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Irwin Army Community Hospital has a means to measure patient satisfaction, however, it does not measure the customers' perceptions and expectations within multiple dimensions of quality of care. The purpose of this study was to explain whether the customers' overall satisfaction and intention to return was a function of the customers' perception of quality and if this meets his or her expectations. A sample of 505 beneficiaries were surveyed. The sample was stratified into six different groups: active duty females, active duty males, dependent females, dependent males, retiree females and retiree males. A multiple linear regression analysis was utilized to predict which dimension influenced overall satisfaction. Results showed the regression equations for each dimension within the beneficiary categories were highly significant. A one-way analysis of variance (ANOVA) test was used to assess the differences of the beneficiary categories and their intention to return to Irwin Army Community Hospital if they had a choice. The results indicate that a difference exists between the beneficiary category's intention to return. Beneficiaries overall are moderately satisfied with the quality of care received at Irwin Army Community Hospital.

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IN HEALTH CARE ADMINISTRATION

MEASURING QUALITY: AN ANALYSIS OF PERCEIVED QUALITY AT IRWIN ARMY COMMUNITY HOSPITAL AND THE CUSTOMER'S INTENTION TO RETURN

A GRADUATE MANAGEMENT PROJECT

SUBMITTED TO THE FACULTY OF

BAYLOR UNIVERSITY

IN PARTIAL FULFILLMENT OF REQUIREMENTS FOR THE DEGREE OF

MASTER OF HEALTH CARE ADMINISTRATION

BY

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ABSTRACT

Irwin Army Community Hospital has a means to measure patient satisfaction, however, it does not measure the customers' perceptions and expectations within multiple dimensions of quality of care. The purpose of this study was to explain whether the customers' overall satisfaction and intention to return was a function of the customers' perception of quality and if this meets his or her expectations. A sample of 505 beneficiaries were surveyed. The sample was stratified into six different groups: active duty females, active duty males, dependent females, dependent males, retiree males and retiree females. A multiple linear regression analysis was utilized to predict which dimension influenced overall satisfaction. Results showed the regression equations for each dimension within the beneficiary categories were highly significant. A one-way analysis of variance (ANOVA) test was used to assess the differences of the beneficiary categories and their intention to return to Irwin Army Community Hospital if they had a choice. The results indicate that a difference exists between the beneficiary category's intention to return. The findings of this study are consistent with the findings of previous studies and measures of patient satisfaction. Beneficiaries overall are moderately satisfied with the quality of care received at Irwin Army Community Hospital. The retired beneficiaries and their dependents are the most satisfied with the care received.

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CHAPTER I - INTRODUCTION

Conditions Which Prompted The Study

The Department of Defense (DoD) and U.S. Army Medical Command (MEDCOM) are under increased pressure to control spending. In an attempt to reduce the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) expenditures, DoD has begun to experiment with managed care. In order to move in this direction, military Medical Treatment Facilities (MTFs) need to reevaluate their internal processes, utilization management, financial and strategic planning.

Drucker challenges us to gain an understanding of the factors that influence the productivity of our workers. In an outpatient clinic, productivity and patient satisfaction relate directly or indirectly to the organizational structure, staffing, workload, scheduling, patient appointment system, space utilization, communication, and leadership (Drucker 1991).

As the health care industry evolves, seeking customer satisfaction becomes a strategic goal for health care providers. Managing patient satisfaction involves creating an organizational structure that uses the feedback from patient surveys to focus on meeting patient needs and more effectively competing in a crowded health care market (Steiber and Krowinski 1990). Military health care providers must focus on DoD beneficiaries in order to work

with the TRICARE contractor, who will offer a HMO option, for enrollment of the population versus patients seeking care under the CHAMPUS option.

High quality clinical outcomes are essential; however, quality in any business setting is more than a measure of the product produced. In the health care setting, the service perceptions of the customer determine quality (Steiber and Krowinski 1990).

Satisfaction is the subjective perception of the customer receiving the service. The typical customer enters a service setting with needs, wants, and expectations. "The extent to which the provider fulfills them defines the degree to which the customer will be satisfied" (Steiber and Krowinski 1990). The success or failure in these three dimensions will determine the relative satisfaction of the customer (Steiber and Krowinski 1990). Customer satisfaction, as a measure of the quality of care, is important because it provides information on the provider's success at meeting the customer's needs, wants, and expectations, in which the customer is the ultimate authority (Donabedian 1980).

Three reasons for measuring customer satisfaction with the health services they receive are: satisfaction is the ultimate outcome of the delivery of health care, satisfaction ratings provide useful information about structure, process, and outcomes of care, and satisfied and dissatisfied patients behave differently (Dolinsky and Caputo 1990). A goal of Irwin Army

Community Hospital is to provide services to our customers that meet or exceed their needs and expectations. In order to achieve this goal, they need to measure and evaluate the customers' expectations.

"The patient satisfaction survey is the primary means of assessing how patients feel about the care they receive in a health care setting" (Steiber and Krowinski 1990). Health care managers that use the feedback from a patient satisfaction survey to focus on the customer's needs, wants, and expectations will succeed in achieving their goals and objectives. Utilization of the results of a patient satisfaction survey will lead to improved services that will exceed the expectations of the customers and bring them back in the future. Managers should analyze the survey data to identify the dimensions of care that have the potential to make a difference in overall satisfaction, retention, or other desirable outcomes. Management should set goals and objectives and use the survey results as feedback to document progress (Steiber and Krowinski 1990).

Initially, quality assessment procedures centered on outcome, structure, and process measures and relied solely on clinical and economic criteria. Today, most hospitals recognize the value of patient feedback and have instituted patient surveys. Administrators are beginning to incorporate patient perceptions of the health care service in quality assurance programs (John 1991).

"Not only is patient satisfaction a desired end in itself, it has further ramifications" (Conbere at el 1992). Donabedian reported that increased patient satisfaction results in improved communication between provider and patient. Additionally, he stated that it results in better compliance with the prescribed medical treatment and improved health outcomes. The benefits for the military MTFs are numerous. These outcomes potentially improve soldier and civilian employee return to work capabilities and quality of life, while controlling health care costs and maintaining or improving the quality of the health care received by the patient. Additionally, civilian employers are demonstrating an interest in the satisfaction level of their employees and their families (Conbere et al 1992).

The implications of the return to work capabilities, better compliance with treatment, and improving the quality of care received at Irwin Army Community Hospital are tremendous. These outcomes could result in a reduction in health care costs and the number of unnecessary visits. This is especially critical in an environment of capitation budgeting and managed care.

Various studies conclude that satisfied patients are more likely to continue health care service at a particular hospital or health care organization, to maintain a relationship with a specific provider, and to comply with medical treatments.

> "Other studies note that satisfied patients are more likely to participate in their own treatment and cooperate with their health care providers by disclosing important medical information and by adhering to prescribed treatment regimens" (Aharony and Strasser 1993).

Customer satisfaction has a tremendous payoff for health care providers. In other service businesses, customer satisfaction is important to the industry leaders. Those who listen to their customers and place them at the center of their business efforts out perform other companies. In the military MTF, satisfied beneficiaries become loyal customers, which translates into revenue, market share, profitability, and better clinical outcomes. These characteristics are requirements necessary to compete in a managed care environment (Steiber and Krowinski 1990).

Some customers come back out of force of habit while others will come back because their physicians tell them to. In today's competitive market, fewer and fewer customers can be relied on to follow either of these paths blindly. To achieve brand loyalty, services must at least meet or exceed the customer's expectations (Steiber and Krowinski 1990). It becomes strategically important to understand the connection between the customer's expectations and their future intentions to return to the military MTF for care.

In recent months, evaluation of the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) requirements for 1995 revealed the need to continuously monitor the expectations of the hospital's customers. Not only must Irwin Army Community Hospital meet this industry standard, they must utilize the results of a patient satisfaction survey to identify dysfunctional processes. A patient satisfaction survey will

improve the structure, process, and outcomes of the hospital, leading to an increase in patient satisfaction that will achieve Irwin Army Community Hospital's goals and objectives.

Furthermore, as the military moves into an environment of managed care and capitated budgets, they must know their customer's needs, wants, and expectations to survive. Once DoD implements TRICARE, Irwin Army Community Hospital will receive funding based on the enrolled population. It is uncertain how many beneficiaries of the population will opt to seek care at Irwin Army Community Hospital. The beneficiaries will make their decision based on the perceptions of the quality of care they receive at the hospital. Understanding the customer's perceptions will provide management with the ability to segment the market and achieve its goals.

Statement of the Management Problem

The problem is although Irwin Army Community Hospital does have a systematic and standardized means to measure patient satisfaction, it does not measure the patients' perceptions and expectations within multiple dimensions of quality of care. In 1991, Irwin Army Community Hospital commissioned Kansas State University to conduct a survey. However, the survey measured perception of access and some areas of interpersonal skills, but it was geared more to identification of customers wants and not an analysis of their perceptions. Irwin Army Community Hospital established a patient satisfaction quality improvement team to look at the perceptions of the patients. During the process,

they did not survey patients prior to making recommendations for improvement. Data on patient complaints and rudeness are collected and analyzed monthly by the Utilization Management Committee. Finally, the patient representative conducts a survey on a continuous basis of the satisfaction of the patients. The questions are open-ended and are designed to identify problems and not evaluate patients' perceptions of the quality of care at Irwin Army Community Hospital. Health care managers cannot think they know what the patient's perceptions of the hospital's quality are, they must measure it.

Irwin Army Community Hospital's definition of quality is, "quality is timely, efficacious and safe organizational performance which enhances the efficiency, appropriateness and effectiveness of health care services and increase the potential for desired customer outcomes and satisfaction." Irwin Army Community Hospital monitors clinical outcomes, but does not measure patient satisfaction (expectations and perceptions) with a valid and systematically reliable instrument that measures satisfaction in different domains or constructs.

According to Larry Moss, Surveyor from JCAHO, there are many ways to measure quality: customer expectations, indicators for ongoing measurement, guidelines, algorithms, protocols, standards, critical pathways, use of performance improvement tools, cross-departmental and cross-discipline quality improvement teams, and finally, involvement of all personnel. In Section Two, "Improving Organizational Performance" of the 1995

Comprehensive Manual for Hospitals, the JCAHO standards require measuring on a continuous basis to help determine priorities for improving systems and processes. It states that patients and other customers judge the quality of health care based on the patient health outcomes, the perception of what was done, the perception of how it was done, and finally the costs. The standards place an emphasis on the importance of assessing patients' needs and expectations and listening to their comments (JCAHO 1995).

Literature Review

Quality of Care

In the healthcare services literature, authors conceptualize and operationalize customer satisfaction using a number of different methods (Taylor and Cronin 1994). It is unclear whether quality is a single attribute or a class of functionally related attributes. The definition and specification of the attributes are only part of the problem. However, these attributes are poorly defined. There are many different concepts of what constitutes *medical care* in the literature that in turn leads to different definitions of what constitutes quality. Patients make judgments about medical care, the persons who provided the care, and the setting or system that provides the care. As a result, the attributes of these persons and settings are the attributes used to define the care and to judge quality (Donabedian 1980).

According to Larry Moss, quality of care is defined as meeting the customers' needs the first time and every time. Quality is providing customers with products and services that consistently meet their needs and expectations. He states that doing the right thing the first time, always striving for improvement, and always satisfying the customer is quality. Finally, he said quality is meeting or exceeding customer expectations at a cost that represents value to them.

