and human resources” (p. 31). There were different perceptions between HFDs and hospital executives regarding financial issues, but both indicated “acts as effective team leader” as the most important competency for the role of HFDs. Regarding financial issues, HFDs indicated that “analyzes financial information for use in decision making” as
one of the highest-rated competencies for importance, however hospital executives perceived this competency as less important. Hospital executives may interpret this competency as relating to finances focused on technical aspects of data management, whereas HFDs may view this as using the information to make decisions (Gregoire et al., 2005).

Foodservice directors play an important role in developing good training and educational programs for their staff in order to obtain maximum output. In addition, the importance of training and knowledge is useful in developing standard practices relating to hospital foodservice operation. According to the Management in Food and Nutrition Systems Dietetic Practice Group of the American Dietetic Association (ADA), some registered dieticians working as hospital food and nutrition services directors are responsible for observing and empowering subordinates. As hospital foodservice directors, they need to build good interactions with the clients and administration of the facility to enhance the quality of services provided (Puckett et al., 2009).

Exceeding patient expectations to get immediate access to resources and services is the most decisive challenge facing hospital foodservice management. Therefore, HFDs have to put forth greater efforts to re-examine the facilities and types of services provided to meet patients’ demands and increase patients’ satisfaction (Foodservice Equipment & Supplies, 2007).

**Importance of Patients’ Satisfaction**

Patients’ satisfaction level is an indicator measuring how satisfied patients are with the quality of medical care they receive in healthcare facilities. Feedback obtained from patients’ satisfaction surveys in hospitals is important for hospital management to determine operational strengths and weaknesses for continued quality improvement. Furthermore,
analysis of patient satisfaction data is a valuable tool, not only to attract market share or increase profitability, but also to use as a guideline for strategy development in the future (Schirg, 2007). Nowadays, in very competitive health care operations, patients’ demands have increased as they seek better services than in the past. It is crucial for hospital administrations to enhance their quality of service to meet specifically what patients want (Gaudagnino, 2003).

Problems Prior to Room Service Implementation

Typically, the management team in hospital foodservice works diligently to improve patients’ satisfaction. Several studies have identified many problems in present foodservice systems that impact patients’ satisfaction. Williams, Virtue, and Adkins (1998) revealed that patients have limited options in selecting their meals, especially in a conventional foodservice system. Patients must select their meals 24 hours in advance. They must choose their meals based on menu cycles, and they have little control over what and when they eat. By using more convenience foods in assembly-serve productions, there are limited food choices for modified diets, which creates difficulties in accommodating patients’ needs regarding the complexity of their diet prescriptions (Sullivan & Atlas, 1998). Similar findings have been noted by Huang and Shanklin (2008), who found that the lowest consumption percentage among the elderly in assisted living facilities (77%) was due to a lack of menu choices. Furthermore, foodservice departments serve their meals at specific times. Typically, three meals (at 8 am, 12 pm, and 5 pm) and three snacks (at 10 am, 2 pm, and 7 pm) are served every day. Based on their patients’ satisfaction survey, Williams et al. (1998) identified that most patients are not satisfied with the menu options and meal times offered by the present foodservice system.
There are many issues regarding the amount of food waste, late tray delivery, and labor usage that need to be emphasized as main problems in the traditional foodservice system (McLymont et al., 2003). Most of the time, with a traditional foodservice system, the foodservice staff does not have a good plan regarding the amount of food wasted as patients transfer from place to place because of changes in their health conditions. Due to frequent diet changes, sometimes patients do not get their correct meals, and this also causes a lot of wasted food.

Several researchers have studied the differences in patients’ satisfaction between the spoken menu concept and the traditional delivery system. Oyarzun et al. (2000) compared efficiency and effectiveness measurements of three phases of foodservice systems, including the spoken menu concept. Wasted trays, late trays, and labor data were analyzed as efficiency measurements. Patient and nursing satisfaction data were used for measurement of effectiveness of these three phases. In phase I, patients chose their meals 1 day in advance of service and they were offered three entrée selections. Phase II was a spoken menu concept with two entrée selections and the dietetic technician verbally presenting lunch and dinner menus to the patients 1 to 2 hours before lunch service. Phase III was a spoken menu concept with upgraded features such as snacks, extra beverage servings, and extra meals served during lunch and dinner.

In Oyarzun et al.’s (2000) study, results indicated a large increase from Phase I to Phase II in the number of patient interactions with the staff, which led to increased patient satisfaction. The spoken menu concept improves patients’ satisfaction when the foodservice staff has personal contact with the patients and patients order their foods close to mealtime. In addition, nursing satisfaction and nurses’ perceptions of patient satisfaction in Phase III
were significantly higher than in Phase I. The total percentage of wasted food trays decreased with the spoken menu implementation. The total percentage of late trays reduced during both Phases II and III to 12.6% and 10.3%, respectively, compared with that of Phase I (16.2%). Furthermore, this concept eliminated wasted food trays and improved tray accuracy compared to the conventional system.

Folio, O’Sullivan-Maillet, and Touger-Decker (2002) investigated differences between the spoken menu concept system (food ordered close to mealtime) and traditional food delivery system (food ordered 24 hours in advance) on patient satisfaction, therapeutic accuracy, tray accuracy, as well as food and labor costs. The foodservice employees were given extensive training on the spoken menu process prior to implementation. Researchers surveyed 432 patients 1 month before the spoken menu concept implementation and 429 patients 1 month following after implementation of the spoken menu concept in two hospitals. The accuracy of placing food items on the patient’s tray, based on physician’s diet orders, was determined as therapeutic accuracy, whereas tray accuracy was the appropriate amount of food items on the patient’s tray as ordered by the patient. The average actual monthly invoices before and after implementation, as well as food used for non-patient purposes, was used to determine food costs. Labor costs were calculated based on actual hours worked and determined by the average total of labor dollars in the full month before and after implementation.

Results after spoken menu implementation showed positive responses for all categories in both hospitals. Both hospitals saw that “very good” responses on “overall satisfaction” increased by 34.9% and 33.2%, respectively. There were positive results for both therapeutic accuracy and tray accuracy. There was a slight, but not significant, reduction
of food and labor costs. With the spoken menu concept, as patients ordered their food close to mealtime, patient satisfaction improved, as did therapeutic accuracy and tray accuracy, with no changes in costs (Folio et al., 2002). However, with the spoken menu concept the meal is served to patients only at designated times and it offers fewer food choices compared to the room-service system (Caithamer, 2004; Schirg, 2007).

**Implementation of Room Service**

The implementation of the room service system has a potential greater impact in overcoming problems. Specifically the room service system can reduce food waste or over production, eliminate late trays, reduce late meal tray delivery, reduce in-floor stock, reduce inventories, and improve patients’ satisfaction (Norton, 2008). The advantages of room service implementation were explained by several researchers with different perspectives. Williams et al. (1998) explored the level of cancer patients’ food intake and their satisfaction of hospital food after implementation of the room service system. Their research, taking both qualitative and quantitative approaches, found that patients’ caloric intake and protein intake increased 28% and 18%, respectively.

A study by Reynolds (2003) indicated that there were more food choices available to patients in the room service system. Patients could choose from a variety of entrées, salads, vegetarian choices, sandwiches, and an all-grilled selection (Norton, 2008). Patients also tended to choose different kinds of menus, especially for dinner entrées, during long stays in the hospital (Norton; Reynolds). A restaurant-style menu design was offered in room-service hospitals. Patients had greater control to order what and when they wanted to eat, a statement strongly agreed too by Sheehan-Smith (2006a), who noted that as the main advantage of the room service system. Eventually, taking meal orders close to meal time ensured the highest
standard of food quality before delivering the meals to the patients. Additionally, room service could be operated 24 hours a day, 7 days a week or during flexible hours that best fit the patients’ requirements.

Wright, Connelly, and Capra (2006) noted the most influence on overall satisfaction in an acute care setting was different food quality aspects, including meal taste, variety, flavor, hot food temperature, meat texture, and cooking method of vegetables. From patients’ interviews in focus groups, resulting themes indicated that patients were more conscious about healthy food choices in the hospital, the quality of food was better than expected, and the menu variety was good (Watters, Sorensen, Fiala, & Wismer, 2003). By implementing the room service system, food presentation and freshness were also improved (Norton, 2008).

Furthermore, a study in Swiss hospitals showed that improvement in hospital food and its presentation should be taken into consideration as patients rely more on hospital food for their nutritional intake during hospitalization. Cooks should play a vital role in putting more effort into enhancing the flavor and presentation of the food served in order to stimulate the appetites of patients. Therefore, highly skilled staff who possess a strong commitment and motivation are needed to prepare good quality food for the patients (Stanga et al., 2003).

Norton (2008) found that a well-trained culinary team in a room-service hospital took responsibility in preparing these meals. They preserved the quality standard of the menu and presented the menu in an attractive way. Meals were also presented by high-skilled food servers, who, in a uniform, looked similar to a restaurant or hotel waiter or waitress. In this situation, patients felt greater satisfaction as they received special personal attention from the wait staff.
Sheehan-Smith (2006a) determined the main key facilitators that increased patients’ satisfaction were providing customer-oriented service, having a good multidisciplinary team, incurring a good relationship with the nursing department, and providing employees with customer service training. In addition, Caithamer (2004) noted that by restyling a foodservice uniform nicely, presenting meals using chinaware, offering snacks during mid-day or evening, and adding a small vase of flowers to the tray had an impact on patients’ satisfaction. From the management’s viewpoint, food waste decreased as the patients ate more (8% increase in consumption) when they ordered the food at the time they wanted to eat (Williams et al., 1998).

The food waste study was supported by McLymont et al. (2003), who determined changes in cancer patient meal satisfaction by implementing room service meal delivery. The researchers surveyed 230 cancer patients during pre-implementation (with conventional meal system in place) and 65 cancer patients after implementation of room service to determine their level of meal consumption. Room service was implemented on two patient care units. The findings showed that 88.24% of the patients consumed more than half of their main entrée after room service implementation compared to 44.78% pre-implementation. The main factors that patients reported for consuming less than 50% of their entrée were because they were sleeping, were not in their rooms, had physical constraints, or had a lack of appetite when meals were delivered. With room service, 90% of the meal trays were delivered to the patients within 40 to 45 minutes of the meal order time.

Room service implementation also increased employees’ satisfaction. Employees became more motivated, based on the good feedback they received from patients. Sheehan-Smith (2006b) conducted a mixed methodology study to identify job satisfaction and the
level of service orientation of room service employees. Four different hospitals with a room
service system were selected. Fifty-five employees agreed to participate in this study. For the
quantitative aspect, Sheehan-Smith (2006b) used Spector’s Job Satisfaction Survey, a 36-
item questionnaire with nine primary scales to determine employees’ satisfaction toward
their jobs, and the Hogan Personality Inventory, which comprised a 206-item questionnaire
with seven primary scales, one validity scale, and six occupational scales to determine how
room service employees accepted their levels of service orientation. Semi-structured
interviews were conducted with 24 employees who had completed the Job Satisfaction
Survey to elaborate on the employees’ satisfaction responses.

Sheehan-Smith (2006b) concluded that the employees’ nature of work, supervision,
and coworkers were the most crucial factors of their job satisfaction. They were dissatisfied
with fringe benefits, contingent rewards, and promotional aspects of their jobs. Themes that
emerged from the interviews showed the employees were very happy with the patients and
the sense of empowerment related to the nature of the job. A good relationship developed
among employees’ colleagues, supported by the co-workers’ statements. However, during
the interviews the researcher found the employees were burdened with various kinds of work
and unorganized job processes, which influenced the “unsatisfied” response on the survey
(Sheehan-Smith, 2006b). Over two thirds (69%) of the room service employees achieved a
moderate or high level of service orientation on the Hogan Personality Inventory survey. The
author concluded that employees with a high level of job satisfaction and service orientation
would help management deliver good quality customer service and increase patients’
satisfaction. Understanding the different aspects of the room service process was crucial to
management and employees to serve the best quality meals and services, especially to their customers, in the context of a hospital setting (Sheehan-Smith, 2006b).
CHAPTER 3: METHODOLOGY

The main objectives of this chapter are to present and explain clearly the processes used to conduct this study. This chapter will present details about the research design, participant selection, research instruments, data collection, and data analysis.

Research Design

A mixed methods research design was utilized to address the objectives of this study and to provide a better understanding of the research problem (Creswell & Plano Clark, 2007). Using a mixed methods design, an in-depth interview with a key informant (an expert) was conducted to collect detailed and rich data about room service implementation. This information was used to construct open-ended questions focusing on key aspects for room service implementation. The open-ended questions were distributed to 16 HFDs who had experience in the room service implementation process. Results from the key informant interview and foodservice directors’ open-ended questions were used to develop a questionnaire. The questionnaire was used to collect empirical data from HFDs and determine the importance of each aspect considered when deciding whether or not to implement room service.

Use of Human Subjects

Because this study included human participants, approval was obtained from the Human Subject–Institutional Review Board Committee (IRB) at Iowa State University (ISU). A copy of the approval letter can be found in Appendix A. A slight modification was needed after the number of potential participants in the study changed. A copy of this modification form can be found in Appendix B.
Key Informant Interview

Participant Selection

An expert with experience in implementing room service was interviewed. The key informant’s name came from a contact list of foodservice directors in the ISU area. This key informant was a local (within 30 miles of ISU) HFD, allowing me to easily travel to the hospital for the interview.

Research Instrument

The key informant interview consisted of questions focusing on factors of room service implementation. These questions were developed based upon a comprehensive review of the literature. My major professor provided feedback to improve the questions. A copy of this instrument can be found in Appendix C.

Data Collection

The purpose of the key informant interview was to elicit more information from an expert to articulate thoughts about room service implementation. Before conducting the key informant interview, I performed a mock interview with an expert in interviews as a method of data collection. As I was a beginner in the interview process, this mock interview provided exposure and good opportunity for me to practice and be prepared prior to conducting the in-person interview with the key informant. Having an interview expert present during the key informant interview process, helped to guide and assist me in conducting the key informant interview professionally. Based upon the interview expert’s knowledge and experience about room service, this interview helped improve the structure of the open-ended questions.

Initial contact with the key informant was made via e-mail with an invitation to participate in this interview and share insights about room service implementation. The initial
contact comprised: (a) the exact purpose of this study, (b) the nature of the interview, and (c) the number and type of interview questions, appointment time and place, length of interview time, and confidentiality and voluntary aspects. Confidentiality is an important consideration when conducting a key informant interview to ensure the informant feels more comfortable sharing information that may be sensitive or of a personal nature. A standard informed consent form was developed and utilized in this study (see Appendix D). After agreement to participate was obtained, I traveled to the key informant’s place of business to conduct the interview. The interview was audio taped.

