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Vanessa A. Theurer
Utah State University

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IMPROVING PATIENT SATISFACTION IN A HOSPITAL FOODSERVICE
SYSTEM USING LOW-COST INTERVENTIONS: DETERMINING
WHETHER A ROOM SERVICE SYSTEM IS THE NEXT STEP

By

Vanessa A. Theurer

A plan B report in partial fulfillment of the
requirements for the degree

of

MASTER OF DIETETICS ADMINISTRATION

in

Nutrition, Dietetics, and Food Sciences

Approved:

Janette Smith Kudin, MS,RD,CD
Major Professor

Janet B. Anderson, MS,RD,CD
Committee Member

Nedra K. Christensen, PhD,MS,RD,CD
Committee Member

Jennifer Oler, MS,RD,CD
Committee Member

UTAH STATE UNIVERSITY
Logan, Utah

2011

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ABSTRACT

A survey was used to assess patient foodservice satisfaction at an acute care hospital. Results were then used to identify the lowest scoring areas of foodservice. Low-cost interventions were implemented to address the areas of needed improvement. Patient satisfaction was reassessed by re-issuing surveys. Group T-tests were used to compare the results of the baseline and follow-up surveys ($P < 0.05$). Low-cost interventions were not shown to be effective in significantly improving patient foodservice satisfaction. Findings suggest that a higher-cost investment in a room service system maybe the next step in order for the foodservice operation to meet patient expectations.

Keywords: Hospital foodservice/room service, low-cost foodservice interventions, patient foodservice satisfaction

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CHAPTER I

Introduction

Statement of Problem

Hospital food and nutrition services play an important role in patient recovery and well-being. Foodservice quality can also influence patients' satisfaction with their overall hospital experience (McLymont, Sharon, & Stell, 2003; Williams, Virtue, & Adkins, 1998). With health care industry competition on the rise, many hospital foodservice operations are looking for ways to improve patient satisfaction. This study will investigate patient foodservice satisfaction at St. Mark's Hospital (STMH), a 276-bed teaching hospital which primarily serves the urban community of the Salt Lake Valley in Salt Lake City, Utah.

STMH is part of the Hospital Corporation of American (HCA) and is a highly respected Mountain Star facility. HCA is a Nashville-based hospital company with 164 hospitals in 20 states (Hospital Corporation of America, 2011). HCA conducts a quarterly, company-wide Gallup poll that surveys post-discharge patients on a variety of factors affecting their overall hospital stay experience and satisfaction. Gallup is a global organization that provides statistical research services (Gallup Organization, 2011). For several years, STMH has consistently scored below the company average in satisfaction in overall quality of foodservice. The single question patients are asked during the telephone interview is, "Were you satisfied with the overall quality of foodservice?" The survey poll does not provide any further details as to why post-discharge patients are dissatisfied.

For years, the STMH foodservice department has also distributed an internal questionnaire of its own on the back of the patient menu. It consists of six “yes or no” questions, with little room to add comments. The questions address meal taste, temperature, appearance, reliability, service and overall satisfaction. According to foodservice department records, the questionnaire has a very low participation rate, with less than 3% of patients returning a completed survey. For those that are completed, the data has not historically been analyzed or recorded in a standardized way.

The food at STMH is prepared on-site in a centralized kitchen. Hot thermal retention trays are then assembled in a round tray line using heated bases and transported via elevator in carts. The foodservice staff delivers trays directly to patients in their rooms. The foodservice department uses a selective 7-day menu cycle. Diet order-entry is computerized, and menus are manually prepared, distributed, and tabulated once daily.

STMH has a limited budget and foodservice interventions must be made using current resources. In order to control costs while also improving the quality of foodservice, it is essential to isolate dimensions of foodservice that are in most urgent need of improved satisfaction and to identify precisely which effort will reap the largest benefits. This study will investigate the dimensions of patient foodservice satisfaction at STMH in an effort to provide cost effective means of improving the patient satisfaction score.

Problem

Perceived foodservice quality contributes to patient recovery and overall satisfaction of hospital stay (McLymont et al., 2003; Williams et al., 1998). However, in recent company-wide polls, post-discharge patients have scored STMH as below average

for satisfaction in overall quality of foodservice. In addition to this, the STMH foodservice department currently uses an ineffective internal patient survey tool. The survey is rarely completed by patients (<3% participation rate) and data collected from the survey is not analyzed.

Purpose and Objectives

Purpose

The purpose of this study is to determine implications for improving foodservice satisfaction at St. Mark's Hospital using a validated tool.

Objectives

To improve foodservice satisfaction at STMH the objectives include:

- (1) Identify the food, service, and patient variables that contribute to foodservice dissatisfaction utilizing a validated patient survey.
- (2) Plan and implement cost-effective changes in the foodservice based on survey results.
- (3) Monitor foodservice satisfaction scores.
- (4) Determine and recommend further changes on to improve patient foodservice satisfaction to administrators.

Review of Literature

The Role of Hospital Foodservice

Adequate nutrition intake is an important part of healing the hospital patient. In general, undernutrition is associated with loss of muscle strength and impaired immune function which can lead to an increase in complication rates, infection rates, and

mortality (Giner, Laviano, Meguid, & Gleason, 1996; Johansen, Kondrop, & Plum, 2004). Promoting optimal nutritional status through quality hospital foodservices can lead to a faster recovery and decreased length of hospital stay which can have a large impact on hospital costs (Giner et al., 1996; Johansen et al., 2004).

Health care in the United States is the largest service industry in the world and it exists in a dynamic, competitive environment, where the need to provide quality services with limited resources is vital (Drain, 2001; Kizer, 2001; Fallon, Gurr, Hannan-Jones, & Bauer, 2008). Health care institutions must monitor and address patient satisfaction in order to remain viable. Foodservice quality is significantly correlated with overall patient satisfaction (Sheehan-Smith, 2006). Therefore, it is not surprising that many hospital foodservice organizations are changing to be more focused on patient care in an effort to boost patient satisfaction and control costs (Buzalka, 2008; Drain, 2001; Urden, 2002). In the highly aggressive health care industry, hospital foodservice is poised to play an important role in gaining the market share edge.

Customer-Oriented Hospital Foodservices

The U.S. health care system is being actively reshaped by the expectations of consumers. Heightened focus on hospital stay satisfaction is the result of many numerous interrelated issues, such as the aging of “baby boomers”, greater prevalence of chronic conditions, the expansion of biomedical scientific knowledge and technology, and disproportionate health care cost increases (Kizer, 2001). This new era of health care consumerism combined with escalating financial pressure presents massive challenges for hospital administrators. Stiff competition has forced administrators to place greater

emphasis on customer-oriented service and cost-effective quality improvement (Goehring, 2002; Kizer, 2001).

The link between a customer-oriented service culture and patient satisfaction is becoming clear. One of the most important principles in customer-oriented service is creating an environment that meets or exceeds patient expectations (Fottler, Ford, Roberts, & Ford, 2000). Establishing a service culture that meets patient expectations requires a total commitment to customer-oriented service. According to a trade journal article by Goehring (2002), hiring and promotion practices should focus on employees who are people-oriented and able to achieve customer service goals.

Another way to establish a service culture is through a foundation of ongoing customer service training. Training can help define service excellence in a hospital foodservice department and throughout the organization (Goehring, 2002; Sheehan-Smith, 2006). Improving patient satisfaction is also linked with satisfied employees (Goehring, 2002; Norton, 2008). As employees find purpose and meaning in their work, they are motivated to see how their actions contribute to better patient care. Following strategies to improve customer-oriented service will ultimately enhance patient satisfaction (Goehring, 2002; Norton, 2008).