Technical Care

Adopting any marketing concept requires that the health care provider be customer oriented and place importance on the patient perceptions and feedback. In other words, health care providers should concern themselves with the satisfaction of their customers' needs and wants. The needs of the health care customer are two fold--medical and psychosocial. Medical needs relate to the medical expertise and skills of the provider needed for the treatment of the patient's illness. Psychosocial needs relate to the delivery of the medical expertise and relate indirectly to the treatment of the patient's illness (John 1991)

Donabedian divides the management of care into two main domains: technical and interpersonal. Technical care is the application of science and medical technology to the treatment of the customer's health care needs. The interpersonal care or functional quality is the management of the social and psychological interaction between the customer and the provider. Donabedian calls this the *art of medicine* (Donabedian 1980).

The professionals' perspective of quality is technical and is operationalized in terms of three constructs: structure, process, and outcome. Structure pertains to whether the health care provider has the knowledge, skill and resources to diagnose and treat a patient properly. Process is the determination of whether diagnostic and therapeutic interventions are applied and appropriately carried out. Finally, outcome reflects whether or not the diagnostic procedures and therapeutic interventions have the expected effect (Bopp 1990).

Technical quality falls short of being a useful measure of how patients evaluate the quality of a medical service encountered. Structure factors have only limited impact on a customer's attitudes and their behavioral intentions. Although technical quality has a high priority for most patients, they typically do not have the knowledge to evaluate the quality of the diagnostic and therapeutic intervention processes. As a result, patients base their evaluation of quality on interpersonal and environmental factors. Unfortunately, medical professionals have regarded this as less important and generally have ignored these factors (Bopp 1990).

Functional Quality

However, most patients cannot distinguish between the interpersonal and functional performance (expressive) and the technical performance of medical providers. Caring and communication skills combined with technical skills create the medical service received. Patients are unable to evaluate the

technical aspects of care, which means that most patients base their evaluation of the medical process on the functional performance of the providers and staff. Thus, matching the providers' caring and communication behavior with the patients' expectations for caring and communication will determine the patients' perceptions of the service quality (Bopp 1990).

The functional type of quality is defined as *quality in perception*, which is how the customer sees it. "Quality in perception is the result of the patient's comparison of his or her perception of the medical encounter experience with his or her preencounter expectations" (Bopp 1990).

Bopp argues that customers define service quality in terms of functional quality rather than technical quality and therefore, technical quality perceptions depend on functional quality perceptions. He states that a medical encounter achieves quality when it meets or exceeds the patient's perceptions (Bopp 1990).

The literature suggests that hospitals determine quality by measuring patients' perceptions of quality using functional quality variables or domains. Functional quality can be conceptualized with two constructs: service quality and customer satisfaction (Taylor 1994).

Service Quality

"Service quality has been described as a form of attitude, related but not equivalent to satisfaction" (Cronin and Taylor 1992). Taylor stresses that there is a distinction between

service quality and customer satisfaction. He states that service quality perceptions are considered long-term customer attitudes, while customer satisfaction refers to a short-term, service encounter judgment. Taylor stresses that the distinction is vital in developing marketing strategies (Taylor 1994). Taylor and Cronin discuss the importance of distinguishing the difference between the two constructs for health care marketers because health care providers should be able to develop strategic objectives aimed at affecting both short-term customer satisfaction and long-term customer attitudes (Taylor and Cronin 1994). Service quality can be visualized in an equation: $ATTITUDE_t = f(EXPECTATIONS)$. A customer's initial or preexisting attitude toward a health service is defined by the level of expectations the customer brings to the medical care encounter. If the customer has previous experience with the health service, the initial expectations are a function of the customer's previous level of satisfaction with the health service (Taylor and Cronin 1994).

In the absence of previous experience with the health service, customers most likely rely on referrals and experiences of friends, co-workers, and relatives (Taylor and Cronin 1994). Patients dissatisfied with the care received at a hospital or physician's office may seek future care somewhere else, which could result in an entire household switching to a different

provider. As patients talk about their bad experiences, even more people may decide to switch providers (Steiber and Krowinski 1990).

Findings by the Technical Assistance Research Programs (TARP) show that the average dissatisfied customer will tell between nine or ten other people about the unsatisfactory experience, and one in every eight customers with a service problem will recount the event to more than twenty individuals. On the other hand, a satisfied customer will talk about a positive experience with only three to four people. Dissatisfaction not only means losing the customer, it also means losing the hospital's reputation because satisfaction is tied to customers' perceptions of quality (Steiber and Krowinski 1990)

Thus, the overall perception of the service encounter that a customer takes away is a function of his or her initial attitude toward the service provider plus the level of satisfaction the customer perceives in a specific service encounter as conceptualized in the following equation: $ATTITUDE_{t+1} = f(ATTITUDE_t + SATISFACTION)$ (Taylor and Cronin 1994). Bolton and Drew suggest that service quality ($attitude_t$) is a function of a customer's residual perception of the quality of a service provider from a prior period ($attitude_{t-1}$) plus the customer's level of (dis)satisfaction with the current level of service performance (CS/D_t). Bolton and Drew developed the following equation: $SERVICE\ QUALITY_t = ATTITUDE_t = f(CS/D_t + ATTITUDE_{t-1})$.

Bolton and Drew's definition of service quality is consistent with Oliver's attitude construct (Cronin and Taylor 1992).

Oliver states that the confirmation or disconfirmation of expectations paradigm which was originally intended to explain the formation of patient satisfaction can also be used to measure both constructs (Taylor and Cronin 1994).

Customer Satisfaction

Taylor and Cronin states that customer satisfaction with their current health care service is defined in terms of the customer's initial expectations plus the customer's perception of the provider's performance during the current service encounter (confirmation of these expectations or not): $SATISFACTION_t = f(EXPECTATIONS_{t-1} + (DIS)CONFIRMATION_t)$. Thus, the overall perception of the service encounter that a customer takes away is a function of his or her initial attitude toward the service provider plus the level of satisfaction the customer perceives in a specific service encounter (Taylor and Cronin 1994).

An extensive literature review has revealed that many authors operationalize customer satisfaction in terms of the (dis)confirmation paradigm. The theory of this paradigm is based on the fact that a customer's quality expectation will be confirmed when the provider or health service performs as expected (perception = expectations), positively confirmed when expectations are exceeded (perceptions > expectations), and

negatively disconfirmed when expectations are not met (perceptions < expectations) (Shewchuk, O'Connor, and White 1991).

A common definition of perception is "a cognitive process by which customers receive information from the environment, arrange it, and attach meaning to it" (Shewchuk, O'Connor, and White 1991). For purposes of this study, perception is a customer evaluation of the service performed.

The literature discusses several ways customers form their expectations. One view of expectations is a customer's belief, probability, or prediction of what will occur during a service encounter. Another view states that customers may expect standards they believe a hospital should offer. These standards differ from the typically defined expectations concept by calling them experience-based norms. Experienced-based norms do not reflect a prediction of performance, but a desired performance that meets the customer's wants and needs. Furthermore, experienced-based norms do not exceed the level of performance a customer believes is achievable for the service (Shewchuk, O'Connor, and White 1991). Parasuraman, Zeithaml, and Berry state that the debate over expectations norms are resolved and the consensus is that the *experience-based norms* are the appropriate frame of reference in assessing customer satisfaction (Parasuraman, Zeithaml, and Berry 1994).

Taylor states that an investigation of the casual path model demonstrates that satisfaction consistently appears more closely related to purchase intention than does service quality. This finding supports the traditional ordering of the constructs previously identified:

SERVICE QUALITY-------->SATISFACTION-------->PURCHASE INTENTION (Taylor 1994).

Customer satisfaction is modeled as a function of comparison between expectations and performance perceptions:

Expectations of Service experience (What patients believe service provider should offer)	(-)	*Perceptions* of Service Experience (What patients perceive service provider actually offered)	(=)	*Customer Satisfaction*

Expectation is defined as what an individual feels the service provider should offer and perception is defined as an individual's evaluation of how well the provider or service fulfills his or her expectations (Lytle and Mokwa 1992). Delivering customer satisfaction is the act of conforming to a customer's expectations on a consistent basis. Lytle and Mokwa suggest that customer satisfaction is a function of both service delivery variables (intangible products) and outcome variables (core products) (Lytle and Mokwa 1992).

Effective outcomes has an impact on an individual's perception of service quality. In other words, a disappointing outcome could influence an individual's perception of service quality although he or she evaluates other dimensions of satisfaction such as tangibles (a visually appealing office),

responsiveness (scheduling of an appointment at the last minute), assurance (the nurse was courteous and inspired confidence), and empathy (the physician had compassion) as exceeding his or her expectations. Therefore, examining the impact of service outcomes on service delivery variables can offer a better understanding of service quality (Lytle and Mokwa 1992).

Inconsistencies in defining the satisfaction constructs (domains) are obvious throughout the literature. Therefore, categorization of constructs (domains) and the definitions used by many authors differ (Ware, Davies-Avery, and Stewart 1978).

The evaluation of a service encounter results in one of two outcomes: satisfaction or dissatisfaction. Satisfaction and dissatisfaction are often viewed as opposite ends of a spectrum. Satisfaction occurs when outcomes meets or exceeds the customer's expectations. Dissatisfaction occurs when a negative discrepancy is present between the client's anticipated outcome and the actual outcome (Brown and Swartz 1989).

Woodruff, Cadotte and Jenkins propose an alternative perspective on satisfaction/dissatisfaction. They suggest the experienced-based norms are more appropriate than expectations of a service as a benchmark against which customers compare their service experiences. Applying a disconfirmation paradigm to the evaluation of a service encounter suggests that the individual will compare his or her experience with some set of expectations. Customers base these expectations, in part or in total, on past relevant experiences (Brown and Swartz 1989).

Early studies define satisfaction as the patient's attitude toward a physician and medical care. "More specifically, a composite index of an individual's evaluation of the quality of medical care received from physicians, nurses, and other relevant sources was hypothesized to represent the individual's satisfaction level" (Singh 1990). Further conceptualization of this construct has resulted in several refinements to the definition (Singh 1990).

Pascoe views patient satisfaction as an evaluation of the service received. This evaluation is a comparison of the individual's health care experience to a subjective standard. The subjective standard used for judging a health care experience may be any one or a combination of an ideal, a sense of what one deserves, an average of past experiences in similar situations, or some minimally accepted level (Aharony and Strasser 1993).

Woodside, Frey, and Daly developed a framework linking service quality, customer satisfaction, and behavioral intentions, which relies on the theoretical work of Parasuraman et al. The findings of their field study support the general framework that, satisfaction with the service encounter appears to impact the relationship between service quality and behavior intention:

(Service Quality--->Patient Satisfaction--->Behavioral Intention) (Aharony and Strasser 1993).

Based on the same theoretical work, O'Connor and Shewchuk developed and tested another service quality model. They linked perceptions of service quality to patient satisfaction and intentions to return to the hospital. They base service quality expectations on reliability, assurance, tangibles, responsiveness, and empathy. The service domains of reliability, assurance, empathy, and responsiveness account for approximately forty percent of the variance in patient satisfaction and sixty percent of the variance in the patient's intention to return for further medical care (Aharony and Strasser 1993).

Swan proposes a model that contains four basic constructs: perceptions of performance, confirmation of expectations concerning performance and perception of equitable treatment, overall satisfaction, and intentions to revisit or avoid the hospital in the future. Swan suggests that patients' perception of a hospital's performance would influence the extent to which the hospital met their overall expectations and perceptions of quality. The fulfillment of these expectations would affect overall patient satisfaction, which could predict a patient's intention to revisit the hospital. In his model, the patient's perception of performance operates as both a direct and indirect cause of intention to return (Aharony and Strasser 1993).