**Data Analysis**

The audio taped interview was transcribed. I then hand coded and analyzed the transcription. Further examination of data was done to develop themes or broad categories of ideas, as recommended by Creswell (2008) who described that qualitative data analysis be hand coded by the researcher and transcripts be further analyzed to develop the themes. Response coding and themes for the key informant interview can be found in Appendix E. My major professor reviewed these findings to assure trustworthiness and accuracy. The identified themes were used to develop and improve the e-mail interview questions.

**E-mail Interviews**

**Participant Selection**

This part of the study was conducted with HFDs in the United States who employed a room service system. An appropriate number of participants should include 10 to 15 people in the same specific group to obtain meaningful results (Delbecq, Van de Ven, & Gustafson, 1975). An appropriate sample size for a qualitative study ranges from 1 person to 40 persons, the number being determined by the research questions being adequately answered.
(Creswell, 2008; Marshall, 1996). However, to enhance group understanding and obtain group support, it is practical to include a larger number of participants (Delbecq et al.). For this study, 16 potential participants’ names were obtained from the 2008 membership list of the National Society for Healthcare Foodservice Management using the organization’s operator member profile. Potential participants were selected based upon their (a) current position at a hospital with room service—such as director of foodservice, director of hospitality services, director of food and environmental services, director of food and nutrition services, director of nutritional services, director of dietary service, foodservice manager/supervisor, food and nutrition manager, and chief nutrition and foodservice; (b) willingness to participate in this study, and (c) commitment to participate in this study.

Stratified purposeful sampling was used in this study to obtain multiple perspectives among the subgroups (Bloomberg & Volpe, 2008). The potential research participants were selected based upon region and size of hospital. Four potential participants (2 participants from small hospitals and 2 participants from large hospitals) were chosen from each of the following regions in the United States—Midwest, South, West, and Northeast regions (U.S. Census Bureau, 2009). Information as to the hospital size and whether the potential participants worked at organizations that had room service were determined from each hospital’s website and article readings. In this study, it was assumed that the number and size of the hospitals varied across regions. The hospitals were categorized as small hospitals if they had 0–300 beds and large hospitals if they had 301 or more beds. This stratified purposeful sampling strategy assured different perspectives were captured including those of foodservice directors at various-sized hospitals as well as those in different geographic regions.
**Research Instrument**

The e-mail interview included open-ended questions about key factors considered when deciding to implement room service at the participant’s current work site. Open-ended questions allow participants to respond and express their thoughts freely. The questions were developed based upon the literature review, information collected from the key informant interview, and feedback from thesis committee members. Based upon feedback, questions were reworded slightly for clarity. A question related to patients’ length of stay was removed based on the key informant’s feedback that patients with different lengths of stay did not have different experiences with room service.

**Data Collection**

I e-mailed the open-ended questions to the selected HFDs. E-mail was an appropriate medium to use for data collection in this qualitative approach as the 16 potential participants were dispersed geographically throughout the United States. In addition, using e-mail allowed me to easily collect the data quickly from the participants (Dillman, 2007). Initially, an introductory message was e-mailed to the 16 potential participants, informing them they would receive open-ended questions later the same week. The introductory message: (a) explained the purpose of this study, (b) provided directions for completing the questionnaire, and (c) described any feedback information (see Appendix F). In this message, potential participants were told about confidentiality and the voluntary nature of their participation. During the same week, I sent the open-ended questions privately to each potential participant via e-mail. A copy of the second e-mail message and embedded questions can be found in Appendix G.
By sending the e-mail as a blind carbon copy (bcc), I expected the responses from the HFDs to be private, which encourages greater openness and more truthful answers from respondents. The respondents were free to express their views without reprisals from others in the group. Participants’ responses would not be anonymous, but I removed all identifying information from the e-mail and ethically guarded the confidentiality of the respondents. Moreover, by using e-mail as the medium, the written transcription and analysis could be completed quickly, once I received the data (Lindqvist & Nordanger, 2007).

Participants had 2 weeks to answer the questions and return them via e-mail. Approximately 10 days after the open-ended questions were sent, a follow-up e-mail message (see Appendix H) was sent to the participants, thanking them for their time and participation. Also, a reminder about the continued need for their participation for the next step was included in the thank you (Delbecq et al., 1975). Five of the 16 potential participants responded by the deadline (see Appendix I).

**Data Analysis**

The responses to the open-ended questions were reviewed and analyzed. I read the data thoroughly to gain a deep understanding of the data and analyzed it to develop the questionnaire. Peer debriefing was used to address the trustworthiness of the findings (Bloomberg & Volpe, 2008). My major professor reviewed the findings in terms of credibility. This involved an inquiry process to ensure these descriptions I portrayed were accurate and matched participants’ responses. Feedback from this process enhanced the accuracy of the findings as well (Creswell, 2008).
Web Questionnaire

**Participant Selection**

HFDs ($N = 845$) listed in the National Society for Healthcare Foodservice Management membership list were contacted via e-mail and invited to participate in a web survey questionnaire. HFDs were identified using information from the organization’s 2008 operator member profile. Supplemental sources, such as a hospital web search and the membership list from the Association for Healthcare Foodservice, were utilized as needed to create the potential participant list. Duplicate names were removed so that potential participants received only one e-mail. All potential participants lived in the United States.

Because there was no way to determine specific information about who implemented room service, all potential participants were invited to respond to the questionnaire. HFDs have expert insight into patient meal service. Therefore, their input was important whether or not they had experience with room service. Prior to sending the questionnaire, the 5 HFDs who had participated in answering the open-ended questions (e-mail interviews) and 3 additional HFDs from the e-mail interviews were asked to participate in a pilot test study to evaluate the clarity of the questionnaire. This group of 8 HFDs was excluded from the final sample answer the web questionnaire. The remaining research participants from the qualitative approach (key informant interview and e-mail interview) were asked to participate in this quantitative (web questionnaire) section.

**Research Instruments**

*Questionnaire development and settings:* Responses from the key informant interview and e-mail interviews were coded and themed to develop the quantitative questionnaire. The web questionnaire was developed using software supported by the Office
Web surveys create more interesting interactions between respondent and questionnaire than do e-mail or paper surveys (Dillman, 2007). Apart from this, there would be fewer potential problems regarding uploading and designing the questionnaire on a web page, because it would be supported by the university and managed by expert staff. Furthermore, questions were constructed in a fixed format to facilitate participants’ ease in marking answers.

The web questionnaire was designed to be visible without scrolling, and a graphical bar indicated the progress of respondents answering the questionnaire. Respondents also could click back and forth between questions, and they also could skip questions. Special instructions were included with the first question. Respondents indicated whether they had or had not implemented room service first before they proceeded to answer questions in the next part of the questionnaire. Dillman (2007) noted a better first question would most likely be fully visible and direct the respondents to easily answer. After each respondent clicked a “yes” or “no” answer, based upon whether or not the respondent had implemented room service, the web questionnaire was programmed to automatically skip unrelated questions. Respondents had the opportunity to choose more than one answer to questions related to professional credentials and sources of room service information.

**Questionnaire content:** The questionnaire comprised two sections. The first section consisted of a list of 28 aspects (e.g., patient satisfaction, food quality, financial, human resources, physical resources, and support) that had been considered by HFDs when implementing room service (Anonymous personal communication, October 29, 2009). All HFDs, whether they had or had not implemented room service in their organizations, were asked to rate each aspect they believed important for room service implementation on a 5-
point Likert-type scale (1 = not at all important, 2 = somewhat important, 3 = important, 4 = very important, and 5 = extremely important).

Demographic questions made up the final section of the web questionnaire. Those who had implemented room service were asked personal information (6 items), hospital information (6 items), and room service information (7 items). Those who had not implemented room service were asked to answer only the personal information (6 items) and hospital information (6 items). One demographic question asking about work experience with room service differed slightly depending upon whether the responding HFD had or had not implemented room service.

To provide an incentive for completing the questionnaire, those completing the questionnaire were asked to enter his or her e-mail address at the end of the questionnaire if he or she wished to receive a summary of the questionnaire results. These e-mail addresses were collected separately from the responses to the questionnaire to ensure anonymity of responses.

**Pilot Study**

Prior to distribution of the web questionnaire a pilot test was conducted and e-mailed to the 5 HFDs who responded to the open-ended questions and an additional 3 HFDs. The copy of the e-mail message and pilot questionnaire can be found in Appendix J. This group of 8 HFDs was asked to complete the questionnaire and evaluate the clarity of the questions. They were excluded from the final group of participants who were invited to answer the web questionnaire. Furthermore, this instrument also was reviewed by a quantitative expert and other thesis committee members. Based upon suggestions from the pilot test participants and experts, several changes were made to the original questionnaire. The directions for the
questionnaire for both groups (those who had or had not implemented room service) were revised. The word “factors” was changed to “aspects” in the final version of the questionnaire. The questions were formatted and reworded to enhance clarity and understanding. A sample of the revised web questionnaire for both (a) those HFDs who had implemented room service (DRS), and (b) those HFDs who had not implemented room service (DNRS) can be found in Appendix K.

Data Collection

For the web questionnaire, 845 HFDs selected as described in the “Participant Selection” section above were contacted via e-mail to invite them to participate in this study by completing a survey on room service. A copy of this e-mail message can be found in Appendix L. During the same week, another e-mail message was sent to the HFDs explaining the details about this study, providing researchers’ contact information, and informing them of the web address for the survey (see Appendix M). The participants were given 14 days from the date of the second e-mail message to complete the web questionnaire. A follow-up message (see Appendix N) was sent 10 days after the second e-mail message to encourage participants to respond to the questionnaire before the deadline (Dillman, 2007) and also to thank those who had responded to the web questionnaire. The e-mails were sent as a blind carbon copy (bcc) to each name on the list to ensure no recipients would see the address of any other member in the group. Personalized e-mail contacts were expected to increase the response rate (Dillman). Participants were told both in the first and second e-mail messages that their responses to this questionnaire were completely anonymous and confidential and that their participation was voluntary.
Data collection ended January 29, 2010. However, there were 82 e-mail messages undelivered due to invalid or inactive e-mail addresses. Phone calls were made to these 82 potential participants to request correct e-mail addresses. Fifty potential participants responded and were willing to give their e-mail addresses. Thirty-two potential participants were not willing to participate or provide their e-mail address to the researcher, were not in the office, or had phone numbers that were invalid; thus, all 845 foodservice directors could not be contacted. A modified introductory message was e-mailed to the 50 foodservice directors to invite them to answer the web questionnaire. The response deadline was extended for a week for these 50 potential participants, and a follow-up message was sent to these potential participants 1 day before the extension deadline.

**Data Analysis**

Data collected from the survey participants’ responses to web questionnaire was initially coded by the university web survey website and stored in an Excel file. The coded data were imported from the Excel file and moved into statistical analysis software for the social sciences (SPSS 16.0, 2009). Descriptive statistics were used to summarize the data. Independent $t$ tests were used to compare mean scores for each room service implementation aspect. Principal axis factoring (PAF) was used to explore the underlying factors for theoretical purposes. Participants received a score for each factor. The factor score consisted of the sum of the responses for each variable loading high (greater than 0.40) on that particular factor. The factor scores were calculated after transformation of the data into the factors. To compare the two groups of respondents on factors identified in PAF, analyses utilized the independent $t$ test (comparing two means when those means have come from different groups of entities; Field, 2009). Cronbach’s alpha was used to analyze the reliability
of the items measuring each factor. One-way ANOVA was run to compare the means of the importance of the room service factors by respondents’ demographic characteristics (credentials, education level, working years, bed capacity, and daily census).
CHAPTER 4: ROOM SERVICE IMPLEMENTATION: IMPORTANT ASPECTS IDENTIFIED BY HOSPITAL FOODSERVICE DIRECTORS

A paper to be submitted to the Journal of the American Dietetic Association

Zafirah Mohd Nor and Susan W. Arendt

Abstract

Objectives. To identify the key aspects hospital foodservice directors (HFDs) consider when deciding to implement room service and to determine the importance of each aspect, as considered by two groups of HFDs (those who had and had not implemented room service).

Design. Responses from a key informant interview and HFDs on open-ended questions were utilized to develop a web questionnaire. Foodservice directors were asked to rate the importance of 28 aspects of room service implementation.

Subjects/setting. A web questionnaire was e-mailed to 845 HFDs who were on the membership list of the National Society for Healthcare Foodservice Management and/or the Association for Healthcare Foodservice or on a supplemental list. A total of 241 HFDs (28.5% response rate) completed questionnaires; 214 responses (25.3%) were usable for complete data analysis.

Statistical analyses. Descriptive statistics were used to summarize questionnaire item responses. Factor analysis and independent t test comparisons of mean ratings of aspects and factors identified if significant differences existed between perceptions of either group on important aspects of room service implementation. Cronbach’s alpha reliability coefficient was calculated for each factor identified as a result of the factor analysis. One-way ANOVA was run to compare the means of the importance of the room service factors by respondents’
demographic characteristics (credentials, education level, working years, bed capacity, and daily census).

**Results.** Both groups of HFDs rated “support from administration” as the most important aspect when implementing room service. Factor analysis on 28 aspects revealed four room service factors: cost allocation, human resources and facilities, food quality, and patient satisfaction. HFDs who had implemented room service rated food quality ($M = 4.74, SD = 0.46$) and patient satisfaction ($M = 4.53, SD = 0.45$) as the essential important factors when deciding to implement room service (rating scale 1 to 5 with 1 = *not at all important* and 5 = *extremely important*). Cost allocation ($M = 4.04, SD=0.76$) was the most important factor reported by HFDs who had not implemented room service. The patient satisfaction factor was perceived as more important by those HFDs in private hospitals ($M = 4.34, SD = 0.61$) than by those in public hospitals ($M = 4.10, SD = 0.80$). ANOVA found HFDs in hospitals with large bed capacity (300–500 beds and more than 500 beds) rated the patient satisfaction factor as significantly higher in importance ($M = 4.37, SD = 0.70$ and $M = 4.34, SD = 0.56$ respectively) than did those from hospitals with small bed capacity (99 or fewer beds; $M = 3.90, SD = 0.82$).