Meeting Patient Foodservice Expectations

It is well recognized that food and other aspects of foodservice delivery are important elements of the patients' overall perception of the hospital experience. The greater patients' expectations are met, the more satisfied they seem to be (Lau & Gregoire, 1998; Fottler et al., 2001). Therefore, provision of foodservices that not only

meet but exceed the expectations of the patient should be considered essential for quality hospital foodservices (Fallon et al., 2008).

Dimensions of Foodservice

A thorough knowledge of the varied dimensions of hospital foodservice satisfaction is needed to understand patient expectations and promote the health and nutritional status of patients (Wright, Connelly, & Capra, 2006). In a survey questionnaire designed study by Dubé, Trudeau, and Belanger (1994), seven dimensions were identified that represent patients' perceptions of foodservice, including: food quality, service timeliness, service reliability, food temperature, attitude of staff who deliver menus, attitude of staff who deliver meals, and customization. Through 132 hospitalized patient surveys, Dubé et al. (1994) found that food quality was the best predictor of patient satisfaction, followed by customization and attitude of the staff that deliver menus. Other studies by Lau and Gregoire (1998) and Williams et al. (1998) also confirmed food quality as the key factor in patient satisfaction.

Food Quality. The perception of food quality can depend on several different attributes, including meal taste, variety, flavor, the texture of meat and vegetables, the perception of choosing a healthy meal (Wright et al., 2006). Menu changes implemented to improve food quality must, therefore, address a wide range of influences. Each hospital foodservice institution is unique and interventions must be customized to the specific patient population's needs and perceptions (Wright et al., 2006).

In an article by Vozenilek (1999), the successful improvement of one hospital foodservice institution in Dallas, Texas was described. As a registered dietitian and the director of Nutrition Services, Mary Kimbrough led an effort to completely overhaul the

patient menu and hospital food quality. Some food quality interventions included adding a variety of fresh fruits, vegetables, and salads to the daily menu; offering more trendy entrees (ie. gnocchi tartlets) along with more familiar comfort food; adding flavors enhancers to sauces, like roasted garlic and fresh herbs; enhancing meat flavors with salsas, vegetable slaws, and fruit purees; enhancing vegetable flavors with fresh herbs, stocks, and aromatics; adding plant-based entrees to please vegetarian customers; and selecting lean meats and preparing them using healthy cooking techniques. These changes yields improved patient satisfaction as well as several foodservice awards (Vozenilek, 1999).

In a 585-bed hospital in Canada, food quality improvements were made on a smaller scale but still focused on specific patient preferences (Watters et al., 2006). Menu changes included adding a weekly seasonal fruit rotation and offering more soup. Changes were also made to the cardiac diet to improve consistency with heart health guidelines and to include more fresh fruit and fish in the menu (Watters et al., 2006).

A validated survey tool should be used to measure and address patient perceptions of food quality and overall foodservice satisfaction. The literature (Dubé et al., 1994; Urden, 2002; Lau & Gregoire, 1998; Williams et al. 1998, Watters et al., 2006) further emphasizes the need for a patient survey to address and thoroughly differentiate the main dimensions of foodservices.

Patient Surveys

Patients are essential sources of data regarding service function. In most health care institutions, quality-control programs have been implemented and patient satisfaction surveys have been routinely administered (Avis, 1995). However, standard

hospital patient satisfaction surveys usually only ask a few general questions about foodservice. Global statements often used in these standard internal surveys (e.g. a single rating of “food quality”) provide insufficient information to allow managers to adapt foodservices to suit patient preferences and expectations (Wright et al., 2006). Draper, Cohen, and Buchan (2001) outlined the difficulty of interpreting the results of health care satisfaction surveys when the survey items are not specific enough or appropriately focused, which leads to poor application of the results to service improvement efforts and limits their broader applications to policy.

In a study by Capra, Wright, Sardie, Bauer, and Askew (2005), researchers worked to design a valid, comprehensive and reliable questionnaire to measure patient satisfaction with acute care hospital foodservices. Building on the research of many previous patient survey studies, such as Dubé et al. (1994), The Acute Care Hospital Foodservice Patient Satisfaction Questionnaire (ACHFPSQ) was designed. It was then administered to a convenience sample of 2347 acute care hospital inpatients and post-discharge patients from three hospitals. Results of this questionnaire revealed four main dimensions or categories of foodservice: food quality, meal service quality, staff/service issues, and the physical environment. The study also indicated that the survey was an accurate, reliable measure of patient foodservice satisfaction and allowed for collection of detailed information about attributes within the four main categories of foodservice. Capra et al. (2005) asserted that the ACHFPSQ provides a tool for the continuous assessment of foodservice quality and satisfaction over time in a variety of acute care settings.

A study by Fallon et al. (2008) demonstrated the effectiveness of the ACHFPSQ in a 440-bed acute care private hospital. Surveys were administered to 551 patients over a 3-year period. The study concluded the tool was sensitive enough to detect specific food quality issues from which targeted interventions for quality improvement activities were then focused. The study also found the tool was practical to administer within existing department resources with minimal disruption to work practices.

Similarly, Porter and Cant (2009) found the ACHFPSQ effective at explaining the dimensions of patients' perceptions of foodservice quality which underlie satisfaction. The benefits of using the ACHFPSQ as a total quality management tool was highlighted by both studies. In addition, both found a significant association between respondents' expectations of the hospital food and their overall satisfaction with the foodservice (Fallon et al., 2008; Porter & Cant, 2009). As interventions to improve food quality were made and patient expectations were increasingly met or exceeded, patient ratings of quality increased.

Patient Population. A study by Lau and Gregoire (1998) compared perceptions of foodservice quality using questionnaire ratings between inpatients and patients who had been discharged. A 5-point scale allowed subjects to rate quality from very poor to very good. Demographic information of respondents suggested that those who completed questionnaires as inpatients were different than those who completed questionnaires after discharge. Inpatient respondents included a greater representative of older, nonwhite patients who had longer lengths of stay. In contrast, post-discharge respondents proportionately were younger, white, and had shorter lengths of stay. However, of the 48 patients who completed questionnaires both as inpatients and then post-discharge, most

often no difference was found in quality ratings, indicating that it may be appropriate and effective to survey patients when they are in the hospital.

Lau and Gregoire (1998) suggest the need for future studies to focus on better ways to collect satisfaction data that are more representative of the actual patient population, as well as identifying the most efficacious and cost-effective methods. The study population was limited to one large, Midwestern hospital and no attempts were made to randomize the distribution of questionnaires.

The work of Lau and Gregoire (1998) suggest that a focus on data collection from inpatients is more convenient and cost-effective and foodservice ratings may not differ between inpatient and post-discharge patients.

Meal Rounds

Meal rounds are a tool for evaluation of inpatients food intake/tolerance and satisfaction with foodservices. Typical meal rounds involve members of foodservice staff visiting patients during meal times and inquiring about food intake and satisfaction as well as observing tray set-up, appearance of food, and need for feeding assistance. Meal rounds can be effective in improving the quality of foodservices and can be used as a continuous quality improvement activity to readily identify nutrition risk factors (Keller, Gibbs-Ward, Randall-Simpson, Boccock, & Dimou, 2006).

A study by Watters, Sorensen, Fiala, and Wismer (2003) investigated adult patients' perceptions of hospital foodservice through inpatient meal rounds as well as focus groups with post-discharge patients and with nurses. Of 250 post-discharge patients identified and invited as potential focus group participants, only 5 patients actually attended. In contrast, for meal rounds, 135 patients were approached and 116 of

these patients consented to be interviewed. For best participation, focusing on inpatients for meals rounds appears to be the most efficient (Watters et al., 2003).

