FACTORS ASSOCIATED WITH IMPROVED HOSPITAL MEAL SATISFACTION: LEADERSHIP IMPLICATIONS FOR FOOD SERVICES ORGANIZATIONS

Angelo Mojica

A dissertation submitted to the faculty at the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Doctor of Public Health in the Department of Health Policy and Management.

Chapel Hill
2015

Approved By:

Suzanne Babich

John Anderson

John Waters

Marci Thomas

Ashley Skinner

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ABSTRACT

Angelo Mojica: Factors associated with improved hospital meal satisfaction: Leadership implications for food services organizations
(Under the direction of Suzanne Babich)

Hospital reimbursements have changed as a result of adopting the PPACA. Patient satisfaction as measured by the HCAHP's survey is one of several measures that will determine these reimbursement rates. The overall rating of the hospital question on the HCAHP's survey is influenced by a variety of hospital departments and functions including meals produced and served by Nutrition and Food Services departments.

This study is motivated by one research question with three sub-questions: (1) How can food service leaders develop service models that increase patient satisfaction while decreasing costs?; and (a) What are the factors associated with increased patient meal satisfaction?; and (b) What factors decrease food service costs?; and (c) What are the factors that facilitate increased patient satisfaction while decreasing food service costs?

The primary investigator conducted five in depth focus groups of UNC Health Care employees from food service management, hospital administration and nursing leadership. A total of 27 individuals participated in these focus groups.

The findings from the research show the impact of different food service models on patient satisfaction and food service expenses. The Restaurant Delivery model was the only model reviewed that provided increased patient satisfaction while reducing food and labor expenses.

The findings support the prediction that hospitals consider implementing a restaurant style menu in an effort to reduce costs and increase patient satisfaction. Food service departments must make a business case to convince hospital administrators that investing capital dollars in this change makes good business sense. A description of potential pitfalls and how these were overcome with prior program launches will be necessary to gain required approvals.

For Christine, Alejandro, Ava and Mr. Bojangles

ACKNOWLEDGEMENTS

Projects like this dissertation are not possible without the help and support of many people. My heartfelt gratitude begins with my parents, both of whom dropped out of high school to provide for each other and their five children. They later earned GED's and asked of their children only that they attend college. The sacrifices they made for me have driven me to all that I have and ever will achieve. I also owe thanks to my brothers. The support and examples that my older brothers provided encouraged me to carry on when driving towards my goals. The death of my youngest brother and disability of my closest brother remain as constant reminders of why public health is so important to me.

Tremendous thanks also go to my teachers. This doctoral program has provided me with an educational experience that has far exceeded my expectations. I am amazed at the talent of the professors in this department and the opportunities that have been provided to me and my cohort through guest lectures. The London trip was an eye opening experience for me and my peers. I also thank my work mentors. I am so very fortunate to have support and guidance from Dan Lehman and Mel Hurston of UNC Health Care. Not only did they support the Doctoral program, but the many "wild" ideas that I have proposed these past 10 years. I could not have two better friends/mentors/foster parents. Sincere appreciation also goes to my work peers. The teams that I have worked with have made my vision of a new service model a reality. Together, we achieved what no one ever could have thought was possible. Hard work, laughter and tears filled our days. The results speak for themselves and would not have been possible without the efforts and vision of so many people working towards a common goal.

I am also grateful for my classmates. I never expected to add 13 sisters and a brother to my family, but this expansion is just what has happened. I have had three other college experiences and never have I experienced the bond that we have created this past two years. We are forever bound to this program and each other.

I cannot begin to thank my committee members. Each of the members of my committee are so special to me. I chose with my heart and feel that in each case, I made a choice that ensured the successful completion of this dissertation. I also chose people that I want to stay connected with long after this project is complete. Thank you for believing in me and treating me as you have through this process

Additionally, thanks to my editor, Melissa Burns, who made such a difference to me throughout the dissertation. Because she had been a patient through all three service models at UNC, there was no one more qualified to assess the programs than her. Throughout this process, she has assisted with editing. What made this a great experience were her insightful and encouraging comments about how things have changed and how much she has enjoyed those changes.

And never last in my thoughts, my heartfelt thanks to my family. My wife, Christine, is the most beautiful and smartest woman that I have ever met. She has supported me for thirty years in ways that no other person could or would. To quote a famous poet (Rocky Balboa). " I have gaps, she has gaps, and together we fill those gaps." My children Alejandro and Ava are so incredible. When I look at what they have achieved and will achieve, it inspires me to be a better person and father. They drive me crazy and fill my heart with joy. And finally, Mr. Bojangles is my best friend. He is also the best friend of Christine, Alejandro, Ava and all that he comes in contact with. He is the glue that holds my family together.

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CHAPTER 1: INTRODUCTION

Introduction

United States healthcare reform will measure patient satisfaction through questions on the HCAHP survey. These metrics will determine reimbursement rates that will greatly affect the ability of hospitals to survive in this competitive market Geiger [1]. The delivery of high quality, nutritious meals can be in jeopardy if food service programs do not receive funding necessary to maintain on demand service models like room service and Restaurant Delivery. Food service is an important measure that touches all hospitalized patients and serves to enhance the quality and financial outcomes of health care facilities. Food is not only important for the physical well-being of hospitalized patients; it is an important component culturally and socially that can aid in the healing process Nixon, [3]. The hospitalized patient has lost control of many aspects of care Taylor [4]. However, hospitals can offer patients a choice of high quality food. The choice of service model to deliver meals to patients is linked to improved clinical outcomes as well as patient satisfaction Ruth Williams [5]. Health Care food service operations will be challenged to increase patient satisfaction while decreasing costs, requiring food service operators to develop service models that satisfy both of these requirements.

The focus of this dissertation is to determine how food service leaders can develop service models that increase patient satisfaction while decreasing costs.

Background

Hospital food service has improved greatly since Florence Nightingale observed the lack of safe and palatable food served to injured soldiers during the Crimean war 160 years ago. Service models today are able to provide patients with the quality and service once thought only to have been possible in fine restaurants and hotels. Substantial internal marketing was necessary to bring about the changes that have led to increased patient satisfaction Joseph [6]. This section is a review of the effect of increased choice, marketing, and quality on patient satisfaction in hospital food service. The changes proposed to current operations will help food service operators increase reimbursement rates for the hospitals they serve.

For many years, traditional "Cook Serve" food service was the only option for hospital food departments. Over time, other service models were developed to include "Cook-Chill", "Room Service", "Pod Service" and "Restaurant Delivery". Each change built on the previous one with the goal of increasing patient satisfaction while reducing expenses.

"Conventional service" or "Cook Serve" food service was an early service model available to food service operators. Patients would receive a paper menu and choose from one of two selections for the following day. A tally was established of foods to be produced and these foods would be prepared in bulk and held hot during meal service. This delivery model provides a limited amount of selections and does not meet the taste preferences of the ethnically diverse populations currently seen in hospitals. Ordering a day ahead of time also provided a challenge, as many patients' diet orders change throughout their stay. A patient can move from not eating (NPO), to a clear liquid diet, and eventually a regular diet in a matter of hours. Orders that are placed a day in advance

of delivery cause many patients to receive foods that do not match the correct diet order. This mismatch often requires additional meals to be delivered resulting in increased food waste, as well as patient dissatisfaction. Foods held hot for extended service times have diminished quality and reduced nutritive values as compared to foods that are made to order. A good example of this diminished quality and nutritive value would be salmon. When produced in large quantities and held hot, the last portion served is not at the same quality as the first portion served.

The Cook-Chill model in health care developed as a means to efficiently and safely produce foods. This process evolved in the 1960s for the catering industry, in which foods are produced in bulk and chilled rapidly. This rapid chill results in a consistent product that has a reduced microbial count because the product is held in the temperature danger zone for a shorter period of time. There is a reduction of labor with this food service model as foods can be held safely for as long as 30 days. An item that is featured on a menu weekly can be produced once each month instead of on a weekly rotation. Foods are held in a refrigerated state and then rethermalized on specialized food carts to heat the food back to a safe and palatable temperature. This program requires a significant capital expenditure for the food production and rethermalization equipment. Although foods are produced safely, many facilities chose to abandon this service model for a variety of reasons, including but not limited to food quality, temperature control issues, cost of equipment and equipment upkeep.

In February of 1997, Swedish Medical Center in Seattle, Washington became the first hospital to launch a room service program. Originally titled *A la carte dining*, this program made it possible for patients to order from a menu that contained 10 to 12 entrée

selections. The foods is made to order and delivered to patients within one hour. The increased variety, focus on quality and this on-demand delivery model proved to increase patient satisfaction. The program received national recognition and soon became a model for hospitals that were interested in enhancing their patient experience. This program requires an increase in labor as compared to conventional service. An overhaul of the meal production and delivery system is also necessary when implementing a room service program.

The bedside ordering system or "Pod" system began as a means of offering a menu with a similar number of entrée selections as a room service menu, but for those facilities without the capital or staff required in the room service model. This program has team members visit patients to take orders at the bed side within hours of meal service. There are three major advantages that this program offers over conventional service. The first is that the diet the patient will be on is less likely to change from the point of order to service. This consistency reduces the expense and negative perception that can occur when an incorrect meal is supplied to a patient. The second advantage is that a greater selection offered by a server walking the patient through available options increases the likelihood that a patient will select items to their liking. A final advantage to this system is that the server often visits the same patient unit each time she/he is scheduled to work. This consistency enhances the relationship with the patient and the nursing team as the server becomes familiar with patient likes and dislikes and builds a rapport with patients and unit team members. A limitation to this method is that the server has a limited amount of time to interact with the patient before visiting other patients and returning to

prepare the meals. Another limitation to the program is the same as the conventional model; foods are not produced to order and are of lower aesthetic and nutritional quality.

The Restaurant Delivery model was initiated in 2012 at the University of North Carolina Medical Center. This program is similar to a room service model in that foods are cooked to order but there is a larger selection than conventional food service. What distinguishes Restaurant Delivery is the increase in the number of entrees offered, as well as the compartmentalization of foods into "restaurant" groupings, offering patients the option of dining from distinct venues. Another factor that differentiates Restaurant Delivery from a room service model is that it requires less labor. Since the menu items offered are produced in retail venues and not the patient kitchen, there is less labor required to produce the greater than 90 entrée selections. A third difference is the marketing and layout of the patient menu. Retail concepts are broken down into restaurants that are unique and each one is marketed by theme. The result is a menu that is 20 pages long as compared to room service menus that are typically 6-8 pages long.

Each of these service models began with the goal of providing the best quality food possible for patients while controlling expenses in an ever changing health care environment. Each has advantages and disadvantages as the industry has evolved. All have unique factors that were designed to help achieve financial and patient satisfaction goals. The goal of this research is to identify the factors contributing to increased satisfaction of meals in hospitals. These factors will prove beneficial to hospitals since reimbursement rates will be tied to satisfaction under the Affordable Care Act.

Context for search

An understanding of how hospitals measure satisfaction and why it is important is essential to the development of tools to meet the needs of health care institutions. Programs that have been successful in increasing satisfaction scores for health care facilities were examined to determine the reasons for increases or decreases.

A review was conducted of the relevant literature on health care food services' impact on patient satisfaction. The Affordable Care Act will place hospitals' Medicare reimbursement dollars at risk of being reduced. Currently, 1.25 % of Medicare reimbursements are subject to risk increasing to 2% over the next three years.

One of the ways to insure repayment of these at-risk dollars is to increase the overall patient satisfaction of the hospital experience. Food Services departments in hospitals do their part in improving overall satisfaction goals by providing a service that meets or exceeds the needs of their patients. Having implemented a program that has proven to meet the needs of the patients at UNC Medical Center, and at a second facility in the health care system, the current goal is to prepare a similar model that can be replicated in other food service operations in any healthcare system.

This research will address the following primary research question:

How can food service leaders develop service models that increase patient satisfaction while decreasing costs*?*

Subquestions:

- What are the factors associated with increased patient meal satisfaction?
- What factors decrease food service costs?
- What are the factors that facilitate increased patient satisfaction while decreasing food service costs?

Definitions

Patient satisfaction measurement tools

- Press Ganey – mailed survey for discharged patients covering all aspects of care. Greater than 1,800 member institutions.
- HCAHPS – phone survey for discharged patients covering all aspects of care. All hospitals receive survey results under this program.

Service Models

- Cook-chill – foods are prepared, held cold and rethermalized for service.
- Cook Serve – foods are prepared and served immediately. Patient orders made one day in advance of service.
- Bedside ordering (pods) – foods prepared using cook serve model. Patient orders made at bedside before each meal.
- Room Service in Health Care – foods prepared on demand. Patients place orders as needed.

CHAPTER 2: LITERATURE REVIEW

This review focused on studies of patient meal service satisfaction in health care settings. Reports from trade journals, as well as scholarly articles were used.

Sources

The search began with Pub Med and found few matches based on the following key word selections. Hospital AND Food service AND Patient satisfaction are the key words used for the search. The search was broadened to google scholar, and found several matches. The "up to date" function with Web of Science was used as a final resource. In all cases, the same key words were used.

Search Strategy

All searches were limited to English publications dated from 1989 to 2014. Key words included: Hospital AND Food Service AND Patient Satisfaction. The search went back to 1989 so as to include service models that have been around for a longer period of time and thus increase the number of articles for review. The articles in trade publications are more relevant as service models have changes more frequently in the past 10 years.

Inclusion/Exclusion

Data from studies going back in time as far back as 1989 were included because there have been major changes in service models through the years that have been studied for their

effects on satisfaction. Also included are studies in all countries that meet the key word criteria and studies involving acute care hospitals. The following items were excluded from the review:

- Studies involving specific nutrients or disease states with the exception of cancer
- Studies involving mental health facilities
- Oral health studies
- Long term care studies
- Studies involving formulary

The items excluded from review had no relevance to the question posed. Long term care and mental health facilities do not use a standard satisfaction model and will not be affected in the same way as acute care hospitals in regards to Medicaid reimbursement rates. Studies involving specific disease states and nutrition needs of specific targeted populations are difficult to compare to studies that look at overall patient satisfaction. Studies reviewed will be assessed based on the inclusion exclusion requirements.

Process for reviewing articles

Articles of studies that focused on satisfaction of meals in hospitals were the main priority. Trade journals were searched on the individual website for the journal, as these articles were rarely found during database searches.