**Conclusions.** In this study, a reliable room service web questionnaire was developed and used. Questionnaire results suggest HFDs perceived the importance of each room service factor differently based on whether they had or had not implemented room service. Those who had not implemented room service noted aspects they would need to consider more specifically to make changes in their food delivery system before they could implement room service. Perception of the room service concept specifically regarding the importance of the patient satisfaction factor differed between hospital type as well as hospital size.
Introduction

The prevalence of malnutrition among a large proportion of hospitalized patients has been extensively reported in several previous studies (Giner, Laviano, Meguid, & Gleason, 1996; Spiekerman, Rudolph, & Bernstein, 1993; Thomas et al., 2002). This malnutrition was reported to be due to insufficient nutritional intake (Corish & Kennedy, 2000). Sullivan, Sun, and Walls (1999) reported the potential cause of low nutritional intake for 21% of elderly patients labeled as members of a low nutrient group (average daily nutrient intake of less than 50%) was because of they disliked or had a lack of appetite for the food provided in the hospital. Tranter, Gregoire, Fullam, and Lafferty (2009) identified unmaintained hot food temperature or taste, missing tray items, and receiving an inappropriate menu were the major issues that frequently appeared in written patient comments. McLymont, Cox, and Stell (2003) found hospitalized cancer patients ate less than 50% of their meals when a traditional food delivery system was used. The authors completed a study with assisted-living residents, which indicated the elderly residents ate less at their dinner meal, contributing to less energy and protein intake, with the traditional food tray delivery system (Desai, Winter, Young, & Greenwood, 2007).

Sustaining adequate levels of food intake is a core necessity because weight loss and protein/energy malnutrition have been associated with increased morbidity and mortality of hospitalized patients (Sullivan, Patch, Walls, & Lipschitz, 1990). Researchers also emphasized dissatisfaction among the patients about food or service provided in hospitals because of inadequate taste, lack of menu selections, and foodservice staff who do not assist well with meals or explain special diets (Tranter et al., 2009). Freil et al. (2006) studied a group of patients with inadequate nutritional intake and found protein/energy consumption
levels could improve if patients were able to select their own menu choices and the hospital staff were well-trained to explain the importance of nutrition of meals that were served. A study by Dube, Trudeau, and Belanger (1994) of 132 patients with minimum hospital stays of 5 days showed food quality and attitude of the staff in delivering and serving meals represented the greatest predictors of patients’ perceptions of hospital foodservice.

Thus, it is imperative to devise methods or strategies of food delivery systems in hospitals that will optimize the nutritional intake of hospitalized patients and result in less severe risk of patient malnutrition. Room service implementation is a change in food delivery that has resulted in improving hospital meals as well as increasing food intake among patients (Kuperberg, Caruso, Dello, & Mager, 2008).

Numerous scholars have examined the benefits of room service implementation associated with increased patient satisfaction. Researchers found more menu options, more flexibility in meal delivery, increased food quality, and more personalized service resulted in improved nutritional intake among patients receiving room service (Kuperberg et al., 2008; Norton, 2008; Wadden, Wolf, & Mayhew, 2006; Williams, Virtue, & Adkins, 1998). From foodservice management’s perspective, job satisfaction among foodservice employees increased (Sheehan-Smith, 2006b) and late trays and food waste were reduced after room service implementation (McLymont et al., 2003; Norton). These streams of research focused on the impacts of room service implementation on the patients and hospital management; however, no known study has assessed the specific aspects that are considered from a foodservice management’s perspective when deciding whether or not to implement room service. Researchers have noted that several aspects, such as sufficient capital expenses and cost of human resources, could be potential barriers to implementation of room service
delivery (Kuperberg et al., 2008). Shockey (2003) viewed that administration support and labor force training were needed for room service implementation. Thus, it is imperative for hospital foodservice directors (HFDs) to give consideration to various aspects and assess the importance of these aspects when deciding whether or not to implement room service in their respective facilities. The purpose of this study was to (a) identify the aspects HFDs considered when implementing a room service system, (b) assess the importance of each aspect considered by HFDs when implementing a room service system, and (c) explore the room service implementation factor differences between HFDs who had and those who had not implemented room service.

**Methods**

**Sample Selection**

A national sample of 845 HFDs (both those who had and had not implemented room service) from throughout the United States was used. Contacts were identified from the National Society for Healthcare Foodservice Management membership list, the Association for Healthcare Foodservice membership list, and web searches. Eight HFDs, who had participated in the open-ended question process and pilot test, were excluded.

**Survey Instrument**

Because no known instrument exists, the room service aspects web questionnaire was developed with the aid of an expert key informant interview, input from 5 HFDs who had implemented room service, and input from three research experts. The final version of the web questionnaire consisted of two parts. Part I included 28 aspects related to implementation of a room service. The scale for importance of each aspect when
implementing room service was rated on a 5-point Likert-type scale: *not at all important* (1), *somewhat important* (2), *important* (3), *very important* (4), and *extremely important* (5).

Part II contained demographic questions posed differently to the two different HFD groups. For those HFDs who had implemented room service (DRS), the demographic questions comprised three main parts (personal information, hospital information, and room service information). For those who had not implemented room service (DNRS), no room service information could be collected, thus only personal and hospital questions were asked.

The questionnaire was pilot tested with research experts and 8 HFDs who were not part of the study sample. The questionnaire was modified slightly based upon feedback from pilot test respondents.

**Data Collection**

This research study was reviewed and granted approval by the Human Subjects Committee of the Institutional Review Board committee (IRB). Prior to the questionnaire, potential participants received: (a) an introductory e-mail and (b) in-depth description of the study, including a web address link to the questionnaire. A follow-up e-mail message was sent 10 days later to remind the participants of the deadline, answer questions, and thank the participants who had responded (Dillman, 2007). Telephone calls were made to obtain the correct e-mail address for 82 undelivered e-mails to potential participants. Fifty correct e-mail addresses were received, and a modified introductory e-mail was sent.

**Data Analysis**

SPSS for Windows (Version 16.0, 2009) was used for all data analyses. Descriptive statistics (including means, standard deviations, and frequencies) were calculated for all variables. Principal axis factoring (PAF) with varimax rotation was performed to
determine if aspects of room service implementation could be grouped meaningfully. A four-factor solution was completed for this analysis. An independent \( t \) test was conducted to compare mean importance ratings of individual aspects of room service implementation and HFDs’ mean ratings of identified factors based upon the respondents’ group (DRS or DNRS). The factor scores of DRSs or DNRSs for the four factors were calculated after a transformation of the data into the factors. Cronbach’s alpha was used to calculate reliability for each factor identified as a result of the factor analysis. One-way ANOVA was run to compare the means of the importance of the room service factors by respondents’ demographic characteristics (credentials, education level, working years, bed capacity, and daily census).

**Results**

A total of 241 responses were collected from the website survey. However, 27 respondents answered only the initial question indicating group (room service or no room service), therefore only 214 responses (25.3% response rate) comprising 85 (39.7%) HFDs with room service and 129 (60.3%) HFDs without room service were usable for complete data analysis.

**Demographics of Hospital Foodservice Director Respondents**

**Room service implementers (DRS):** The demographics (personal and hospital information) of the web questionnaire respondents are presented in Table 1. The majority of DRSs were female (68.2%). The most prevalent age range of these HFDs was between 51 and 60 years (48.2%). The most prevalent highest degree held was a bachelor’s degree (44.7%) followed by a master’s degree (42.4%). Just over one fourth (27.4%) of the respondents had worked for 5 to 10 years in the respective facilities, and 73.1% reported
being a registered dietitian (RD). Over half (55.3%) of the hospitals where these HFDs worked were stand alone, 47.1% were public, and 95.2% had self-operated foodservices.

Table 2 summarizes room service data. Almost half of the respondents (47.6%) reported being experienced working with room service facilities less than 3 years with most of those respondents indicating the current facilities had operated room service in place for 1 to 3 years (45.9%). Most room service operations operated 12 to 15 hours daily (76.5%), with average meal delivery time between 31 and 45 minutes (64.7%). More than half (51.8%) of the DRSs reported that all patients were eligible to receive room service and that foodservice employees (56.5%) were responsible for passing out and picking up room service trays. With room service, 82.4% of the DRSs indicated that the patient or a representative calls to kitchen with menu selections. Prior to implementing room service, the majority of DRSs obtained room service information by visiting other room service facilities (84%) and utilizing consultation services (59.3%).

**Non-room service implementers (DNRS):** Two thirds (66.7%) of the DNRS were female, 52.3% were between the ages of 51 and 60 years, and 89.1% held at least a bachelor’s degree. Over two thirds (67.5%) of the DNRSs responding to the questionnaire were registered dieticians and almost one fourth (23.3%) of the respondents had worked between 11 and 20 years. The highest percentages of DNRSs indicated working at stand-alone (48%), public hospitals (52.3%) with self-operated foodservice (96.1%). The largest percentage of the DNRSs’ hospitals had a bed capacity and census between 100 and 299 beds (36.4% and 40.4%, respectively). The majority of DNRSs (71.9%) indicated an average length of stay in hospitals of 3–5 days. More than three fourths (82.8%) of the DNRSs reported they had no experience with room service.
Importance Ratings

HFDs from both groups gave most room service aspects a rating greater than 3 on a 5-point Likert-type scale (1 = not at all important and 5 = extremely important), indicating the aspects were considered important or very important in the decision to implement room service (Table 3). The “support from administration” aspect had the highest importance rating by both groups. The DRS group rated the “freshness of the food at service” aspect also as of highest importance with same mean rating with the “support from administration” aspect. Both groups gave the lowest importance mean ratings to the same three aspects—“cost of utilities,” “design and layout of the dishroom area,” and “design and layout of storage areas.”

An independent t test indicated the ratings of importance by these two groups differed significantly ($p < .05$) for 14 of the 28 listed aspects, as shown in Table 3. DRSs rated number of full-time equivalents (FTEs), cost of labor, cost of additional service equipment, cost of additional production equipment, and layout of dishroom and storage areas as much less important than did the DNRSs.

Factor analysis was utilized to determine if aspects of room service implementation considered by HFDs could be grouped meaningfully. Initially, the factorability of the 28 room service aspects was examined. The factor analysis in this study proved to be acceptably valid with the following observations (Field, 2009). First, 27 of the 28 items had a correlation of greater than 0.30 with at least 1 other item, suggesting reasonable factorability. Variables that correlated very highly with other variables ($R > 0.90$) were not a problem for these data; thus, there was no need to consider eliminating any items at this stage. Second, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.82, above the recommended
value of 0.60, and Bartlett’s test of sphericity was significant ($p < .001$). Third, the communalities were all above 0.30, further confirming each item shared some common variance with other items. Given these overall indicators, factor analysis was conducted with all 28 items. Principal axis factoring with varimax rotation identified four factors accounting for 51.08% of the variance (see Table 4). Cronbach’s alpha was computed to measure the reliability for each factor. The internal consistency of each of the four factors ranged between .84 and .88, indicating a measure of high internal consistency (Field).

Table 4 shows the factor loadings after rotation and factor scores of both groups for the four factors compared by using the $t$ test procedure. In this study, factor loadings less than 0.4 were suppressed in the output (Field, 2009). The factor loading for the “support from administration” aspect was less than 0.4, and it was not loaded under one of these four factors. The factors food quality and patient satisfaction were rated significantly more important by DRS than by DNRS. DNRS perceived cost allocation as a significantly more important factor for implementing room service than did DRS. Based on hospital type, the patient satisfaction factor was shown as significantly more important by HFDs in private hospitals ($M = 4.34, SD = 0.61$) than by those in public hospitals ($M = 4.10, SD = 0.80$).

A one-way ANOVA was computed comparing the scores of respondents who were tested under four different sizes of hospital bed capacity. A significant $F$ ratio was found between the groups, $F(3, 205) = 4.22, p < .05$. A Tukey’s post-hoc analysis was conducted. According to the data, HFDs from hospitals with bed capacity of 300–500 beds ($M = 4.37, SD = 0.70$) and more than 500 beds ($M = 4.34, SD = 0.56$) both rated significantly higher on the patient satisfaction factor than did those from hospitals with 0–99 bed capacity ($M = 3.90, SD = 0.82$).
Discussion

Results from the sample of this study showed 90% of the hospitals were self-operated and public or nonprofit. These results are similar to that found by Silverman, Gregoire, Lafferty, and Dowling (2000) in which 79% of the hospitals were self-operated and 86% were nonprofit. Findings from this study show the percentage of HFDs who reported having implemented room service (39.7%) has not increased much compared to the 37% in a previous survey done by National Society for Healthcare Foodservice Management (cited in Buzalka, 2008). HFDs still need more exposure to obtain information regarding the implementation process of room service and its effectiveness for hospital foodservice operations. In this study, DRS indicated that all patients are eligible to receive room service except those who are on restricted diets, have mental health issues, or are unable to communicate, which was supported by Norton (2008). Identifying appropriate patient groups that cannot receive room service is essential because those who are not eligible may require assistance in some aspects of completing the menu selections or may have regular “house diets” designed for them. A majority of the DRS noted room service operated for 12 to 15 hours each day, similar to the time span of 12 to 14.5 hours each day reported by McLymont et al. (2003) and Williams et al. (1998).

Both groups agreed support from administration was the highest of all aspects in importance. This finding is supported by Nettles, Gregoire, and Canter (1997), who found HFDs considered “hospital administration support” was an important issue for deciding the type of foodservice system for a hospital. In a trade article about room service, Shockey (2003) noted providing great administrative support was essential to ensure successful room service implementation. A myriad of studies regarding room service have emphasized
improving patient satisfaction (Williams et al., 1998), reducing food waste (Kuperberg et al., 2008), and increasing food quality (Wadden et al., 2006). No known empirical studies have assessed the important aspects that need to be considered by HFDs when deciding to implement room service.

In this study, three significant findings were found in analyzing the two different groups against the four identified factors. Interestingly, responses from DRS considered factor items on patient satisfaction (“opportunity for patients to eat when they want to eat,” “opportunity for patients to order when they want to eat,” “opportunity for patients to order what they want to eat,” “availability of more menu choices,” and “ability to update menu to meet patients’ desires”) as more important aspects than did DNRS when deciding to implement room service. Results support the study by Kuperberg, Mager, and Dello (2009), who reported that patient flexibility to order what and when they want to eat and a wide variety of menu selections should be provided to transform to a room service food delivery system. The menu, ordering system, timing, and service styles have been identified as areas of control to improve the provision of meals in hospital (Johns, Hartwell, & Morgan, 2009).

Based upon the current study, DRSs perceived that an understanding of room service concepts that relate to patients’ needs or demands, is essential when deciding to implement room service. A room service program gives patients a feeling of home. Thus, patients’ perceptions change from “institutional food” to “hotel style services,” which emphasizes the great quality services provided too, and encourages high food intake among the patients.