Watters et al. (2003) emphasized that a team approach toward improving patient satisfaction is critical; this included having foodservice information available to all hospital staff and providing food service feedback forms on all patient units. This study also showed that meal rounds helped pinpoint the areas where foodservice staff needed additional training, such as on special or therapeutic diets, interacting with patients, offering bedside choices, and on improving communication with hospital staff. The main barrier to meal rounds is participation and support. Difficulty acquiring the support of nursing staff and other members of the disciplinary team can halt this approach (Watters et al., 2003).

Snack Room Service

Disease status, poor appetite, gastrointestinal intolerance, fatigue, early satiety and taste alterations often affect intake in a hospital setting (McLymont et al., 2003; Williams et al., 1998). Clinical dietitians often advise malnourished, hospitalized patients to consume ‘small, frequent meals’ or snacks every few hours to encourage oral intake and meet nutritional needs. Promoting optimal nutrition status can lead to faster recovery times and reduced hospital costs (Sullivan, Nelson, Bopp, Puskarich-May, & Walls, 1998; Giner et al., 1996; Johansen et al., 2004).

An example of a typical snack system involves snack delivery between the mid-day and evening meal and again before bedtime. Patients may be required to make food choices well in advance of snack times using printed menus or registered dietitians may choose specific snacks based on the patient’s diet order (Pietersma et al., 2003).

Common snacks include dairy products, baked goods, savory items, or fresh, canned, or dried fruit. Oral nutrition supplements (eg. Ensure or Boost) are also common hospital snack items (Price, McMurdo, & Anderson, 2006).

In a study by Pantalos and Bishop (1995), a patient-centered snack delivery system was implemented at a children's hospital. Nutritious snacks were stocked on a cart three times daily and the cart was then circulated through inpatient units. A cart attendant offered a variety of fresh and prepackaged items to patients on an increased calorie and protein diet. After implementation of the snack delivery system, the percentage of patients who actually consume the snacks they receive increased from 50% to 84%. Cost savings of more than \$8,000 yearly resulted from reduced waste and foodservice labor (Pantalos & Bishop, 1995).

In a similar study, White, Wilcox, Watson, Rogany, and Meehan (2008) also evaluated a new patient-centered snack delivery system at a children's hospital. A snack cart with both savory and sweet items was operated between 2 PM and 3 PM. Patient satisfaction was determined via surveys. Surveys results showed 75% of respondents believed the cart improved foodservice satisfaction. Snack popularity was also analyzed, however, the study did not measure the effect on increased nutritional intake. Foodservice cost comparisons were made before and after implementation of the snack cart and a cost saving of 33.3% was observed (White et al., 2008).

The literature (Pantalos & Bishop, 1995; White et al., 2008; Pietersma et al., 2003) suggests that patients overwhelmingly prefer to choose food items at time of service. A patient-centered snack room service can enhance patient satisfaction and

reduce costs through reductions in food waste, foodservice labor, and preventing the need for enteral or parenteral nutrition due to poor oral intake.

Room Service

Going beyond snack room service is the implementation of a full room service system, which is one of the fastest growing trends in hospital foodservice (McLymont et al., 2003). In 2008, figures from the National Society for Healthcare Foodservice Management (HFM) showed that 37 percent of respondents to an HFM survey had implemented room service dining in some way, a quarter of them within the past year (Buzalka, 2008). Many more indicated they had plans to do so in the near future.

Room service has several advantages, some of the proven top advantages include: improved patient control over food choices, improved patient satisfaction, improved food temperatures, increased foodservice employee pride in their job, decreased plate waste and decreased food cost (Buzalka, 2008; Norton, 2008; Sheehan-Smith, 2006). The main disadvantage of room service is increased cost. Increased cost mainly comes from initial investment in new equipment and computer software and initial staff training costs (Buzalka, 2008; Norton, 2008; Sheehan-Smith, 2006). A larger number of labor hours needed to run a room service system is sometimes reported, however some operations report no change in labor cost after the initial implementation period (Buzalka, 2008). At the same time room service can reduce food cost by eliminating late trays, reducing floor stock and inventory, eliminating between meal nourishments and over production (Norton, 2008).

Deploying a Room Service System. Room service systems can vary greatly between hospitals. Norton (2008) explains that some hospitals wholly convert from a

traditional trayline system to a room service system, implementing it on all compatible units and offering it to every patient capable of receiving it. Others offer it only to some areas or units, while the rest of the patients receive the traditional meal service. Patients that may not be eligible for room service are those on liquid diets, extremely restricted diets, dysphasia diets, chemically dependent and rehabilitation patients, and those who have vision, language or other limitations (Norton, 2008).

Not every hospital can afford to implement a comprehensive program turnaround; some find a compromise that provides some of the benefits of room service without all the costs. In a recent foodservice magazine article, Buzalka (2008) illustrates one example in the use of temperature-controlled mobile carts that circulate inpatient floors during lunch and dinner hours. The carts carry hot and cold meal components, which are assembled just outside patient rooms. The advantage is that patients who preorder meals in the traditional way can change their orders at mealtime. It also accommodates dietary changes and recent admissions quickly. When deploying a room service system, it is important for hospital foodservice departments to customize the system to its specific needs and to continue adapting after implementation (Buzalka, 2008).

In a qualitative study by Sheehan-Smith (2006), the best practices of hotel-style room service in hospitals were examined in four heterogeneous hospitals in the United States. The common features of hotel-style room service are meal delivery within 30 to 45 minutes, a restaurant-style menu, procedures to feed ineligible patients, tray assembly on demand, standardized employee scripting, and wait staff uniforms for room-service employees. The study found that the initial best practices included taking a multidisciplinary team approach and allowing enough time for developing and

implementing the process. In order for the system to succeed, it was emphasized that employees who take patients' orders over the telephone and deliver meals should receive intense customer-service training. It was also recommended that practitioners develop a customer-driven menu and use carts with airpots for dispensing hot beverages (Sheehan-Smith, 2006).

The most substantial factor driving the growth of room service is competition (Buzalka, 2008; Norton, 2008). As more institutions implement the system, it becomes more difficult for others not to. This is partly because the rise in satisfaction scores at one institution negatively impacts the percentiles for other institutions (Buzalka, 2008). Patients begin to expect more and it becomes more difficult to exceed these expectations with a conventional hospital foodservice system.

In summary, the goal of this study is to use a validated, comprehensive inpatient survey to assess current foodservice satisfaction and identify the dimensions of foodservice in need of improvement. Cost-effective, customer-oriented interventions will be determined and implemented and the effect of these interventions will be monitored by re-issuing surveys. Based on survey results, it will be determined what, if any, further changes are necessary for STMH foodservice to improve satisfaction.

CHAPTER II

Introduction

Hospital food and nutrition services play an important role in patient recovery and well-being. Foodservice quality is also a large influence in a patient's overall hospital stay satisfaction (McLymont et al. 2003; Williams, et al., 1998). Competition in the healthcare industry is pushing administrators to innovate, become more customer-oriented and improve perceived patient foodservice quality (Goehring, 2002; Kizer, 2001). One of the fastest growing trends in hospital foodservice is implementation of a room service model (Norton, 2008). Today, many conventional foodservice administrators are questioning if changing to a room service model is right for their operation and worth the cost.

In 2009, the foodservice director at St. Mark's Hospital (STMH) a 276-bed teaching hospital primarily serving the urban community of the Salt Lake Valley in Salt Lake City, Utah was faced with this situation; with pressure to increase patient satisfaction within a limited budget and the possibility of room service implementation in the very distant future.