Intention to Return/Behavioral Intention

The overall objective of assessing the issue of patient experience and patient satisfaction from the perspective of quality improvement is to develop strategies for expanding market

share by generating higher levels of overall quality and customer satisfaction. Thus, the purpose of the survey process is not only to find out whether the customer is happy or unhappy (benchmarking) but to explain why (diagnosis) (Stratmann at el 1994).

Service quality has become a critical competitive consideration. The concept of service quality relies on a (dis)confirmation paradigm: initial service expectations must be met or exceeded by perceived outcomes of the service experience. The work of Parasuraman, Zeithaml, and Berry develops an extensive theoretical base and offers a reliable and useful approach for measuring perceived service quality on the basis of this paradigm (Headley and Miller 1993).

It becomes useful and strategically important to understand the connection between perceptions of service quality and future customer behavior. Acknowledging that behaviors are difficult to predict and understand, Headley and Miller suggest that a person will generally act in accordance with predisposing intentions. A customer's behavioral intention is a result of his or her experience with a service or some relevant information about that service. A determining factor in a customer's behavior to return to the hospital in the future is this predisposition or attitude (Headley and Miller 1993).

Woodside, Frey, and Daly used an intent to return measure to associate a measure of quality regarding hospital stays. They found that service quality does have a strong association with a

customer's intention to return to the same hospital service provider. More recently, Cronin and Taylor suggested that a performance-based measure of service quality significantly affects customer satisfaction, which in turn, significantly affects purchase intentions (Headley and Miller 1993).

Much of current marketing action is based on the assumption that the perception of service quality (either positive or negative) by a customer influence the future behavior of the customer. Logic would suggest that if customers perceive positive service quality, they would tend to return or compliment the service. Similarly, if they perceive negative service quality, they would intend to complain, switch providers, or not use the same services again (Headley and Miller 1993).

Headley and Miller's research measured the strength of behavioral intent pertaining to a range of future actions of a sample. Results indicate that significant relationships exist between perceived service quality, measured as a difference between pre and postencounter opinion, and intent to return, compliment, complain, recommend, switch, and not use medical care services. The confirmation of the relationships between perceived service quality and these various customer intentions suggests that perceived higher service quality will positively affect the customer's intention to return and that perceived lower service quality will lead to unfavorable intentions (Headley and Miller 1993).

Hospitals have been concentrating on *high tech*, while their patients or customers have begun demanding *high touch*. An accepted concept in customer relations states that a dissatisfied customer will tell three to four times as many people about the fact as a satisfied one (Anderson 1988).

"Satisfied and loyal customers are also vital to any organization's continuing viability because of a crucial fact of marketing math" (Anderson 1988). Marketing communications and public affairs alone usually cannot generate enough demand. Instead, demand for a hospital or medical service is generated in three ways; repeat use by past customers, recommendations from established customers to new ones, and attraction of new customers by marketing communications (Fisk et al 1990).

Through a review of the literature, it is reasonable to presume that a relationship between service quality, customer satisfaction, and purchase intention exists. The theoretical model suggested in this study is based on literature findings that patients assess the quality of medical care received in MTFs.

INSERT FIGURE 1 ABOUT HERE

The scope is narrowed from the two dimensions of quality (technical and functional) to focusing on the functional dimension of quality. The theoretical model focuses on two aspects of functional quality, service quality and patient satisfaction, and the functional relationship they have in developing the patient's perceived quality. Finally, the model

suggests that perceived quality influence the patient's intent to return to the MTF. The model specifies the hypothesized relationship of the independent variables of the technical quality of care, access to care, continuity of care, outcome of care/efficacy, and interpersonal skills to the dependent variables of overall satisfaction and the patient' intention to return.

Purpose of the Study

The purpose of this study is to conduct a survey to conceptualize and operationalize service quality (long term attitudes) and customer satisfaction (confirmation of perceptions and expectations). Additionally, the purpose is to examine the relationship between service quality, customer satisfaction, and the customer's intention to return.

Furthermore, the purpose is to explore whether the customer's overall satisfaction and intention to return is a function of the customer's perception of quality and if this perception meets his or her expectations.

The goals and objectives of this study are to promote awareness throughout Irwin Army Community Hospital of a commitment to continuously improve the quality of patient care as perceived by the patients. Measuring this goal would confirm whether or not Irwin Army Community Hospital is meeting its established goals and objectives. Additionally, it is to stimulate a spirit of inquiry among managers into the factors that influence patients' ratings of their satisfaction with

hospital services. Also, it will create opportunities for managers and individuals to strengthen their understanding of patient satisfaction with hospital care, and to develop plans that lead to improvements in the services delivered and the quality of patient care. Finally, it is to provide a reliable mechanism for evaluating plans initiated by managers to improve the quality of service delivered (Speedling et al 1993).

Given this purpose and framework, it is reasonable to assume the following hypotheses:

Ha_1: The customer's overall satisfaction is influenced by the customer's perception of the technical quality, access to care, continuity of care, outcome of care, interpersonal skills, and the demographics of the sample.

Ha_2: There are differences in the customer's intention to return associated with beneficiary category and their Intent to Return is a function of the beneficiary's overall satisfaction.

CHAPTER II - METHODS AND PROCEDURES

Sample

The sample of the study consisted of 505 beneficiaries of Irwin Army Community Hospital at Fort Riley, Kansas. Each beneficiary had received care at Irwin Army Community Hospital between January and February 1995. The sample was limited to beneficiaries seeking care in the outpatient clinics only, which performs approximately 400,000 visits per year.

The sample of the beneficiaries was drawn randomly. The sample was drawn from all those beneficiaries accessing care at Irwin Army Community Hospital and not limited to those patients easily contacted.

The composition of the sample was comparable to the proportion of the beneficiary population. The sample was stratified into six different groups: active duty females, active duty males, dependent females of active duty, dependent males of active duty, retiree males, and retired females (which includes retiree, dependent of retiree, survivor, and dependent of survivor). Based on the Resource, Analysis, and Planning System (RAPS) eligible population projection report dated December 22, 1994, the proportion of the population for each group was calculated: three percent of the population are active duty females, thirty percent are active duty males, thirty-one

percent are female dependent of active duty, fifteen percent are dependent males of active duty, eleven percent are retired females, and ten percent are retiree males. The sample was comparable in proportion to population except it only consists of ten percent of dependent males of active duty compared to the fifteen percent of the population. However, the difference was shifted to the dependent females of active duty because ninety-two percent of the dependent males are under the age of seventeen and in most cases, the mother completed the survey for the son. As a result, the mother completed the survey based on her perceptions.

The sample was composed of twenty-one (four percent) active duty females, one hundred and fifty (thirty percent) active duty males, one hundred and eighty (thirty-six percent) dependent females, fifty (ten percent) dependent males, fifty-eight (eleven percent) retiree females, and forty-six (nine percent) retiree males. The overall composition of the sample (n = 505) was comparable to the beneficiary population. Forty-nine percent

INSERT TABLE I ABOUT HERE

of the sample were males and fifty-one percent were females with an average age of 29.9 years. Overall, seventy-two percent of the sample was married. The sample was seventy percent Caucasian, sixteen percent Black, five percent other, four percent Hispanic, three percent Asian, and two percent Mexican. The respondents of the survey reported that twenty-nine percent

had a high school diploma or GED, forty-one percent had some college education, ten percent had a college degree, and three percent had completed post graduate work.

Instrumentation

A review of the literature located a survey tool that would measure the conceptual definition of patient satisfaction. Additionally, a literature review was conducted to categorize the dimensions or domains of customer satisfaction. The Group Health Association of America (GHAA) developed a survey tool that addresses five dimensions: the technical quality of care, access to care, continuity of care, outcome of care/efficacy, and interpersonal skills. Additionally, the survey tool measures overall satisfaction and behavioral intention to return. The technical quality of care refers to the technical skills, experience, and training of the providers, such as accuracy, attention to details, and clear explanations. Access to care pertains to the factors associated with arranging to get care and the length of time spent getting the care. Continuity of care refers to the delivery of care by the same facility and provider. Outcome of care pertains to the efficacy of treatment to improve or maintain the patient's health status. Interpersonal skills pertain to friendliness and courtesy of providers and staff members, respect, and a personal interest in the patient' medical problems.

The GHAA survey tool was modified to include expectation questions to match the questions designed to measure the

patient's perceptions of the dimensions of quality of care. As a result, each question on the GHAA survey was put into two statements, one to measure expectations about the health care industry and the other to measure perceptions about Irwin Army Community Hospital (see Appendix 1).

The survey consisted of seventy-two questions designed to collect demographic information (dichotomous variables) and measure expectations and perceptions (ordinal variables). A five-point Likert scale ranging from strongly agree (5) to strongly disagree (1) was used to measure the expectations statements. A five-point Likert scale ranging from excellent (5) to poor (1) was used to measure the patient's perception of the dimension of quality. A low score then indicates dissatisfaction and a high score indicates satisfaction.

The final portion of the survey contained the following demographic information:

- rank/status
- ethnic background
- gender
- age
- level of education
- family's income level
- marital status
- zip code
- coverage by third party health insurance

The survey tool was a self-administered questionnaire covering the five dimensions of patient satisfaction, overall satisfaction, behavioral intention to return, and demographics.

Thirty beneficiaries pretested the questionnaire. It was important that the questionnaire be pretested on a sample of respondents before the full survey to identify any potential problems (Fitzpatrick 1991). Each respondent was asked about the clarity and acceptability of the questionnaire items. The pretest identified that most of the respondents clearly understood each question. Only a few respondents felt that some of the questions were ambiguous or confusing. However, the questions identified pertained to demographic items.

A cover letter explaining the purpose, significance, and confidential nature of the study accompanied the questionnaire. It explained the purpose of the survey, the goal of the study, and a guarantee of anonymity.

Reliability

The internal-consistency reliability was tested for the multi-item scales using Cronbach's Alpha. The reliability coefficient indicates the proportion of the reliable variance as opposed to random error, in the scale score. The coefficient alpha for all five domains was .95. The reliability estimates

INSERT TABLE II ABOUT HERE

for the domains within all the beneficiary groups ranged between .76 and .98 except for the continuity domain. The results exceed the 0.70 minimum standard recommended to be used in analyzing beneficiary groups.

Validity

Face validity is defined as the extent to which a survey asks what appears to be appropriate questions for the purpose of the study. A quick examination of the survey by the respondent determines face validity and considers only obvious relevance of the items on the survey (Conbere at el 1992). In this study, face validity was established by asking participants of a pretest how to improve the survey.

Content validity is defined as the extent to which the questions of the survey reflect the important components of the topic. The survey should cover the range of possible components and each individual question should be examined for the rationale for its inclusion. Since not all possible questions can be asked, the resulting sample must be representative (Conbere at el 1992). In this study, the survey encompasses the domains or dimensions of patient satisfaction (the technical quality of care, access to care, continuity of care, outcome of care/efficacy, and interpersonal skills).

Construct validity seeks empirical or statistical support for the assertion that the survey measures the appropriate construct. Pearson product-moment correlation coefficients were

used to assess the construct validity between the items within each domain and overall satisfaction. Item to total correlations between overall satisfaction and the items within each domain

INSERT TABLE III ABOUT HERE

were predominately positive and ranged between .09 and .89, all significant at $p \leq .05$.