Responses indicated that the employee courtesy aspect was a greater concern for DRSs than for DNRSs when deciding to implement room service. These findings support the results of previous work conducted in four hospitals using room service, reinforcing the
emphasis on the need for employees to be more hospitable when interacting with patients, such as with meal delivery (Sheehan-Smith, 2006a). Patients are concerned about accuracy of tray items, which is influenced by the way employees communicate with them, especially when taking a meal order or delivering a tray. The courtesy aspect associated with the actual room service concept is a big concern regarding customer service orientation.

Findings from this study illustrate differences between DRSs and DNRSs. DRSs indicated food quality as an important factor to be considered regarding room service implementation. Approximately 90% of the DRSs reported the average meal delivery time was ≤ 45 minutes, which is consistent with McLymont et al.’s (2003) study. This would be expected to result in improvements in food quality, such as retaining freshness and temperature of foods, because it diminishes the typical 24-hour lag time between meal ordering and delivery. With room service, food is made to order and deterioration in the quality of food, especially for the hot items, can be avoided because of the short holding period before delivery of the meal to the patient. Attractive meal presentation is another concern. This can be achieved by providing a well-trained culinary team to prepare appealing meals (Norton, 2008). When experiencing room service, DRS may reflect on and learn about food quality factors that can be improved by taking appropriate actions such as modifying meal timing or having expertise in culinary fields specifically related to increase the quality of food.

Perceptions for concepts loading on the cost allocation factor differed between the two groups. DRSs viewed this factor as less important than did DNRSs. This finding was similar to that of Kuperberg et al. (2008) and Shockey (2003), who found that problems with capital and miscellaneous expenditures, including human resource costs or food costs, could
be overcome in the long term with room service, which is associated in improvements in patient intake and reduction in food waste. Kuperberg et al. (2009) described kitchen design, especially in the production area, as an essential aspect, with kitchens in hospital foodservice needing to be constructed in the style of a restaurant/hotel including a computer system installation to manage room service. Basically, DRSs perceived the cost of additional equipment and technology as a minor cost based upon the demand, sources, and stages of room service implementation, which might differ for each hospital.

DRSs indicated the number of full-time equivalents (FTEs) needed for implementation was less important compared to DNRSs. These findings agree with Kuperberg et al. (2009), who found that an additional number of FTEs was needed only during the early stage of room service implementation. However, within a year after implementation of room service, the FTE number was reduced. Contradictory to the study’s findings by Kuperberg et al. (2009), Sheehan-Smith (2006a) discovered that 52% of the management level indicated the increased number of FTEs created an increase in cost. Before implementation, nursing staff delivered meals to patients, but when the job responsibility was taken over by foodservice employees, the budget for FTEs increased without reducing the budget for nursing staff. One can assume that, after experiencing the nature of room service, HFDs should have the good sense to predict flexibility in hiring and scheduling of staff and be able to effectively control the total staffing and costs. DNRS may perceive this as an important aspect because they do not have the background or information regarding room service system operations and, of course, cost is a major concern for them.

The patient satisfaction factor regarding room service implementation was reported as highly important by HFDs in private hospitals. It could be expected that private hospitals are
better at hospital hotel services (Taner & Antony, 2006). People rely heavily on private health insurance in the United States health care system. Thus, HFDs may perceive that patients with adequate insurance coverage expect to be well-treated and receive great quality care because they deserve it given their high spending on health as compared to those patients whose care is funded by the government.

The patient satisfaction factor was rated as less important by HFDs from small-size hospitals. This finding could be predicted given that a small hospital is easier to control and hospital staffs are able to monitor patients regularly as compared to large hospitals. Pink, Murray, and McKillop (2003) found that a lower patient satisfaction score was reported among larger hospitals. HFDs may perceive that, ideally, room service is a concept that should be beneficial in large hospitals to imply the aspects of greater care and attention to the patients.

**Limitations**

Because a web-based questionnaire was used as the survey instrument for collecting data, invalid/inactive e-mail addresses and participants who chose not to provide their e-mail addresses to the researcher could be a limitation of this study as the entire population was not provided an opportunity to respond. This study was completed mostly by those in hospitals with a self-operated foodservice. Therefore, this study’s results may not be generalizeable to all hospital foodservice facilities.

**Conclusions**

From this study, HFDs appear to consider several aspects when deciding whether or not to implement room service. The findings propose the need for a deeper understanding of the room service concept to assist foodservice directors in their decision-making process.
Aspects which appear to have great impact on patient satisfaction, such as better meal delivery service and meal quality, must be emphasized and studied. Availability of hospitable employees and a variety of menu choices that meet patients’ preferences are crucial components needed for room service (Sheehan-Smith, 2006a). Some facilities can implement room service in a few months or years, but that depends upon administrative support, support from all levels within the hospital team, needs, and availability of adequate resources.

Findings from this study show that DNRSs perceive more tangible factors, such as high cost allocation were needed specifically on food, labor, kitchen design, and technology installation when implementing room service. DRSs perceived that more intangible factors, such as satisfaction and quality, were needed to improve the patient meal delivery service. This study will help educate DNRSs and change their perceptions of cost-saving implications due to improvement of patient intake and food waste reduction if room service is implemented in their respective facilities.

Room service is becoming widely accepted throughout hospital foodservice in the United States. Its successful implementation, however, requires understanding of its concept and commitment to it throughout all levels of the hospital organization. Identifying the specific aspects used to select this system would be helpful to HFDs across the nation. The list of aspects proposed in this research is one way that can assist HFDs to obtain concise information and find the best way to accomplish those aspects perceived important by HFDs in order to make the change in transforming to room service. Identifying the decision factors could provide guidance to directors as to the critical factors that should be considered when attempting to implement a successful room service program. As hospitals consider expanded services, the potential for cost saving and quality control possible in a room service system
may sufficiently offset capital investment costs and this also will be expected to benefit 
DNRS to introduce room service that fit the operational characteristics of a particular 
hospital. As the room service concept is similar to the hotel-style concept, this will assist 
HFDs to think about implementing room service as a brand in hospital foodservice in order 
to change patients’ perception about hospital food as well as the service.

References

iness_feature/room_service_dining_1211/+hfm+survey+on+room+service


offoodservice and dining room environment preferentially benefit institutionalized 
seniors with low body mass indexes. Journal of the American Dietetic Association, 
107, 808-814.

Dillman, D. A. (2007). Mail and internet surveys: The tailored design method (update with 
new internet, visual, and mixed-mode guide) (2nd ed.). New York: John Wiley & 
Sons.

satisfaction with foodservices. Journal of the American Dietetic Association, 94, 394-
398


Table 1.

**Demographic Information of Hospital Foodservice Director Respondents (N = 214)**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>DRS(^a)</th>
<th></th>
<th>DNRS(^b)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td><strong>Personal Information</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>58</td>
<td>68.2</td>
<td>84</td>
<td>66.7</td>
</tr>
<tr>
<td>Male</td>
<td>27</td>
<td>31.8</td>
<td>42</td>
<td>33.3</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 30 years old</td>
<td>3</td>
<td>3.5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>30 – 40 years old</td>
<td>5</td>
<td>5.9</td>
<td>7</td>
<td>5.5</td>
</tr>
<tr>
<td>41 – 50 years old</td>
<td>29</td>
<td>34.1</td>
<td>40</td>
<td>31.2</td>
</tr>
<tr>
<td>51 – 60 years old</td>
<td>41</td>
<td>48.2</td>
<td>67</td>
<td>52.3</td>
</tr>
<tr>
<td>More than 60 years old</td>
<td>7</td>
<td>7.5</td>
<td>14</td>
<td>10.9</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Associate’s degree</td>
<td>8</td>
<td>9.4</td>
<td>12</td>
<td>9.3</td>
</tr>
<tr>
<td>Bachelor’s degree</td>
<td>38</td>
<td>44.7</td>
<td>51</td>
<td>39.5</td>
</tr>
<tr>
<td>Master’s degree</td>
<td>36</td>
<td>42.4</td>
<td>61</td>
<td>47.3</td>
</tr>
<tr>
<td>Doctorate degree</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>2.3</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>3.5</td>
<td>2</td>
<td>1.6</td>
</tr>
<tr>
<td>Credentials(^c)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Registered dietitian</td>
<td>49</td>
<td>73.1</td>
<td>77</td>
<td>67.5</td>
</tr>
<tr>
<td>Licensed dietitian</td>
<td>24</td>
<td>35.8</td>
<td>45</td>
<td>39.5</td>
</tr>
<tr>
<td>Registered dietetic technician</td>
<td>2</td>
<td>3.0</td>
<td>4</td>
<td>3.5</td>
</tr>
<tr>
<td>Certified dietary manager</td>
<td>8</td>
<td>11.9</td>
<td>12</td>
<td>10.5</td>
</tr>
<tr>
<td>Other(^d)</td>
<td>1</td>
<td>1.5</td>
<td>9</td>
<td>7.9</td>
</tr>
<tr>
<td>Time worked at current organization</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 5 years</td>
<td>18</td>
<td>21.4</td>
<td>28</td>
<td>21.7</td>
</tr>
<tr>
<td>5 – 10 years</td>
<td>23</td>
<td>27.4</td>
<td>28</td>
<td>21.7</td>
</tr>
<tr>
<td>11 – 20 years</td>
<td>22</td>
<td>26.2</td>
<td>30</td>
<td>23.3</td>
</tr>
<tr>
<td>21 – 30 years</td>
<td>15</td>
<td>17.9</td>
<td>27</td>
<td>20.9</td>
</tr>
<tr>
<td>More than 30 years</td>
<td>6</td>
<td>7.1</td>
<td>16</td>
<td>12.4</td>
</tr>
</tbody>
</table>
Table 1. (continued)

<table>
<thead>
<tr>
<th>Hospital Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hospital affiliation</strong></td>
</tr>
<tr>
<td>Stand alone</td>
</tr>
<tr>
<td>VA affiliated</td>
</tr>
<tr>
<td>Associated with a larger health system</td>
</tr>
<tr>
<td><strong>Hospital type</strong></td>
</tr>
<tr>
<td>Public</td>
</tr>
<tr>
<td>Private</td>
</tr>
<tr>
<td>Other(^e)</td>
</tr>
<tr>
<td><strong>Foodservice type</strong></td>
</tr>
<tr>
<td>Self-operated</td>
</tr>
<tr>
<td>Contract managed</td>
</tr>
<tr>
<td><strong>Hospital bed capacity</strong></td>
</tr>
<tr>
<td>Less than 50 beds</td>
</tr>
<tr>
<td>50 – 99 beds</td>
</tr>
<tr>
<td>100 – 199 beds</td>
</tr>
<tr>
<td>200 – 299 beds</td>
</tr>
<tr>
<td>300 – 399 beds</td>
</tr>
<tr>
<td>400 – 500 beds</td>
</tr>
<tr>
<td>More than 500 beds</td>
</tr>
<tr>
<td><strong>Hospital average daily census</strong></td>
</tr>
<tr>
<td>Less than 50 patients per day</td>
</tr>
<tr>
<td>50 – 99 patients per day</td>
</tr>
<tr>
<td>100 – 199 patients per day</td>
</tr>
<tr>
<td>200 – 299 patients per day</td>
</tr>
<tr>
<td>300 – 399 patients per day</td>
</tr>
<tr>
<td>400 – 500 patients per day</td>
</tr>
<tr>
<td>More than 500 patients per day</td>
</tr>
<tr>
<td><strong>Patient average length of stay</strong></td>
</tr>
<tr>
<td>1 – 2 days</td>
</tr>
<tr>
<td>3 – 5 days</td>
</tr>
<tr>
<td>6 – 9 days</td>
</tr>
<tr>
<td>10 or more days</td>
</tr>
</tbody>
</table>

\(^a\)DRS: Hospital foodservice directors who had implemented room service (N=85).

\(^b\)DNRS: Hospital foodservice directors who had not implemented room service (N=129).
Some respondents might hold more than one credential, thus the total exceeds 100%.

Includes certified executive chef, certified healthcare facilities manager.

Includes nonprofit organization, military.
Table 2.

*Room Service Information Provided by DRS*\(^a\) Respondents (\(N = 85\))

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Room service years</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 1 year</td>
<td>9</td>
<td>10.6</td>
</tr>
<tr>
<td>1 – 3 years</td>
<td>39</td>
<td>45.9</td>
</tr>
<tr>
<td>4 – 6 years</td>
<td>27</td>
<td>31.8</td>
</tr>
<tr>
<td>7 – 10 years</td>
<td>6</td>
<td>7.1</td>
</tr>
<tr>
<td>More than 10 years</td>
<td>4</td>
<td>4.7</td>
</tr>
<tr>
<td><strong>Room service hours</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24 hours each day</td>
<td>5</td>
<td>5.9</td>
</tr>
<tr>
<td>16-23 hours each day</td>
<td>7</td>
<td>8.2</td>
</tr>
<tr>
<td>12-15 hours each day</td>
<td>65</td>
<td>76.5</td>
</tr>
<tr>
<td>1-11 hours each day</td>
<td>8</td>
<td>9.4</td>
</tr>
<tr>
<td><strong>Room service patients</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All patients</td>
<td>43</td>
<td>51.8</td>
</tr>
<tr>
<td>All patients <em>except</em> those on therapeutic diet</td>
<td>8</td>
<td>9.6</td>
</tr>
<tr>
<td>All patients <em>except</em> mental health/rehab/psych/ICU/CCU</td>
<td>15</td>
<td>18.1</td>
</tr>
<tr>
<td>Other, please specify(^b)</td>
<td>17</td>
<td>20.4</td>
</tr>
<tr>
<td><strong>Room service communications</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient or representative calls to kitchen with menu selections</td>
<td>70</td>
<td>82.4</td>
</tr>
<tr>
<td>A hospital employee reads the menu and records selections</td>
<td>2</td>
<td>2.4</td>
</tr>
<tr>
<td>Combination: Patient calls and foodservice/nurse assists with menu selection</td>
<td>10</td>
<td>11.8</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>3.5</td>
</tr>
<tr>
<td><strong>Average meal delivery time</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30 minutes or less</td>
<td>23</td>
<td>27.1</td>
</tr>
<tr>
<td>31 – 45 minutes</td>
<td>55</td>
<td>64.7</td>
</tr>
<tr>
<td>46 – 59 minutes</td>
<td>5</td>
<td>5.9</td>
</tr>
<tr>
<td>1 - 2 hours</td>
<td>2</td>
<td>2.4</td>
</tr>
<tr>
<td>More than 2 hours</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Passes out &amp; picks up room service trays</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foodservice employees</td>
<td>48</td>
<td>56.5</td>
</tr>
<tr>
<td>Foodservice employees pass out and nursing staff picks up trays</td>
<td>34</td>
<td>40.0</td>
</tr>
<tr>
<td>Other</td>
<td>3</td>
<td>3.5</td>
</tr>
</tbody>
</table>

\(^a\)DRS: Hospital foodservice directors who had implemented room service (\(N = 85\)).
bIncludes patients in special units such as: pediatric, obstetrics, gynecology, burn, oncology, maternity, and anyone who can use the communication system.
Table 3.