STMH is part of the Hospital Corporation of American (HCA) and is a highly respected Mountain Star facility with patient satisfaction is its top priority. HCA is a Nashville-based hospital company with 164 hospitals in 20 states (Hospital Corporation of America, 2011). HCA conducts a quarterly, company-wide Gallup poll which surveys post-discharge patients on a variety of factors affecting their hospital stay experience and satisfaction. Gallup is a global organization that provides statistical research services for

benchmarking (Gallup Organization, 2011). For the past several years, STMH, which uses an onsite centralized kitchen with a round trayline, hot thermal retention trays, cart delivery, and a selective 7-day menu cycle, had consistently scored below the company average in satisfaction in overall quality of foodservice. The single question patients are asked during the telephone interview is, “Were you satisfied with the overall quality of foodservice?” The survey poll did not provide any further details as to why many post-discharge patients were dissatisfied.

The STMH foodservice department included an internal questionnaire on the back of the patient menu. It consisted of six “yes or no” questions, with little room to add comments. The questions addressed meal taste, temperature, appearance, reliability, service, and overall satisfaction. According to department records, the questionnaire had a very low participation rate, with less than 3% of patients returning a completed survey. For those that were completed, the data was not analyzed or recorded in a standardized way. Clearly, the current questionnaire was not an adequate source of information in identifying areas of needed improvement.

In order to control costs while also improving the quality of foodservice, it is essential to isolate dimensions of foodservice that are in most urgent need of improved satisfaction and to identify precisely which effort will reap the greatest benefits (Capra et al., 2005; Dubé et al., 1994; Lau & Gregoire, 1998; Watters et al., 2006). This is also an important first step in determining whether a room service model is necessary to improve patient satisfaction and if it is worth the investment for a hospital foodservice operation (Norton, 2008; Williams et al. 1998).

Therefore, the objectives of this study were to: 1) identify the food, service, and patient variables that contribute to foodservice dissatisfaction utilizing a validated patient survey; 2) plan and implement cost-effective changes in the foodservice based on survey results; 3) monitor foodservice satisfaction scores; 4) determine and recommend further changes on to improve patient foodservice satisfaction to administrators.

Methods

All methods used in this study received prior approval from St. Mark's Hospital Institutional Review Board and Utah State University Institutional Review Board.

Survey Instrument

This study used a validated survey titled *The Acute Care Hospital Foodservice Patient Satisfaction questionnaire (ACHFPSQ)* (Capra, Wright, & Sardie, 2005). The ACHFPSQ is based on a six-year study that sampled 2347 acute care hospital patients from two public hospitals and one private hospital. It is an accurate, reliable measure of patient foodservice satisfaction and allows quality improvement processes to be focused and measured. It differentiates foodservice into four main dimensions or categories, including: food quality, meal service quality, staff/service issues, and physical environment. Other sub-categories include: meal size, hot foods, and hunger and food quantity (Appendix).

The survey is two-pages long with 22 questions and requires 10-15 minutes to complete. Minor changes were made to the wording of some questions in order to make the survey more specific to the local area vernacular. All surveys were completed voluntarily and responses were kept completely anonymous; names were not recorded on

the survey. The informed consent of patients was indicated by the return of the completed satisfaction surveys. If patients did not wish to participate in the study, a blank survey was returned.

Population and Sample

A convenience sample of 198 participants was used in two series of surveys, 99 in each of the two series of surveys. The target population consisted of inpatients served by the foodservice department during a minimum two-day stay at STMH. Both phases of survey distribution lasted 4 weeks with a goal of collecting approximately 100 completed surveys. Subjects excluded from the study included patients younger than 18 years of age and those with notable physical, cognitive, or emotional limitations as determined by the clinical dietitians. Those with an NPO diet order or those receiving enteral or parenteral nutrition as the primary source of nutrition were also excluded.

Data Collection

Clinical dietitians were responsible for the distribution and collection of surveys on a same-day basis. Surveys were distributed in-person, throughout the dietitians' shift. Patients who were visually or physically impaired and could not complete the survey independently were offered assistance. In cases of assistance, dietitians followed a structured interview protocol to reduce interviewer bias. In the first phase of the study, 166 surveys were distributed over 4 weeks and 99 completed surveys collected. The participation rate for the first phase was 60%.

Data Analysis and Interventions

Raw survey data from phase one were recorded and analyzed using the accompanying ACHFPSQ Excel spreadsheet (known as the ‘ACHFPSQ automated analysis spreadsheet’) (Capra et al, 2005). Question responses were coded on a scale of 1-5, representing the Likert Scale on the survey (Always=5, Often=4, Sometimes=3, Rarely=2, Never=1). The ACHFPSQ spreadsheet calculated response means and differentiated the foodservice into the main categories and sub-categories of foodservice. The spreadsheet also allowed foodservice satisfaction to be examined further by age, self-reported diet order, gender, length-of-stay and food intake (Table 1). This initial data analysis identified the lowest-scoring foodservice categories from survey phase one and later allowed for preliminary comparison between the two survey phases, pre- and post-intervention.

After initial data analysis, a committee was formed that included the Foodservice Director, head chefs, kitchen managers, and several dietitians. Based on phase one survey results, the committee decided to focus on the food quality, meal size, hunger and food quantity categories for intervention; specifically, within the standard, diabetic, and cardiac diets orders as these were the areas least positively rated.

Meal size, hunger and food quantity categories are comprised of survey questions 12, 20, 21, and 22 (Appendix). These questions address patient hunger between meals and after meals as well as patient ability to choose different sized meals and receive enough food. The food quality category is comprised of seven questions: 1, 5, 8, 9, 13, 16, and 18 (Appendix). These questions address patient food quality expectations; meal taste, variety, flavor, and texture; vegetable preparation; and the ability to choose a healthy meal.

Due to current budget limitations, interventions were restricted to low-cost improvements using current resources. All interventions were ultimately decided on by the Foodservice Director based on what he thought would be the most influential and cost-effective. It was believed that several small changes would add up to a large impact on food quality improvement. Planned interventions were made between the months of March and June 2010.

Once all interventions were running smoothly and consistently, the second phase of survey distribution was initiated. In the second phase, clinical dietitians distributed a total of 140 surveys and 99 completed surveys were collected over a four-week period. The participation rate for the second phase was 71%. Again, Excel was used to record and initially analyze raw data. It should be noted that the HCA quarterly Gallup poll results were monitored by the head foodservice director during this time.

Statistical Analysis

The raw survey data was statistically analyzed using grouped T-tests to compare the two survey phases, question by question. This was done using Excel spreadsheets imported into StatPlus for Mac LE (2009, AnalystSoft) and a group T-test was calculated for each of the 22 survey questions. For the statistical tests the significance level was set at $P < 0.05$.

Results And Discussion

Characteristics of Respondents

Characteristics of survey respondents for phase one and phase two are shown in Table 1. Data showed that 64% of respondents were women (n=127) and male

respondents made up about one-quarter of the group (n=53). The greater number of women respondents can be partly explained by the inclusion of the maternity and women's care units in the survey. Nearly one-third of respondents were between the ages of 51-70 years (n=58). The second largest age group was 31-50 years of age, one-fifth of survey respondents (n=39). The majority of respondents (72.5%) had a length of stay less than one week at the time of the survey. Fifty-three percent of respondents reported food intake while in the hospital as 'unchanged' or 'more than usual'. The majority of respondents reported receiving a standard or diabetic diet (67.5%) and just over one-tenth reported receiving a cardiac diet (11.5%).