Table 1

Literature Review

Publication Year	Authors	Title	Relevance:
2009	Tranter, Michelle A. Gregoire, Mary B. Fullam, Francis A. Lafferty, Linda J.	Can Patient-Written Comments Help Explain Patient Satisfaction with Food Quality?	Food quality cited as most important factor in satisfaction of meals during hospital stay
1998	Lau, C. Gregoire, M. B.	Quality ratings of a hospital foodservice department by inpatients and post discharge patients	Multiple regression analysis conducted and found that variety of food was cited as one of the five quality variables predicting overall meal satisfaction
2006	Sheehan-Smith, Lisa	Key Facilitators and Best Practices of Hotel-Style Room Service in Hospitals	Qualitative study that reviewed the features, advantages and disadvantages of hospital the room service model. Control over food choices was found to be the largest advantage. The largest disadvantage was found to be the cost to implement and maintain the service model.
1994	Dube, L. Trudeau, E. Belanger, M. C.	Determining the complexity of patient satisfaction with foodservices	Food quality was found to be the most critical dimension in explaining the overall satisfaction with meals
2013	Messina, G. Fenucci, R. Vencia, F. Niccolini, F. Quercioli, C. Nante, N.	Patients' evaluation of hospital foodservice quality in Italy: what do patients really value?	Cross sectional study collecting patient preferences of acute care hospitalized patients. Food quality was the aspect that most influenced patient satisfaction
2012	Aase, Sara	Hospital foodservice and patient experience: what's new?	Room Service found to have a significant influence on quality of foods served to patients
2003	McLymont, V. Cox, S. Stell, F.	Improving patient meal satisfaction with room service meal delivery	Meal consumption of greater than fifty percent for cancer patients increased from 39% to 88% after the implementation of a room service model

2005	Dalton, A.	Get out the China: gourmet meal plans garner rave reviews from patients and, surprisingly, reduce costs	Food cost savings and satisfaction increases were realized as a Dallas hospital moved from a "cook-chill" to a room service model
2010	Johns, N. Hartwell, H. Morgan, M.	Improving the provision of meals in hospital. The patients' viewpoint	A study that measured the provision of hospital meals from a patients viewpoint found food choice to be an emerging theme when asked to comment on quality aspects of hospital dining
2014	Lawn, J	Outlook 2014: What's Trending in Healthcare	This review of the healthcare food service market explained the emphasis on quality while reducing expenses and the concern that the PPACA could limit room service implementations in the future
2011	Howell, Whitney L. J.	Haute, Healthy, Local Cuisine Coming to a Hospital Near You	Hospitals now serve better food that the industry has seen in its past. This quality increase can become more important as Medicare ties reimbursement rates to patient satisfaction scores
2013	Lawn, J	2013 Healthcare Foodservice Market Outlook	Pay for performance, and the consolidation of health care facilities for cost savings are believed to effect healthcare food service in the future. Administrators will need the room service model to increase overall hospital satisfaction scores
2009	Hartwell, H. Edwards, J.	Descriptive menus and branding in hospital foodservice: a pilot study	Branding was found to add value to patient menus and influence customers hedonic response
2013	Paul Hysen	Patient Satisfaction – The Longest Yard	Comfort foods and menu marketing are important in a plan to increase meal satisfaction
2013	Bazulka, M.	Best Customer Concept: Univ. of North Carolina Hospitals	Restaurant Delivery service model developed as a labor savings alternative to the room service model. Labor savings were achieved along with food cost savings and satisfaction increases.
2011	King, P.	Homegrown Culinary Training	The UNC health Care system launched a culinary training program to improve the quality of foods served to patients and retail customers. This program was successful in the increase of patient satisfaction scores as well as retail sales
2014	Fitzpatrick, Tara	White Toque Culinarians	Modeled after the successful Black Hat Chef program

		Program Elevates Healthcare Dining at RWJ	from UNC Medical Center, this program has a focus on preparing culinary staff for the execution of quality patient meals
2013	Bazulka, Mike	Robert Wood Johnson Debuts "Dining for All Seasons"	Hospital running a room service model changed patient menu to increase entrée offerings by 20% and hired culinary trained team members to manage changes

Search Results

A review of PubMed identified 158 studies. CINAHL with a filter of non-inclusion of Medline records to exclude duplicates found an additional 146 records. Use of industry trade journals identified 27 records and articles for review. Duplicates were excluded in the second search database and additional duplicates were removed when reviewing industry trade journals. The result was a total of 331 items to review. The Exclusion criteria were applied to these items reducing the total for review to 35. Each of the 35 items were obtained in full text and read. An additional 10 items were removed leaving 25 items (see Table 1) for inclusion.

A variety of themes were identified from the 25 studies and reports that were analyzed. Food quality and variety/choice were linked most often to patient satisfaction increases, and this combination was identified in 13 of the 25 items reviewed. Additional themes in several items reviewed were advantages and disadvantages of the current best practice room service model, the effect of the Affordable Care Act of food service operations, branding, the outlook for hospital food service, and quality of service measures.

Food Quality

The quality of food, as identified from the patient perspective, was consistently identified as the item most likely to increase satisfaction. Tranter, Gregoire [7] reviewed written comments from patients that visited hospitals using the Press Ganey survey tool. They found that food quality ratings were best predictive by written comments they received, and was the most important factor in determining the satisfaction of food service. Lau and Gregoire [8], Sheehan-Smith [9], Dube, Trudeau [10] and Messina, Fenucci [11] all agree that food quality is the best predictor of overall food service satisfaction. These studies focus on increased

satisfaction scores as they related to achieved or exceeded expectations. Aase [12] completed an assessment of the state of food service in relation to patient experience. This review identified the room service model as having a significant influence on the quality of food as it has become an industry standard for care. The quality of food increases are measured by the quality survey tool that each facility uses. Each survey tool has a question that specifically requests information on food quality. In this study, 81% of hospitals that had implemented the room service model saw a 10 % increase in satisfaction scores, but it did not identify any specific reason for the increase in scores.

Variety/Choice

As the trend towards on demand services has become the gold standard for hospital food service, the industry is seeing continued advancements that will allow for enhanced variety and choice. McLymont, Cox [13], Aase [12], Dalton [14], and Sheehan-Smith [9] all examined the room service model and cited increased variety and/or choice along with increases in satisfaction. The discussion section of the McLymont article specifically suggests the enhancement of menu variety as a means for further improving the room service model. Dalton describes a facility that has developed 30 different menus for patients on a variety of diets to choose from and the Sheehan-Smith paper sites control over food choices as a major advantage to choosing the room service model with 59% of respondents citing control over food choices. Johns, Hartwell [15] found that choice was mentioned most often, second only to food quality. The study, however, made no effort to find more details regarding these responses or make suggestions to increase choice for patients.

Lau and Gregoire [8] completed a multiple regression analysis using information obtained from discharged patients. The data suggests that five quality variables help to predict overall

satisfaction. Variety of food was cited as one of these five quality variables, although it was not as strong a predictor as quality of food.

Room service advantages/disadvantages

The room service model has been used in hospital settings since the late 1990's and has had a variety of attention in the media, as well as scholarly reviews. For the lay person, this model seems as though it should have been the way that food service should be operating in a hospital setting. There have been studies of this model that have revealed several strengths, as well as weaknesses. There are some conflicting findings regarding whether or not this service model improves financial performance or not. All studies agree that this service model improves the quality of food offered as measured by satisfaction tools. Sheehan-Smith [9], Aase [12], Lawn [16], Dalton [14] and Ziqi, Robson [17]. Although the mention of choice and food quality continues to arise in the literature, none of these studies have investigated the specific characteristic of the increased number of options that a room service menu has in comparison to a traditional food service model. While Aase, Dalton and Ziqi identify room service as a means for a hospital to save money, Sheehan and Lawn suggest cost as a potential barrier.

The Affordable Care Act and Hospital Food Service

The Affordable Care Act will require all hospital departments to reconsider the programs that have been effective in the past and develop new programs aimed at providing the highest quality of care at the most cost effective price, while ensuring that customers are satisfied. Four of the items, Aase [12], Howell [18], Lawn [19], Lawn [16], reviewed touched on these changes and speculated on the actions that may be necessary for food service departments. Aase, 2012 has identified an increased focus on satisfaction because of the potential for

reimbursements to be tied to these measurements that result in improved financial performance for hospitals. Howell goes further to suggest that the goal of increasing satisfaction will likely enhance the quality of food served to patients. Lawn has proposed a market outlook for 2013 and 2014. He suggested in 2013 that consolidation of health care facilities would lead to more of a top down management model for food service in an effort to manage expenses on a larger scale. The author is aware of at least 6 health care systems that are undergoing or have undergone this transformation. For 2014, Lawn discusses the concern that room service programs may be targeted as potential money saving efforts for health care facilities because of the increased labor required to manage these programs. He believes that the Affordable Care Act will require food service directors to continue the focus on quality while finding ways to reduce expenses.

Branding

Branding of retail food is commonplace but until recently, unheard of in health care. There have been and are branded retail concepts in hospitals but very few attempts have been made to brand patient menus. Hartwell and Edwards [20] looked at the effects of descriptive menu terms as well as providing branded items on patient menus to determine the effect that these might have on patient satisfaction. The case study used a questionnaire that was administered to patients on medical and surgical wards of an 842 bed acute care hospital. Additional data was obtained through qualitative comments from patients and food management staff. The study found that patients welcomed descriptive menu terms for familiar items but did not choose unfamiliar items because of descriptive menu terms. Branding of foods consumed for the home were identified as important to those surveyed using the qualitative assessment tool while only 40 % of individuals who filled out the

questionnaire identified branded items as being important. This study did have a low sample size of only 42 individuals who completed the questionnaire. Hysen [21] in *Food Management* discusses menu marketing as one of the finishing touches that are necessary to further improve patient satisfaction scores. The University of North Carolina Medical Center has developed a service model that specifically focuses on branding as a means of increasing satisfaction. This concept takes retail brands and represents them as distinct "restaurants" on the hospital's 20 page patient menu. The program has proven to be successful in increasing satisfaction (Bazulka [22]). Another example of the branding to increase satisfaction is the clear liquid smoothie program also at The University of North Carolina Medical Center (Bazulka [23]). This program took simple ingredients and transformed them into a brand with descriptive terms and internal marketing to nursing staff. The white grape, mojito and apple pie smoothies replaced apple juice, grape juice and cranberry juice combined with a cherry Italian ice. The program became so well marketed throughout the facility that the nursing staff began to order the new products for patients transitioning to solid diets to ensure that the patient could tolerate foods. Nursing has also requested that these foods be served in retail venues.

Meal Service Times

McLymont, Cox [13] discussed meal service times. In this study, it was noted that a room service model provides patients with the ability to order foods they want, when they are ready for them. The study acknowledged that breakfast and lunch order times are much the same with a traditional delivery system as with the room service model. The difference is at dinner. Hospitals on a traditional service schedule generally serve dinner between the hours of 4:00PM and 6:00PM. A room service system allows individuals to order dinner later if

desired. This study found that patients generally ordered dinner between 5:00PM and 8:30PM.

Discussion

A review of the literature resulted in a variety of studies and articles that appraised the effect of meals on patient satisfaction. Although many studies were able to identify a connection between service model changes and an increase in satisfaction, few were focused on the reasons for these changes. Many studies speculated that increased choice and quality were the reason for increases in satisfaction with little details of the types and number of choices or the specific quality changes that were instituted. An understanding of how hospitals measure satisfaction and why it is important is essential to the development of tools to meet the needs of the institution. Programs that have been successful in increasing satisfaction scores for health care facilities should be examined in more detail to determine the reasons for increases, as well as the ability to replicate these efforts in order for other facilities to achieve similar goals.

Patient Satisfaction Measurement Tool

Only one of the studies reviewed identified the survey tool used to assess patient satisfaction. Significant increases in satisfaction were sited in many cases with no mention of specific questions, comparison groups, or the survey used. There are a variety of survey tools available to hospitals that can assess the satisfaction of patient meal service and quality. Press Ganey and Professional Research Consultants (PRC) are the most frequently chosen by hospitals.

Press Ganey began the push for hospitals to monitor satisfaction when in 1985, Drs. Press and Ganey formed Press Ganey associates. Their survey tool is sent to patients after discharge and returned to Press Ganey where the scores are tallied and compared to other health care facilities. This created an environment where satisfaction became important to hospital administrators which ultimately enhanced services for patients. Press Ganey uses a survey that is mailed to patient homes while PRC contacts patients by phone. There is debate whether phone interviews produce higher survey scores than written surveys because of the anonymity of written surveys. These companies also differ in the terms used on their Likert scales. Press Ganey uses "very good" as the top score while PRC uses "excellent." There are also differences in the number of hospitals in the databases. PRC has roughly 250 hospitals in their database while Press Ganey has more than 1,800. These differences make it difficult to compare hospitals that use different survey tools.

The focus on satisfaction in hospitals, and the programs that were developed to better manage satisfaction as it relates to food, better prepared them when the center for Medicaid services and the Agency for Healthcare Research Quality (AHRQ) collaborated to research, develop, and test the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey. HCAHPS is a standardized 27-question survey administered randomly by approved vendors or the hospital to adult hospital inpatients after discharge. In 2007, hospitals received a financial incentive for participating in HCAHPS. Each of the companies that measures satisfaction of the patients surveyed makes comparisons to other hospitals in the database. A raw score is produced and percentile ranking is made available comparing the hospital to similar facilities in the database or to the entire database, though the survey companies differ in their methods of receiving data.

The link between patient comments and satisfaction

Tranter, Gregoire [7] identified a link between comments about meals and patient satisfaction. This study found that quality ratings were correlated with patient comments. The issue of concern is that the correlation was with lower scores and written comments when using the Press Ganey survey tool. The mere presence of comments showed significantly lower scores. This inverse relationship does not shed any light on what is necessary to increase patient satisfaction, but instead focuses on what patients do not like about a particular part of their service. As mentioned above, there is debate that written surveys produce lower scores in general than phone surveys because of the anonymity when filling out a written survey. The results of this study indicate that further research is necessary to understand the satisfiers for patients, in addition to the items that dissatisfy.

Programs to Increase Food Quality

The emergence of the Black Hat Chef and the White Toque culinary training programs, King [24], Fitzpatrick [25], are good examples of how hospitals are beginning to understand the need to train staff members to have the ability to incorporate and execute an increased variety of menu items. These programs place a focus on the training of front line cooks in the basic techniques of culinary arts. They have been successful in achieving both higher patient satisfaction scores and employee satisfaction scores at the facilities in which they have been implemented. Robert Wood Johnson medical center in New Jersey has recently added two Culinary Institute of America graduates to their team who have developed an upgraded version of their already successful room service menu to include an increase of 20% of entrees that can be selected by patients [Bazulka [26].

Limitations

There were several limitations that should be mentioned as they may have affected the outcome of the findings. In choosing a narrow topic, there were not as many matches as expected. Pubmed and CINAHL were used and several other databases with little success except to find duplicates of previously found articles. More familiarity with additional databases may have provided additional results. A review of *Food Management and Food Service Director* trade journals provided articles that were used for this review. These journals are not peer reviewed and show bias towards effective programs. There are other trade publications that could have been reviewed with additional time. This literature review did not identify direct links to the number of choices, the quality of food or marketing efforts. These are all potential factors that might enhance a patient's satisfaction with meals while visiting a hospital. The studies that did use quantitative and qualitative data were limited in that the sample sizes were small. No studies had a sample size over 400. Another limitation that was found involved one of the studies reviewed that focused on written comments. The presence of written comments is correlated with lower meal scores so the predictive nature of food quality in this instance relates to the negative comments with poor food quality scores and does not prove that an absence of comments would indicate a higher quality rating.