*Importance Rating*\(^a\) of Aspects When Deciding to Implement Room Service

<table>
<thead>
<tr>
<th>Room service aspects</th>
<th>DRS(^b)</th>
<th>DNRS(^c)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M±SD</td>
<td>M±SD</td>
</tr>
<tr>
<td>Support from administration</td>
<td>4.79±0.49</td>
<td>4.82±0.42</td>
</tr>
<tr>
<td>Freshness of the food at service(^d)</td>
<td>4.79±0.47</td>
<td>4.58±0.63</td>
</tr>
<tr>
<td>Opportunity for patients to eat when they want to eat(^d)</td>
<td>4.78±0.50</td>
<td>3.87±1.08</td>
</tr>
<tr>
<td>Courtesy of tray delivery employees(^d)</td>
<td>4.78±0.54</td>
<td>4.57±0.80</td>
</tr>
<tr>
<td>Support from foodservice employees</td>
<td>4.78±0.52</td>
<td>4.78±0.49</td>
</tr>
<tr>
<td>Opportunity for patients to order when they want to eat(^d)</td>
<td>4.75±0.51</td>
<td>3.77±1.15</td>
</tr>
<tr>
<td>Presentation of the food at service(^d)</td>
<td>4.75±0.51</td>
<td>4.50±0.67</td>
</tr>
<tr>
<td>Temperature of the food at service</td>
<td>4.74±0.52</td>
<td>4.60±0.62</td>
</tr>
<tr>
<td>Opportunity for patients to order what they want to eat(^d)</td>
<td>4.73±0.52</td>
<td>4.30±0.86</td>
</tr>
<tr>
<td>Support from nursing staff</td>
<td>4.71±0.61</td>
<td>4.69±0.63</td>
</tr>
<tr>
<td>Safety of the food at service</td>
<td>4.68±0.74</td>
<td>4.56±0.82</td>
</tr>
<tr>
<td>Training needs of foodservice employees</td>
<td>4.60±0.71</td>
<td>4.39±0.79</td>
</tr>
<tr>
<td>Design and layout of the trayline area</td>
<td>4.42±0.82</td>
<td>4.23±0.95</td>
</tr>
<tr>
<td>Design and layout of the production area</td>
<td>4.38±0.83</td>
<td>4.36±0.85</td>
</tr>
<tr>
<td>Number of full time equivalents needed(^d)</td>
<td>4.34±0.83</td>
<td>4.62±0.65</td>
</tr>
<tr>
<td>Skill level of foodservice production employees</td>
<td>4.32±0.85</td>
<td>4.30±0.82</td>
</tr>
<tr>
<td>Availability of more menu choices(^d)</td>
<td>4.20±0.97</td>
<td>3.66±1.02</td>
</tr>
<tr>
<td>Training needs of nursing staff</td>
<td>4.20±0.81</td>
<td>4.09±0.99</td>
</tr>
<tr>
<td>Ability to update menu to meet patients’ desires</td>
<td>4.08±0.94</td>
<td>4.00±0.91</td>
</tr>
<tr>
<td>Cost of the labor(^d)</td>
<td>4.05±0.98</td>
<td>4.43±0.81</td>
</tr>
<tr>
<td>Cost of the food</td>
<td>4.02±0.85</td>
<td>3.86±0.98</td>
</tr>
<tr>
<td>Item</td>
<td>Scale (Mean ± Standard Deviation)</td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-----------------------------------</td>
<td></td>
</tr>
<tr>
<td>Cost of additional technology</td>
<td>3.94 ± 1.02</td>
<td></td>
</tr>
<tr>
<td>Ability to explain therapeutic diets within menu</td>
<td>3.92 ± 0.94</td>
<td></td>
</tr>
<tr>
<td>Cost of additional service equipment</td>
<td>3.76 ± 0.85</td>
<td></td>
</tr>
<tr>
<td>Cost of additional production equipment</td>
<td>3.71 ± 0.96</td>
<td></td>
</tr>
<tr>
<td>Cost of utilities</td>
<td>2.93 ± 1.13</td>
<td></td>
</tr>
<tr>
<td>Design and layout of the dishroom area</td>
<td>2.92 ± 1.05</td>
<td></td>
</tr>
<tr>
<td>Design and layout of the storage areas</td>
<td>2.89 ± 1.06</td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) Scale: 1 = not at all important, 2 = somewhat important, 3 = important, 4 = very important, 5 = extremely important.

\(^b\) DRS: Hospital foodservice directors who had implemented room service (n=85).

\(^c\) DNRS: Hospital foodservice directors who had not implemented room service (n=129)

\(^d\) Independent t-test comparisons of hospital foodservice directors who had implemented room service differed significantly (p<.05) from ratings of hospital foodservice directors who had not implemented room service.
Table 4.

*Factor Loadings and Factor Scores*\(^d\) of Room Service Factors

<table>
<thead>
<tr>
<th>Factors (Aspects)</th>
<th>Factor loading(^b)</th>
<th>Room service (n) (M\pm SD)^c</th>
<th>No room service (n) (M\pm SD)^c</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost allocation(^d) ((\alpha = 0.88))</td>
<td></td>
<td>83 3.81±0.70</td>
<td>123 4.04±0.76</td>
</tr>
<tr>
<td>Cost of additional service equipment</td>
<td>0.895</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost of additional production equipment</td>
<td>0.877</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost of additional technology</td>
<td>0.756</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost of labor</td>
<td>0.643</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost of food</td>
<td>0.608</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost of utilities</td>
<td>0.561</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of full-time equivalents needed</td>
<td>0.537</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human resources and facilities ((\alpha = 0.84))</td>
<td></td>
<td>84 4.20±0.50</td>
<td>120 4.22±0.59</td>
</tr>
<tr>
<td>Training needs of foodservice employees</td>
<td>0.769</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training needs of nursing staff</td>
<td>0.635</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skill level of production employees</td>
<td>0.602</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design and layout of the dishroom area</td>
<td>0.565</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Courtesy of tray delivery employees</td>
<td>0.552</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design and layout of the trayline area</td>
<td>0.525</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design and layout of the storage areas</td>
<td>0.519</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Design and layout of the production area</td>
<td>0.506</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support from nursing staff</td>
<td>0.473</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Support from foodservice employees</td>
<td>0.451</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food quality(^d) ((\alpha = 0.85))</td>
<td></td>
<td>85 4.74±0.46</td>
<td>124 4.55±0.57</td>
</tr>
<tr>
<td>Temperature of food at service</td>
<td>0.731</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presentation of food at service</td>
<td>0.727</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshness of food at service</td>
<td>0.692</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety of food at service</td>
<td>0.573</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Patient satisfaction\(^d\) (\(\alpha = 0.84\))

<table>
<thead>
<tr>
<th>Statement</th>
<th>Sample 1</th>
<th>Sample 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients eat when they want to</td>
<td>0.870</td>
<td></td>
</tr>
<tr>
<td>eat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patients order when they want</td>
<td>0.836</td>
<td></td>
</tr>
<tr>
<td>to eat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patients order what they want</td>
<td>0.725</td>
<td></td>
</tr>
<tr>
<td>to eat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>More menu choices</td>
<td>0.525</td>
<td></td>
</tr>
<tr>
<td>Update menu to meet patients’</td>
<td>0.477</td>
<td></td>
</tr>
<tr>
<td>desires</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

84 4.53±0.45 126 3.92±0.80

\(^a\)Factor scores is calculated after a transformation of the data into the factors.

\(^b\)Factor loading is the contributing statement’s correlation with factor.

\(^c\)Scale used by respondents: 1 = not at all important, 2 = somewhat important, 3 = important, 4 = very important, 5 = extremely important.

\(^d\)Independent sample \(t\) test of mean ratings of factors differ significantly (\(p < .05\)) by both groups respondents.
CHAPTER 5: GENERAL CONCLUSIONS

Results of this study provide a brief understanding and updated information about the aspects used in deciding to implement room service systems in hospital foodservice. The aspects that should be focused on when deciding to implement room service were identified by those who had experience with room service. Room service is a trend in hospital food delivery system, thus HFDs who are interested or considering shifting to room service in their respective facilities can learn which aspects have been identified as most important.

Overall, administrative support was rated the most important aspect by both HFD groups, those who had implemented room service and those who had not. Administrative support is important for a comprehensive improvement in patient meal delivery service specifically in the hospital setting. With the implementation of room service, cooperative support from administration and the hospital team is needed as they worked side by side to achieve the same aim of ensuring better patient care and satisfaction with hospital services. A patient meal service transformation, such as implementing room service, would not be achieved without substantial alterations in personnel and procedures, and administrative support is needed to embrace these challenges and ensure the room service system is successfully operated.

The perception of important aspects of room service implementation by DRSs does appear to differ significantly from the perception of DNRSs. Williams (2009) noted that hotel-style room service was a costly approach in hospital foodservice. DNRSs perceived cost, which includes labor, food, additional equipment, and technology, as the major aspect that they are really concerned about. However, in this study experienced DRSs did not identify cost as a major aspect that needs to be worried about much, leading one to assume
that they believe they did not have a major increase in their budget when implementing room service. For them, the crucial aspect needed to succeed in implementing room service is focusing on the customer-oriented meal delivery concept, availability of menu selections based on patients’ preferences, and great food quality served.

The informative findings from this study will be beneficial in educating DNRSs regarding the cost savings implication and what they might expect. By educating DNRS, it is anticipated they may change their perception to that, as patient foodservice becomes more personalized and menus are upscaled, the room service program might contribute to cost savings for healthcare in the future. Improvement of the patient meal delivery system can encourage patients to eat more and can decrease food waste in hospital foodservice. This also can allow all HFDs to focus on areas where attention is needed, such as developing best practices in, for example, menu development or human resources training that are similar to that of hotel-style services.

HFDs looking to the future can develop services, such as hospital foodservice related to room service implementation that can be branded. Indirectly, a room service program can act as a brand in hospital foodservice. Besides the attraction of quality of medical care, a DRS would be able to confidently attract patients to choose his or her hospital by emphasizing personalized care and service, using the “customer satisfaction is our top priority” concept. The hospital can aim to offer hospitality to patients with services similar to at a hotel (Severt, Aiello, Elswick, & Cyr, 2008). Patients’ perception of hospital food would be expected to change from institutional to high-end quality. This branding concept can act as part of a marketing strategy, especially for HFDs who plan to implement room service in the future to improve hospital foodservice in their respective facilities.
Limitations of the Study

Several limitations pertain to this study and may affect the findings. HFDs are inundated with countless e-mail requests, meetings, and professional development opportunities. Perhaps HFDs may have received this research questionnaire and considered it junk mail. Foodservice directors may have chosen not to answer the e-mail interview or questionnaires because they did not want to take the time or did not have interest in the research topic. Some of the HFDs might not have had convenient access to a computer, especially when not in the office.

Another limitation is that the hospital foodservice director list obtained through the professional membership groups may not have contained updated information. Foodservice directors may not have updated their e-mail addresses on the membership lists when job changes occurred. Foodservice directors at contract foodservice managed hospitals are underrepresented on the membership lists, and therefore, the findings may not be generalizeable.

Future Research

The information in this study may be utilized as a basis for further research. Future examination needs include: (a) a larger sample from those who are in contract managed hospital foodservice operation in order to support the findings of the present study, (b) a further study on the perceptions by administrators of these factors in order to define well-implemented room service, (c) to work with DRSs from multiple hospitals to collect rich data through focus group in order to broaden the scope of the current investigation and create a supporting survey to convince the HFDs of the existing factors that have been discussed here,
and (d) to examine the role of room service information sources in the decision to implement room service.
REFERENCES


APPENDIX A: HUMAN SUBJECTS APPROVAL

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

DATE: September 14, 2009

TO: Zafirah Mohd Nor
2114C Frederiksen Court

CC: Dr. Susan Wohlsdorf Arendt
9E MacKay Hall

FROM: Roxanne Bappe, IRB Coordinator
Office for Responsible Research

TITLE: Hospital Foodservice Directors Identify the Critical Factors in Implementing Room Service

IRB ID: 09-415 Study Review Date: 14 September 2009

The Institutional Review Board (IRB) Chair has reviewed this project and has declared the study exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b). The IRB determination of exemption means that:

- You do not need to submit an application for annual continuing review.

- You must carry out the research as proposed in the IRB application, including obtaining and documenting (signed) informed consent if you have stated in your application that you will do so or if required by the IRB.

- Any modification of this research should be submitted to the IRB on a Continuing Review and/or Modification form, prior to making any changes, to determine if the project still meets the Federal criteria for exemption. If it is determined that exemption is no longer warranted, then an IRB proposal will need to be submitted and approved before proceeding with data collection.

Please be sure to use the documents with the IRB approval stamp in your research.

Please note that you must submit all research involving human participants for review by the IRB. Only the IRB may make the determination of exemption, even if you conduct a study in the future that is exactly like this study.
The project referenced above has undergone review by the Institutional Review Board (IRB) and has been declared exempt from the requirements of the human subject protections regulations as described in 45 CFR 46.101(b). The IRB determination of exemption means that:

- You do not need to submit an application for annual continuing review.

- You must carry out the research as proposed in the IRB application, including obtaining and documenting informed consent if you have stated in your application that you will do so or if required by the IRB.

- Any modification of this research should be submitted to the IRB on a Continuing Review and/or Modification form, prior to making any changes, to determine if the project still meets the federal criteria for exemption. If it is determined that exemption is no longer warranted, then an IRB proposal will need to be submitted and approved before proceeding with data collection.

Please be sure to use only the approved study materials in your research, including the recruitment materials and informed consent documents that have the IRB approval stamp.

Please note that you must submit all research involving human participants for review by the IRB. **Only the IRB may make the determination of exemption**, even if you conduct a study in the future that is exactly like this study.
APPENDIX C: E-MAIL MESSAGE FOR KEY INFORMANT INTERVIEW

(An initial contact to explain about the study and procedures that was conducted by the principal investigator)

Dear hospital foodservice director,

I am a graduate student in Foodservice and Lodging Management at Iowa State University. I am conducting a study exploring the important factors to consider when implementing room service in hospitals. I am writing this email to briefly explain the study procedures and request your assistance with the study.