Table 1: Characteristics of Respondents in Phase 1 and Phase 2				
Characteristic	Survey Phase 1 #	Survey Phase 2 #	Total for Both Phases	Percent Total for Both Phases
Gender	n	n	n	%
Men	28	25	53	27%
Women	60	67	127	64%
Unreported*	11	7	18	9%
Age				
18 yrs and under	0	1	1	0.5%
19-30 yrs	16	22	38	19%
31-50 yrs	25	14	39	20%
51-70 yrs	31	27	58	29.5%
>70 yrs	14	24	38	19%
Unreported*	13	11	24	12%
Length of hospital stay to survey date				
Less than 1 week	69	74	143	72.5%
1-2 weeks	16	13	29	14.5%
More than 2 weeks	3	5	8	4%
Unreported*	11	7	18	9%
Food Intake				
Unchanged	35	42	77	39%
More than usual	10	18	28	14%
Less than usual	35	31	66	33.5%
Unreported*	19	8	27	13.5%
Self-reported diet order				
Standard/Diabetic menu	59	74	133	67.5%
Cardiac Diet	11	12	23	11.5%
Restricted for medical reasons	7	3	10	5%
Minced/Pureed/Liquid diet	2	3	5	2.5%
Don't Know	3	1	4	2%
Unreported*	17	6	23	11.5%

*Unmarked information on survey

Assessment of Current Foodservice Satisfaction

During the first phase of survey distribution, 99 completed surveys were collected. Data analysis revealed scores for each foodservice category were very high, with Staff/Service Issues being the most positively rated (score 4.65). The least positively rated categories included Food Quality (score 4.03), Meal Size (score 4.13), Hunger and Food Quantity (score 4.21), and Hot Foods (score 4.21). Overall foodservice satisfaction was scored at 4.20 out of 5 (Table 2). Comparing satisfaction by diet order, the least positively rated diet orders based on the Food Quality category were the Standard Diet/Diabetic Diet (3.94) and Cardiac Diet (4.06) (Table 3).

The ACHFPSQ defines a score of 4 out of 5 as ‘very good’. These high patient satisfaction ratings for hospital foodservice may seem inconsistent with the reported perception that the quality of hospital food at STMH is below average within HCA hospitals. Capra et al. (2005) stated that the food does not have to be of a high quality for the patient to be satisfied, as satisfaction is a comparison between an expectation and a reality or experience. Patients may expect the food to be very poor, and as a result will be inclined to rate ‘ordinary’ food well (Capra et al., 2005). It has also been suggested that patients tend to overinflate their satisfaction depending on any number of methodological influences (Sitzia, 1999). The role of dietetic staff in distributing surveys and assisting patient in their completion where needed may have influenced patients’ responses. Conversely, respondents to the company-wide Gallup poll were surveyed anonymously over the phone.

In general, the measurement and quantification of foodservice satisfaction is difficult, as it is highly subjective and influenced by many variables. In its original study,

the ACHFPSQ survey instrument was only able to explain 61.2% of the variance in overall satisfaction, indicating that other variables such as pain, loss of personal power, time of year, etc., may have an effect (Capra et al., 2005). In acute care, this is not unexpected given the nature of the experience for patients.

Nevertheless, these results help establish a baseline for improvement. A score of 4 out of 5 may be defined as 'very good' by the ACHFPSQ but it can be postulated that within HCA a 'very good' score is below average when compared with the other 164 HCA hospitals. These results uncover factors related to the satisfaction of STMH patients providing valuable information the hospital has never had before. One of the strengths of the ACHFPSQ is its ability to highlight very specific areas of the foodservice for quality improvement interventions such as the lowest scoring categories of foodservice (Capra et al., 2005; Fallon, Gurr, Hannan-Jones, & Bauer, 2008).

Table 2: Foodservice Satisfaction Results by Survey Category		
Survey Category	Survey Phase 1 Mean*	Survey Phase 2 Mean*
Food Quality (Q1,5,8,9,13,16,18)	4.03	4.00
Meal Service Quality (Q7,10,14)	4.36	4.40
Staff/Service Issues (Q3,11,15)	4.65	4.69
Physical Environment (Q2,4,6)	4.61	4.53
Meal Size (Q12)	4.13	4.22
Hot Foods (Q17)	4.21	4.23
Hunger & Food Quantity (Q10,21,22)	4.21	4.21
Overall	4.20	4.21

*Total displayed as average score, based on Likert scale: from 1 (lowest satisfaction) to 5 (highest satisfaction)

Table 3: Average Food Quality Scores by Diet Order				
Diet Order	Survey Phase 1 (n)	Survey Phase 1 Mean*	Survey Phase 2 (n)	Survey Phase 2 Mean*
Standard/ Diabetic Diet	59	3.94	74	4.07
Cardiac Diet	11	4.06	12	3.57
Restricted Diet for medical reasons (ie. Renal diet, gluten free, etc.)	7	4.34	3	4.07
Minced/Pureed/Liquid Diet	2	4.29	3	3.86
Don't Know	3	4.24	1	4.00
Unreported Diet Information**	17	-	6	-

*Total displayed as average score, based on Likert scale: from 1 (lowest satisfaction) to 5 (highest satisfaction)

**Unmarked diet order on survey

Identifying Areas of Improvement

As stated previously, improvement interventions were decided in committee. Food quantity and quality issues were discussed and many ideas were proposed for improvement. However, the STMH Foodservice Director made final decisions on specific interventions. Instead of choosing complex interventions that would significantly alter current foodservice activities, such as redesigning the snack distribution system or implementing meal rounds, the director chose to make several small changes. These small changes were quick and easy to implement with minimal influence on current foodservice activities. The goal was that several small changes would add up to a large impact on foodservice quality improvement. However, more time-intensive interventions may have had a larger impact on survey results.

Interventions

To address meal size, hunger, and food quantity issues, patients were given clearer options on the menu to control meal size. These options allowed patients to circle portion size preference: small, regular, and large. This intervention was added to the standard diet menu and the least restrictive texture-altered menu (Table 4). The foodservice staff was trained on how to modify portion sizes to meet patient requests.

The perception of food quality depends on several different attributes (Wright et al., 2006; Capra et al., 2005) and interventions were more numerous and varied, in order to address this wide range of influences represented in the seven different survey questions. To address differences among patients' unique taste and flavor preferences, the committee decided to add Mrs. Dash and hot sauce to the standard, diabetic, and

cardiac diet menus as condiment options. Brown sugar and raisins were also added to the standard and cardiac breakfast menu as condiments for oatmeal.

To improve entrée food quality, several meals were evaluated by foodservice staff to identify specific issues. Problems with vegetable firmness were found and cook time was adjusted to prevent under- or overcooking of carrots and green beans. Entrée improvement examples included changing the type of noodles in the beef stroganoff entrée and refining and standardizing the seasoning in a variety of soups (Table 4).

Table 4: Low-cost Interventions Based on Survey Category	
Survey Category (See Appendix)	Intervention
Meal Size, Hunger and Food Quantity (Q12,20,21,22)	<ul style="list-style-type: none"> • Clearer options added to menu to choose portion size • Patients circle choice: small, regular, large • Options added to standard and least restrictive texture modified diets
Food Quality (Q1,5,8,9,13,16,18)	<ul style="list-style-type: none"> • Decreased cook time on string beans to reduce overcooking • Increased cook time on baby carrots to reduce undercooking • Mrs. Dash and hot sauce packets added to condiment options on standard, diabetic, and cardiac diet menus • Brown sugar and raisins added as condiments to standard and cardiac breakfast menu for oatmeal • Type of noodles changed in Beef Stroganoff recipe to prevent overcooking • Taste tests and seasoning changes to a variety of soups

Monitoring Change

During the second phase of survey distribution, 99 completed surveys were collected. Initial data analysis indicated very little improvement in the categories chosen for intervention. Meal size satisfaction increased from 4.14 to 4.22 (Table 2). The hunger and food quantity category scores stayed the same after intervention at 4.21. The average score for food quality decreased slightly from 4.03 to 4.00. Overall satisfaction slightly increased post-intervention from 4.20 to 4.21. Looking specifically at food quality by diet order, the standard/diabetic diet score increased from 3.94 to 4.07 and the cardiac diet score decreased from 4.06 to 3.57. After statistical analysis of all survey questions, none of these results were shown to be statistically significant (see Table 5).