Lau and Gregoire [8] completed a multiple regression analysis using information obtained from discharged patients. A limitation of this study is that it was conducted in a single hospital and may not prove to be widely applicable.

Gaps in the Literature

More research is necessary to determine factors that may increase patient meal satisfaction. The literature does a fine job in identifying several service model changes over the past 25 years that have been successful in enhancing the patient experience as measured by satisfaction surveys. The fact that hospital reimbursement will be based on satisfaction should motivate hospitals to focus on the factors that will enhance the patient experience. Having knowledge of the key factors that will increase satisfaction will assist hospitals in providing an enhanced experience while maintaining or reducing expenses. This ability to pinpoint the key drivers of satisfaction for our health care systems will allow administrators to make the correct choices. For Nutrition and Food Services, it is not yet fully understood what these drivers are. On demand dining is a possible aspect of the room service model that might trigger increased satisfaction. An increased focus on quality of menu selections may also be a factor as is the increased number of choices available. Finally, the marketing of room service and restaurant dining programs cannot be underscored enough. Many hospitals use internal and external marketing efforts to highlight the meal programs available as amenities that differentiate their facility. Determining which of these drivers, or which combination of these drivers are most effective will prove to be valuable to directors of nutrition and food services departments and the administrators that oversee these areas. Knowledge of the right tools to drive satisfaction will enable facilities to make financial decisions based on the costs and benefits of the program.

Conclusion

Although there is not a specific question on the HCAHPS survey that identifies food services or meals, it is important for hospital food service directors to be aware of the key drivers in their operations. They will need to advocate funding enhancements in their current programs in an effort to increase the overall satisfaction score for the hospital. This prioritization may prove to be difficult as administrators will need to be educated on the link between food service satisfaction and overall hospital satisfaction. Hospitals that have not yet adopted a room service or restaurant style menu will need to advocate for the expenses that are necessary to begin and to maintain such a program. Proof of the benefits to patients, as well as the hospitals reimbursement for an overall increase in satisfaction will aid in these decisions. An increase in labor and food cost expenses that has been seen as a deterrent to the room service model could explain the apprehension of some hospital administrators when deciding to move to this type of a program. There does seem to be a savings in the duplication of patient trays that are delivered which explains the food cost reduction that some studies have identified. The other side of this coin involves the additional labor and new equipment that is necessary to launch and maintain a room service program.

CHAPTER 3: METHODOLOGY

Three healthcare facilities in the UNC Health Care system will be the focus of this study. Focus groups will be conducted with food service professionals, nursing leaders and hospital administrators to determine how food service leaders develop service models that increase patient satisfaction while decreasing costs,

This study will use a descriptive and nonexperimental design and be conducted using qualitative methods. The qualitative research approach has its beginnings in the social sciences in the early 1960's and focuses on non-statistical methods of inquiry. Data collection involves observation, interviews, case studies and videotapes. This method has proven to provide researchers with an in-depth understanding of human behavior.

A case study design will be used. Case study reports describe the in-depth nature of individuals, a group or a situation and are studied over a period of time. Three case studies involving three healthcare facilities will be reviewed. Focus groups will be conducted with team members at the selected facilities that are most likely to provide knowledge of the determining factors for increases in patient satisfaction in a hospital setting. Focus group participants will be asked their opinions on what the drivers of patient meal satisfaction are. A questionnaire will be used for all focus groups (Appendix A). Sessions will be video and audio recorded. The information obtained will be linked to each individual. Reported in

aggregate, the participants bear little risk of criminal or civil liability, nor would it be damaging to the participants financial standing, employability or reputation. The principal investigator will obtain written consent from each member of the focus groups before the start of each session. The consent form will be reviewed orally by the principal investigator and the participant will be invited to inquire in detail about the study. Study participants consent will be obtained and they will be interviewed in English. All study procedures will be described in detail so that the participant is fully informed of their requirements while in the study. During this consent process, the participants will be reminded that they are free to choose to participate in the research study or not, and that their decision will not affect their employment at the healthcare system. This choice is reinforced by a statement from Dan Lehman, Associate Vice President at UNC Medical Center, stating participation is voluntary, there is no negative consequence, nor expected appropriate answer to the questions. The potential participant may agree or decline to participate in the study. Those who consent to participate in the study will be enrolled. This research has been approved by the University of North Carolina Institutional Review Board. (Appendix B). A survey will be administered to all participants to determine some demographics of the individuals that make up these focus groups. (Appendix C).

To maintain confidentiality, each subject will be given a numeric identifier so their specific comments cannot be linked to the data. Immediately after each focus group, the digitally recorded files will be uploaded and saved on a password-protected computer in the principal investigator's office. The interview files will be sent electronically to an individual on the research team for transcription. Interviews will be transcribed verbatim

and verified against the audio recording to ensure that all thoughts and opinions are included in the analysis. Once verification of the transcripts is complete, the investigator will conduct a content analysis, which will involve identifying themes and categories prior to coding the data. As a result, a set of codes and code definitions will be developed.

Subjects and Setting

The UNC Hospital began seeing patients in 1952 as part of an effort to improve the health of North Carolinians. The hospital grew over the years adding a women's hospital, a children's hospital, a neurosciences hospital, and a cancer hospital. Today the UNC Medical Center has grown to an 860 bed level one trauma center. In 1999, Rex Healthcare became a part of what is now UNC Health Care. In 2013 and 2014, UNC Health Care added Chatham county hospital, High Point Regional Medical Center, Caldwell Memorial Hospital, Nash Health Care and Johnston Memorial hospital. Two facilities are in construction as of this writing: Hillsborough and Holly Springs hospitals. An additional management contract with Pardee Hospital will yield the following statistics for the UNC Health Care system:

- Facilities - 10
- Licensed beds - 2,760
- Annual patient revenues - 3.2 billion
- Team members - 22,000
- Annual Surgeries - 93,000
- Annual Emergency department visits - 415,000

This health care system is similar in composition to many of the systems that are forming across the country in an effort to better manage resources and provide cost effective care as part of the changes brought on by the Patient Protection and Affordable Care Act (PPACA).

UNC health care system has a variety of food service models at these 10 facilities. There are hospitals that use a traditional Heat and Serve model, several that have employed a Room Service model, and several others that are using the Restaurant Delivery model. The focus of the four case studies to be conducted will be on facilities that use either the Room Service or Restaurant Delivery service models as they have proven to be successful at increasing satisfaction scores.

The following facilities will be chosen to represent hospitals in the UNC Health care system that differ in size and scope:

- A large academic medical center
- A community hospital in a large city
- A community hospital in a small city

Large academic medical center

UNC Medical Center in Chapel Hill, North Carolina is an academic medical center with 860 inpatient beds. The Nutrition services department in this facility used a traditional food service model until 2010 when it switched to a pod system. In April of

2012, the health care facility converted to the Restaurant Delivery service model that it created and implemented.

Community hospital in large city

Rex Healthcare became part of UNC Health Care in 2000. It is a 433 bed community hospital in Raleigh, North Carolina. The Nutrition services department in this facility used a Room Service model as part of a food service contract. In 2008, Rex Healthcare removed the food service contractor and continued to use a Room Service model.

Community hospital in small city

High Point Regional Health Care became a member of UNC Health Care in 2013. It is a 350 bed community hospital located in High Point, North Carolina. The Nutrition services department in this facility used a Room Service model as part of a food service contract. In February of 2014, High Point removed the food service contractor and converted to the Restaurant Delivery service model.

The first three focus groups will have up to eight members and represent team members employed in the production and service of patient meals. These individuals are directly involved with the care and feeding of hundreds, and in some cases, thousands of meals each day. The experience that each of these individuals brings will provide a unique insight to the necessary tools for providing meals that will meet the needs of patient populations. Each focus group will consist of the following team members:

- Food Service Director – department oversight and strategic vision
- Production manager/sous chef – focus on food production and quality
- Patient services manager – focus on service logistics and patient preferences
- Retail/marketing manager – focus on retail brands and marketing
- Clinical manager – focus on patient clinical requirements
- Administrative support manager – focus on departmental support services

Two additional food service managers may join each team and bring the focus groups to no more than eight members.

The fourth and fifth focus groups will have Nursing leaders and Vice Presidents that are responsible for the oversight of Nutrition and Food Service departments. These groups of individuals add a unique insight to the management of patient meals. The reason that these individuals are excluded from the food service focus groups is the potential for power dynamics and interpersonal relationships altering the group interaction.

Analysis

Data will be coded by the primary investigator. Once the data is analyzed and the study completed, all recordings will be destroyed to ensure that no responses can be linked to an individual. The results will be presented in the aggregate and the names of the individuals kept confidential. Descriptors of focus group participants are included, but in order to maintain confidentiality of the respondent, the participants' names are not

included. Hard copies of data and collateral materials such as consent forms will be stored separately in a locked cabinet in the office of the principle investigator. All interview data will be stored in password protected files at the principal investigator's office.

CHAPTER 4: RESULTS

The purpose of the focus group interviews was to investigate how food service leaders develop service models that increase satisfaction while decreasing cost. Focus group interview data were recorded using two forms of audio as well as video. Care was exercised to accurately and systematically collect and protect data throughout the duration of the study. In focus group interviews, the researcher acts as a moderator or facilitator who has specific responsibilities to follow (Krueger & Casey, 2009). The researcher took great care to avoid bias by having an assistant read interview questions and moderate the focus group sessions. Notes were not taken during the focus group interviews so that the primary investigator could focus on moderating the interview sessions. The primary investigator enlisted the assistance of an Administrative Coordinator to operate the audio and video equipment during interviews. At the conclusion of the focus group interviews, the primary investigator had all focus groups transcribed verbatim. Focus group participants were categorized according to gender (Female or Male) and a number (1-5). The number sequence represents the number of participants of the particular gender in the focus group. The participant is referred to as "Female 1" or "Male 3" depending on the number and males and females in each group.

The constant comparative method was used to code focus group data. This method uses a process that reviews new data and compares them with data collected earlier in the research process. Managing data in this manner allows for theories to be formed, improved, confirmed, and rejected as a result of new data that surfaces from the study. This process is

generally used in grounded theory research but is also used as a method of analysis for qualitative research. Maykut and Morehouse recommend the following steps (Maykut & Morehouse, 1994):

(a) Read and code each data piece

(b) Organizing all data pieces into categories,

(c) Compare new data pieces to existing categories to see if the new data fit into an existing category or if a new category is needed.

(d) Identify emerging themes within each category

(e) Repeat the process for finding the most significant themes.

The primary investigator identified, coded, and analyzed themes that are an accurate portrayal of the content across all the focus groups. Participants' occupations will be identified after each quote as follows:

Food service managers – F

Hospital administrators – A

Nursing leadership – N

Overall, three themes were identified from the analysis: (1) factors that are associated with increased meal satisfaction, (2) factors designed to decrease food service costs and (3) factors that increase patient meal satisfaction while decreasing food service costs.

I. Factors associated with increased meal satisfaction

The satisfaction of patients was identified a number of times when discussing the advantages and disadvantages of different service models.

A. Traditional service model

The traditional service model was most often identified with a decrease in patient satisfaction scores. When asked why this service model results in lower satisfaction, focus group participants elaborated on a variety of reasons:

1. Poor food quality
2. Fewer offerings/lack of choice
3. Patient ordering mechanism

1. Poor food quality

The traditional service model is designed to produce foods in bulk and serve them at scheduled times. Patients order as much as a day in advance of receiving foods in this model. Food quality was identified by focus group participants as inferior to that of the other two models:

- "I guess that I've experienced in the past is, you know, you have to keep everything hot. You have to keep it hot for a long period of time". (F)
- "I think in terms of food quality, what I was going to say is with the on- demand services, they're making the food for you. I feel like I'm ordering my meal. It's being prepared for me

by someone rather than knowing that it's trays of flank steak downstairs and I'm just getting one of the ones out of the tray like in traditional service". (F)

2. Fewer offerings/lack of choice

The traditional service model provides one entrée selection with one alternate selection. Patients that are unable to choose for themselves receive the house selection for the meal period. Focus group participants found the traditional service model to be lacking in variety:

- "It is less flexible in terms of number of offerings, so you have limitations" (A)
- "it doesn't give the patient a lot of choice" (F)
- "not being as good as much choice." (F)
- "It's not necessarily just the quality of the food. It's just they don't have choice" (N)
- "less menu options, less choice, which means the potential that when a patient gets an item that they haven't selected 'cause they couldn't, there's a tendency to not like it or can't eat it" (F)

3. Patient ordering mechanism

The traditional service model is designed to have patients order meals one day in advance. This method was designed to assist in forecasting the amount of food that is necessary for cooks to prepare. Paper menus are delivered to patients who are asked to circle choices and return the menu to nursing who delivers it to the Nutrition and Food Services department. Focus group participants pointed to this ordering mechanism as a source of confusion and dissatisfaction.