I am interesting in studying room service as it is a new trend in meal delivery and appears to impact patients’ satisfaction. Because you have been involved in room service implementation, your participation in this research is valuable.

This interview process will consist of seven main questions related to the implementation of room service system (sample of questions shown below). It will take approximately 1 hour to completely respond to all questions during this interview. You may participate in answering these questions, but you can chose to skip questions that you are not comfortable answering. Your participation in answering these questions is completely voluntary. The interview will be taped and interview notes will be taken by the researcher. Your responses will be kept confidential. There are no costs or foreseeable risks associated with participating in this research. If you agree to participate in this study, we could set up the date, time and place to do this interview process.

Thank you for your time and consideration. Please do not hesitate to contact me or my major professor, Dr. Susan Arendt, should you have questions. Our contact information is listed below. I look forward to hearing back to you.

Best regards,

Zafirah Mohd Nor
Graduate Student, Iowa State University
515-572-7660
zmohdnor@iastate.edu

Susan Arendt, PhD, RD
Assistant Professor
Iowa State University
515-294-7575
sarendt@iastate.edu
Factors of Room Service Implementation: Key Informant Interview Questions

1) What are your current room service procedures?

2) In your current room service system, how do you handle therapeutic diets?

3) In your current room service system, how do you handle patients with a short length of stay? Is it different from those patients who stay longer?

4) At your facility, what factors most influence patients’ satisfaction with foodservice?

5) What were important factors you needed to focus on when implementing room service?

6) What information would you like to have had before implementing room service?

7) What lessons did you learn during and after implementing room service?
APPENDIX D: INFORMED CONSENT DOCUMENT FOR KEY INFORMANT INTERVIEW

Title of Study: Hospital Foodservice Directors Identify the Critical Factors in Implementing Room Service

Investigators: 1) Zafirah Mohd Nor  
2) Susan Wohlsdorf Arendt

This is a research study. Please take your time in deciding if you would like to participate. Please feel free to ask questions at any time.

INTRODUCTION

The purpose of this study is to identify the factors hospital foodservice director consideration when implementing a room service system and to determine the importance of each factor considered by hospital foodservice directors when implementing room service. You are being invited to participate in this study due to your job as a foodservice director and because you have implemented room service in your operation.

DESCRIPTION OF PROCEDURES

If you agree to participate in this study, your participation will last about 1 hour. During the study you may expect the following study procedures to be followed:

1) The researcher will ask you a series of questions related to room service implementation.
2) Your responses will be audiotaped and the researcher will take notes during the interview.

RISKS

While participating in this study you may not experience the following risks: There will be no risk or discomfort anticipated, as no identity of the participants will be reported and all answers will remain confidential. There are no foreseeable risks at this time from participating in this study.

BENEFITS

If you decide to participate in this study there will be no direct benefit to you. It is hoped that the information gained in this study will benefit others who are considering implementing room service delivery. The data from this study will provide useful direction and input for those who are interested in implementing a room service system in hospital foodservice. This study is also intended to broaden research literature specifically in the hospitality foodservice field.
COSTS AND COMPENSATION

You will not have any costs from participating in this study. You will not be compensated for participating in this study.

PARTICIPANT RIGHTS

Your participation in this study is completely voluntary and you may refuse to participate or stop the interview at any time. You may skip questions you are not comfortable answering. If you decide not to participate in the study or leave the study early, it will not result in any penalty or loss of benefits to which you are otherwise entitled.

CONFIDENTIALITY

Records identifying participants will be kept confidential to the extent permitted by applicable laws and regulations and will not be made publicly available. However, federal government regulatory agencies, auditing departments of Iowa State University, and the Institutional Review Board (a committee that reviews and approves human subject research studies) may inspect and/or copy your records for quality assurance and data analysis. These records may contain private information.

To ensure confidentiality to the extent permitted by law, the following measures will be taken:

a) Interview data will be reported without identifiers. A pseudonym will be used.
b) The computer data will be stored in secured databases and will be kept on the principal investigator's personal computer, while printed data will be stored in a locked file cabinet.
c) All data will be kept for one year after completion of the study.
d) Only the principal investigator and the major professor will have the right to access all data.
e) The tapes will be destroyed at the completion of the study. Results from the interview will not be reported in the form of a graduate paper. The purpose of collecting the information is to develop and improve the open ended questions.
f) If the results are published, your identity will remain confidential.

QUESTIONS OR PROBLEMS

You are encouraged to ask questions at any time during this study.

- For further information about the study contact:
  1) Zafirah Mohd Nor
     Graduate Student, Iowa State University
     zmohdnor@iastate.edu
     Contact number: 515-572-7660
2) Susan Arendt, PhD, RD  
Assistant Professor  
Department of Apparel, Educational Studies and Hospitality 
Management (AESHM)  
Iowa State University  
sarendt@iastate.edu  
Contact number: 515-294-7575

- If you have any questions about the rights of research subjects or research-related injury, please contact the IRB Administrator, (515) 294-4566, IRB@iastate.edu, or Director, (515) 294-3115, Office for Responsible Research, Iowa State University, Ames, Iowa 50011.

PARTICIPANT SIGNATURE

Your signature indicates that you voluntarily agree to participate in this study, that the study has been explained to you, that you have been given the time to read the document and that your questions have been satisfactorily answered. You will receive a copy of the written informed consent prior to your participation in the study.

Participant’s Name (printed) __________________________

__________________________  (Participant’s Signature)  (Date)

INVESTIGATOR STATEMENT

I certify that the participant has been given adequate time to read and learn about the study and all of their questions have been answered. It is my opinion that the participant understands the purpose, risks, benefits and the procedures that will be followed in this study and has voluntarily agreed to participate.

__________________________  (Signature of Person Obtaining Informed Consent)  (Date)
<table>
<thead>
<tr>
<th>Element</th>
<th>General Themes</th>
<th>Specific Themes</th>
<th>Coded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current room service</td>
<td>• Menu choices in room service menu</td>
<td>• Availability of many choices in room service menu</td>
<td>• Each room has regular room service menu</td>
</tr>
<tr>
<td></td>
<td>• Diet restriction and patient care</td>
<td>• Concern about specific type of diet restrictions</td>
<td>• 6 pages or 30 different things</td>
</tr>
<tr>
<td></td>
<td>• Greater satisfaction on patient demand</td>
<td>• Concern about specific patients</td>
<td>• Late night menu</td>
</tr>
<tr>
<td></td>
<td>• Well-planned room service system</td>
<td>• Patients have greater control</td>
<td>• Have pre-made salads, pre made sandwiches, pre-made wraps</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Achieve patient satisfaction</td>
<td>• Exception cardiac menu</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Identify type of diet</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Fine with regular diet</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Eight different diets</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Blood sugar testing</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• What low sodium can and cannot have</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Certain amount calorie diet</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Fluid restrictions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Identifiers of specific diets on room service menu</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Handle paper menu</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Paper menu filled in by family member</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Order from 7am till 8pm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Get anything they want</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Want to achieve 100% people on room service</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• A scale patients</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Press gamey benchmark</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Improve score to specific question</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Not good explanation about diet</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Telephone automatically programmed to room service</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Phone identical number</td>
</tr>
</tbody>
</table>
| Job specification of each staff member | Excellent room service activity | Pick up phone, hit one button, rings down to diet office  
Answer the phone  
Have 3 printers – hot foods, cold area  
Final ticket  
Starter station  
Started in stages  
Easy to start with regular diet  
Three months for whole hospital  
Look up diet sheets  
Steer toward other things  
Doesn’t match with your diet  
Diet technician are trained on diet  
Helping patients pick items to meet requirements  
Diet technician looks at touch screen and check the order  
Get tickets, make up trays, get all condiments  
Give order that depends on specific diet  
Take to the nursing floor  
Dietary staff take the trays  
Staff are ready to go  
Nurse notifies patient transporter  
Set up tray system  
Everything is all ready  
Nurse responsibilities to explain everything |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Room service facilities</td>
<td>Stages in implementing room service</td>
<td>Staff aware about their responsibilities</td>
</tr>
<tr>
<td>Duties/responsibilities of dietary and nurses staff</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Handle therapeutic patients with different length of stay | • Different approach for different patients | • Room service not available for short stay | • No meal available for day care procedure
• No room service for short stay
• Can call and get their meal
• Send box lunches
• Choices of snacks and may toast
• Patient satisfaction gone way up |
|----------------------------------------------------------|---------------------------------|---------------------------------|------------------------------------------------------------------|
| Factors that most influence patient satisfaction | • Greater choices and updated menu meet patient demand
• Patient feedback
• Guest tray service | • Opportunity to choose lots of menu choices
• Patients demand and have choice of good balance
• Changes and updated menu all the time
• Respond to patients’ feedback
• Great opportunity for visitors | • What and when they want to eat
• A lot of choices in room service menu
• Pick up room service, order anything
• Demand on vegetarian options
• Get good balance
• Find the great balance
• Keep changing frequently
• Constantly updating menu
• Find out the right mix
• Identify items being served
• Keep growing
• Make huge difference
• Focus continually on patient comments
• Feedback from nurses
• Visitors order guest tray
• Promote room service for $6
• Let visitors get what they want
• Increase revenues |
<table>
<thead>
<tr>
<th>Factors needed to focus when implementing room service</th>
<th>Labor – cost, training, commitment, awareness, experience and skills</th>
<th>Labor mix – availability, knowledge, and skills</th>
<th>Number of staff</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Find great experience labor and provide adequate training</td>
<td></td>
<td>Load the carts</td>
</tr>
<tr>
<td></td>
<td>Staff commitment and confidence from all departments</td>
<td></td>
<td>Nurses pass the trays</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Taking order, assembly and delivery to patient</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Know how to run a program</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Refer to scale setting</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Have no idea what is the shrimp scampi</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Cook many things</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hire experience cook</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Get the right personnel</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Get the right spot</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nursing support</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nurses like the idea</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Promote to department</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Get nurses commitment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>More time on patient care</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Do not bother all about food</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Do a good job</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Inform the administration</td>
</tr>
<tr>
<td></td>
<td>Physical resources</td>
<td>Appropriate equipment</td>
<td>Do not have griller</td>
</tr>
<tr>
<td></td>
<td>Design and layout</td>
<td></td>
<td>Match equipments with menu needs</td>
</tr>
<tr>
<td></td>
<td>Systematic information system tools</td>
<td></td>
<td>Buy 6 burners</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Must have charbroiler</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>By a lot of equipment</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Utilize plate system</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Restaurant style layout</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Luxury space</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Have perfect tools</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Touch screen system</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Printers, computer</td>
</tr>
<tr>
<td>Information would like to have had before implementing room service</td>
<td>Lessons during implementation of room service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Site visit</td>
<td>• Staff support and commitment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Appropriate kitchen layout</td>
<td>• Availability of great staff do a great job</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Systematic kitchen layout</td>
<td>• Promoting room service</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Information about other facilities’ room service system</td>
<td>• FTE and full time needed</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Add users at counter point</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Staff do a good job</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Introduce yourself and room service</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Helping patients</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Patient demand
- Service and quality concern
- Effect of operation cost
- Patients’ demand
- High quality and service consistent
- Cost budgeting
- I want control
- Not waiting for 20 minutes
- Food get colds
- Bad reflection of dietary
- Do test trays all the time
- Quality of the meals
- Find a perfect balance
- Eat on demand
- Give good result
- Budget for number of meals
- Keep up a dollar figure
- Waste is minimal
- Have site visit
- Gather information
- What is working, what is not
- Everybody does different thing
- Heating equipment system
- Layout of kitchen
- Drainage and gas line system
<table>
<thead>
<tr>
<th>Standardization of recipe</th>
<th>Meet the standardization recipe</th>
<th>Have good recipe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meet patient concern and demand very well</td>
<td>Patients have greater choices for their meals</td>
<td>Have picture of recipe</td>
</tr>
<tr>
<td>Achievement of job satisfaction among staffs</td>
<td>Keep growing to enhance patient satisfaction</td>
<td>How the meal looks like</td>
</tr>
<tr>
<td></td>
<td>Impact on patient satisfaction</td>
<td>Need to be the same</td>
</tr>
<tr>
<td></td>
<td>Job satisfaction</td>
<td>Using standardized recipe</td>
</tr>
<tr>
<td></td>
<td>Having right personnel manage the operation</td>
<td>Right menu mix</td>
</tr>
<tr>
<td></td>
<td></td>
<td>People demand</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Patients have choice of meals</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Give patients what they want</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cannot remain stagnant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>We will get it for them</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Go out to the store</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Get special things</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hit kosher island and others not on menu</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Increase patient satisfaction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Getting back patients</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Food is lovely</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Feedback reviewed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Visit patients most of the time</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Courtesy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Staff on the board</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hire good people</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Do the right job</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Know what they have done</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Obtain nursing support</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rewarding staff</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Develop in-house catering menu</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Good managers, production, and service people</td>
</tr>
<tr>
<td>Other factors</td>
<td>Creativity</td>
<td>Create own menu design</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>• Meal time delivery</td>
<td>• Reduce meal time delivery • Well-organized activities for timing on meal delivery</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX F: FIRST E-MAIL MESSAGE: E-MAIL INTERVIEWS

(An introductory message to explain about the study and procedures that was conducted by the principal investigator)

Dear hospital foodservice directors,

I am a graduate student in Foodservice and Lodging Management at Iowa State University. I am conducting a study exploring the important factors to consider when implementing room service in hospitals. I am writing this email to briefly explain the study procedures and request your assistance with the study.

I am interested in studying room service as it is a new trend in meal delivery and appears to impact patients’ satisfaction. Because you have been involved in room service implementation, your participation in this research is valuable. Results from this portion of the study will be used to develop a questionnaire that will be sent to a national sample of hospital foodservice directors. The final results of this study will be used to help others who may be considering implementing room service in their operation.

Later this week, you will be receiving a list of open-ended questions via email. It will take approximately 20-25 minutes to completely respond to all questions; all responses will be kept confidential. You may participate in answering these questions, but you can chose to skip questions that you are not comfortable answering. Your participation in answering these questions is completely voluntary. Responding to the questions will indicate your willingness to participate in this study. By completing the open ended questions and replying to this email, you are giving your consent to participate in this study. There are no costs or foreseeable risks associated with participating in this research.

If you have any questions about the rights of research subjects or research-related injury, please contact the IRB Administrator, (515) 294-4566, IRB@iastate.edu, or Director, (515) 294-3115, Office for Responsible Research, Iowa State University, Ames, Iowa 50011.

Thank you for your time and consideration. Please do not hesitate to contact me or my major professor, Dr. Susan Arendt, should you have questions. Our contact information is listed below.