Design

If the respondent had previously visited an outpatient clinic at Irwin Army Community Hospital, they received a survey to complete. This method was chosen over mailing the survey to gain a larger response rate and decrease the turn around rate of the response. The patients receiving the survey was randomized. A multiple linear regression analysis was developed to predict which domains influence overall satisfaction. Finally, a series of one-way analysis of variance (ANOVA) tests were used to assess the differences of the beneficiary groups and their intent to return to Irwin Army Hospital if they had a choice.

Reducing Measurement Error

A large sample was collected to maximize experimental variance (n = 505). The standardized Group Health Association of America's (GHAA) Survey minimized the error variance. Extraneous variables were controlled through casewise and listwise deletions. Missing variables were replaced with the mean.

Ethical Considerations

The ethical rights of the patients were protected throughout the study. All information was extracted through the survey. The coded information was not associated with individual beneficiaries. The cover letter reassured the respondent that their anonymity will be protected and the questionnaire would not link or connect either their name or social security number to the results of the survey.

CHAPTER III - RESULTS

Descriptive Statistics.

Table IV summarizes the means and standard deviations of the items within the five domains for each of the beneficiary groups

INSERT TABLE IV ABOUT HERE

and the total sample. A five-point Likert scale ranging from excellent (5) to poor (1) was used to measure the patient's perception. A low score then indicates dissatisfaction and a high score indicates satisfaction. In the domain of Access, the items' means ranged from 2.7 to 3.7, Interpersonal Skills ranged from 3.2 to 3.6, Technical Quality ranged from 3.3 to 3.5, Continuity ranged from 2.4 to 2.8, and Outcomes averages at 3.4. The mean of the dependent variable of overall satisfaction was 3.6 with a standard deviation of 1.0. A five-point Likert scale ranging from strongly agree (5) to strongly disagree (1) was used to measure overall satisfaction. The mean for the dependent variable recommend Irwin Army Community Hospital was 3.0 with a standard deviation of .82. A four-point scale ranging from (4) definitely yes, (3) probably yes, (2) probably not, and (1) definitely not was used to measure recommend and switch. The mean for switching to a different healthcare organization was 2.5 with a standard deviation of .92.

Inferential Statistics.

A multiple linear regression was performed to predict which domains influence the patient's overall satisfaction. The analysis was performed by beneficiary group. The dependent variable was overall satisfaction and the independent variables were the individual items within each domain. Some interesting results emerged from the regression of the five domains of quality of care on the dependent variable overall satisfaction. The domain Outcomes is found to be the most significant predictor of patient satisfaction (R^2 = .61, p = .000). Interpersonal Skills (R^2 = .49, p = .000), Technical Quality (R^2 = .48, p = .000), Access (R^2 = .44, p = .000), and finally Continuity (R^2 = .17, p = .000) were all significant predictors of patient satisfaction. The regression equations for each domain within the beneficiary categories were highly significant, except for

INSERT TABLE V ABOUT HERE

active duty females. The only domain that was significant for active duty female in predicting overall satisfaction was outcomes, all other domains were nonsignificant.

The most noticeable variable (largest multiple R and R^2) in predicting overall satisfaction for active duty males was Outcomes, followed by Access, Interpersonal Skills, Technical Quality, and finally Continuity. The most noticeable variable (largest multiple R and R^2) in predicting overall satisfaction

for dependant females was Outcomes, followed by Interpersonal Skills, Technical Quality, Access, and finally Continuity. The most noticeable variable (largest multiple $\underline{R}$ and $\underline{R}^2$) in predicting overall satisfaction for dependant males was Interpersonal Skills, followed by Outcomes, Access, Technical Quality, and finally Continuity. The most noticeable variable (largest multiple $\underline{R}$ and $\underline{R}^2$) in predicting overall satisfaction for retired females was Interpersonal Skills, followed by Technical Quality, Outcomes, Access, and finally Continuity. Finally, the most noticeable variable (largest multiple $\underline{R}$ and $\underline{R}^2$) in predicting overall satisfaction for retired males was Outcomes, followed by Interpersonal Skills, Access, Technical Quality, and finally Continuity.

Table VI illustrates the differences between the mean expectation scores and the mean perception scores. The differences in the mean scores ranged from .1 to 2.2 on a scale of one to five.

INSERT TABLE VI ABOUT HERE

The results presented in Table VII demonstrate that a significant difference exists in terms of the recommendation of Irwin Army Community Hospital to friends or family and the desire to switch to a different health care facility associated with the type of beneficiary category.

CHAPTER IV - DISCUSSION

Overall Satisfaction

The results from this quantitative analysis support the alternate hypotheses that the customer's overall satisfaction is influenced by the customer's perception of Technical Quality, Access to Care, Continuity of Care, Outcome to Care, and Interpersonal Skills. The results did not exhibit a significant correlation with a majority of the demographic data such as race, gender, beneficiary category, and education.

For the beneficiary category of active duty females, the item to total correlations show that only two of the eleven Access questions had a significant relationship with overall satisfaction. In the domain of Interpersonal Skills, only two of the nine questions had a significant relationship with overall satisfaction. Two out of the three questions of the domain of Technical Quality had a significant relationship with overall satisfaction. None of the questions in the domain of Continuity of Care had a relationship with overall satisfaction. Finally, both questions in the domain of Outcomes to Care had a significant relationship with overall satisfaction (see Table III).

Overall, active duty female's rated their satisfaction with Irwin Army Community Hospital as a 3.7 or scaled between good but

closer to very good. In analyzing the active duty female's mean scores for the questions in the domain of Access indicate that five out of the eleven questions had the lowest mean scores when compared to the other beneficiary categories (see Table IV). The mean scores ranged from 2.4 to 2.9 on a scale of 5 (excellent) to 1 (poor). The respondents rated on an average, these five questions as fair to good. Overall, active duty female's rated Irwin Army Community Hospital's Access to Care as a 3.2 or scaled as good. The mean for the domain of Interpersonal Skills was 3.5, Technical Quality was 3.4, Continuity of care was 3.1, and the mean for Outcomes was 3.4. The active duty female rated the five domains of quality care between good and very good.

The results in Table V list the results of the multiple regression analysis. The Multiple $\underline{R}$, $\underline{R}^2$, F Test, and the significance are listed for all categories of beneficiaries. However, only the Outcome domain's F test was significant indicating that the active duty female's perceptions of Outcomes influences their overall satisfaction. All other domain's were nonsignificant in predicting the active duty females overall satisfaction.

Active duty females gave the five domains of quality care between 3.2 to 3.5 on a scale of 5 (excellent) to 1 (poor), but the correlations between the individual questions to overall satisfaction was nonsignificant, except the domain of Outcomes. The results of the multiple regression analysis suggested that only the domain of Outcomes influences the active duty females'

overall satisfaction. This indicates that nothing except how the customer was helped as a result of the care received and the quality of the care received by the customer impacts how the customer perceives overall satisfaction. However, it is important to note that only three percent of Irwin Army Community Hospital's population are active duty females. Therefore, only twenty-one surveys were collected from active duty females. Due to the low numbers, it is difficult to assume that only the domain of Outcomes influence the patient's overall satisfaction and nothing else.

For the beneficiary category of active duty males, the item to total correlations show that all the Access, Interpersonal Skills, Technical Quality, Continuity of Care, and Outcomes to Care items had a significant relationship with overall satisfaction (see Table III).

Overall, active duty male's rated their satisfaction with Irwin Army Community Hospital as a 3.5 or scaled between good and very good. In analyzing the active duty male's mean scores for the questions in the domain of Access, the results indicate that two out of the eleven questions and three out of the nine Interpersonal Skills questions had the lowest mean scores when compared to the other beneficiary categories (see Table IV). Overall, active duty males rated Irwin Army Community Hospital's access to care as a 3.2 or scaled as good. The mean for the domain of Interpersonal Skills was 3.3, Technical Quality was 3.3, Continuity of care was 3.0, and the mean for Outcomes was

3.3. The active duty male rated the five domains of quality of care between good and very good.

The results in Table V list the results of the multiple regression analysis. All five domains' F tests were significant which indicates that the active duty male's perceptions of Access, Interpersonal Skills, Technical Quality, Continuity, and Outcomes influences their overall satisfaction.

The most noticeable variable (largest multiple $\underline{R}$ and $\underline{R}^2$) in predicting overall satisfaction for active duty males was Outcomes (Multiple $\underline{R}$ = .78, $\underline{R}^2$ = .60), followed by Access (Multiple $\underline{R}$ = .66, $\underline{R}^2$ = .44), Interpersonal Skills (Multiple $\underline{R}$ = .66, $\underline{R}^2$ = .43), Technical Quality (Multiple $\underline{R}$ = .64, $\underline{R}^2$ = .41), and finally Continuity (Multiple $\underline{R}$ = .32, $\underline{R}^2$ = .10). The coefficient of determination for each domain explains the variance accounted for by the relationship between overall satisfaction and the domains.

For the beneficiary category of dependent females, the item to total correlations show that all the Access, Interpersonal Skills, Technical Quality, Continuity of Care, and Outcomes to Care items had a significant relationship with overall satisfaction (see Table III).

Overall, dependent females rated their satisfaction with Irwin Army Community Hospital as a 3.6 or scaled between good and very good. In analyzing the dependent female's mean scores for the questions in the domain of Access indicate that three out of the eleven questions, one out of the nine Interpersonal Skills,

and one out of the two continuity questions had the lowest mean scores when compared to the other beneficiary categories (see Table IV). Overall, dependent females rated Irwin Army Community Hospital's access to care as a 3.2 or scaled as good. The mean for the domain of Interpersonal Skills was 3.3, Technical Quality was 3.3, Continuity of care was 2.6, and the mean for Outcomes was 3.3. The dependent females rated the five domains of quality care between good and very good.

The results in Table V list the results of the multiple regression analysis. All five domains' F tests were significant which indicates that the dependent female's perceptions of Access, Interpersonal Skills, Technical Quality, Continuity, and Outcomes influences their overall satisfaction.

The most noticeable variable (largest multiple $\underline{R}$ and $\underline{R}^2$) in predicting overall satisfaction for dependent females was Outcomes (Multiple $\underline{R}$ = .75, $\underline{R}^2$ = .56), followed by Interpersonal Skills (Multiple $\underline{R}$ = .72, $\underline{R}^2$ = .52), Technical Quality (Multiple $\underline{R}$ = .71, $\underline{R}^2$ = .51), Access (Multiple $\underline{R}$ = .68, $\underline{R}^2$ = .46), and finally Continuity (Multiple $\underline{R}$ = .53, $\underline{R}^2$ = .28).

For the beneficiary category of dependent males, the item to total correlations show that all the Access, Interpersonal Skills, Technical Quality, Continuity of Care, and Outcomes to Care items had a significant relationship with overall satisfaction (see Table III).

Overall, dependent males rated their satisfaction with Irwin Army Community Hospital as a 3.1 or scaled as good. In analyzing the dependent males mean scores for the questions in the domain of Access indicate that four out of the eleven questions, six out of the nine Interpersonal Skills, all three of the questions in Technical Quality, one out of the two continuity, and both of the Outcomes questions had the lowest mean scores when compared to the other beneficiary categories (see Table IV). Dependant males overall had the lowest mean scores of all the beneficiary categories. Dependent males had the highest mean score for two of the Access to Care questions. Overall, dependent males rated Irwin Army Community Hospital's access to care as a 3.2 or scaled as good. The mean for the domain of Interpersonal Skills was 3.2, Technical Quality was 3.1, Continuity of care was 2.5, and the mean for Outcomes was 3.0. The dependent males rated four out of the five domains of quality care between good and very good. They rated the domain of Continuity between fair and good.