- “They also forget that they ordered it. "Ordering food a day in advance" (F)
- “You pass out these menus in the morning with the breakfast tray where people are just circling and start picking them up. They pick them up at 11:00AM. They're changing diets either higher or lower through the day and so now it's the next day and the choice that they've made is no longer valid.” (F)
- “What he liked today, he may not like tomorrow ordering food a day in advance" (F)
- “I think a disadvantage of traditional is choosing your food a day in advance” (A)
- “From a clinical standpoint that sometimes patients, they have their diet changed at the last minute and the foods they ordered a day in advance are no longer valid.” (F)
- “You lose the menus a lot or they come down and they're wet, you know, by something spilled on or you can't tell what they're writing or how they circled. So then the patients actually don’t get what they're really ordering.” (F)
- “A lot of patients have a tendency to forget what they ordered 'cause they're on medication. They forget what they ordered and then if the doctor changes the diet” (N)

B. On-demand service models

The on-demand room service and Restaurant Delivery service models were identified by focus group participants as contributing to an increase in patient satisfaction scores. When asked why this service model results in higher satisfaction, focus group participants elaborated on a variety of reasons:

1. Patients can order what they want/when they want it
2. Compartmentalization of the menu
3. Number of Entre selections

a) Restaurant Delivery

1) Compartmentalized menu

2) How leftovers are used

3) Retail menu dictates number of entrees

b) Room Service at large community Hospital

c) Restaurant Delivery at small community hospital

4. Pictures on patient menu

1) Patients can order what they want/when they want it

Both on-demand service models allow patients to order foods throughout the day. The Restaurant Delivery model provides patients with a 24 hour service. Focus group participants discussed the ability to order foods throughout the day as a reason for increased patient satisfaction:

- "I would say the big plus about the room service style system is just the mere fact that patients can order when they want to as opposed to set meal times." (F)
- 'People can order exactly what they want. There's not that changing around of, "Oh I selected this yesterday, but now my diet has changed."' (F)
- "Opposite of traditional tray line, giving people what they want when they want it" (A)
- "Well, one of the advantages of the restaurant delivery is that they can get the food when they wanted and I think that overrides anything else because they enjoy getting that food when they want it. They have a baby at 2:00 o'clock in the morning. They can get their food at 2:00 o'clock in the morning." (F)

2) Compartmentalization of the menu

Focus group participants that were familiar with the Restaurant Delivery model recognized that the design of the menu may influence patient satisfaction. The Restaurant Delivery menu is designed to manage the large number of entrée selections by breaking them down into different restaurants. This compartmentalization was described as a means of managing a large number of entrée selections:

- "The biggest difference that I see between the room service and restaurant delivery is the size of the menu and how it's put into the compartments of different restaurants. So I think that that-- how it's-- I guess how it's presented makes it easier for the patients to make decisions on their food choices because they know, "Oh, this type of food sounds good so I'm going to look through this page." And so even though it's larger and it gives them more choice, it's not overwhelming." (N)
- "Which is how it's kind of been set up or what we see it's divided into those specific restaurants" (A)
- "When I think about restaurant delivery and our menu, it's broken up. I think Female 2 mentioned how our menu is compartmentalized, and so we may have 100 or 90 somewhat entrées, but every page is a different restaurant. So at any given moment, I'm only being confronted with 10 or so. When I'm looking at the one page and the one restaurant, its 10:1." (F)
- "Which is how it's kind of been set up. What we see is it's divided into those specific restaurants." (F)
- "That's part of the beauty of it is that they don't realize that there's that many entrées." (N)

- “Everything is very organized. Things are-- you know, if you want sushi, it's on a separate page. At Cheesecake Factory, spaghetti and general Tso’s chicken might be on the same page and that's really confusing. So, I think the way that we lay it out is very friendly to the patient.” (F)
- “The biggest difference that I see between room service and restaurant delivery is the size of the menu and how it's put into the compartments of different restaurants. So I think that how it's, I guess how it's presented makes it easier for the patients to make decisions on their food choices because they know, "Oh, this type of food sounds good so I'm going to look through this page." And so even though it's larger and it gives them more choice, it's not overwhelming.” (A)

3) Number of entre selections

Each of the three service models identified manages a different number of entrees. Participants elaborated on the number of entrees that they believe to be a large amount. They then elaborated on how they manage the number of entrees on their menu.

a. <u>Restaurant Delivery at large academic medical center</u>

- “A large number would probably be 200.” (A)
- “I think that-- I mean 100+ because we used that much. We have that many options. But what I mean, you would put it in different restaurants, so that way it's not overwhelming when the patients look at it and they can decide. If I don’t like fried chicken, I don’t have to look at that restaurant and then you know it doesn’t look like it's overwhelming to me.” (A)

- “So we're 800 beds. We have about 93 entrées give or take. Typically in a, restaurant, you see 10 entrées one for every 10 seats in a 100-seat restaurant. So, 80 to 90 entrées for us is pretty much in range 'cause we're in the mid-800s as far as beds. So,
- “Oh. Restaurant delivery menu? I got to say it's a lot. 90” (F)
- “I know that our menu has nearly 100 which I used to think was too much until our team proved me wrong.” (F)

1) Compartmentalized Menu

- “When I think about restaurant delivery and our menu, I eat my words because it's broken up. I think Female 2 mentioned how our menu is compartmentalized, and so we may have 100 or 90 somewhat entrées, but every page is a different restaurant. So at any given moment, I'm only being confronted with 10 or so.” (F)
- “But yes, as far as-- people aren’t confused. Everything is very organized. Things are-- you know, if you want sushi, it's on a separate page. With Cheesecake Factory, you know, spaghetti and general, Tsao’s chicken might be on the same page and that's really confusing. So, I think the way that we lay it out is very friendly to the patient.” (F)
- “Which is how it's kind of been set up or what we see it's divided into those specific restaurants.” (F)
- “We break the menu down by restaurants which makes it more manageable to our patients and family members. By compartmentalizing the menu, it breaks the number of selections into more manageable chunks.” (F)

2) Because of how we use leftovers

- “In the Restaurant Delivery model, we manage our waste by sending foods back and forth between the patient and retail areas. At the beginning of the lunch meal period, we start the

patient line with fresh food; fried rice is a good example. An hour later, we send the first batch to sell in the retail venue and give the patients a new fresh batch. We do this all day which gives fresh food to the patients and reduces waste by selling "leftovers" in our retail venues." (F)

3) Retail menu dictates number of entrees

- "I would say that the number that you can manage in your retail operations will dictate the number of entrees that you can manage. In our case it is 93. As we grow our retail program, our number will likely grow." (A)
- "The same items that we serve to our guests." (F)
- "We use items directly from our retail program." (F)

b. Room Service at large community hospital

- "Yeah, I was going to say 20 to 30." (F)
- "I think anything over 15." (A)
- "I was going to say 12." (F)
- "We have like 14 or something right now, 14 or 15." (F)

c. Restaurant Delivery at small community hospital

- "Around the 75 ballpark" (F)
- "About choices in the hospital, we take a lot of control away from patients and a lot of choices away. So I think this is a way that as an organization, we can provide them with some options that are an easier way to provide options than some of the medical ways that we have more difficulty giving them room to choose." (F)

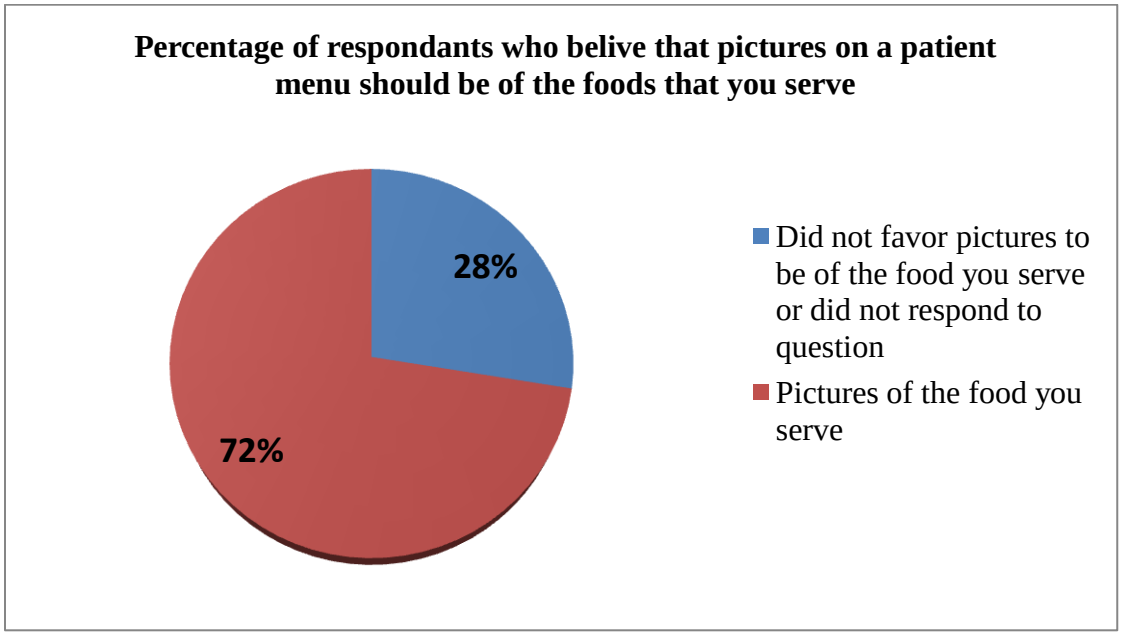
1) Pictures on patient menus

Many of the participants identified that food pictures should be placed on patient menus. Seventy-two percent of all participants commented that if pictures are to be placed on a patient menu, they should be of the foods that are being prepared for the patients
(See chart 2).

- “I like pictures. Adult learners learn by pictures.” (F)
- “Sometimes people order based on the picture. They'll say-- especially that big city page with the Berlin on it. They're all like "The one in the picture, the one-- I don’t know which one it is. I want the one in the picture." (A)
- “Our menu is our first impression to when a patient comes in to the hospital. And when they're able to flip through a 20-page menu with beautiful pictures of our food, I mean it’s not prop pictures that we pulled from the internet, but pictures are actually of our food. That is the first impression and to be able to go back to them and talk to them to compare the quality and say, "Yeah, this is great" and to actually say, "Yeah, that's a picture of actually what your food is going to look like," I think that's a huge thing for our patients.” (F)
- “You can have a professional photographer taking picture of your food that's going up to the patient.” (N)
- “I think the pictures help again with the patients who have a hard time reading. “ (N)

Figure 1

Percentage of respondents who believe that pictures on a patient menu should be the foods you serve



C. Traditional service model compared to on-demand

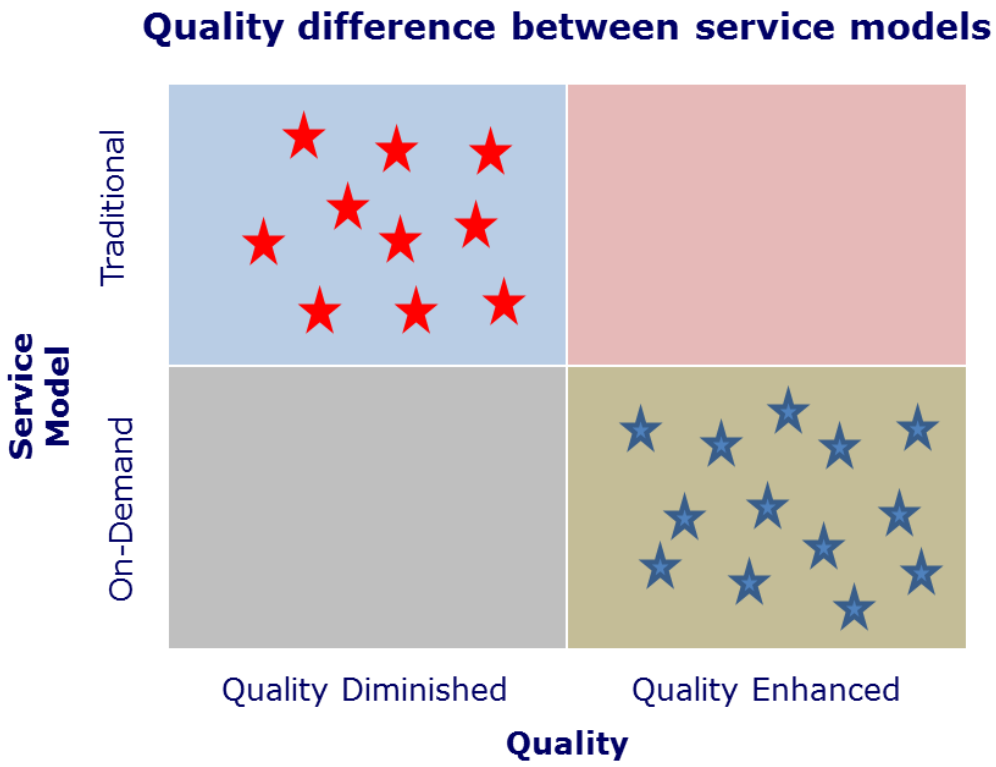
1) Traditional

2) On-demand

Focus groups participants were asked if there is a quality difference when comparing traditional to on-demand service models. There were a number of participants that identified the existence of a quality difference between the traditional and on-demand service models (Table 4).

Figure 2

Quality difference between service models



Quality difference when comparing traditional to on-demand service models

1. *Traditional*

- "Yeah, the first five units maybe get fresh food. The last unit, not so much." (F)
- "The food just sits out there, you know, they're not really kind of paying too much attention to it." (F)
- "300 portions of something the day ahead and re-heat it the day of service takes a toll on the quality." (F)

2. On-demand

- "The on-demand, you get what you want. It's still warm and, therefore, better quality." (A)
- "In an on-demand situation, you're making the food basically fresh, so it's going to have to be of better quality versus something that's set in hot well for, you know, two, three, four hours." (F)
- "Cooking the burger or whatever it is to order, it's hard to even compare traditional to either restaurant delivery or a room service model." (F)

II. Factors designed to decrease food service costs

Several questions were designed to determine if focus group participants felt that there were differences in the way that service models had an effect on food costs. Three themes emerged:

1. Food cost difference when comparing service models
    a. Traditional
    b. Room service
    c. Restaurant Delivery
2. Staffing difference among service models
    a. Traditional
    b. Room service
    c. Restaurant delivery
3. Food cost per patient meal

1. Food cost difference when comparing service models

There were several comments that represented an opinion on either the need for identifying cost containment or a comparison of one service model to others. The remaining comments were specific to one of the service models.