Best regards,

Zafirah Mohd Nor  
Graduate Student, Iowa State University  
515-572-7660  
zmohdnor@iastate.edu

Susan Arendt, PhD, RD  
Assistant Professor  
Iowa State University  
515-294-7575  
sarendt@iastate.edu
APPENDIX G: SECOND E-MAIL MESSAGE: E-MAIL INTERVIEWS

(Open-ended questions that was conducted by the principal investigator)

Dear hospital foodservice directors,

Earlier this week, you should have received an email describing my research project. As a reminder, I am approaching you to participate in a research study designed to identify the factors hospital foodservice directors consider when implementing a room service system. Below you will find the questions designed to collect these data.

Please answer the questions outlined below by October 29, 2009, approximately two weeks from today. Please send your responses by replying to this email. Please do not hesitate to contact my major professor or me if you have any questions or concerns about this study. Your thoughts, ideas, and insights are truly appreciated in this research project.

Best regards,

Zafirah Mohd Nor  Susan W. Arendt, PhD, RD
Graduate Student  Apparel, Educational Studies & Hospitality Mgmt
Iowa State University  Iowa State University
zmohdnor@iastate.edu  sarendt@iastate.edu

Factors of Room Service Implementation Questionnaire

1) What are the current room service procedures where you work? Please explain in detail including: hours of room service availability, which patients receive room service and how/when patients receive the room service menu?

2) How are patients on diets other than house (general) diet handled? Please elaborate.

3) What are the factors that most influence patients’ satisfaction with overall foodservice where you work? Please elaborate.

4) What were the important factors you needed to focus on when implementing room service?

5) What information did you seek out before implementing room service?

6) What information would you like to have had before implementing room service?

7) What lessons did you learn when implementing room service?

Thank you for your participation!
APPENDIX H: THANK YOU/REMINDER E-MAIL MESSAGE TO HOSPITAL FOODSERVICE DIRECTORS: E-MAIL INTERVIEWS

Last week you received an e-mail seeking your input in identifying the factors hospital foodservice directors consider when implementing a room service system.

If you have already completed and returned question responses, please accept our sincere thanks. If you have not yet completed the questions, please do so by October 29, 2009. We are especially grateful for your help because it is through your input and experiences that we can understand the important factors when implementing room service. We appreciate your consideration and allocating your time to answer these questions. **It will take you approximately 20-25 minutes to complete.**

The questions are outlined below. **Your thoughts, ideas, and insights are truly appreciated in this research project.**

Best regards,

Zafirah Mohd Nor  
Graduate Student  
Iowa State University  
zmohdnor@iastate.edu

Susan W. Arendt, PhD, RD  
Apparel, Educational Studies & Hospitality Mgmt  
Iowa State University  
sarendt@iastate.edu

**Factors of Room Service Implementation Questionnaire**

1) What are the current room service procedures where you work? Please explain in detail including: hours of room service availability, which patients receive room service and how/when patients receive the room service menu?

2) How are patients on diets other than house (general) diet handled? Please elaborate.

3) What are the factors that most influence patients' satisfaction with **overall** foodservice where you work? Please elaborate.

4) What were the important factors you needed to focus on when implementing room service?

5) What information did you seek out before implementing room service?

6) What information would you like to have had before implementing room service?

7) What lessons did you learn when implementing room service?
APPENDIX I: FACTORS OF ROOM SERVICE IMPLEMENTATION
QUESTIONNAIRE RESPONSES

What are the current room service procedures where you work? Please explain in detail including: hours of room service availability, which patients receive room service and how/when patients receive the room service menu?

1: Room Service is available from 630am-930pm 7 days a week. Room Service is available to all patients. Patients are classified as Room Service (RS) 1, 2, or 3. RS 1 is fully able to participate in Room Service without assistance. RS 2 is able to participate in selections but may require assistance in some aspect of completing the communication. RS 3 is not able to participate in the process and receives the “house diet”. The RS menu is a restaurant style menu and remains in the room. All food selections except soups, gravies, meatloaf, lasagna, mashed potatoes, vegetables and sauces are prepared to order. Patient requests are delivered in the order received and within 45 minutes. Food Service delivers all patient meals. Nursing picks up patient trays.

2: Our room service hrs are 6 am to 8 pm, patients can call anytime and order. All patients receive room service, we do not send house diets. If patients cannot call in themselves the nurses or family call in for them. Nursing orients pts to room service and gives them the menu when they are oriented to their room. Psych patients don’t call in, they circle choices on a paper menu daily (same menu choices) that is sent to the kitchen. We run a report after every meal period that tells us who hasn’t ordered yet. We call each patient and ask if they want to order. We allow pts to miss one meal a day.

3: Full hotel style room service for all 370 beds. 7:00 am to 7:00 pm. Menus are distributed by the Room Service Ambassadors.

4: We serve 7am-7pm, breakfast available all day. All patients can use room service. Patients call diet techs, place their orders, based on diet orders, likes dislikes and allergies. Those that can’t call go to non-select menus trays are sent automatically. Family members can call from home if they want to order for someone. We use CBord room service program. Nursing delivers our trays. We delivery some trays. Delivery is within 45 minutes of placing order.

5: A menu specifically designed for patient use will be distributed by Admission Clerk. Extra copies are located on each Nursing unit. Using the number 4000, patients will call the Foods and Nutrition department to order their meals. Hours of operation will be 7 AM until 7:00 PM. Within 30 - 45 minutes of placing the order, the meal will be delivered to the patient room. At the time of the call, the Diet Assistant will verify all patient diet orders using the diet list generated by the (name of software). The patient room numbers will be verified using the caller ID system. Using the (name of software), all menu orders will be entered into the system by room number and diet order. The system allows orders to be scheduled 48 hours in advanced if needed. Food items are divided by designated categories and sent to the three different monitoring stations (Hot, Cold, Expeditor) in the kitchen for preparation. Orders are organized by time and nursing unit to ensure priority preparation and delivery. Using a
printed ticket, the expeditor station checks the tray for accuracy and sends it up with a runner for delivery to the patient. Each runner documents the time that the tray leaves the kitchen for delivery. Food carts will be stationed on the patient units for tray pickup. Host and hostesses from the Foods and Nutrition Department will make rounds during the day to retrieve the carts and return the trays to the kitchen.

*How are patients on diets other than house (general) diet handled? Please elaborate.*

1: We use the CBORD System to screen selections for diet appropriateness. Items are prepared to order so they can be seasoned correctly and in many cases the fresh preparation reduces the need for sauces and seasoning.

2: We have a liberalized room service menu, meaning that cardiac and carb controlled (diabetic) diets use the regular menu. The amounts of carbs are printed next to each item and the heart healthy items are identified with an icon. Pts on cardiac or carb controlled diets are encouraged to choose menus compatible with their diet order, but are not compelled to (the MD can order the diet as Not Liberalized if they want us to be strict). If the patient orders 2 meals in a row that are very non compliant with the dietary restrictions the dietitian is notified and they work with the patient to teach them to make better choices. If the pt continues to be non-compliant to the detriment of their recovery, they are taken off the liberalized diet. Patients on 2 gm Na, Renal and Dysphagia diets are given Room Service menus with those restrictions. We use *(name of software)*, which has all the dietary restrictions loaded in by diet type. The tech who takes the order is trained in all the diets and can see on the computer which foods are allowed—like on a gluten free or other restriction. They work with the patient to make sure appropriate foods are ordered.

3: All patients have full room service no matter what diet they are on. They may order whenever they want between the hours we are open.

4: We accommodate patients as much as possible. We cook to order for patients and we try to meet all religious, ethnic, and cultural requests.

5: A host or hostess from the Foods and Nutrition Department will visit all new admits to orient the patient on the room service process regardless of diet order. Patients that are identified as unable to participate in the program will be visited daily by a nutrition hostess for their meal preferences. In an effort to coordinate lab testing, patients that have a diagnosis of diabetes will be asked by the hostess to decide on a set schedule for meal delivery. Using this information, the Unit Secretary will be responsible for ordering lab testing around these designated meal times. Patient on the Inpatient Rehab unit will have a set time for breakfast and lunch. The dinner meal will be sent according to the patient’s individual request. Meals for the patients on the critical care units will be ordered as needed by the unit secretaries. At designated times, a list will be compiled identifying all patients that have not ordered meals. Using this list, a nutrition hostess will contact all patients. It is the responsibility of the Nursing Unit to inform the patient of the current status of their diet order (i.e. NPO, liquid diets).
What are the factors that most influence patients' satisfaction with overall foodservice where you work? Please elaborate.

1: We use Press Ganey to measure patient satisfaction. Our service is evaluated based on the following four criteria: Explanation of Special diets, temperature of food, quality of food, courtesy of the server.

2: Ordering what they feel like eating when they want to eat. Quality food that is well-presented. Having the food delivered by food services in a timely manner so the temperatures are good. Having nursing as a positive advocate for the food because they think it’s great.

3: The ability to order when they want to do so; the freshness of the food that has just been prepared especially for them; the courtesy of the servers.

4: Patients are influenced by the way staff interact with them when taking the order or delivering the tray. They are concerned about temperature of food and accuracy of trays.

5: Patients enjoy selecting the type of foods for each meal and time that they want to have their meals delivered.

What were the important factors you needed to focus on when implementing room service?

1: Communication about how the program works, especially with nursing and pharmacy to resolve issues with mediation administration. Educating the various therapies how unscheduled meal times may influence their schedules. Training and explaining the program to employees. Ensuring that all the details are in place and everyone knows who, what when where and how.

2: Working with nursing was key so they were positive about it and supportive. We had nursing represented on all our teams and spent hours training all nursing staff before we started. We spent 9 months planning every detail from taking orders to producing, assembling and delivering the food. We tried to leave nothing to chance but also were prepared to be very flexible. We involved our staff in every decision and trained them thoroughly with scripts and scenarios. We worked with our management engineer to plan every process---we focused on processes and the outcomes we wanted.

3: Appropriate equipment in appropriate locations; room service skilled cooks; enhanced customer service skills for Ambassadors.

4: Staff by in without the staff understanding the process and being able to help adjust the system nothing will work. The main reason you are implementing the program and explain that to staff. You need to have the correct equipment in the right places.
5: Selecting the computer system that will be needed to process orders, educating and training staff, designing work space and evaluating equipment, menu planning.

*What information did you seek out before implementing room service?*

1: We used a consultant, *(name of the contract foodservice)*, and visited several of their locations to see operations before we began our planning.

2: We did 3 site visits at facilities (similar size as our own) already doing room service, but at different stages—so one newly doing room service, one that had been doing it 3 years, another that had 5 yrs experience. We included our management engineer every step of the way—he went on the site visits and helped us design processes and layout. We talked to consultants; we talked to other hospitals doing room service. We asked tons of questions and also checked out the impact on clinical nutrition.

3: Spoke with others using room service; worked with consultants.

4: We went to see different facilities and how their set up worked. Search information about room service programs. Met with our staff to discuss what we wanted to accomplish and got their input.

5: Computer programs, staffing needs, menu planning, equipment needs

*What information would you like to have had before implementing room service?*

1: We had access to all of *(name of the contract foodservice)* Room Service implementation information and we were able to see Room Service in operation. We had access to all of the necessary information.

2: We had thoroughly done our homework. We did neglect to include speech therapy in our multidisciplinary team. So we had a few problems with the dysphagia menu and not good buy in from the Speech therapists. One thing I would have done differently is not have so many helpers there the first day—we had too many people and they got in the way of our staff.

3: The fact that room service cooking and room service delivery required a much higher skill level than one can imagine!

4: No answer

5: More input from other hospitals that implemented room service
What lessons did you learn when implementing room service?

1: The implementation went smoothly. We did spend a tremendous amount of director, manager and supervisor time the first three weeks of implementation. After three weeks employees were able to make the correct decisions and operate the system with out a lot of direct supervision.

2: It was really important to be flexible. We used the *(name of program)* approach to designing our Room Service process. We thought we understood *(name of program)*, but we didn’t. But the best way to learn it is by doing it—which is exactly what we did. We had several 100 changes in our process and layout the first 6 months. The process stabilized as we got better and is now pretty slick. Utilizing our management engineering resources was key for us—like having your own consultant in house.

3: Have the right staff in place prior to beginning. Don't try to "make do" with current staff if they do not have the appropriate skill levels.

4: Lessons learned- room service needs to be customized to your facility. There is not one model that works for all. You must be flexible and open minded when implementing the program. You need to listen to staff suggestions and keep adjusting to find the right fit.

5: I cannot emphasize how important it is to educate staff including nursing and other support staff throughout the facility!
I am Zafirah Mohd Nor, a graduate student from Iowa State University. Currently, I am working on my thesis. I am conducting this pilot test for the questionnaire. The aim of this pilot test is to test the clarity of the questionnaire. It is also to ensure that the words and scales used in the questionnaire are clear and easy to understand. The survey questionnaire is to determine the importance of each factor considered by hospital foodservice directors when implementing room service.

**Procedures for pilot test:**

1) Read every instruction before you start to answer the questions from the questionnaire. You will be asked to rate each critical factor statement that you believe important for room service implementation.

2) After completion, you will be asked to complete the pilot test form which can be found at the end of the electronic questionnaire. This form will ask you how understandable words or scales used in this questionnaire.

3) You may also make any suggestions to improve the questionnaire.

**The url link of the survey questionnaire is**

[http://humansciences.roomservice.squizmo.com](http://humansciences.roomservice.squizmo.com). We would be happy to get your feedback by Nov 17, 2009. Your time and effort in assisting with this pilot test is greatly appreciated. Thank you.

Best regards,

Zafirah Mohd Nor
Graduate Student, Foodservice and Lodging Management
Iowa State University

Susan W. Arendt, PhD, RD
Assistant Professor
Iowa State University
Pilot Test Form

Please answer the following questions or make any comments upon the completion of your questionnaire.

1. Were the questions clear and understandable? _________________________
   If not, please indicate the questions number and what needs clarification
   ___________________________________________________________________
   ___________________________________________________________________
   ___________________________________________________________________
   ___________________________________________________________________

2. Were the scales (rankings) understandable? ___________________________
   If not, please indicate what could be done to make them more understandable
   ___________________________________________________________________
   ___________________________________________________________________
   ___________________________________________________________________
   ___________________________________________________________________

3. Overall, what suggestions do you have to improve the questionnaire?
   ___________________________________________________________________
   ___________________________________________________________________
   ___________________________________________________________________
   ___________________________________________________________________

Thank you for your participation in this pilot test.

I may have questions about what you have written. If you are interested to have further discussion about the questionnaire, you can email me at zmohdnor@iastate.edu or I can be reached at my phone number 515-572-7660.