The results in Table V list the results of the multiple regression analysis. All five domains' F tests were significant which indicates that the dependent male's perceptions of Access, Interpersonal Skills, Technical Quality, Continuity, and Outcomes influences their overall satisfaction.

The most noticeable variable (largest multiple $\underline{R}$ and $\underline{R}^2$) in predicting overall satisfaction for dependent males was Interpersonal Skills (Multiple $\underline{R}$ = .82, $\underline{R}^2$ = .68), followed by

Outcomes (Multiple $\underline{R}$ = .81, $\underline{R}^2$ = .66), Access (Multiple $\underline{R}$ = .81, $\underline{R}^2$ = .66), Technical Quality (Multiple $\underline{R}$ = .67, $\underline{R}^2$ = .45), and finally Continuity (Multiple $\underline{R}$ = .64, $\underline{R}^2$ = .41).

For the beneficiary category of retiree females, the item to total correlations show that all the Access, Interpersonal Skills, Technical Quality, Continuity of Care, and Outcomes to Care items had a significant relationship with overall satisfaction (see Table III).

Overall, retiree females rated their satisfaction with Irwin Army Community Hospital as a 4.0 or scaled as very good. In analyzing the retiree female's mean scores for the questions in the domain of Access indicate that three out of the eleven questions had the lowest mean scores when compared to the other beneficiary categories (see Table IV). Overall, retiree females rated Irwin Army Community Hospital's access to care as a 3.2 or scaled as good. The mean for the domain of Interpersonal Skills was 3.5, Technical Quality was 3.6, Continuity of care was 3.1, and the mean for Outcomes was 3.5. The retiree females rated all five domains of quality care between good and very good.

The results in Table V list the results of the multiple regression analysis. All five domains' F tests were significant which indicates that the retiree female's perceptions of Access, Interpersonal Skills, Technical Quality, Continuity, and Outcomes influences their overall satisfaction.

The most noticeable variable (largest multiple $\underline{R}$ and $\underline{R}^2$) in predicting overall satisfaction for retiree females was Interpersonal Skills (Multiple $\underline{R}$ = .78, $\underline{R}^2$ = .61), followed by Technical Quality (Multiple $\underline{R}$ = .69, $\underline{R}^2$ = .48), Outcomes (Multiple $\underline{R}$ = .67, $\underline{R}^2$ = .45), Access (Multiple $\underline{R}$ = .65, $\underline{R}^2$ = .43), and finally Continuity (Multiple $\underline{R}$ = .62, $\underline{R}^2$ = .38).

For the beneficiary category of retiree males, the item to total correlations shows that all the Access, Interpersonal Skills, Technical Quality, Continuity of Care, and Outcomes to Care items had a significant relationship with overall satisfaction (see Table III).

Overall, retiree males rated their satisfaction with Irwin Army Community Hospital as a 4.3 or scaled between very good and excellent. In analyzing the retiree male's mean scores for the questions in the domain of Access indicate that nine out of the eleven questions, nine out of the nine questions in Interpersonal Skills, all three Technical Quality, both Continuity and Outcome questions had the highest mean scores when compared to the other beneficiary categories (see Table IV). Overall, retiree males had the highest mean scores of all the beneficiary groups. Retiree males rated Irwin Army Community Hospital's access to care as a 3.8 or scaled as good to very good. The mean for the domain of Interpersonal Skills was 4.1, Technical Quality was 4.1, Continuity of care was 3.6, and the mean for Outcomes was 4.2. The retiree males rated two of the five domains of quality

care between good to very good and the other three between very good and excellent.

The results in Table V list the results of the multiple regression analysis. All five domains' F tests were significant which indicates that the retiree male's perceptions of Access, Interpersonal Skills, Technical Quality, Continuity, and Outcomes influences their overall satisfaction.

The most noticeable variable (largest multiple $\underline{R}$ and $\underline{R}^2$) in predicting overall satisfaction for retiree males was Outcomes (Multiple $\underline{R}$ = .90, $\underline{R}^2$ = .81), followed by Interpersonal Skills (Multiple $\underline{R}$ = .84, $\underline{R}^2$ = .71), Access (Multiple $\underline{R}$ = .84, $\underline{R}^2$ = .70), Technical Quality (Multiple $\underline{R}$ = .81, $\underline{R}^2$ = .65), and finally Continuity (Multiple $\underline{R}$ = .70, $\underline{R}^2$ = .48).

In analyzing the differences between the patient's expectations and perceptions, it appears the gap between the retiree's expectations and perceptions was the smallest. This indicates that the retiree category is the most satisfied because Irwin Army Community Hospital comes closer to meeting their expectations than the other beneficiary categories. This is consistent with the findings of the mean scores of each domain. The retirees' perceptions of the quality of care received at Irwin Army Community Hospital come closest to their expectations and the guardian of the male dependent of active duty (who completed the survey) has the largest gap between their expectations and perceptions, meaning that they are less satisfied because their expectations are not being met (see Table

VI). These results suggest that Irwin Army Community Hospital needs to restate one of it's goals from "providing services to our customers which meet or exceeds their needs and expectations" to "provide services to our customers which meets their needs and narrow the gap between their expectations and perceptions of quality of care at Irwin Army Community Hospital."

Intention to Return

The results from this quantitative analysis supports the alternate hypothesis that a significant difference exists between the different beneficiary category's intention to return to Irwin Army Community Hospital. Additionally, their Intent to Return is a function of the beneficiary's overall satisfaction. The results presented in Table VII demonstrate that a significant differences exist in terms of the recommendation of Irwin Army Community Hospital to friends or family and the desire to switch to a different health care facility associated with the active duty categories.

INSERT TABLE VII ABOUT HERE

Retirees, dependents of retirees, and dependents of active duty members demonstrate differences in their response to whether they would recommend Irwin Army Community Hospital and whether they would switch to a different health care facility as compared to active duty soldiers. The retiree's mean score for recommending Irwin Army Community Hospital was 3.6 which indicates they *probably would* to *definitely would* recommend Irwin

Army Community Hospital. A four-point Likert scale ranging from (4) definitely yes, (3) probably yes, (2) probably not, and (1) definitely not was used to measure recommend and switch. When asked if they would switch to a different health care facility, their mean score was 1.8 which indicates they *probably would not* to *definitely would not* switch. Dependents of Retirees mean score for recommending Irwin Army Community Hospital was 3.3 which indicates they probably would to definitely would recommend Irwin Army Community Hospital. When asked if they would switch to a different health care facility, their mean score was 2.3 which indicates they probably would not switch. On the other hand, the dependents of active duty mean score for recommending Irwin Army Community Hospital was 2.7 which indicates dependents scored between *probably would not*, but closer to *probably would* recommend Irwin Army Community Hospital. When asked if they would switch, their mean score was 2.8 indicating that they *probably would not*, but closer to *probably would* switch, unlike the other two groups. This supports the finding that dependent males and females were less satisfied while the retiree males and females were more satisfied.

Opportunities for Improvement

In the analysis of the survey data, some of the areas provide opportunities for improvement. The availability of medical information or advice by phone, ability to make appointments for medical care by phone, easy access to specialty care when needed, choice of provider, and how often a patient

sees the same provider are those items that the mean scores were less than 3.0 (good) on a scale of (1) poor to (5) excellent. Written comments added by the respondents reinforced the low ratings in these areas.

Comparisons with Previous Studies

Patient satisfaction and perception of quality have been the focus of many studies. Within the DoD health care system, major studies including the DoD 1984 Health Care Survey, the OMB Report of the Military Health Care Study in 1975, and the General Accounting Office surveys have been conducted to assess the views of military beneficiaries (Mangelsdorff 1994). According to Dr. David Mangelsdorff, these studies' findings were similar to the results of his study. The results of this study are consistent with the results of his and other military studies. The results showed overall satisfaction with the care received by beneficiaries at military treatment facilities. The active duty personnel and their dependents are less satisfied with the care received than the retirees and their dependents.

CHAPTER V - CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The purpose of this study was to explore whether the customer's overall satisfaction and intention to return is a function of the customer's perception of quality and if this perception meets his/her expectation. This study suggests that the five domains of access, interpersonal skills, technical quality, continuity of care, and outcomes predicts overall satisfaction of beneficiaries seeking care at Irwin Army Community Hospital. Assessing the customer's perceptions of the five domains provides information on Irwin Army Community Hospital's successes at meeting the customer's needs, wants and expectations.

The findings of this study are consistent with the findings of previous studies and measures of patient satisfaction. Beneficiaries overall are moderately satisfied with the quality of care received in Irwin Army Community Hospital. The retired beneficiaries and their dependents are the most satisfied with the care received.

This research produced a significant relationship between overall satisfaction and the five domains of care; Access, Interpersonal Skills, Technical Quality, Continuity, and Outcomes. A multiple regression of the five domains on overall

satisfaction shows that each domain influences the beneficiary's overall satisfaction with the care received at Irwin Army Community Hospital.

The importance and personal nature of health care encourage patients to seek the highest possible quality. Customers of health services are typically not capable of assessing the technical quality of care they receive. Because of this lack of ability to assess technical quality, customers utilize quality attributes associated with the delivery of health care. Results from this study suggest that patients define health care quality in terms of Access, Interpersonal Skills, Technical Quality, Continuity of Care, and Outcomes.

As stated earlier, there are three reasons for measuring customers satisfaction with health care: satisfaction is the ultimate outcome of the delivery of health care, satisfaction ratings provide useful information about structure, process, and outcomes of care, and that satisfied and dissatisfied customers behave differently (Dolinsky and Caputo 1990).

Satisfaction is the ultimate outcome of the delivery of health care. The results of this study indicate that overall, the beneficiaries of Irwin Army community Hospital are moderately satisfied with the quality of care they receive. This supports one of the goals of Irwin Army community Hospital which is to provide services to its customers that meet or exceed their needs and expectations.

Satisfaction ratings provide useful information about structure, process, and outcomes of care. The results of this analysis suggest that some considerations need to be made towards evaluating some access to care elements. This evaluation of the access items with low mean scores could lead to an improvement in processes that would eventually lead to higher overall satisfaction scores.

Satisfied and dissatisfied customers behave differently. In the analysis of variance, beneficiary categories that demonstrated high satisfaction also indicated a stronger intent to return if given an option to switch to a different health care facility. Additionally, increased patient satisfaction results in improved communications between the provider and the patient. Also, higher satisfaction results in better compliance with prescribed medical treatment and improved health outcomes. This could result in a reduction in health care costs and the number of unnecessary visits which is critical in a capitated environment.

The overall satisfaction rating and the category of the beneficiary influences their intention to return to Irwin Army Community Hospital. As the DoD moves into an environment of managed care, it becomes more important than ever that Irwin Army Community Hospital understands the patient perceptions and expectations of the quality of care. This study shows that there is a relationship between the satisfaction of the customer and their intent to return if given a choice.