- *"Well, I think the answer is yes. And I think it's the ongoing demand for defining reimbursement and increasing cost at the same time."* (A)
- *"In a traditional tray line, milk is something you send out on a standard tray and it's what comes back and goes straight in the trash. So, just in that one quick easy example, you're demonstrating that an on-demand or restaurant delivery style can save a lot of money and help with food cost and waste." (F)*

    a) *Traditional service model*

- "With a traditional tray line method, there was a considerable amount of waste."
- "I believe food cost is greatly higher in traditional because you're cooking for that number and if that number is not met, you're having a lot of stuff that's thrown away."
- "So, a lot of times you're sending up multiple trays because you didn't get them what they wanted the first time, which you don't have with the room service or restaurant delivery model. (F)
- "I think food cost is definitely higher on the traditional." (N)

    b) *Room Service model*

- "With room service, you may have like a certain number of entrées like 20, but you're going to put some higher end items on there, but they're going to still be part of like the default rotation which is going to heighten it. So salmon is on there. There's going to be a lot of salmons going out the door, you know, through default or just because there's less items to choose from." (F)

- "If you have 10 to 20 entrées like in room service, your cost is going to be driven a lot more by those high-cost items with that smaller menu." (F)

c) Restaurant Delivery model

- "It works a lot better with restaurant delivery versus traditional because you don't have to put everything onto the trays and a lot of them they throw it and then your food cost is really high." (F)
- "We saw a big difference when we switched over to Restaurant Delivery in our compost bins. We didn't fill those compost bins up as quickly as we did before, so it made a big difference." (F)
- "With the restaurant delivery is that with there being so many different entrées, it allows us to put some like higher cost items on there, but they're not, you know, selected continuously throughout the day. So there is less use. (F)
- "When you've got something like, salmon or some higher end beef on the menu, with restaurant delivery, you may get a couple of orders a day, but it's still a very low number compared to a room service model." (F)
- "I don't have the exact number, but I know it was over $400,000 each of the last two years that we saved when compared to traditional service I think we're approaching $900,000 over the last two years which is a pretty astronomical number." (A)

2. Staffing difference among service models

Food service managers and hospital administrators were able to identify differences in staffing when comparing service models. The on-demand service models were seen as different when considering staffing needs.

a) Traditional service model

- "Traditional service takes less staff to run than Room Service" (A)

b) Room service model

- "Room service needs more staff than traditional trayline because you are making more entrees and need more people to make them" (F)
- "you do need to add staff if you're running a room service model" (A)
- "About 20% increase for room service from traditional." (F)
- "You do need to add staff if you're running a room service model." (F)

c) Restaurant Delivery service model

- "The reason we were able to do that here is that we combined the retail operation with our existing patient production operation. Instead of running two distinctly different production components we integrated it to one because we're already making great food in retail. We're making okay food in production, but we had two processes supporting in parallel, so we brought those together and we were able to create some efficiencies that are bringing those two processes together." (A)
- "From room service to restaurant delivery we did not add staff 'cause you already have them from retail." (F)
- "As I said before, we did a budget-neutral switch to Restaurant Delivery so that's huge especially going to administration asking for people or not being able to do what we did with the staff that we had in the building. It was pretty remarkable." (F)
- "With the restaurant delivery, you can serve more entrées with less staff basically." (F)
- "We didn't have to add any more staff. We just moved some people around." (F)

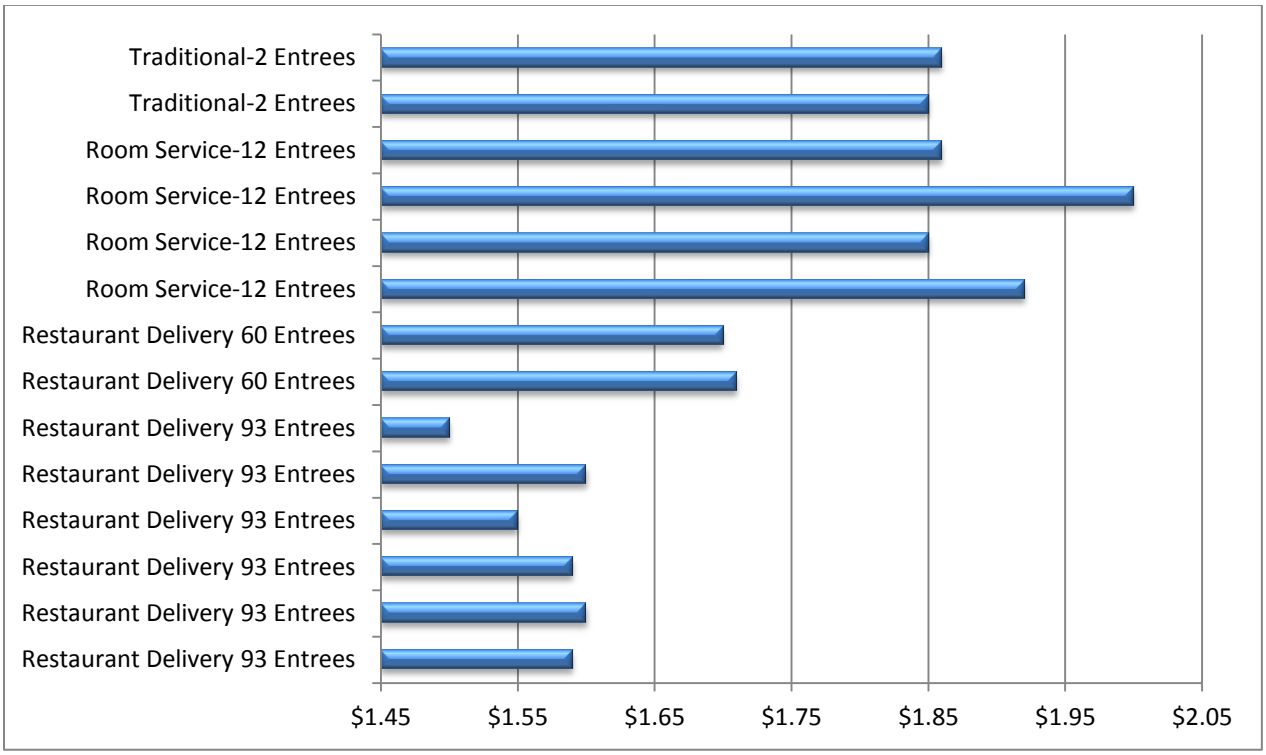
- "We made the conversion, I recall, very nearly budget-neutral to staffing. We had like one or two staff members to the call center to either the call volume." (A)

3. Current cost per meal

Focus group members were asked to recall the cost for a patient meal for the traditional service model. They were then asked to recall the cost of a patient meal as for the service model the facility is currently using. The number of entrees offered was determined by the patient menu currently offered at the facility. The costs for patient trays are displayed on Figure 3:

Figure 3

Patient Tray Cost by service model and number of entrees served



III. <u>Factors that increase patient meal satisfaction while decreasing food service costs</u>

Focus group participants were eager to share ideas that had been tried in the past to increase satisfaction while controlling costs. These individuals also had interesting ideas on how to move forward and continue to provide increased satisfaction while reducing costs.

1. Barriers to having increased patient satisfaction while controlling costs
2. Factors to help increase satisfcation while controling costs

1.Barriers to having increased patient satisfaction while controlling costs

Focus group participants identified a variety of potential barriers that can affect the goal of increasing patient satisfaction while controlling costs.

- "Yes, there are barriers to high patient satisfaction related to food cost. You could just buy the highest quality stuff and just not worry about your waste and just only focus on patient satisfaction? Sure. But, the two can work together." (A)
- "We have to control our food cost, you know, as managers, that's always a big focus for us. With restaurant delivery, we obviously didn't see a barrier in controlling our cost. To the other side is that we saw a decrease on our food cost by implementing this program." (F)
- "The piece I wanted to add and again it was going back to the nursing piece. It was a challenge. I mean they're all on board now, but we really had to do a big sell with nursing. This was a big change for them." (F)
- "We're in a pretty competitive healthcare market, three rather large hospitals within a few minutes of each other. We all have constraints with cost. It's just, are you able to do it with what you have?" (A)
- "The equipment too like we have. We're fortunate enough that we have a pretty good equipment budget and we're able to purchase certain pieces of equipment that really help make this possible and I think the pizza oven is a great example of that. " (F)
- "I think going back to what Male 1 says, it's just the physical layout of the hospital that expands to different locations, but the kitchen started over here, and the hospital expanded to here. " (F)

2.Factors to help increase satisfcation while controling costs

Asking participants to brainstorm about ideas that have yet to be tried resulted in a variety of interesting ideas that may prove to meet the goals of hospital food service programs.

- “I'm still a fan of the centralized commissary-type concept at least for our region for all the things that you can do behind the scenes whether that's the baking, the stocks, and soups, the basics, but not everything by any means, but a commissary to support the basics.” (A)
- “I think looking at some of those technology options that we have in front of us. Everybody has got a smartphone or virtually everybody has a smartphone. If we look at apps and things like that that bring it closer to the patient with their fingertips.” (N)
- “Talking about televisions, other things that we can do that are going to mean some one-time investments of product-- that may be present a barrier to an organization because they do not have capital dollars to make those investments, but I think that's-- the key is looking at some of those technology solutions.” (N)
- “I think every time one of our employees goes into a patient's room, it's an opportunity to increase patient satisfaction and I don’t know if we leveraged that very well.” (A)
- “So, we developed the sous-vide program. We actually went from a 6-ounce chicken breast to a 5-ounce chicken breast, which reduced our expenses. The chicken is just-- it’s remarkable.” (F)
- “I think one person being on the floor will be great if you can implement it with restaurant delivery. Basically a Goodwill Ambassador for your department there at all times to continue to sell your department and make it even better.” (F)

- "Healthcare is becoming patient-centered and patient-focused and, I mean, food is part of that and having them being able to choose things that they want. From a nutrition and food services perspective, it doesn't get much more patient-centered than that than giving them 100 different entrées to choose from and letting them pick what they want when they want 24/7, 365." (F)

Overall, three themes were identified from the analysis of five focus group: (1) factors associated with increased meal satisfaction, (2) factors designed to decrease food service costs and (3) factors that increase patient meal satisfaction while decreasing food service costs. Participants clearly articulated specific differences among the three service models that support the research question and sub questions proposed by the primary investigator.

CHAPTER 5: DISCUSSION

This dissertation began with a primary research question and 3 sub-questions.

Primary question:

- How can food service leaders develop service models that increase patient satisfaction while decreasing costs?

Subquestions:

- What are the factors associated with increased patient meal satisfaction?
- What factors decrease food service costs?
- What are the factors that facilitate increased patient satisfaction while decreasing food service costs?

The results are summarized in the following sections

Factors associated with increased patient meal satisfaction

Table 2

Factors Associated with patient meal satisfaction
Traditional service model disadvantages
· Foods held for extended periods compromising food quality
· Lack of selections for patients
· Meal ordering method
On Demand (room service and Restaurant Delivery) advantages
· Ability to order what you want, when you want it
· Foods produced to order are presented to patients at better temperatures
· The number of entrée selections are increased from the traditional service model for both room service and Restaurant Delivery programs
Restaurant Delivery advantages over room service
· The number of entrée selections are the highest with the Restaurant Delivery model with some hospitals recording nearly 100 entre choices
· Compartmentalizing the menu into distinct "restaurants" keeps patients from being overwhelmed with the number of entrée choices

Patient satisfaction is shown to be driven by a variety of factors. When comparing the Traditional food service model to that of two on-demand food service models, focus group participants were able to clearly differentiate these three programs.

The Traditional service model is identified to have poor food quality. The quality is described as being poor primarily because foods are prepared in bulk and held for several hours at temperatures above one hundred and forty degrees. Although this service model

does offer some advantages for scheduling and forecasting, the loss of quality that comes as a result of long holding times presents a significant deterrent. The Traditional service model also suffers from a lack of selections for patients. Limited variety is cited as a drawback because patients arrive at the hospital with a variety of tastes and cultural expectations that are difficult to meet in a menu with two entrée selections. The third issue that results in reduced patient satisfaction with the Traditional service model is the method in which foods are ordered. With this system, patients order meals as long as 24 hours in advance of the actual meal time. The movement of patients throughout a hospital, coupled with physician ordered diet changes and lost patient menus results in a large amount of meals that need to be returned to the kitchen to be remade. This delay in getting meals to hungry patients leads to frustrated and dissatisfied patients.

On demand service models have been shown to increase patient satisfaction. There are a variety of reasons for this improved service as perceived by patients. The primary reason cited was that patients have the ability to order foods that they are interested in when they actually have an appetite for them. This model also provides patients with foods that are at the appropriate temperature when a patient receives them. Because foods are ordered on an individual basis, the item is produced immediately and delivered within a short timeframe. Having foods produced in a manner similar to that of a restaurant provides patients with an experience to which they have become accustomed.

The number of entrée selections available to a patient is another aspect of the patient menu that has the ability to increase patient satisfaction. Focus group participants were asked what they consider to be a large number of entrée selections and how they manage the number of entrée selections on their menu. The participants using the Room Service

model identified that a large number of entrée selections was between 15 and 20. This number is a significant increase from the two-entrée selections seen in the Traditional service model. Individuals using the Restaurant Delivery service model in a small community hospital with roughly 80 entrée selections identified that 80 was a large number. Those who used the Restaurant Delivery model in a large academic medical center with roughly 100 entrée selections felt that 100 was a large number. The results of the focus groups indicate that the number of entrees that are being successfully produced dictates the number of entrée selections that are perceived to be optimal. Increased variety is a goal in hospital food service. Having the ability to provide more selections without changing the patient menu seasonally provides an opportunity to reduce expenses while increasing satisfaction.

The Restaurant Delivery model provides the largest number of entrée selections at between 80 and 100. The teams that operate this model feel that listing this large amount of entrée selections in a Traditional way would overwhelm patients and family members. They describe a method of breaking the number of entrees into specific "restaurants" in order to compartmentalize selections. This compartmentalization not only helps with preventing patients and family members from becoming overwhelmed, it also creates virtual destinations that patients and guests can visit during their stay. Nurses describe the process as an amenity that can be offered. The nurse visits a patient and asks what type of restaurant they usually enjoy. The nurse then directs the patient to the page on the menu that contains the desired cuisine. This restaurant takeout format has been shown to appeal to patient guests as well. The menu offers a preview of offerings at the hospital retail venues which can increase hospital revenue. Guests may also choose to order a

guest tray in order to enjoy social time with a patient. The largest hospital visited described how nursing directs guests to enjoy a meal together with patients. This guest tray program has resulted in improved relationships with nursing departments, increased patient satisfaction for meals and nursing, and an increase in revenue to the Nutrition and Food Services department. This facility currently reports $120,000 to $140,000 in guest meal revenue.

The Restaurant Delivery model which uses retail selections for the patient menu is only limited by the type and number of selections that are offered in the hospital retail venues. This creates more variety for patients. Lack of variety is often cited as a source of dissatisfaction for patients. Overcoming this Traditional shortcoming of hospital food service is accomplished by both on-demand food service models. The Restaurant Delivery model creates more variety than the Room Service model with the number of entrée selections reaching as many as 100.

Factors that decrease food service costs

Table 3

	Factors That Decrease Food Costs
Traditional service model	
Positive	· Decreased food cost - two comfort food entrees
Negative	· Increased food cost - large amount of waste from patient ordering system
Room Service Model	
Negative	· Increased food cost - expensive hotel style entrees
Negative	· Increased labor cost - more menu selections require incresed labor
Restaurant Delivery	
Positive	· Decreased food cost - cross utilization with retail
Positive	· Decreased food cost - large proportion of comfort foods chosen
Positive	· Decreased labor cost - cross utilization with retail

The Traditional service model offers entrée selections that are lower in cost than a Room Service program, but has its own set of issues that increase overall food costs. This model provides a large number of house selected patient trays. This provision increases waste and additional expense for items that are not desired or consumed. A good example of this is milk that is served as a standard on all breakfast trays. Many patients do not consume the milk sent and it is later discarded.