Zafirah Mohd Nor
Graduate Student, Foodservice and Lodging Management
Iowa State University

Susan W. Arendt, PhD, RD
Assistant Professor
Iowa State University
APPENDIX K: SAMPLE OF WEB QUESTIONNAIRE

(A) For Hospital Foodservice Directors Who Had Implemented Room Service

Important Aspects When Implementing Room Service

Page One
Please complete the questionnaire based on the facility that you currently manage. If you work at a large medical center, please respond based on your span of control. Please complete the questionnaire by February 5 and note that participation in this survey is completely voluntary. Thank you.

Have you implemented a room service system at your facility?

*  
○ Yes  
○ No
Section 1: Important aspects when implementing room service

Please rate the importance of the following aspects in the decision making process to implement room service.

2. Patient satisfaction:

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Not at all</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunity for patients to order what they want to eat</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opportunity for patients to order when they want to eat</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opportunity for patients to eat when they want to eat</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to update menu to meet patients’ desires</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Availability of more menu choices than a “traditional” menu</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to explain therapeutic diets within the menu design</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Food quality:

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Not at all</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature of the food at service</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety of the food at service</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presentation of the food at service</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshness of the food at service</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Financial aspects:

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Not at all</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of the food</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost of the labor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost of utilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost of additional production equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost of additional service equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5. Human resources:

<table>
<thead>
<tr>
<th>Cost of additional technology</th>
<th>Not at all important</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of full time equivalents needed</th>
<th>Not at all important</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Training needs of nursing staff about room service procedures</th>
<th>Not at all important</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Training needs of foodservice employees about room service procedures</th>
<th>Not at all important</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Skill level of foodservice production employees to prepare room service meals</th>
<th>Not at all important</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Courtesy of tray delivery employees</th>
<th>Not at all important</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

6. Physical resources:

<table>
<thead>
<tr>
<th>Design and layout of the production area</th>
<th>Not at all important</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Design and layout of the dishroom area</th>
<th>Not at all important</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Design and layout of the trayline area</th>
<th>Not at all important</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Design and layout of the storage areas</th>
<th>Not at all important</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

7. Support:

<table>
<thead>
<tr>
<th>Support from administration</th>
<th>Not at all important</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Support from nursing staff</th>
<th>Not at all important</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Support from foodservice employees</th>
<th>Not at all important</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
Section 2: Demographic Information

Part 1: Personal Information

8. 1. What is your gender?
   ○ Female
   ○ Male

9. 2. What is your age?
   ○ Less than 30 years old
   ○ 30-40 years old
   ○ 41-50 years old
   ○ 51-60 years old
   ○ More than 60 years old

10. 3. What is your highest education level?
    ○ Associate's degree
    ○ Bachelor's degree
    ○ Master's degree
    ○ Doctorate degree
    ○ Other

11. 4. What are your credentials? (Check all that apply)
    □ Registered dietitian
    □ Licensed dietitian
    □ Registered dietetic technician
    □ Certified dietary manager
    □ Other, please specify:

12. 5. How long have you been working at your current organization?
    ○ Less than 5 years
    ○ 5-10 years
    ○ 11-20 years
    ○ 21-30 years
    ○ More than 30 years

13. 6. What is your length of time working with the room service concept in any operation?
    ○ Less than 3 years
    ○ 3-6 years
    ○ 7-10 years
    ○ 11-20 years
    ○ More than 20 years
Section 2: Demographic Information

Part 2: Hospital Information
15. 7. How is your organization operated?
   - Stand alone, not part of a larger health system
   - VA affiliated
   - Associated with a larger health system, but not VA affiliated
   - Other, please specify:
16. 8. What is your organization type?
   - Public
   - Private
   - Other, please specify:
17. 9. How is your foodservice managed?
   - Self-operated
   - Contract managed
18. 10. What is bed capacity of the organization where you work?
   - Less than 50 beds
   - 50-99 beds
   - 100-199 beds
   - 200-299 beds
   - 300-399 beds
   - 400-500 beds
   - More than 500 beds
19. 11. What is the average daily census at the organization where you work?
   - Less than 50 patients per day
   - 50-99 patients per day
   - 100-199 patients per day
   - 200-299 patients per day
   - 300-399 patients per day
   - 400-500 patients per day
   - More than 500 patients per day
20. 12. What is the average length of stay at the organization where you work?
   - Less than 1 day
   - 1-2 days
   - 3-5 days
   - 6-9 days
   - 10 or more days
Section 2: Demographic Information

Part 3: Room Service Information
21. 13. How many years has your current organization had room service in place?
   o Less than 1 year
   o 1-3 years
   o 4-6 years
   o 7-10 years
   o More than 10 years
22. 14. How many hours is room service available to patients?
   o 24 hours each day
   o 16-23 hours each day
   o 12-15 hours each day
   o 1-11 hours each day
23. 15. Which patients receive room service options?
   o All patients
   o All patients except those on therapeutic diets
   o Other, please specify:
24. 16. How do patients who receive room service communicate their menu selections?
   o Patient or representative calls to kitchen with menu selections
   o Patient or representative fills out a paper menu
   o A hospital employee reads the menu and records selections
   o Other, please specify:
25. 17. What is average time between order placement and tray delivery?
   o 30 minutes or less
   o 31-45 minutes
   o 46-59 minutes
   o 1-2 hours
   o More than 2 hours
26. 18. Who passes and picks up room service trays?
   o Foodservice employees
   o Nursing staff
   o Foodservice employees pass trays and nursing staff picks up trays
   o Nursing staff passes trays and foodservice employees pick up trays
   o Other. Please specify:
27. 19. Who did you seek information from prior to implementing room service? (Check all that apply)

☐ Foodservice directors at other facilities using room service
☐ Room service consultants
☐ Nursing staff in the organization
☐ Own foodservice employees
☐ Other. Please specify: ____________________________

28. OPTIONAL

If you would like a copy of the results of this survey, please enter your email address below or, if you prefer, email Zafirah at zmohdnor@iastate.edu.

Thank You!
Thank you for your participation in this survey.

Zafirah Mohd Nor
Graduate Student, Foodservice and Lodging Management
Iowa State University

Susan W. Arendt, PhD, RD
Assistant Professor
Iowa State University
(B) For Hospital Foodservice Directors Who Had Not Implemented Room Service

Important Aspects When Implementing Room Service

Page One
Please complete the questionnaire based on the facility that you currently manage. If you work at a large medical center, please respond based on your span of control. Please complete the questionnaire by February 5 and note that participation in this survey is completely voluntary. Thank you.

1. Have you implemented a room service system at your facility?

*  
  ○ Yes
  ○ No
Section 1: Important aspects when implementing room service

Please rate the importance of the following aspects in the decision making process to implement room service.

2. Patient satisfaction:

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Not at all important</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opportunity for patients to order what they want to eat</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Opportunity for patients to order when they want to eat</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Opportunity for patients to eat when they want to eat</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Ability to update menu to meet patients' desires</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Availability of more menu choices than a &quot;traditional&quot; menu</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Ability to explain therapeutic diets within the menu design</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

3. Food quality:

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Not at all important</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature of the food at service</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Safety of the food at service</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Presentation of the food at service</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Freshness of the food at service</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

4. Financial aspects:

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Not at all important</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of the food</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Cost of the labor</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Cost of utilities</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Cost of additional production equipment</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Cost of additional service equipment</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
Cost of additional technology

5. Human resources:

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Number of full time equivalents needed
Training needs of nursing staff about room service procedures
Training needs of foodservice employees about room service procedures
Skill level of foodservice production employees to prepare room service meals
Courtesy of tray delivery employees

6. Physical resources:

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Design and layout of the production area
Design and layout of the dishroom area
Design and layout of the trayline area
Design and layout of the storage areas

7. Support:

<table>
<thead>
<tr>
<th>Not at all</th>
<th>Somewhat important</th>
<th>Important</th>
<th>Very important</th>
<th>Extremely important</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Support from administration
Support from nursing staff
Support from foodservice employees
Section 2: Demographic Information

Part 1: Personal Information
8. 1. What is your gender?
   - Female
   - Male
9. 2. What is your age?
   - Less than 30 years old
   - 30-40 years old
   - 41-50 years old
   - 51-60 years old
   - More than 60 years old
10. 3. What is your highest education level?
    - Associate's degree
    - Bachelor's degree
    - Master's degree
    - Doctorate degree
    - Other
11. 4. What are your credentials? (Check all that apply)
    - Registered dietitian
    - Licensed dietitian
    - Registered dietetic technician
    - Certified dietary manager
    - Other, please specify:
12. 5. How long have you been working at your current organization?
    - Less than 5 years
    - 5-10 years
    - 11-20 years
    - 21-30 years
    - More than 30 years
13. 6. What is your length of time working with the room service concept in any operation?
    - Less than 3 years
    - 11-20 years
    - More than 20 years
Section 2: Demographic Information

Part 2: Hospital Information

15. 7. How is your organization operated?
   - Stand alone, not part of a larger health system
   - VA affiliated
   - Associated with a larger health system, but not VA affiliated
   - Other, please specify: __________

16. 8. What is your organization type?
   - Public
   - Private
   - Other, please specify: __________

17. 9. How is your foodservice managed?
   - Self-operated
   - Contract managed

18. 10. What is bed capacity of the organization where you work?
   - Less than 50 beds
   - 50–99 beds
   - 100–199 beds
   - 200–299 beds
   - 300–399 beds
   - 400–500 beds
   - More than 500 beds

19. 11. What is the average daily census at the organization where you work?
   - Less than 50 patients per day
   - 50-99 patients per day
   - 100-199 patients per day
   - 200-299 patients per day
   - 300-399 patients per day
   - 400-500 patients per day
   - More than 500 patients per day

20. 12. What is the average length of stay at the organization where you work?
   - Less than 1 day
   - 1-2 days
   - 3-5 days
   - 6-9 days
   - 10 or more days
28. OPTIONAL

If you would like a copy of the results of this survey, please enter your email address below or, if you prefer, email Zafirah at zmohdnor@iastate.edu.

Thank You!

Thank you for your participation in this survey.

Zafirah Mohd Nor
Graduate Student, Foodservice and Lodging Management
Iowa State University

Susan W. Arendt, PhD, RD
Assistant Professor
Iowa State University
Dear hospital foodservice directors,

I am a graduate student in Foodservice and Lodging Management at Iowa State University. I am conducting a study seeking hospital foodservice directors’ opinions so as to determine the importance of certain aspects when deciding whether or not to implement room service. I am writing this email to briefly explain the study and ask for your participation.

I am interested in studying room service as it is a newer trend in meal delivery and appears to impact patients’ satisfaction. Because you have expert insights into patient meal service, your participation in this study is most valuable. Your input is important whether you have experience with room service or not. The results of this study will be used to help identify important aspects when deciding whether or not to implement room service.

Later this week, you will be receiving an email message outlining more specific details of this research. I anticipate no risk to you as a result of your participation in this study. There are no foreseeable risks at this time from participating in this study as it is a voluntary participation and participants can leave or skip any questions that they are not comfortable answering. If you wish to receive a brief report of our survey results, I would be happy to share these with you. There is a place at the end of the questionnaire where you can request summary results.

Please do not hesitate to contact me or my major professor, Dr. Susan Arendt, should you have questions. Our contact information is listed below.

Best regards,

Zafirah Mohd Nor                       Susan Arendt, PhD, RD
Graduate Student                       Assistant Professor
Iowa State University                  Iowa State University
515-572-7660                            515-294-7575
zmohdnor@iastate.edu                   sarendt@iastate.edu
Dear hospital foodservice directors,

This research is an attempt to determine the importance of certain aspects considered by hospital foodservice directors when deciding whether or not to implement room service. In the first part of this study, I collected data from a small group of foodservice directors and now I hope to get input from a larger group of foodservice directors.

The aspects identified in this questionnaire are a merging of ideas and opinions from other foodservice directors. I am hoping this research will provide useful direction and input for those who are interested in implementing a room service system in hospital foodservice. I hope you will participate in this research project, as your expert opinions are extremely valuable. Your feedback is important whether you have or have not implemented room service.

Your participation in this survey is completely voluntary. You may participate in answering these questions and you may chose to skip questions that you are not comfortable answering. Completing the survey will indicate your willingness to participate in this study. There are no costs or foreseeable risks associated with participating in this research. Your completion and submission of the survey to the researchers represents your consent to serve as a subject in this research. This research project has been approved by the Institutional Review Board of the Office for Responsible Research at Iowa State University. The director of Research Assurances at Iowa State can be reached at 515-294-3115.

The survey questionnaire is located at the following link and will take approximately 10-15 minutes to complete. The survey will be available until 11:59 PM CST on Friday, January 29, 2010.

http://humansciences.roomservice.sgizmo.com

Thank you for your participation. Please contact me if you have any questions or would like more information about this study. I can be reached at the phone number or email address listed below. Questions about this research project can also be directed to my major professor, Dr. Susan Arendt.

Best regards,

Zafirah Mohd Nor
Graduate Student
Iowa State University
zmohdnor@iastate.edu

Susan W. Arendt, PhD, RD
Apparel, Educational Studies & Hospitality Management
Iowa State University
sarendt@iastate.edu
APPENDIX N: THANK YOU/REMINDER E-MAIL MESSAGE TO HOSPITAL FOODSERVICE DIRECTORS: WEB QUESTIONNAIRE

Dear hospital foodservice directors,

Last week, a web questionnaire seeking your opinions about certain aspects considered when deciding whether or not to implement room service was emailed to you. If you have already completed and submitted the questionnaire, please accept our sincere thanks. If you have not yet completed and submitted the questionnaire, it will remain open until 11:59 PM CST on Friday, January 29, 2010. It will take you approximately 10 - 15 minutes to complete. Please follow this link:

http://humansciences.roomservice.sgizmo.com

We are especially grateful for your help because it is only through your input and experiences that we can understand the important aspects to the implementation of room service. We appreciate your consideration and allocating your time to answering this questionnaire.

If you wish to receive a summary report of the research findings, please put your email address on the last page of the questionnaire. Your email address will not be linked to your questionnaire responses in any way.

Thank you again for your participation. Please contact us if we can answer any questions or provide further information related to this study. Your thoughts, ideas, and insights are truly appreciated in this research project.

Best regards,

Zafirah Mohd Nor                  Susan W. Arendt, PhD, RD
Graduate Student                   Apparel, Educational Studies & Hospitality Management
Iowa State University             Iowa State University
zmohdnor@iastate.edu              515-294-7575
                                     sarendt@iastate.edu