The HCA quarterly Gallup poll results were monitored by the head foodservice director during this time. The director reported no significant improvement in the foodservice satisfaction score after interventions were made.

Despite the lack of improvement in satisfaction scores, the benefits of using the ACHFPSQ as a total quality management tool is still valid (Fallon et al., 2008; Porter & Cant, 2009). STMH should continue administering the survey, at least on an annual basis, to detect any change in patient perceptions of foodservice quality. The survey tool is a vast improvement over the previous internal questionnaire and it is practical to administer within existing department resources with minimal disruption to work practices.

Table 5. Comparing Survey Results between Phase 1 and Phase 2			
Survey Question	Phase 1^a (n ^b =99)	Phase 2^a (n ^b =99)	Significance^c
1. The hospital food has been as good as I expected	3.99 ± 1.026	4.00 ± 0.968	0.945
2. The dishes and utensils are chipped and/or stained	1.31 ± 0.765	1.39 ± 0.915	0.508
3. The staff who deliver my meals are neat and clean	4.71 ± 0.704	4.81 ± 0.547	0.283
4. The hospital smells stop me from enjoying my meals	1.58 ± 0.930	1.70 ± 0.965	0.333
5. I am able to choose a healthy meal in the hospital	4.51 ± 0.800	4.40 ± 0.766	0.368
6. I am disturbed by the noise of finished meal trays being removed	1.29 ± 0.648	1.27 ± 0.607	0.812
7. The cold drinks are just the right temperature	4.24 ± 1.044	4.37 ± 0.748	0.333
8. I like the way the vegetables are cooked	3.88 ± 1.137	3.75 ± 1.023	0.401
9. The meals taste good	4.01 ± 0.941	4.04 ± 0.865	0.811
10. The hot drinks are just the right temperature	4.38 ± 0.759	4.24 ± 0.864	0.221
11. The staff who take away my finished meal tray are friendly and polite	4.72 ± 0.577	4.74 ± 0.672	0.822
12. I like to be able to choose different sized meals	4.18 ± 1.132	4.26 ± 0.966	0.597
13. The menu has enough variety for me to choose meals that I want to eat	4.23 ± 0.957	4.02 ± 0.995	0.130
14. The cold foods are the right temperature	4.53 ± 0.706	4.46 ± 0.762	0.509
15. The staff who deliver my menus are helpful	4.51 ± 0.740	4.49 ± 0.883	0.853
16. The meals have excellent and distinct flavors	3.73 ± 1.114	3.78 ± 1.013	0.724
17. The hot foods are just the right temperature	4.20 ± 0.925	4.20 ± 0.776	1.000
18. The meat is tough and dry	2.14 ± 1.055	2.09 ± 0.944	0.708
19. Overall, how would you rate your satisfaction with the foodservice	4.20 ± 0.896	4.21 ± 0.815	0.932
20. I receive enough food	4.58 ± 0.817	4.65 ± 1.017	0.577
21. I still feel hungry after my meal	1.71 ± 0.944	1.74 ± 0.750	0.859
22. I feel hungry in between meals	2.37 ± 1.141	2.33 ± 1.076	0.845

^a A Likert-type scale was used as follows: 5=Always, 4=Often, 3=Sometimes, 2=Rarely, 1=Never (Question 19 is an exception: 5=Very good, 4=Good, 3=Okay, 2=Poor, 1=Very Poor)

^b The actual number of participants per question varied due to missing or invalid data

^c Results of comparison of means (T-test), p<0.05

Future Interventions

Stiff competition in the health care industry is forcing administrators to place greater emphasis on customer-oriented service and cost-effective quality improvement (Goehring, 2002; Kizer, 2001). An important principle of customer-oriented service is creating an environment that meets or exceeds patient expectations (Fottler, Ford, Roberts, & Ford, 2000). Following strategies to improve customer-oriented service have been shown to ultimately enhance patient satisfaction (Goehring, 2002; Norton, 2008). One trend towards customer-oriented service included the deployment of a hospital room service model.

The Benefits of Room Service

Hospital room service systems have several advantages, including: improved patient satisfaction, improved patient control over food choices, improved food temperatures, increased foodservice employee pride in their job, decreased plate waste and decreased food cost (Buzalka, 2008; Norton, 2008; Sheehan-Smith, 2006). The main disadvantage of room service is increased cost. Increased cost mainly comes from initial investment in new equipment and computer software, larger number of labor hours needed to run the system, and initial staff training costs (Buzalka, 2008; Norton, 2008; Sheehan-Smith, 2006). At the same time room service can reduce food cost by eliminating late trays, reducing floor stock and inventory, eliminating between meal nourishments and over production (Norton, 2008).

Hospital Competition

The most substantial factor driving the growth of room service is competition (Buzalka, 2008; Norton, 2008). As more institutions implement the system, it becomes more difficult for others not to. This is partly because the rise in satisfaction score at one institution negatively impacts the percentiles down for other institutions (Buzalka, 2008). This may be the case for St. Mark's Hospital, since several competing hospitals in the region have initiated a form of room service within the last 5 years (Intermountain Healthcare, 2011). Residents and potential patients in the Salt Lake Valley region of Utah may begin to expect more from hospital foodservice, making it more difficult to exceed these expectations with a conventional hospital foodservice system. As patient expectations increase, it becomes more difficult to meet or exceed them with a conventional hospital foodservice system.

Strategies for Deploying a Room Service System

Room service systems can vary greatly between hospitals. From a trade journal article, Norton (2008) explains that some hospitals wholly convert from a traditional trayline system to a room service system, implementing it on all compatible units and offering it to every patient capable of receiving it. Others offer it only to some areas or units, with the rest of the patients receiving the traditional meal service. Patients that may not be eligible for room service are those on liquid diets, extremely restricted diets, dysphasia diets, chemically dependent and rehab patients, and those who have vision, language or other limitations (Norton, 2008).

In a qualitative study by Sheehan-Smith (2006), the best practices of hotel-style room service in hospitals were examined in four heterogeneous hospitals in the United

States. The common features of hotel-style room service are meal delivery within 30 to 45 minutes, a restaurant-style menu, procedures to feed ineligible patients, tray assembly on demand, standardized employee scripting, and wait staff uniforms for room-service employees. The study found that the initial best practices included taking a multidisciplinary team approach and allowing enough time for developing and implementing the process. In order for the system to succeed, it was emphasized that employees who take patients' orders over the telephone and deliver meals should receive intense customer-service training. It was also recommended that practitioners develop a customer-driven menu and use carts with airpots for dispensing hot beverages (Sheehan-Smith, 2006).

Following best practices and observing other room service operations are helpful when deploying a hospital room service system, but it is also highly important for hospital foodservice departments to customize the system to its specific needs and to continue adapting the system after implementation (Bulzaka, 2008).

Conclusions And Applications

Based on the follow-up survey results and recent quarterly Gallup poll, low-cost interventions were not shown to be effective in significantly increasing foodservice satisfaction at St. Mark's Hospital. Findings may indicate that the STMH foodservice department is reaching its patient-satisfaction potential within its current conventional system and cost-limitations.

Patient satisfaction is the highest priority at STMH and foodservice quality plays a large roll in the overall hospital stay experience (McLymont et al., 2003; Williams et

al., 1998). For considerable improvement in foodservice satisfaction, it may be necessary for STMH foodservice administrators to consider higher-cost interventions. Based on this study, it was recommended that a room service system be considered as a way to truly meet and possibly exceed the foodservice expectations of patients.