A review of patient tray expense comparing one Room Service and two Restaurant Delivery hospital programs revealed that the tray cost for the Room Service program is in line with the industry standard of $1.85. This expense is an increase when compared to that of the Traditional service model because there are more than two selections and the selections offered are more expensive. The Restaurant Delivery model hospitals recorded tray costs that were lower than that of a Room Service program. The program at a small community hospital recorded a patient tray cost of $1.70 while the program at a large academic medical center recorded an even lower cost of $1.53 per patient tray. Focus group participants proposed two reasons for a lower food cost with the Restaurant Delivery program as compared to that of a Room Service program. The first reason has to do with the cross utilization of foods between the patient and retail areas. Foods are prepared in retail venues and delivered to the patient kitchen for service. If within an hour, the hot held foods are not ordered, they are returned to the retail venue where they are sold to customers. The patient kitchen continues to receive fresh supplies throughout the day. This food production program produces a significantly reduced amount of waste than a system that produces different menu items for patients and retail customers. The second proposed reason is that the increased variety provides patients with more comfort

food selections than a Room Service menu. Although a Room Service menu offers more selections than the Traditional service model that provides only two entrees to choose from, Room Service programs have chosen to offer higher cost entrée selections as a means of giving patients more of a hotel amenity experience. While this approach has proven to increase patient satisfaction, it also increases food cost for hospitals. The Restaurant Delivery program offers the higher cost entrée selections, as well as a number of lower cost comfort food options. Patients appreciate the offer of boutique offerings like sushi and salmon. These same patients are choosing comfort food selections more often. Items like homemade chicken noodle soup and meatloaf with fresh mashed potatoes continue to be more popular than the boutique offerings.

Staffing in hospital food service departments was reviewed as part of this research. The Traditional and Restaurant Delivery models operate with a staffing model that uses production teams producing different foods but they operate at similar staffing levels. The retail team in a Traditional model produces foods for retail guests only. The retail team in a Restaurant Delivery model produces foods for retail guests, as well as for patients. Because the menu offers a large variety of items, each retail production team member needs to produce only a small amount more than typical production to accommodate patient needs. Both of these models use a patient production team that produces patient foods. The patient production team in a Room Service model requires additional production team members as the number of entrees increases from 2 to as many as 20. This increase in labor and the associated expense is most often cited as the reason that hospitals do not launch a Room Service program or decided to abandon the service model as a means of reducing hospital expenses.

Factors that facilitate increased patient satisfaction while decreasing food service costs

Table 4

Barriers to a Successful Program
· Equipment Needs
· Hospital Layout
· Nursing Engagement

Focus group participants identified a variety of barriers to a successful program that is capable of increasing patient satisfaction while reducing costs. Equipment needs and hospital layout are very important when considering a food service model. Lack of proper equipment limits the size and variety that can be offered on the patient menu. The physical layout of the facility can have the effect of increasing delivery time to patients. Extended delivery times affect food temperatures which are associated with low patient satisfaction. Hospitals without dedicated elevators or dumbwaiter systems are at a greater risk for negative food temperatures. The distance to nursing units may also be a concern as some hospitals have nursing units that are 12 to 20 minutes walking distance from the food production kitchen. Nursing engagement is the primary focus for those interested in launching an on-demand service model. Nursing is responsible for the direct care of patients including the oversight and timing of medications that in some cases are coordinated with meals. Diabetic patients are the primary concern to nursing team members when an on-demand system is under consideration. With a Traditional service model, patient meals are delivered at scheduled times. Nursing team members can time insulin doses based on these meal delivery times. With an on-demand service model, diabetic patients call for meals at times that may not align with their insulin doses which create concerns with nursing team members. Food service operators have developed

systems to notify nursing team members when a diabetic meal is delivered to a patient room so insulin can be administered.

Table 5

Improvements to Further Enhance Service Models
· Central Commissary
· Bedside Tablet Ordering
· Sous Vide Production
· Floor Ambasador

Participants brainstormed ideas to further improve food service models while increasing satisfaction and reducing costs. A central commissary system could be used to produce foods for a number of hospitals in a geographical region. The following are items that lend themselves to a commissary production system:

- Soups
- Sauces
- Desserts
- Jellos and puddings
- Gravies
- Salads
- Sandwiches
- Allergen free meals
- Research diet meals
- Braised meats

Foods can be produced, packaged and shipped in refrigerated trucks to participating hospitals. This system has the advantage of producing a consistent product while controlling costs.

The use of technology continues to improve service at many hospital services including food service operations. Bedside tablet ordering systems are being tested in several health care facilities and provide a flexible ordering platform for patients while

reducing the labor that would normally be required in the food service call center for order taking. Robot delivery systems have the potential to provide consistent delivery times and reduce the staff necessary for meal delivery. The *Sous vide* food production method has been used in several health care facilities (Bazulka, 2014). This method places food products in a reduced-oxygen, vacuum environment. The foods are cooked slowly in a water bath at a temperature that is controlled within a $1/10^{th}$ of a degree Fahrenheit. The advantages to the food service operation are:

- Improved consistency and quality – Since products are produced at prescribed temperatures and held at these temperatures, the end product is always of the best quality
- Food safety – controlled production times and temperatures can guarantee thermal death rates of harmful bacteria.
- Improved yield – Product yield is improved by 12-14% which decreases food cost
- Speeds of delivery – Foods are held at the final service temperature. Certain foods require roughly 2 minutes on a grill for color. This can reduce cooking times by as much as 10 minutes.

Improvements in service at the patient bedside have the benefit of increasing satisfaction. Traditional, Room Service and Restaurant Delivery service models all use host/hostesses to deliver completed patient meals to rooms. Meals are delivered to the patient and retrieved roughly one hour later. The problem with this model is that the patient may want a second cup of coffee or may have forgotten to request a condiment to go with the meal ordered. In this scenario, the patient needs to contact the nurse who would then contact food service. The requested item is then prioritized with other meals and can take up to an hour to be delivered. A floor ambassador program has the ability to create a better experience for patients. This program involves having a host/hostess assigned to a nursing unit for the entire work shift. The ambassador takes orders, assists with setting up meals, and coordinates special requests and missing items so the patient

does not have an extended wait time. All three of the hospitals that were part of the focus groups have trialed this program. Each achieved satisfaction increases and each have proposed the staffing increases necessary to take the program house wide.

Of the three service models studied, the Restaurant Delivery model is identified as the program that has the ability to increase satisfaction while still reducing costs. The Traditional service model does have the ability to manage costs, but does not satisfy patients. In contrast, the Room Service model does increase patient satisfaction but at an increased cost to the health care facility. The Restaurant Delivery service model was developed as a budget neutral alternative to Room Service. The model not only proved to maintain labor expenses, but has the added benefit of reducing the cost of foods to the department. These cost reductions have been possible while achieving satisfaction results that meet and exceed that of the Room Service model.

Despite several limitations to the study, data was gathered that suggests that on-demand models provide increased satisfaction compared to the Traditional service model. The Restaurant Delivery program delivers the increased satisfaction that is seen with the Room Service model while reducing expenses in labor and food cost.

What I learned from this study –

- Alternative approaches exist to achieve goals - For many years, the room service model was seen as the standard program designed to increase patient satisfaction

scores. Witnessing the feedback from the focus groups made it clear that alternative approaches exist that are capable of enhancing the patient experience and that these approaches can achieve these results while reducing departmental operating expenses. This is an important consideration in today's patient focused, financially constrained health care environment.

- People drive results, not programs – This study reinforced my understanding that a strong team can achieve greatness. Hearing from focus group participants about successes that occurred as a result of an open exchange of ideas between leaders and hourly team members renewed my focus on this important aspect of leadership.
- Compartmentalized menu selections – Separating menu offerings into restaurants compartmentalizes the selections in the Restaurant Delivery model. This was the idea when the program was conceived because of concerns of overwhelming patients with too many options. It has proven to be a very successful means of providing a great deal of variety but still making the program work in a manageable way for patients and nursing.
- Marketing matters- For years, I thought that producing the best food and giving excellent service would result in satisfied internal customers and patients. This assumption is far from true. An example from the focus groups was how many participants identified that the foods on the patient menu should be accompanied by photographs of the actual foods that will be produced and served, which reinforced the importance for marketing the menu to the patients/consumers, an area of food service long neglected because it has not been considered to be a useful tool in achieving service goals.

Areas for future research –

- Production methods – As large academic medicals centers partner with and acquire hospitals, there will be a need to consider an approach to produce larger menus that can achieve consistent quality. This needs to be accomplished without the addition of labor and ideally with a reduction of labor across the health care system. The development of a model for the cook chill/modified sous vide rethermalization program that was tested as part of this study can benefit with additional research. Food safety and quality issues are just two of the areas to consider.
- Food and labor cost study – to date, a study has not been conducted that reviews the food cost in relation to labor costs per patient meal for a variety of service models. Focus groups and the literature in this study identify that the room service model requires more labor than the traditional service model but this labor cost has not been quantified. The focus groups also identify the Restaurant Delivery program as not needing additional labor to operate. A study comparing a room service model and a Restaurant Delivery model of similar hospital type and bed size would provide data necessary for future considerations.
- Optimal number of entrée selections – This study identified a large number of entrees as a means to increase patient meal satisfaction while reducing expenses. A study of the optimal number based on hospital size would be very helpful.
- Creation of ethnically diverse menus – As the United States continues to become more diverse, hospital food service operators will need to provide options that meet the needs of a variety of different populations. Having a menu with many options

allows for more opportunities to create menu selections for specific populations. This diversification can extend to menu options for unique populations like food allergies/sensitivities.

Not what I studied -

- <u>This study did not</u> –
    - Quantify patient satisfaction scores related to different food service models.
    - Quantify savings for different food service models.
    - Complete a review of the cook-chill service model.
    - Identify how a Restaurant Delivery food service model would operate in a community hospital that is not affiliated with a health care system.

CHAPTER 6: PLAN FOR CHANGE

Despite several limitations to this study, data were gathered that suggest a preferred service model. This study, with its supporting review of the literature suggests the following:

- The traditional food service model provides hospitals with meals at low cost. The drawback is that patient satisfaction scores are low.
- The room service model has been shown to increase patient satisfaction. The drawback is that the increase in patient satisfaction requires additional expenses for labor and food cost.
- The Restaurant Delivery service model is able to meet the needs of increased patient satisfaction with reduced expenses for labor and food cost.

These results support a plan for change that will incorporate the Restaurant Delivery service model shown to increase patient satisfaction while decreasing costs at all UNC Health Care hospitals. The UNC Health Care system is made up of ten hospitals throughout the state of North Carolina. They include:

- UNC Medical Center – Chapel Hill, NC
- Rex Health Care – Raleigh, NC
- Chatham Hospital – Siler City, NC
- Caldwell Memorial Hospital – Lenoir, NC
- Pardee Hospital – Hendersonville, NC
- Johnston Health – Smithfield, NC
- Hillsborough Hospital – Hillsborough, NC
- High Point Hospital – High Point, NC
- Nash Hospital – Rocky Mount, NC

Since 2012, the Restaurant Delivery service model has been implemented in four of the hospitals in the health care system:

- UNC Medical Center
- High Point Regional
- Hillsborough Hospital
- Chatham hospital

The plan for change will include converting the remaining UNC Health Care system hospitals to the Restaurant Delivery service model:

- Rex Health Care – Raleigh, NC
- Caldwell Memorial Hospital – Lenoir, NC
- Pardee Hospital – Hendersonville, NC
- Johnston Health – Smithfield, NC

- Nash Hospital – Rocky Mount, NC

Making this change will require a considerable effort on the part of the food service managers that are currently operating in these hospitals. Convincing stakeholders of program benefits is essential to success. Prior observations from the primary investigator, a review of the literature and information from the focus groups completed in this study all identified issues raised in the past by stakeholders:

- Transition expenses for program launch
- Ongoing expenses for program use
- Employee engagement scores
- Nursing issues
    - Patients on specialized diets receiving foods between medication passes
    - Time nurses would need to spend with patients on such a large menu
- Patient satisfaction scores
- Disruption of services during program launch
- Loss of retail revenue
- Potential labor increases for program

The transition team for these program launches will complete a slide deck that will address these issues with statistics from prior launches. This team will be made up of managers from Nutrition and Food Service who have been involved in prior program launches, a Nursing representative and a Vice President from the first program launch. This team will address concerns from prior launches, as well as concerns that were specific to the size and scope at the hospital that is being proposed for launch.

Kotter's 8 steps of change model will be used (Kotter, 1996). This model has been used to create and sustain change in organizations for nearly thirty years. The steps are not necessarily linear but all steps do need to be accomplished for success. The steps are as follows:

1. Create a sense of urgency
2. Building a guiding coalition
3. Form strategic vision and initiatives
4. Enlist a volunteer army
5. Enable action by removing barriers
6. Generate short term wins
7. Sustain acceleration
8. Anchoring change into the culture

Each of these steps will be reviewed as they relate to the implementation of the Restaurant Delivery service model at all UNC Health Care system facilities Table (6).

Table 6
Kotter 8 steps of change – implementation of Restaurant Delivery program

Kotter Change Step	*What to do*	*Stakeholders*
1. Create a sense of urgency	Show link between poor food quality, patient satisfaction and threats to reimbursement	Chief financial officer, Chief nursing officer, Chief medical officer, Chief executive officer
2. Building a guiding coalition	Food service director coalition	Chief financial officer, Chief nursing officer, Vice presidents, Food service managers from initial program launch,
3. Form strategic vision and initiatives	UNC Restaurant Delivery model, Operations manual, Slide deck for program launch explaining advantages that will offset potential pitfalls	Food service managers, Hospital administration
4. Enlist a volunteer army	Hourly team members used to train at new program launces and daily huddles	Hourly team members, Food service managers, Nursing,
5. Enable action by removing barriers	Nursing partnership	Hospital Administration
6. Generate short term wins	Identify potential barriers to change (Cost, disruption of service, employee engagement, patient satisfaction and loss of retail revenue). Bonus plan and Spirit lifters	Food service managers, Food service director
7. Sustain acceleration	Satisfaction score tracking and Patient meal rounding	Food service managers, Food service director
8. Anchor change into the culture	Carolina care award	Hospital Administration

Create a sense of urgency

Hospital reimbursement will change with the adoption of the PPACA and will be based in part on HCAHPS survey results for overall hospital rating scores. This reimbursement change has created a sense of urgency for hospital food service departments that affect the overall hospital rating score. Shifting hospitals not currently using Restaurant Delivery to this model will help to achieve higher overall hospital rating scores.

Hospital leaders will first need to be convinced that a restaurant style menu is the right choice for spending limited health care dollars. A strong business case must be presented outlining any payback of capital investments necessary for future program launches. The Chief executive officer, Chief financial officer, Chief nursing officer and Chief medical officer are key decision makers that may raise objections and show concern for potential pitfalls. A storyboard will be presented to this group outlining concerns from prior launches. Patient satisfaction score increases, food expense decreases and labor expense decreases will be presented in the storyboard. Capital payback for the program launch must come in the form of a reduction in expenses within the first year regardless of hospital size.

The launch of this program in 2012 at the UNC Medical Center required a capital investment of $200,000 for equipment and construction. The payback for this capital was achieved within six months. The total three year food cost savings was $1,150,000. Creation of a program that decreases food cost, does not require additional labor to implement/maintain, and increase Press Ganey patient satisfaction scores to the 99th percentile for meals proved the financial and program effectiveness of the model.