Recommendations

In order to manage consumers' perceptions of quality in health care, Irwin Army Community Hospital should focus on the findings of this study. A recommendation for further study would be to examine the items of the five domains that mean scores were below 3.0 (good). The availability of medical information or advice by phone, ability to make appointments for medical care by phone, easy access to specialty care when needed, choice of provider, and how often a patient sees the same provider are those items that mean scores were less than 3.0 (good) on a scale of (1) poor to (5) excellent. A performance and improvement team should be created to evaluate this study and make recommendations to improve those items identified as needing improvement to increase overall satisfaction in all beneficiary categories. The results of this survey can be used as a baseline for measuring improvement.

As stated earlier, the results of this study will create opportunities for managers and individuals to strengthen their understanding of patient satisfaction with hospital care, and to develop plans that lead to improvements in the services delivered and the quality of patient care. The results of this survey has utility for managers throughout the hospital. It provides opportunities to analyze the domains of patient satisfaction by beneficiary category. This analysis can help in identifying and targeting the beneficiary categories in which the hospital needs to focus on in marketing TRICARE.

The domains that management has the most impact on are Access, Interpersonal Skills, and Continuity of Care. Through process improvement activities and patient and family education, the gap between the customers' perceptions and expectations can be reduced. This study can be used as a baseline measurement to monitor these improvement activities. Additionally, this survey tool can be used as a continuous measurement of patients' perceptions and expectations within the domains of quality of care at Irwin Army Community Hospital.

The results of the analysis between the expectations and perceptions suggest that Irwin Army Community Hospital needs to restate one of it's goals from "providing services to our customers which meet or exceeds their needs and expectations" to "provide services to our customers which meets their needs and narrow the gap between their expectations and perceptions of quality of care at Irwin Army Community Hospital." According to Dr. David Mangelsdorff in an interview on 1 March 1995 and Dr. Raymond Carey in an interview on 8 March 1995 both stated that it is unrealistic to assume that a hospital could meet or exceed the patient's expectations. They agree that closing the gap is a more realistic goal (Mangelsdorff 1995 and Carey 1995).

DEFINITIONS OF TERMS

Access to Care. Access to care pertains to the factors associated with arranging to get care and the length of time spent getting the care.

Attitude. A long term level of expectations a customer brings to a medical encounter.

Beneficiaries. Beneficiaries refers to the categories of individuals seeking care in the military MTF. They consist of active duty soldiers, dependents of active duty, retirees, dependents of retirees, survivors of active duty soldiers, and dependents of the survivors.

Construct Validity. Construct validity seeks empirical or statistical support for the assertion that the survey measures the appropriate construct.

Content Validity. Content validity is defined as the extent to which the questions of the survey reflect the important components of the topic.

Continuity of Care. Continuity of care refers to the delivery of care by the same facility and provider.

Customer Satisfaction. The measure of the quality of care a patient perceives based on the provider's success at meeting the patients's needs, wants, and expectations.

(Dis)Confirmation. Confirmation is when the customer's perceptions of the encounter meets or exceeds his or her expectations. Disconfirmation is when the perceptions does not meet the expectations.

Dissatisfaction. Dissatisfaction occurs when a negative discrepancy is present between the customer's anticipated outcome and the actual outcome.

Expectations. A desired level of performance that meets a customer's needs, wants, and desires.

Face Validity. Face validity is defined as the extent to which a survey asks what appears to be appropriate questions for the purpose of this study. It is determined by a quick examination of the survey by the respondent, and considers only obvious relevance of the items on the survey.

Functional Care. Functional care is defined as quality in perception when customers makes a comparison of his or her perception of the encounter with his or her pre-encounter expectations.

Intention to Return. A customer's intention to return to the hospital or provider after an encounter is a function of their satisfaction.

Interpersonal Skills. Interpersonal skills pertain to friendliness and courtesy of providers and staff members, respect, and a personal interest in the patient' medical problems.

Joint Commission on the Accreditation of Healthcare Organizations (JCAHO). The commission responsible for surveying healthcare organizations to ensure compliance with standards and the delivery of standard medical care.

Medical Treatment Facility (MTF). Healthcare facility for the treatment of military members, dependents of active duty, retirees, dependent of retirees, survivors and their dependents of a deceased military member.

Outcome of Care/Efficacy. Outcome of care pertains to the efficacy of treatment to improve or maintain the patient's health status.

Perceptions. Confirmation of a customer's quality expectations during a current medical encounter.

Providers. Providers refers to doctors, physician assistants, and nurse practioners.

Quality Assessment. Quality of care is defined as the process of measuring the inputs, outputs, and outcomes of medical care.

Quality of Care. Providing customers with products and services that consistently meet their needs and expectations.

Quality Outcomes. Procedure and diagnostic-specific measures used to generate successful outcomes.

Reliability. Reliability concerns the extent to which the instrument yields the same measurement on repeated uses. It relates to the reproduciblity of measurements.

Service Quality. Service quality is long term attitudes about medical care.

Technical Care. Technical care is the application of science and medical technology to the treatment of the customer's health care needs.

Technical Quality of Care. Technical quality of care refers to the technical skills, experience, and training of the providers, such as accuracy, attention to details, and clear explanations.

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TABLE I

DEMOGRAPHIC STATISTICS OF SAMPLE

Variable	AD Female n	AD Female %	AD Male n	AD Male %	Dep Female n	Dep Female %	Dep Male n	Dep Male %	Ret Female n	Ret Female %	Ret Male n	Ret Male %	Total n	Total %
Gender (Male)	0	0	150	30	0	0	50	10	0	0	46	9	246	49
(Female)	21	4	0	0	180	36	0	0	58	11	0	0	259	51
Enlisted	9	2	85	17	0	0	0	0	0	0	0	0	94	19
NCO	9	2	58	11	0	0	0	0	0	0	0	0	67	13
Warrant	0	0	4	1	0	0	0	0	0	0	0	0	4	1
Officer	3	.5	2	.5	0	0	0	0	0	0	0	0	5	1
AD Depend	0	0	0	0	180	36	50	10	0	0	0	0	230	46
Retiree	0	0	0	0	0	0	0	0	5	1	43	8	48	9
Ret Depend	0	0	0	0	0	0	0	0	46	9	3	.5	49	9.5
Survivor	0	0	0	0	0	0	0	0	5	1	0	0	5	1
Sur Depend	0	0	0	0	0	0	0	0	2	.5	0	0	2	.5
Age														
<21 years	1	.2	17	3	40	8	49	10	1	.2	3	.5	111	21.9
21 - 30	16	3	92	18	85	17	1	.2	6	1.1	1	.2	201	39.5
31 - 40	3	.5	32	6	46	9	0	0	7	1.1	1	.2	89	16.8
41 - 50	1	.2	9	2	9	2	0	0	15	3.2	4	.8	38	8.2
51 - 60	0	0	0	0	0	0	0	0	13	3	16	3.2	29	6.2
>60 years	0	0	0	0	0	0	0	0	16	3.2	21	4.2	37	7.4
Education														
<8th Grade	0	0	0	0	17	3	45	9	1	.2	1	.2	64	12.4
Some High	1	.2	2	.4	13	3	3	.6	3	.6	3	.6	25	5.4
High School Grad/GED	7	1.4	58	11	46	9	1	.2	21	4	13	3	146	28.6
Some College	8	1.6	79	16	74	14.8	1	.2	26	5	20	4	208	41.6
College Grad	4	.8	9	2	27	5	0	0	4	.8	5	1	49	9.6
Post Grad	1	.2	2	.4	3	.5	0	0	3	.5	4	.8	13	2.4

n = 505 Beneficiaries

TABLE I

DEMOGRAPHIC STATISTICS OF SAMPLE

Variable	AD Female n	AD Female %	AD Male n	AD Male %	Dep Female n	Dep Female %	Dep Male n	Dep Male %	Ret Female n	Ret Female %	Ret Male n	Ret Male %	Total n	Total %
Ethnicity														
Black	9	2	36	7	17	3	8	1.6	6	1.2	7	1.4	83	16.2
Caucasian	10	2.2	98	19	130	26	36	7.1	45	9	36	7.1	356	70.4
Hispanic	1	.2	7	1.4	9	2	3	.6	0	0	1	.2	21	4.4
Mexican	0	0	4	.8	4	.8	0	0	0	0	0	0	8	1.6
Asian	0	0	1	.2	5	1	1	.2	4	.8	0	0	11	2.2
Other	1	.2	4	.8	15	3	2	.4	3	.6	1	.2	26	5.2
Income														
<$10,000	1	.2	4	.8	5	1	0	0	5	1	2	.4	17	3.4
$10-19,000	6	1.2	76	15	48	9.6	11	2	13	2.6	12	2.4	166	32.8
$20-29,000	7	1.4	50	10	72	14.1	21	4.2	15	3	15	3	180	35.7
$30-39,000	3	.6	12	2.4	32	6.1	12	2.4	11	2.2	6	1.2	76	14.9
$40-49,000	3	.6	6	1.2	15	3	3	.6	8	1.6	5	1	40	8
$50-59,000	0	0	2	.4	3	.6	1	.2	2	.4	1	.2	9	1.8
$60-69,000	1	.2	0	0	4	.8	1	.2	2	.4	1	.2	9	1.8
$70-79,000	0	0	0	0	0	0	1	.2	1	.2	1	.2	3	.6
>$80,000	0	0	0	0	1	.2	0	0	1	.2	3	.6	5	1
Married	20	4	102	20	158	31	0	0	49	10	37	7	366	72
Insurance	1	.2	9	1.8	4	.8	1	.2	16	3.2	15	3	46	9.2
Intervention	2	.4	5	1	4	.8	3	.6	1	.2	1	.2	16	3.2

n = 505 Beneficiaries

TABLE I

DEMOGRAPHIC STATISTICS OF SAMPLE

Variable	AD Female n	AD Female %	AD Male n	AD Male %	Dep Female n	Dep Female %	Dep Male n	Dep Male %	Ret Female n	Ret Female %	Ret Male n	Ret Male %	Total n	Total %
Clinic Visited														
Red Team	7	1.4	14	2.8	40	8	4	.8	1	.2	1	.2	67	13.4
Blue Team	5	1	12	2.4	43	8.2	9	1.8	1	.2	1	.2	71	13.8
White Team	0	0	0	0	10	2	3	.6	3	.6	6	1.2	22	4.4
Green Team	2	.4	15	3	30	6	11	2.2	25	5	12	2.4	95	19
TMC	1	.2	45	8.6	0	0	0	0	0	0	0	0	46	8.8
EENT	0	0	3	.6	2	.4	0	0	6	1.2	2	.4	13	2.6
Int Med	0	0	5	1	6	1.2	0	0	11	2.2	19	3.8	41	8.2
OB/GYN	1	.2	0	0	27	5.3	0	0	3	.6	0	0	31	6.1
Ortho	0	0	16	3.2	0	0	1	.2	2	.4	0	0	19	3.8
Phys Thpy	1	.2	21	4.2	2	.4	0	0	0	0	0	0	24	4.8
Peds/Well	0	0	9	1.8	18	3.5	22	4.4	0	0	1	.2	50	9.9
Surgical	4	.8	9	1.8	3	.6	0	0	6	1.2	4	.8	26	5.2

n = 505 Beneficiaries

TABLE II

RELIABILITY ANALYSIS

Domain/Item	Coefficient Alpha AD Fem	AD Male	Dep Fem	Dep Male	Ret Fem	Ret Male	Total
Access	.76	.83	.82	.87	.86	.84	.84
Interpersonal Skills	.84	.94	.94	.94	.95	.98	.95
Technical Quality	.96	.93	.92	.93	.94	.93	.93
Continuity	.67	.24	.42	.19	.69	.65	.34
Outcomes	.80	.89	.89	.91	.89	.92	.89
Total	.92	.92	.95	.96	.96	.97	.95