Traditional hospital foodservice operations with limited funds that are considering options to increase patient foodservice satisfaction may consider the following recommendations:

- 1) Utilize a validated patient survey, such as *The Acute Care Hospital Foodservice Patient Satisfaction questionnaire (ACHFPSQ)*, to assess current patient foodservice satisfaction.
- 2) Focus improvement interventions on the lowest scoring foodservice categories.
- 3) Improvement interventions may be decided in committee, keeping in mind the varied dimensions of foodservice and examples of successful interventions at other institutions.
- 4) Monitor change to patient foodservice satisfaction score by re-issuing surveys.
- 5) Make continuous quality improvements; survey and intervention periods may be repeated indefinitely.
- 6) If significant improvement to patient foodservice satisfaction is not made, survey findings may be helpful in validating and securing additional funding for higher-cost interventions, such as a version of a room service system.
- 7) When higher funding or deployment of a room service system is not an option for the operation, it is recommended to remain focused on continuous quality

improvements over time with revised and realistic goals of improving patient foodservice satisfaction given the operations limitations.

Limitations and Future Research

Study participants were limited to a convenience sample of 198 patients in one hospital. It is likely that patients, who are most severely ill, have limited literacy skills and those from non-English speaking backgrounds are underrepresented.

Patients were only surveyed one time during their hospital stay, typically within a couple days of admission and it is possible that patients' opinions of foodservice satisfaction changed over the course of their stay. Several studies report longer length of stay is associated with less satisfaction with foodservice (Lau & Gregoire, 1998; Stanga et al., 2003). However, a study by Fallon, Gurr, Hannan-Jones, & Bauer (2008) found no statistically significant difference between overall satisfaction and length of stay. The hospital in the study offers long stay patients (≥ 14 days) an alternate menu with an additional eight choices for both lunch and evening meals. Fallon et al. (2008) asserts this may explain why there was no significant decrease in satisfaction with increased length of stay.

Response rates ranged from 60-71%, however, this is consistent with response rates from foodservice satisfaction surveys in the literature (Wright et al., 2006). One intervention period was implemented during this study and interventions were not exhaustive or standardized over many intervention periods. If this study were repeated it would be preferable that several intervention and survey periods be implemented over a longer time period. The interventions chosen were quick and easy to add within the current foodservice system, a longer time period would allow for more complex

interventions to be designed, such as snack room service or patient meal rounds. These more time-intensive interventions may have had a larger impact on survey results.

Future research might focus on investigating whether most patients now expect hotel-style room service during hospital stays and what has influenced their expectations. Further exploration into what influences patient expectations in a given region may be helpful in determining whether a hospital must deploy a room service system in order to compete and meet patient expectations.

CHAPTER III

Conclusions and Applications

Patient satisfaction is the highest priority at St. Mark's Hospital (STMH) and foodservice quality plays an important role in the overall hospital stay experience (McLymont et al., 2003; Williams et al., 1998). However, in the quarterly company-wide poll, STMH consistently scored below the company average in satisfaction in overall quality of foodservice. The purpose of this study was to use a validated patient survey to: 1) identify the food, service, and patient variables that contribute to foodservice dissatisfaction; 2) plan and implement cost-effective changes in the foodservice based on survey results; 3) monitor foodservice satisfaction scores; and 4) determine and recommend further changes on to improve patient foodservice satisfaction to administrators.

The study was conducted at STMH, a 276-bed acute care hospital in Salt Lake City, Utah, over a six-month period from February 2010 to July 2010. The STMH foodservice department operates as a conventional centralized kitchen. This traditional system uses a round trayline, hot thermal retention trays, cart delivery, and a selective 7-day menu cycle. The *Acute Care Hospital Foodservice Patient Satisfaction Questionnaire* (ACHFPSQ) was chosen as the validated survey instrument because of its accuracy and reliability in measuring patient foodservice satisfaction (Capra et al., 2005).

Clinical dietitians were responsible for the distribution and collection of surveys on a same-day, convenience-basis. Ninety-nine completed surveys were collected in the first phase of distribution. Data analysis of the first survey phase revealed high

satisfaction scores in all foodservice categories and in overall satisfaction with foodservice. Nevertheless, the results were helpful in establishing a baseline for improvement and for identifying the lowest scoring foodservice categories. The least positively rated categories were food quality, meal size, hunger and food quantity. Low-cost interventions were decided in committee and implemented to address these categories. The second phase of surveys was distributed to monitor the effect of these low-cost interventions on patient foodservice satisfaction. An additional 99 surveys were collected in the second phase for a total of 198 survey participants. Grouped T-tests were calculated to compare the two survey phases and it was found that there was no statistically significant improvement in patient foodservice satisfaction. The company Gallup poll was also monitored during this time and no significant improvement in patient satisfaction with foodservice was found.

Despite the lack of statistically significant change in satisfaction scores, the benefits of using the ACHFPSQ as a total quality management tool is still recommended (Fallon et al., 2008; Porter & Cant, 2009). STMH should continue administering the survey, at least on an annual basis, to detect any change in patient perceptions of foodservice quality. A survey period could be held in February and results could then be reported and addressed in March as part of the American Dietetic Association National Nutrition Month. The survey tool is a vast improvement over the previous internal questionnaire and it is practical to administer within existing department resources with minimal disruption to work practices. As hospitals in the private sector compete for patients' care, Fallon et al. (2008) suggests results from the survey may be used as a marketing tool to differentiate a hospital on the basis of the quality of the foodservice.

Results can also be used to provide positive feedback to foodservice workers as a way to contribute to job satisfaction (Fallon et al., 2008).

Based on the follow-up survey results and most recent quarterly company poll, the low-cost interventions selected for this study were not shown to be effective in significantly increasing foodservice satisfaction at STMH. Findings may suggest that the STMH foodservice department is reaching its patient-satisfaction potential within its current conventional system and cost-limitations. For considerable improvement in foodservice satisfaction, it may be necessary for STMH administrators to consider higher-cost, customer-oriented investments, such as a room service system.

The link between a customer-oriented service culture and patient satisfaction is becoming clear. One of the most important principles in customer-oriented service is creating an environment that meets or exceeds patient expectations (Fottler, Ford, Roberts, & Ford, 2000). Room service systems are one of the fastest growing trends in hospital foodservice due in part to the ability it gives foodservice institutions to exceed patient expectations (McLymont et al., 2003). In 2008, figures from the National Society for Healthcare Foodservice Management (HFM) showed that 37 percent of respondents to an HFM survey had implemented room service dining in some way, a quarter of them within the past year (Buzalka, 2008). Many more indicated they had plans to do so in the near future.

Hospital room service systems have several large advantages, including: drastically improved patient satisfaction, improved patient control over food choices, improved food temperatures, increased foodservice employee pride in their job, decreased plate waste and decreased food cost (Buzalka, 2008; Norton, 2008; Sheehan-

Smith, 2006; McLymont et al., 2003). It has been well documented that patients prefer to choose food items at time of service (Pantalos & Bishop, 1995; White et al., 2008; Pietersma et al., 2003).

The main disadvantage of room service is increased cost. Increased cost mainly comes from initial investment in new equipment and computer software and initial staff training costs (Buzalka, 2008; Norton, 2008; Sheehan-Smith, 2006). A larger number of labor hours needed to run a room service system is sometimes reported, however some operations report no change in labor cost after the initial implementation period (Bulzaka, 2008). At the same time room service can reduce food cost by eliminating late trays, reducing floor stock and inventory, eliminating between meal nourishments and over production (Norton, 2008). STMH can confront the cost challenges by conducting a cost-benefit study. This type of study could research and weigh the initial room service cost with the overall financial and patient satisfaction benefit. A break-even point may then be determined and a cost-savings may be estimated over time.