Admittedly, this program is easiest to administer at large hospitals because these facilities have more retail venues to support the cross utilization of meals to the patient program. Similar savings can be achieved as a percentage of expenses if production methods are manipulated to meet program needs. Examples of such methods follow:

- In mid-sized hospitals, cook-chill technology is necessary to increase the number of entrees offered. In this scenario, foods are produced on the day that they are being

offered as the retail special. These foods are then chilled and portioned individually for later patient use. Tight production forecasting is necessary to maintain the savings found in programs of larger hospitals.

- Small hospitals of 100 beds or less offer the greatest challenge. A modified cook-chill and sous vide rethermalization technology is necessary to increase the number of entrees offered. In this model, foods are produced and individually vacuum sealed. Once sealed, these foods are frozen. When an item is ordered by a patient, the menu selection is placed in a circulating water bath at 170 degrees farenheight for 20-24 minutes. This production method allows for a menu of more than 30 entre selections while maintaining inventory levels and reducing waste.

Building a guiding coalition

The results seen in the initial Restaurant Delivery launch created the guiding coalition that supported launches of the program at three other hospitals in the health care system. The chief financial officer, director of nursing and two vice presidents at the large academic medical center became the drivers for the three program launches that have occurred since. In addition to executive leadership support, the food service director and the team that created the initial program became the coalition for change in all three additional launches. Having a group of dedicated leaders that can move the program forward will act as a model for future program launches. Supervisors and (eventually) hourly team members will be added as part of the volunteer army that will be enlisted in step 4.

Form strategic vision and initiatives

The strategic vision and initiatives were developed with the launch of the program in 2012. This model has been tested with three successive implementations at hospitals in the UNC Health Care system. The model was also implemented at an academic medical center in California. The guiding coalition will be better able to navigate the challenges of additional rural and small community hospitals because they have experience tailoring the program to meet the needs of rural and small community hospitals during these launches in the past two years.

The development of an operations manual to be used to guide the strategic vision and initiatives is essential to ensuring that programs are launched in a consistent manner throughout the enterprise. Photographs and step by step instructions are beneficial when training hourly team members. This approach is successful in holding program leaders and those who produce and serve meals accountable to standards.

Enlist a volunteer army

The hourly and management teams at the four Restaurant Delivery hospitals have developed a culture of change that ensures success when implementing new programs. The hourly team members at these facilities offer assistance in training new team members. The management teams coordinate schedules that ensure programs are implemented at the hospital receiving the new program while maintaining operations at the hospital that is offering the support.

This model proved to be effective with prior program launches because team members who actually perform the operations are training new program participants. Often times, this exchange of ideas at the hourly team member level helps to create a sense of ownership. It has also been found to create new and innovative approaches to program issues that are faced in all hospital food service departments.

Enable action by removing barriers

The launch of additional hospitals will require a strong partnership with nursing leaders, front line nurses and allied health providers. The success of any initiative involving patient feeding requires a strong connection to and communication plan with nursing. The variety of specialized diets and feeding protocols has a direct effect on the work flow of nursing team members. In prior launches of the Restaurant Delivery program, there were many barriers to overcome. For nursing, the development of protocols for handling special diets and timing for medications that require meals were the primary concerns. The time nursing would need to spend assisting patients with such a large menu was the secondary concern. The Nutrition and Food Service team developed protocols for specialized diets and a script explaining how a compartmentalized menu that is also used in retail venues actually reduces contact time with nurses assisting patients to make menu selections. The Nutrition and food services team then launched a communication plan that reached nurses working all shifts. Nurses were then able to better support the change as the partnership developed. In addition to the nursing concerns, hospital administrators involved in the four prior implementations of the Restaurant Delivery program identified a number of concerns:

- Transition expenses for program launch
- Ongoing expenses for program use
- Employee engagement scores
- Nursing issues
    - Patients on specialized diets receiving foods between medication passes
    - Time nurses would need to spend with patients on such a large menu
- Patient satisfaction scores
- Disruption of services during program launch
- Loss of retail revenue
- Potential labor increases for program

The original launch required that the Nutrition and Food Service Director develop a plan to address each of these issues. This individual was responsible to report results on a monthly basis. For the launches that occurred at the three additional hospitals, a coalition of members from the original launch team developed. This team was made up of managers from Nutrition and Food Service, a Nursing representative and a Vice President. This team addressed concerns from prior launches, as well as concerns that were specific to the size and scope at the hospital that was being launched.

An example of this partnership occurred in the UNC Medical Center and has proven to be effective with later launches. A nursing unit partnered with the Nutrition and Food

Service Director to develop a program that reduced the time that nurses needed to spend contacting food services with patient requests. With this program, nurses would either instruct a patient on how to order a meal or call for a meal themselves. This structure was a change from having to enter meal requests into the electronic medical record. The program had an additional benefit of reducing the amount of food service labor necessary to support patient meal ordering and resulted in improved patient satisfaction.

Generate short term wins

Linking spirit lifters with satisfaction increases has been a successful strategy of the four prior implementations. Thus this strategy will be used for additional implementations. The UNC Medical Center has developed and implemented a performance based bonus plan. The plan is that this approach will be launched in the affiliate hospitals. This plan has been successful at providing incentives over the course of 12 months, driving exceptional results.

Regular communication of where the department and facility are in relation to meeting the hospital goals has proven to help teams feel the sense of accomplishment that is necessary during a program launch. In addition to the bonus plan, small spirit lifter campaigns maintain excitement. Random prize drawings with small gifts (gas cards, gift cards and movie tickets) have proven to help managers show their appreciation to hourly team members for meeting program goals.

Sustain acceleration

Daily reviews of satisfaction scores are an effective method of maintaining a focus on program goals. Having knowledge of where the satisfaction scores are trending provides teams with an opportunity to self-correct if the program begins to lose effectiveness. Managers in food service departments will perform daily rounding with patients. This provides teams with immediate feedback as issues arise.

All of the facilities that are currently using the Restaurant Delivery model currently have programs in place that require managers to review patient satisfaction scores each day before the breakfast meal period is completed. This requirement has enabled the teams to act on the information they have received. If there is a drop in scores, managers can see where the program may have varied from standards. If scores increased, managers can provide positive reinforcements to hourly team members.

Anchoring change into the culture

The UNC medical center acted as a model that successfully implemented, sustained and anchored this program into their culture. The program was then successfully repeated in three smaller affiliate hospitals to ensure scalability. Using this success as a model, other hospitals in the health care system that will implement the Restaurant Delivery program will have a model to follow for leaders. The Carolina Care award is a tool that has been used successfully at the UNC Medical Center and can be used in successive hospitals. This program identifies specific patient units that have made significant increases to patient

satisfaction using an interdisciplinary approach. The unit is identified with a plaque and recognized on the hospital intranet.

The development of a service culture that rewards collaboration can be an effective way to ensure that changes are anchored at the health care facility. A program that has involved team members from the top of the organization through all layers ensures a greater likelihood of success. This hardwiring of an organization lays the groundwork for successive programs that can further enhance the patient experience.

When considering a plan for change based on the results of this study, the principles applied in the Harvard Business Review article titled "In Praise of the Incomplete Leader" were also observed.

Sensemaking - interpreting developments in the business environment

The team at the UNC Medical Center was well aware of where the health care market was heading when they began to develop the Restaurant Delivery program in 2011. The notion that a program must meet financial as well as patient satisfaction targets was not yet embraced in many hospital markets. The leadership at UNC Health Care provided an environment where risk was supported as long as it aligned with the mission of the organization. Knowing that the program needed to be implemented and paid for in less than one year was the basis for approving the change. Increasing patient satisfaction was necessary as part of this change.

Relating - building trusting relationships

This program was possible because leadership was aligned with managers and managers aligned with hourly team members. Convincing a team of more than 300 hourly team members that they could create and implement a menu with nearly 100 entrees for 800 patients, 24 hours a day would be impossible without a culture of cooperation and trust. This culture was apparent in all of the focus groups that were conducted. Hospital administrators and nursing leaders were equally impressed with the relationship among Food Service team members and with nursing and other hospital departments.

Visioning - communicating a compelling image of the future

Daily huddles and weekly management meetings provided an environment that cascaded information from the top down. This provided opportunities for exchanges of ideas that allowed the program to change quickly in order to achieve goals. Having completed the initial launch at the UNC Medical Center was an effective way to communicate the vision at launches that followed. The plan for change involves additional launches of this program that will also benefit from this vision.

Inventing - coming up with new ways of doing things

The idea that no one else had implemented a model similar to Restaurant Delivery provided the team with an entrepreneurial environment. This inventive culture allowed team members to feel that no idea was too small or insignificant to be considered. Many aspects of the program came from on the spot brainstorming sessions. Each day brought changes as

the program advanced to the program that it is today. Even after the program was launched and had achieved financial and patient satisfaction goals, the team continues to create novel approaches to thrive and stay ahead of the industry.

The implementation of the Restaurant Delivery program at UNC Health Care system hospitals will help to increase patient satisfaction while reducing expenses. Other health care organizations may consider the recommended findings from this study There has been a steady progression of improvements in food service models designed to provide meals for patients that not only meet nutritional guidelines but serve in a financially viable manner while satisfying patients. This latest iteration of a food service model has proven to continue to promote excellence in patient care.

APPENDIX A: QUESTIONNAIRE

Questionnaire

Introduction

My name is Angelo Mojica and I am the director of Nutrition and Food Services at the University of North Carolina Medical Center. Thank you for taking the time to participate in this focus group. This session will take 90 minutes to complete. I respect your commitment to this project and will be sure to finish on or before the 90 minutes. The focus of this inquiry is to determine what the drivers of patient satisfaction are, and how food service departments can continue to manage excellent care in a difficult financial environment and share best practices across the healthcare industry. I hope that the information you share will help to make the meal experience better for our patients and others.

Let's start by getting to know one another. On a sheet of paper that each of you has, I would like for you to draw a pig. Make it as detailed as you like. In 5 minutes, we will talk about what you have drawn.

I want to define a few service models before we begin our session

- A traditional heat and serve model is one in which meal selections are made the day ahead of service and the food is prepared and sent to patients from a trayline at scheduled meal times.
- A room service model is an on demand system in which patients can order from a menu with as many as 20 entrée selections. The meals are produced when ordered and delivered immediately.
- A Restaurant Delivery model is very similar to a room service model with the exception of the menu size and scope. The menu offers between 80 and 100 entrée selections and these selections are compartmentalized into distinct "restaurants".

Now for our first question:

1. Compare traditional heat and serve to on demand service models like room service or Restaurant Delivery. What are the advantages and disadvantages of both?
2. Is there a food quality difference between traditional heat and serve and on demand service models? Please explain the reasons for your answer.
3. Are there staffing implications of an on demand service model as compared to a traditional heat and serve model? Please explain your answer.
4. Is there a difference in food cost associated with an on demand service model as compared to a traditional heat and serve model? Please explain your answer.
5. Does the choice of service model have an effect on patient satisfaction? If so, please describe your reasons.
6. What is the current cost per patient meal at your hospital excluding supplements?
7. What do you consider to be a large number of entrée selections on a patient menu? Why?
8. In the development of a patient menu, what strategies have you used to manage the number of entrée selections? Which succeeded and why? Which failed and why?
9. In the development of a patient menu, what strategies have you used to determine the type of entrees that you will offer?
10. What implications does the type of entrees that you offer have on how the department is staffed and managed? Which strategies worked, Which did not work? Why?
11. How important are the following when considering the choice of service model
    a. Construction necessary for the change
    b. The layout of the hospital
    c. Staffing

Now let's talk about the menu itself

1. Describe the types of patient menus available and the advantages/disadvantages of each?

Prompt –

   Paper menu
   Reusable menu
   Disposable
   No menu – bedside orders
2. What are your thoughts about pictures on a patient menu?
3. If food pictures are used where do you think they should come from?

Prompt

Clip art
Internet photographs
Other

Finally, let's talk a bit about challenges for food service professionals that are interested in increasing patient satisfaction while reducing expenses.

1. Are there barriers to having increased patient satisfaction while controlling costs? Please describe these in detail?

2. What factors could help with the adoption of patient satisfaction increases while controlling costs?

3. Please think back to programs that have been implemented in your facility in the past. What strategies for improving patient meal satisfaction and controlling costs have been tried? Which have succeeded, which have failed, and why?

APPENDIX B: IRB APPROVAL

University of North Carolina-Chapel Hill

Consent to Participate in a Research Study

IRB Study # 14-2493

Consent Form Version Date: _____

Title of Study: Factors associated with increased hospital meal satisfaction and the leadership implications for food services organizations

Principal Investigator: Angelo Mojica

UNC-Chapel Hill Department: Health Policy and Management

Co-Investigators:

Funding Source:

Study Contact:

What are some general things you should know about research studies?

You are being asked to take part in a research study. To join the study is voluntary. You may refuse to join, or you may withdraw your consent to be in the study, for any reason, without penalty.

Research studies are designed to obtain new knowledge. This new information may help people in the future. You may not receive any direct benefit from being in the research study. There also may be risks to being in research studies.

Details about this study are discussed below. It is important that you understand this information so that you can make an informed choice about being in this research study. You will be given a copy of this consent form. You should ask the researchers named above, or staff members who may assist them, any questions you have about this study at any time.

What is the purpose of this study?

The purpose of this research study is to understand the factors associated with increased hospital meal satisfaction and the leadership implications for food services organizations

How many people will take part in this study?

If you decide to be in this study, you will be one of approximately 28 people in this research study, which is being conducted across the UNC Health Care system. All participants were chosen based on their participation in a food and nutrition services department in one of the UNC health Care facilities.

How long will your part in this study last?

Your participation in this focus group will last approximately two hours.

What will happen if you take part in the study?

The group will be asked to discuss a variety of subjects related to meal service in the health care setting. No questions will be directed to you individually, but instead will be posed to the group. You may choose to respond or not respond at any point during the discussion. The focus group discussion will be audiotaped and videotaped so we can capture comments in a transcript for analysis.

What are the possible benefits from being in this study?

Research is designed to benefit society by gaining new knowledge. You may not benefit personally from being in this research study.

What are the possible risks or discomforts involved from being in this study?

We do not anticipate any risks or discomfort to you from being in this study. Even though we will emphasize to all participants that comments made during the focus group session should be kept confidential, it is possible that participants may repeat comments outside of the group at some time in the future. Therefore, we encourage you to be as honest and open as you can, but remain aware of our limits in protecting confidentiality.

How will information about you be protected?

Every effort will be taken to protect your identity as a participant in this study. You will not be identified in any report or publication of this study or its results. Your name will not appear on any transcripts; instead, you will be given a code number. The list which matches names and code numbers will be kept in a locked file cabinet. After the focus group tape has been transcribed, the tape will be destroyed, and the list of names and numbers will also be destroyed.