TABLE III

DOMAIN AND ITEM VALIDITY

Domain/Item	Item-Total Correlations AD Fem	AD Male	Dep Fem	Dep Male	Ret Fem	Ret Male	Total
Access							
1. Access/emerg	ns	.40	.52	.56	.59	.46	.51
2. Advice/phone	ns	.37	.41	.40	.43	ns	.36
3. Appts/phone	.47	.28	.33	ns	.40	ns	.30
4. Clinic hours	ns	.35	.36	.35	.30	.76	.40
5. Clinic location	.44	.35	.39	.40	.27	.66	.42
6. Access to care	.57	.31	.37	.66	ns	.67	.42
7. Pharm svc	ns	.09	.21	.54	ns	.32	.28
8. Access/spec	ns	.44	.43	.58	.40	.52	.47
9. Time w/prov	ns	.59	.61	.69	.49	.68	.60
10. Wait for appt	ns	.31	.12	ns	ns	ns	.12
11. Wait in clinic	ns	.28	.16	.36	.34	ns	.22
Interpersonal Skills							
1. Advice/avoid ill	ns	.53	.51	.64	.65	.70	.56
2. Attention to pt	ns	.56	.61	.69	.51	.76	.62
3. Explain procedures	ns	.47	.51	.44	.44	.62	.51
4. Friendliness/prov	ns	.49	.58	.66	.48	.78	.57
5. Friendliness/clerk	ns	.55	.37	.52	.52	.74	.51
6. Friendliness/nurs	ns	.51	.43	.66	.39	.76	.52
7. Per interest in pt	.67	.59	.69	.70	.55	.72	.66
8. Respect/privacy	ns	.48	.61	.60	.42	.70	.56
9. Reassurance/spt	.57	.52	.61	.74	.61	.74	.62
Technical Quality							
1. Accurate diagnosis	.49	.62	.67	.58	.57	.68	.64
2. Skill/exper of prov	.48	.54	.66	.63	.59	.79	.63
3. Thorough treatment	ns	.61	.67	.64	.69	.72	.67
Continuity							
1. Choice of provider	ns	.16	.50	.63	.58	.68	.28
2. Seeing same prov	ns	.31	.32	ns	.51	.50	.37
Outcomes							
1. How was pt helped	.64	.67	.69	.74	.63	.85	.71
2. Quality care recd	.59	.76	.73	.80	.65	.89	.76

TABLE IV

Descriptive Statistics Within Domains

Domain/item	AD Female MEAN	AD Female SD	AD Male MEAN	AD Male SD	Dep Female MEAN	Dep Female SD	Dep Male MEAN	Dep Male SD	Ret Female MEAN	Ret Female SD	Ret Male MEAN	Ret Male SD	Total MEAN	Total SD
Access														
1. Access/emerg	3.1	.83	3.1	.99	3.3	.99	3.0	1.0	3.3	1.1	4.1	.98	3.3	1.0
2. Advice/phone	2.6	.97	2.8	1.1	2.6	1.2	2.7	1.1	2.6	1.3	2.9	1.3	2.7	1.2
3. Appts/phone	2.4	1.1	2.8	1.1	2.6	1.2	2.5	1.3	2.6	1.3	3.2	1.3	2.7	1.2
4. Clinic hours	3.6	.87	3.3	.97	3.5	1.0	3.3	.98	3.6	1.0	4.2	.92	3.5	1.0
5. Clinic location	4.2	.77	3.5	.90	3.6	.99	3.6	.96	3.9	.96	4.3	.85	3.7	.97
6. Access to care	2.8	.95	3.3	1.1	3.3	1.2	3.2	1.2	3.5	1.1	4.1	1.1	3.4	1.2
7. Pharm svc	3.2	1.1	3.0	1.1	3.1	1.1	2.9	1.2	3.4	1.1	4.0	1.1	3.2	1.2
8. Access/spec	2.9	.94	3.1	1.0	3.0	1.1	2.9	1.2	3.1	.94	3.8	1.2	3.1	1.1
9. Time w/prov	3.2	1.0	3.1	.94	3.0	1.1	3.1	.95	3.2	1.1	3.9	1.1	3.2	1.1
10. Wait for appt*	5.4	1.5	5.1	1.3	5.4	1.3	5.5	1.3	4.4	1.7	4.6	1.9	5.1	1.4
11. Wait in clinic**	4.0	1.2	4.1	1.2	3.9	1.1	4.4	1.0	3.9	1.3	4.3	1.2	4.1	1.2
Interpersonal Skills														
1. Advice/avoid ill	3.4	.87	3.3	1.0	3.1	1.1	3.0	1.1	3.2	1.0	3.9	1.2	3.3	1.1
2. Attention to pt	3.3	.80	3.1	1.0	3.2	1.1	3.0	1.1	3.3	1.1	3.9	1.1	3.2	1.1
3. Explain procs	3.5	1.1	3.2	.98	3.3	1.1	3.1	.99	3.5	1.0	4.1	1.0	3.4	1.1
4. Friendliness/prov	3.6	.92	3.4	1.1	3.5	1.0	3.5	1.1	3.8	1.0	4.2	1.0	3.6	1.1
5. Friendliness/clk	3.8	.98	3.3	1.1	3.3	1.2	3.1	1.2	3.5	1.1	4.0	1.2	3.4	1.2
6. Friendliness/nurs	4.0	.83	3.5	.91	3.6	1.1	3.4	1.1	3.7	1.0	4.3	.92	3.6	1.0
7. Interest in pt	3.2	1.0	3.1	1.0	3.2	1.1	3.2	1.1	3.4	.92	4.0	1.2	3.3	1.1
8. Respect/privacy	3.4	.97	3.4	1.0	3.4	1.0	3.5	1.0	3.7	.96	4.2	1.1	3.5	1.0
9. Reassurance/spt	3.5	.93	3.2	.99	3.3	1.0	3.1	1.0	3.3	1.1	4.1	1.1	3.3	1.0
Technical Quality														
1. Accurate diagn	3.4	1.0	3.2	1.1	3.3	1.1	3.1	1.1	3.5	.78	4.0	1.2	3.3	1.1
2. Prov skill/exper	3.4	.93	3.4	.98	3.4	.99	3.2	.99	3.7	.93	4.1	1.1	3.5	1.0
3. Thorough treat	3.5	.98	3.2	1.1	3.3	1.0	2.9	1.0	3.5	1.0	4.2	1.1	3.4	1.1
Continuity														
1. Choice of prov	2.9	1.2	2.9	1.2	2.5	1.1	2.6	1.2	2.9	1.1	3.4	1.3	2.8	1.2
2. Seeing same prov#	2.6	.81	2.5	.99	2.1	.99	1.9	.72	2.7	.81	3.0	.71	2.4	.96

TABLE IV

Descriptive Statistics Within Domains

Domain/item	AD Female MEAN	AD Female SD	AD Male MEAN	AD Male SD	Dep Female MEAN	Dep Female SD	Dep Male MEAN	Dep Male SD	Ret Female MEAN	Ret Female SD	Ret Male MEAN	Ret Male SD	Total MEAN	Total SD
Outcomes														
1. How was pt helped	3.3	.66	3.3	.82	3.2	.88	3.1	.97	3.4	.98	4.1	1.0	3.4	.96
2. Quality care recd	3.5	.81	3.3	.91	3.3	.82	2.9	1.1	3.6	1.0	4.2	.94	3.4	.99
Dependent Variables														
1. Satisfaction+	3.7	.96	3.5	.98	3.6	.98	3.1	1.2	4.0	.89	4.3	.95	3.6	1.0
2. Dissatisfaction+	3.6	.81	3.3	1.2	3.4	1.3	3.6	1.2	2.6	1.1	2.7	1.3	3.2	1.2
3. Recommend IACH@	3.0	.50	2.9	.78	2.8	.87	2.6	.83	3.3	.66	3.6	.66	3.0	.82
4. Switch@	2.2	.70	2.6	.89	2.6	.91	3.0	.91	2.3	.89	1.8	.84	2.5	.92

(Scale: 1=poor, 2=fair, 3=good, 4=very good, 5=excellent)
*(Scale: 1 through 7 scale measuring time)
**(Scale: 1 through 6 scale measuring time)
#(Scale: 1=rarely, 2=sometimes, 3=most of time, 4=always)
+(Scale: 1=strongly disagree, 2=disagree, 3=not sure, 4=agree, 5=strongly agree)
@(Scale: 1=definitely not, 2=probably not, 3=probably yes, 4=definitely not)

TABLE V

MULTIPLE REGRESSION

DEPENDENT VARIABLE: SATISFACTION

Beneficiary Category	Multiple R	R squared	F Test	p*
ACCESS				
AD Female	.868	.754	2.50	ns
AD Male	.660	.436	9.68	.000
Dep Female	.680	.462	13.13	.000
Dep Male	.809	.655	6.56	.000
Ret Female	.652	.426	3.10	.003
Ret Males	.838	.702	7.30	.000
Total	.661	.437	34.84	.000

*(Exact probabilities reported, ns=non-significant)
Independent Variables=11 items in Access Domain

TABLE V

MULTIPLE REGRESSION

DEPENDENT VARIABLE: SATISFACTION

Beneficiary Category	Multiple R	R squared	F Test	p*
INTERPERSONAL SKILLS				
AD Female	.775	.601	1.84	ns
AD Male	.657	.431	11.79	.000
Dep Female	.722	.521	20.53	.000
Dep Male	.823	.678	9.36	.000
Ret Female	.782	.611	8.37	.000
Ret Males	.842	.709	9.76	.000
Total	.702	.493	53.40	.000

*(Exact probabilities reported, ns=non-significant)
Independent Variables= 9 items in Interpersonal Skills Domain

TABLE V

MULTIPLE REGRESSION

DEPENDENT VARIABLE: SATISFACTION

Beneficiary Category	Multiple R	R squared	F Test	p*
TECHNICAL QUALITY				
AD Female	.529	.280	2.21	ns
AD Male	.637	.406	33.28	.000
Dep Female	.711	.505	59.88	.000
Dep Male	.670	.449	12.50	.000
Ret Female	.694	.481	16.68	.000
Ret Males	.807	.651	26.14	.000
Total	.692	.479	153.44	.000

*(Exact probabilities reported, ns=non-significant)
Independent Variables= 3 items in Technical Quality Domain

TABLE V

MULTIPLE REGRESSION

DEPENDENT VARIABLE: SATISFACTION

Beneficiary Category	Multiple R	R squared	F Test	p*
CONTINUITY				
AD Female	.156	.024	.22	ns
AD Male	.322	.103	8.47	.000
Dep Female	.533	.284	35.03	.000
Dep Male	.637	.406	16.05	.000
Ret Female	.620	.384	17.14	.000
Ret Males	.695	.484	20.13	.000
Total	.413	.171	51.68	.000

*(Exact probabilities reported, ns=non-significant)
Independent Variables= 3 items in Continuity Domain

TABLE V

MULTIPLE REGRESSION

DEPENDENT VARIABLE: SATISFACTION

Beneficiary Category	Multiple R	R squared	F Test	p*
OUTCOMES				
AD Female	.669	.448	7.29	.005
AD Male	.777	.603	111.83	.000
Dep Female	.750	.563	113.97	.000
Dep Male	.812	.659	45.50	.000
Ret Female	.672	.452	22.64	.000
Ret Males	.901	.812	92.94	.000
Total	.778	.606	386.13	.000