Room service systems can vary greatly between hospitals. From a trade journal article, Norton (2008) explains that some hospitals wholly convert from a traditional trayline system to a room service system, implementing it on all compatible units and offering it to every patient capable of receiving it. Others offer it only to some areas or units, with the rest of the patients receiving the traditional meal service. Patients that may not be eligible for room service are those on liquid diets, extremely restricted diets, dysphasia diets, chemically dependent and rehab patients, and those who have vision, language or other limitations (Norton, 2008).

Hours of room service operation, including evening service hour cutoffs are an additional challenge. According to Bulzaka (2008), most programs begin serving around 6:30-7 am and go into the early evening until 6:30-7 pm. However, some programs run 24 hours a day, seven days a week. Hours of operation should be decided based on patient population; most important is that the majority of patients have what they want to eat when they want to eat it (Norton, 2008).

In a qualitative study by Sheehan-Smith (2006), the best practices of hotel-style room service in hospitals were examined. The common features of hotel-style room service are meal delivery within 30 to 45 minutes, a restaurant-style menu, procedures to feed ineligible patients, tray assembly on demand, standardized employee scripting, and wait staff uniforms for room-service employees. The study found that the initial best practices included taking a multidisciplinary team approach and allowing enough time for developing and implementing the process. In order for the system to succeed, it was emphasized that employees who take patients' orders over the telephone and deliver meals should receive intense customer-service training.

It was also recommended that practitioners develop a customer-driven menu and use carts with airpots for dispensing hot beverages (Sheehan-Smith, 2006). Following best practices and observing other room service operations are helpful when deploying a hospital room service system, but it is also highly important for hospital foodservice departments to customize the system to its specific needs and to continue adapting the system after implementation (Bulzaka, 2008).

The most substantial factor driving the growth of room service is competition (Buzalka, 2008; Norton, 2008). As more institutions implement the system, it becomes

more difficult for others not to. This is partly because the rise in satisfaction scores at one institution negatively impacts the percentiles at other institutions (Buzalka, 2008). St. Mark's Hospital may be facing this situation, since several other competing hospitals in the region have initiated a form of room service within the last 5 years (Intermountain Healthcare, 2011). Residents and potential patients in the Salt Lake Valley region of Utah are conceivably beginning to expect more from hospital foodservice, making it more difficult to exceed these expectations with a conventional hospital foodservice system.

In summary, due to the highly competitive nature of the health care industry, organizations are becoming more customer-oriented and patients are beginning to expect more (Kizer, 2001). Further investments in the conventional foodservice system likely will not achieve the goal of significant improvement in patient satisfaction. Based on this study, it was recommended that a room service system be considered as a way to truly meet and possibly exceed the foodservice expectations of patients. To accomplish this practitioners may consider following the best practices of hotel-style room service in hospitals as outlined by Sheehan-Smith (2006), using a multidisciplinary team approach, and observing current room service operations in the area.

In the summer of 2011, the St. Mark's Hospital foodservice department will begin implementation of a hotel-style room service system. The department was able to secure room service funding from hospital administration due in part to the findings of this study.

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One intervention period was implemented during this study and interventions were not exhaustive or standardized over many intervention periods. If this study were repeated it would be preferable that several intervention and survey periods be implemented over a longer time period. In the study by Fallon et al. (2008), the ACHFPSQ was administered annually over a 3-year period. Improvement interventions were carefully chosen and thorough. Continuous quality improvement became a collaborative team approach within the department.

It is also important to note the suggested tendency of hospital patients overinflating their satisfaction ratings depending on any number of methodological influences (Sitzia, 1999). The role of dietetic staff in distributing surveys and assisting patients in their completion where needed may have influenced patients' responses. Conversely, respondents to the company-wide Gallup poll were surveyed anonymously over the phone.

In general, the measurement and quantification of foodservice satisfaction is difficult, as it is highly subjective and influenced by many variables. In its original study, the ACHFPSQ survey instrument was only able to explain 61.2% of the variance in overall satisfaction, indicating that other variables such as pain, loss of personal power, time of year, etc. have an effect (Capra et al., 2005). In acute care, this is not unexpected given the nature of the experience for patients.

Future research might focus on investigating whether most patients now expect hotel-style room service during hospital stays and what has influenced their expectations. Further exploration into what influences patient expectations in a given region may be helpful in determining whether a hospital must deploy a room service system in order to compete and meet patient expectations.

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APPENDIX

Survey No:

We are improving the hospital foodservice and we need to know your opinions by completing this questionnaire. Participation in this survey is completely voluntary. Your response will not affect your care in anyway, and will remain confidential. Thank you.

1. The hospital food has been as good as I expected	Always	Often	Sometimes	Rarely	Never
2. The dishes and utensils are chipped and/or stained	Always	Often	Sometimes	Rarely	Never
3. The staff who deliver my meals are neat and clean	Always	Often	Sometimes	Rarely	Never
4. The hospital smells stop me from enjoying my meals	Always	Often	Sometimes	Rarely	Never
5. I am able to choose a healthy meal in hospital	Always	Often	Sometimes	Rarely	Never
6. I am disturbed by the noise of finished meal trays being removed	Always	Often	Sometimes	Rarely	Never
7. The cold drinks are just the right temperature	Always	Often	Sometimes	Rarely	Never
8. I like the way the vegetables are cooked	Always	Often	Sometimes	Rarely	Never
9. The meals taste good	Always	Often	Sometimes	Rarely	Never
10. The hot drinks are just the right temperature	Always	Often	Sometimes	Rarely	Never
11. The staff who take away my finished meal tray are friendly and polite	Always	Often	Sometimes	Rarely	Never
12. I like to be able to choose different sized meals	Always	Often	Sometimes	Rarely	Never
13. The menu has enough variety for me to choose meals that I want to eat	Always	Often	Sometimes	Rarely	Never
14. The cold foods are the right temperature	Always	Often	Sometimes	Rarely	Never
15. The staff who deliver my menus are helpful	Always	Often	Sometimes	Rarely	Never
16. The meals have excellent and distinct flavors	Always	Often	Sometimes	Rarely	Never
17. The hot foods are just the right temperature	Always	Often	Sometimes	Rarely	Never
18. The meat is tough and dry	Always	Often	Sometimes	Rarely	Never
Overall, how would you rate your satisfaction with the foodservice	Very good <input type="checkbox"/>	Good <input type="checkbox"/>	Okay <input type="checkbox"/>	Poor <input type="checkbox"/>	Very poor <input type="checkbox"/>

Please feel free to make any other comments about the hospital foodservice:

ADDITIONAL QUESTIONS

20. I receive enough food	Always	Often	Sometimes	Rarely	Never
21. I still feel hungry after my meal	Always	Often	Sometimes	Rarely	Never
22. I feel hungry in between meals	Always	Often	Sometimes	Rarely	Never

GENERAL INFORMATION

This section is asking for some information about yourself. This information will enable us to identify the level of satisfaction of various groups of our clients, which in turn will help us to achieve our goal of making our foodservice the very best.

All information will be confidential. All questions are optional and please do not complete any questions you feel uncomfortable answering.

Your approximate age is

Your gender is: (please tick the appropriate box)

Female

Male

How long have you been in hospital (this time)? (please tick the appropriate box)

less than
1 week

1-2
weeks

2-4
weeks

1-2
months

more than
2 months

As compared to your normal food intake, how would you rate your food intake for the majority of your hospital stay (this time) (Please tick the appropriate box)

unchanged

More than usual

Less than usual

What sort of diet have you been on for the majority of your hospital stay (this time)? (Please tick the appropriate box)

Regular

Diabetic

Cardiac

Restricted diet for medical reasons ie. renal diet, gluten free, allergy

Minced or Pureed diet

Full Liquid

Clear Liquid

Don't Know

Was assistance required to complete this survey? (Please tick the appropriate box)

No

Yes