Will you receive anything for being in this study?

You will not receive anything for taking part in this study.

Will it cost you anything to be in this study?

There will be no costs for being in the study.

What if you are a UNC employee?

Taking part in this research is not a part of your University duties, and refusing to participate will not affect your job. You will not be offered or receive any special job-related consideration if you take part in this research.

What if you have questions about this study?

You have the right to ask, and have answered, any questions you may have about this research. If you have questions, or concerns, you should contact the researchers listed on the first page of this form.

What if you have questions about your rights as a research participant?

All research on human volunteers is reviewed by a committee that works to protect your rights and welfare. If you have questions or concerns about your rights as a research subject you may contact, anonymously if you wish, the Institutional Review Board at 919-966-3113 or by email to IRB_subjects@unc.edu.

Participant's Agreement:

I have read the information provided above. I have asked all the questions I have at this time. I voluntarily agree to participate in this research study.

_____

_____ _____

Signature of Research Participant Date

_____

Printed Name of Research Participant

_____ _____

Signature of Research Team Member Obtaining Consent Date

_____

Printed Name of Research Team Member Obtaining Consent

APPENDIX C: SURVEY

Survey

This brief survey is designed to find out more about those who are participating in these focus groups. This information will be used to guide the research and create change that will help enhance hospital food service. I am not looking to obtain information that will identify you personally. All surveys will be placed in a sealed envelope and tallied only after all focus groups are completed by a faculty member from the Health Policy department.

1. What is your role at UNC Health Care?
    a. Administration _____
    b. Nursing _____
    c. Food Service
        i. Director _____
        ii. Patient Services _____
        iii. Production _____
        iv. Clinical _____
        v. Retail _____
        vi. Administrative support _____

2. What is your gender?
    a. Male _____
    b. Female _____

3. How long have you been working at UNC Health Care?

    a. 0-5 years _____

    b. 5-10 years _____

    c. 10-15 years _____

    d. 15-20 years _____

    e. > 20 years _____

4. Education

    a. High School Diploma _____

    b. Associates Degree _____

    c. Bachelors Degree _____

    d. Masters Degree _____

    e. PhD or other Terminal degree_____

5. How many food service models have you experienced in your career (traditional, Cook-chill, Pods, Room service, Restaurant Delivery?

    a. 1 _____

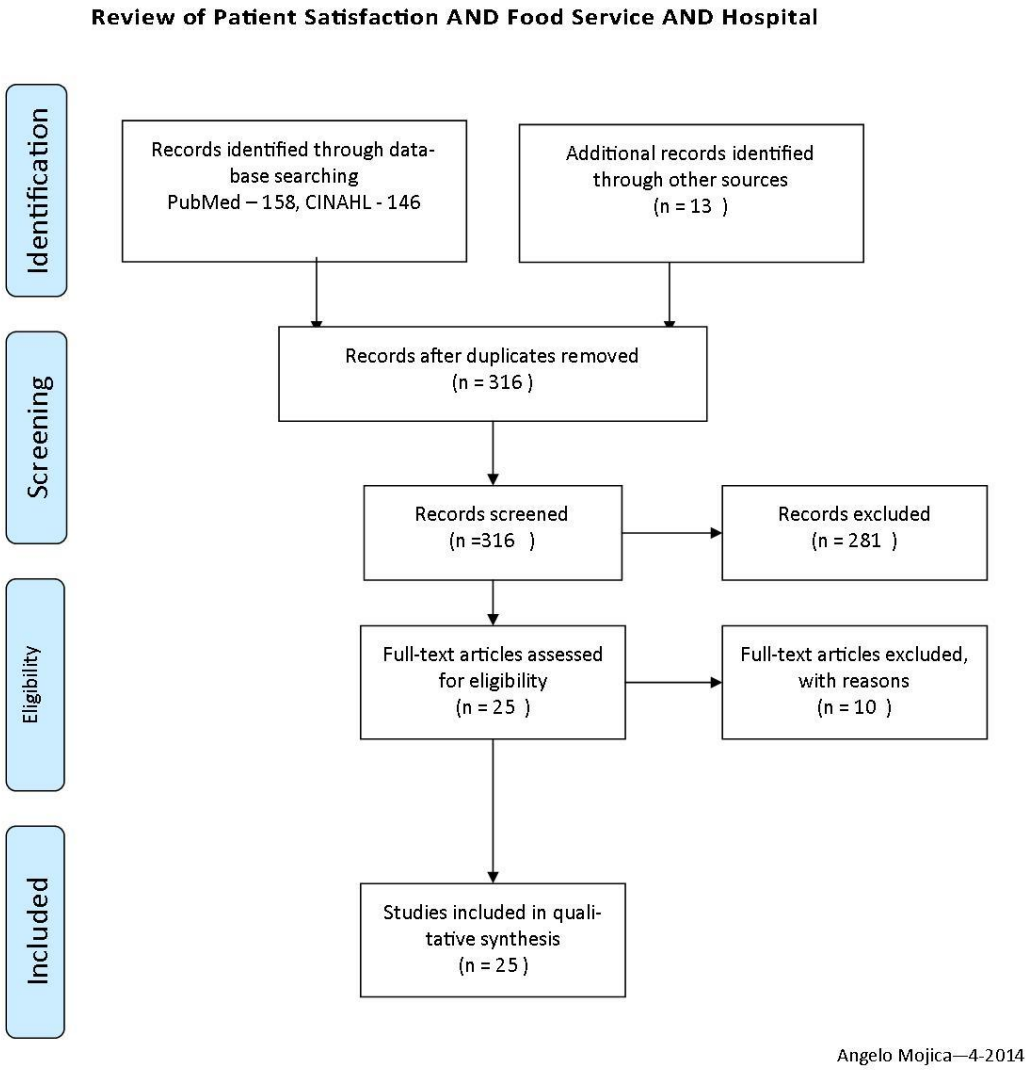
    b. 2 _____

    c. 3 _____

    d. 4 _____

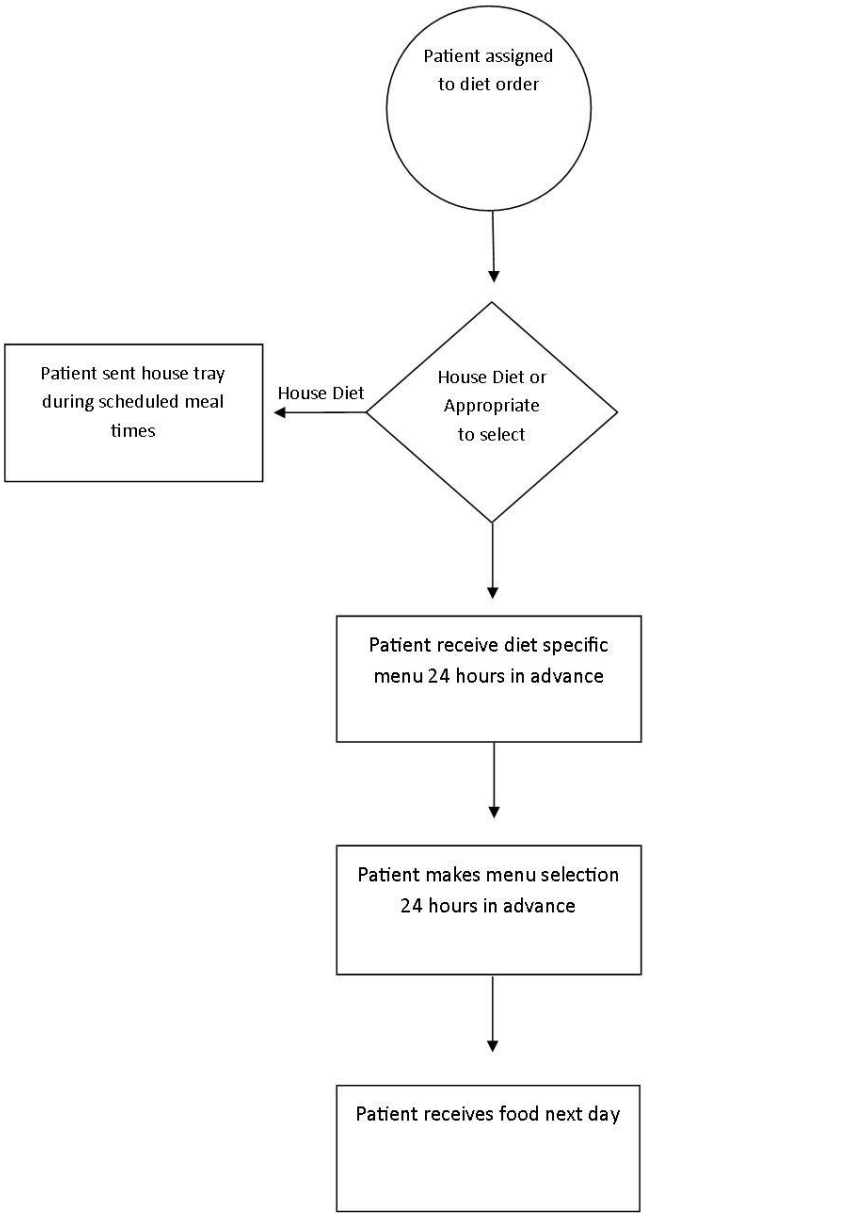
    e. 5 _____

APPENDIX D: LITERATURE REVIEW SEARCH RESULTS



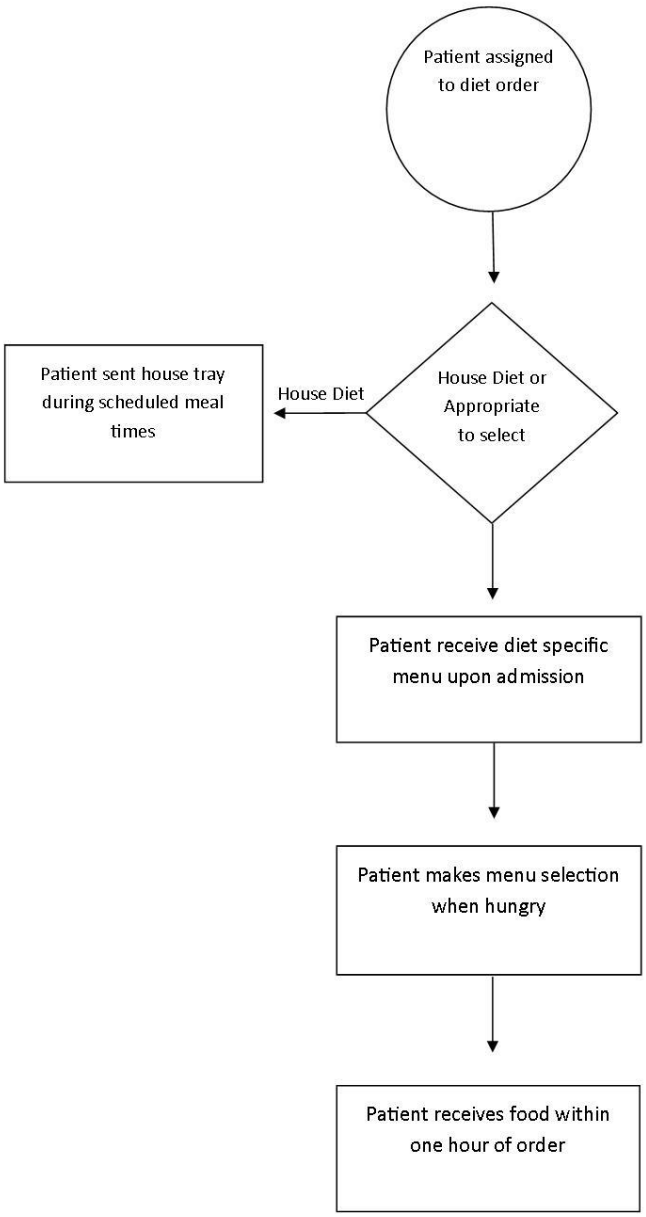
APPENDIX E: FOOD SERVICE MODELS

Conventional Hospital Food Service (Cook-Serve)



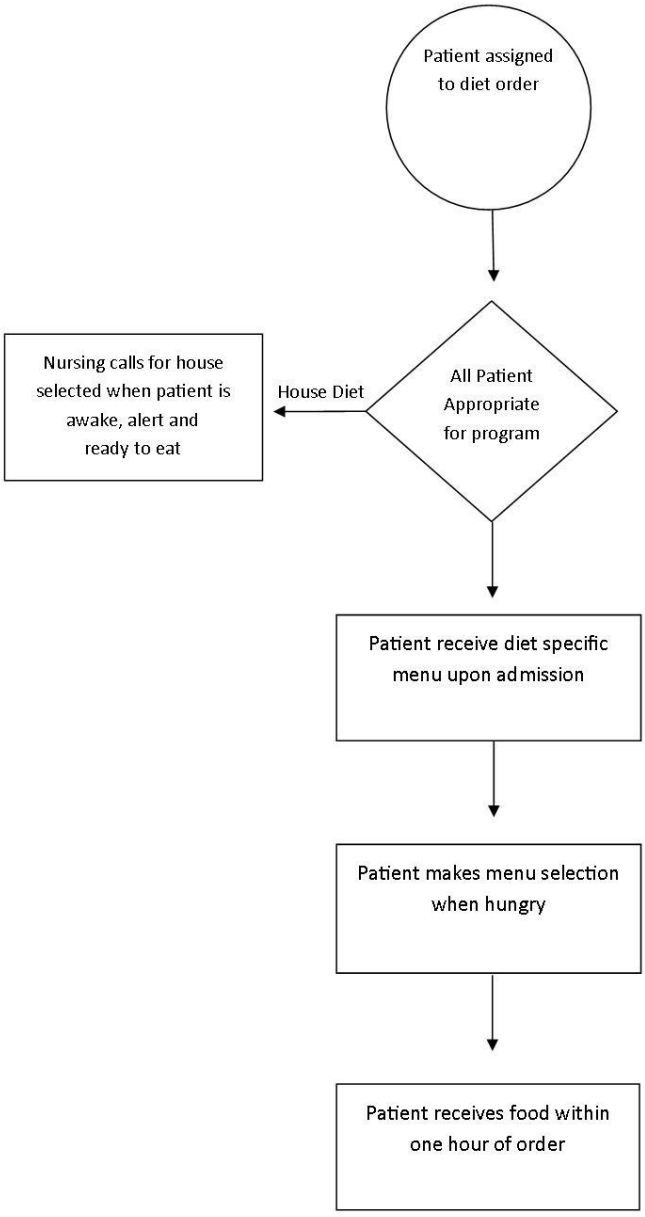
Angelo Mojica—4-2014

Hospital Food Service Room Service Model



Angelo Mojica—4-2014

Hospital Food Service Restaurant Style Model



Angelo Mojica—4-2014

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