*(Exact probabilities reported, ns=non-significant)
Independent Variables= 3 items in Outcome Domain

TABLE VI

Differences Between Expectations and Perceptions Within Domains
Gaps = Expectations minus Perceptions (Exp - Per = Diff)

Domain/Item	AD Female Diff	AD Male Diff	DEP Female Diff	DEP Male Diff	RET Female Diff	RET Male Diff	Total Diff
Access							
1. Access/emerg	1.3	1.5	1.4	1.7	1.2	.5	1.3
2. Advice/phone	1.5	1.3	1.8	1.7	1.4	1.2	1.5
3. Appts/phone	2.2	1.7	2.1	2.2	1.9	1.2	1.9
4. Clinic hours	.7	1.1	1.0	1.2	.7	.3	1.0
5. Clinic location	.1	.8	.7	.8	.3	.1	.6
6. Access to care	1.9	1.5	1.5	1.6	1.2	.7	1.4
7. Pharm svc	1.4	1.5	1.6	1.7	1.2	.6	1.4
8. Access/spec	1.6	1.6	1.7	1.8	1.5	.8	1.6
9. Time w/prov	1.3	1.3	1.6	1.5	1.3	.4	1.3
10. Wait for appt*	.6	1.1	.5	.5	1.4	1.2	.9
11. Wait in clinic**	1.3	1.0	1.3	.8	.9	.3	1.0
Interpersonal Skills							
1. Advice/avoid ill	1.1	1.2	1.5	1.6	1.4	.6	1.3
2. Attention to pt	1.5	1.5	1.6	1.8	1.3	.5	1.5
3. Explain procs	1.1	1.4	1.5	1.7	1.2	.4	1.3
4. Friendliness/prov	.9	.6	1.3	1.3	.9	.3	1.1
5. Friendliness/clk	.9	1.3	1.4	1.6	.8	.5	1.3
6. Friendliness/nurs	.6	1.1	1.1	1.3	1.0	.2	1.1
7. Interest in pt	.9	1.1	1.3	1.4	1.1	.4	1.1
8. Respect/privacy	1.3	1.2	1.4	1.2	1.0	.3	1.2
9. Reassurance/spt	.9	1.2	1.3	1.6	1.2	.4	1.2
Technical Quality							
1. Accurate diagn	1.3	1.5	1.5	1.7	1.3	.7	1.5
2. Prov skill/exper	1.5	1.4	1.5	1.7	1.1	.7	1.3
3. Thorough treat	.9	1.3	1.3	1.7	1.0	.2	1.2

TABLE VI

Differences Between Expectations and Perceptions Within Domains
Gap = Expectations minus Perceptions (Exp - Per = Diff)

Domain/Item	AD Female Diff	AD Male Diff	DEP Female Diff	DEP Male Diff	RET Female Diff	RET Male Diff	Total Diff
Continuity							
1. Choice of prov	1.1	1.3	1.9	2.0	1.4	.7	1.5
2. Seeing same prov#	.9	1.0	1.3	1.5	.8	.4	1.1
Outcomes							
1. How was pt helped	.9	1.0	1.2	1.4	.9	.3	.9
2. Quality care recd	1.1	1.4	1.5	1.9	1.2	.5	1.5

(Scale: 1=poor, 2=fair, 3=good, 4=very good, 5=excellent)
*(Scale: 1 through 7 scale measuring time)
**(Scale: 1 through 6 scale measuring time)
#(Scale: 1=rarely, 2=sometimes, 3=most of time, 4=always)
@(Scale: 1=definitely not, 2=probably not, 3=probably yes, 4=definitely not)

TABLE VII

ANALYSIS OF VARIANCE

	df	Sum of Squares	Mean Square	F Test	p
RECOMMEND					
Between Groups	6	35.19	5.87	9.47	.0000
Within Groups	497	307.85	.62		
Total	503	343.04			
SWITCH					
Between Groups	6	27.20	4.53	5.60	.0000
Within Groups	497	399.93	.81		
Total	503	427.14			

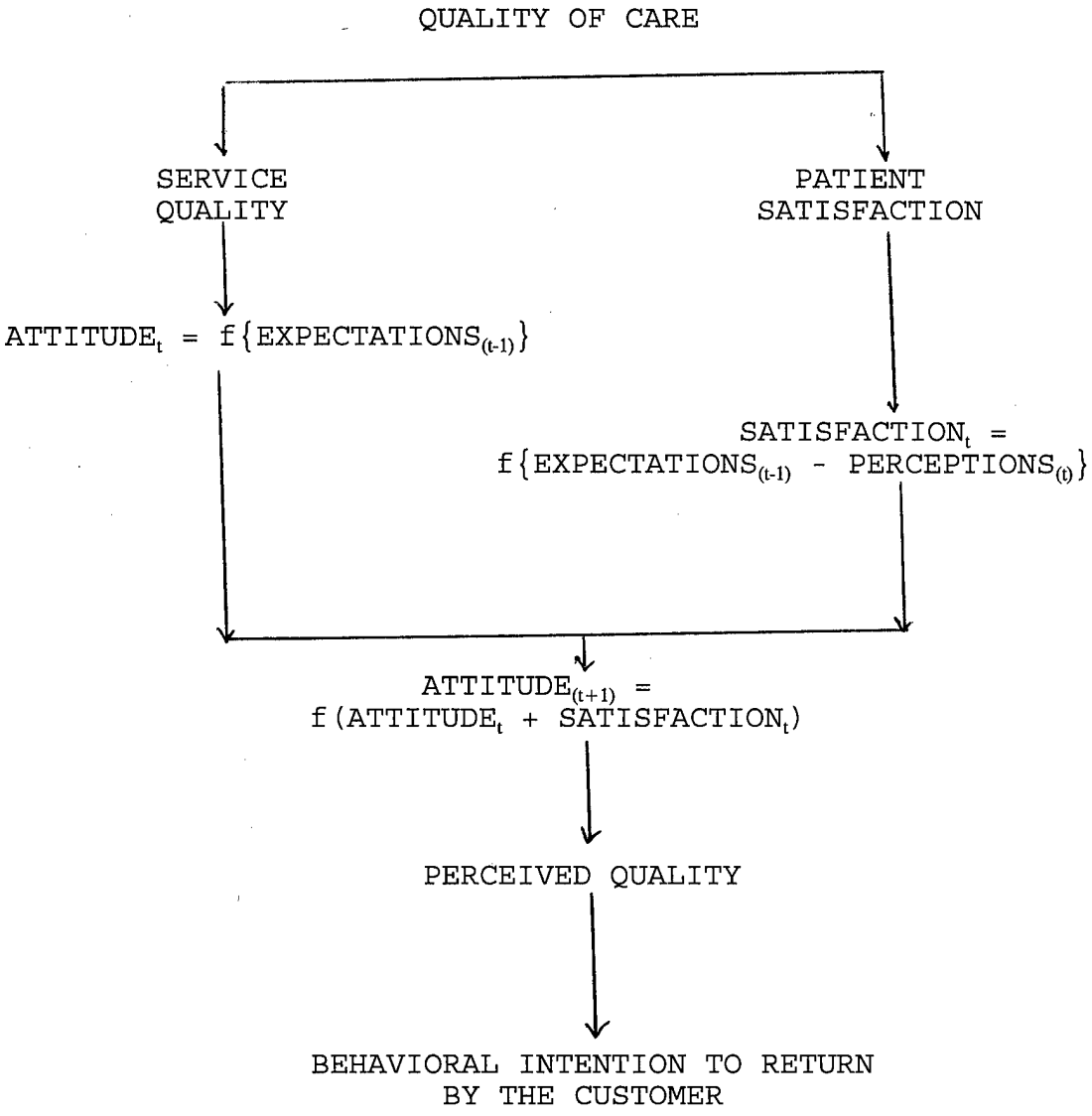

Figure 1. Theoretical Framework

IRWIN ARMY COMMUNITY HOSPITAL'S

CUSTOMER SATISFACTION SURVEY

1. The clinic that you last visited. (Place an **X** in the blank)

Red Team.....___
Blue Team.....___
White Team.....___
Green Team.....___
EENT.....___
Internal Medicine.....___
OB/GYN.....___
Occupational/Physical Therapy.....___
Orthopedics.....___
Pediatrics/Well Baby.....___
Surgical Clinic.....___

2. Would you say your health is

Excellent.....5
Very Good.....4
Good.....3
Fair.....2
Poor.....1

3. How old were you on your last birthday? (Write in) ____ years

4. Are you: (Circle one)

Male
Female

5. Which of the following best describes your racial or ethnic background? (Place an **X** in the blank)

Black.....___
Caucasian.....___
Hispanic.....___
Mexican.....___
Asian.....___
Other.....___

6. What is the highest grade you completed in school?
(Place an **X** in the blank)

Less than 8th grade.....___
Some high school.....___
High school graduate.....___
Some college.....___
College graduate.....___
Any post graduate work.....___

7. Approximately what was your family's total income last year before taxes? (Place an **X** in the blank)

Less than $10,000.....___
$10,000 to 19,999.....___
$20,000 to 29,999.....___
$30,000 to 39,999.....___
$40,000 to 49,999.....___
$50,000 to 59,999.....___
$60,000 to 69,999.....___
$70,000 to 79,999.....___
$80,000 and more.....___

8. Which of the following best describes your current marital status?
(Place an **X** in the blank)

Married.....___
Never married.....___
Separated.....___
Divorced.....___
Widowed.....___

9. Which of the following best describes your current status?
(Place an **X** in the blank)

Active Duty Enlisted (E1 to E4).....___
Active Duty NCO (E5 to E9).....___
Active Duty Warrant Officer (WO1 to WO4).....___
Active Duty Officer (O1 to O7).....___
Dependant of Active Duty Member.....___
Retired Service Member.....___
Dependant of Retired Service Member.....___
Survivor of Service Member.....___
Dependent of Survivor.....___

10. Were you a participant in the Fort Riley Intervention Project?
(Circle one)

Yes
No

11. What is the five-digit ZIP Code of your home address?

(Write in) ___ ___ ___ ___ ___

12. Do you have third party health care insurance? (Circle one)

Yes
No

(Circle the appropriate number)	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
13. The location of a provider's office in a hospital should be convenient	1	2	3	4	5
14. The hours when the provider's office is open should be convenient	1	2	3	4	5
15. Patients should have access to specialty care when needed	1	2	3	4	5
16. Patients should have access to medical care in an emergency	1	2	3	4	5
17. Making appointments for medical care by phone should be convenient	1	2	3	4	5
18. Medical Information or advice should be available by phone	1	2	3	4	5
19. Patients should have access to medical care whenever they need it	1	2	3	4	5
20. Services for getting prescription filled should be available	1	2	3	4	5
21. Patients should be able to expect a thorough examination and an accurate diagnosis	1	2	3	4	5
22. Providers in the hospital should have skill, experience, and training	1	2	3	4	5

(Circle the appropriate number)	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
23. Patients should expect a thorough treatment regimen	1	2	3	4	5
24. Patients should expect an explanation of the medical procedures and tests	1	2	3	4	5
25. Patients should expect the provider to give attention to what they have to say	1	2	3	4	5
26. Patients should be given advice about ways to avoid illness and stay healthy	1	2	3	4	5
27. Patients should be able to see the provider of their choice easily	1	2	3	4	5
28. Patients should expect friendliness and courtesy from their medical providers	1	2	3	4	5
29. Patients should expect friendliness and courtesy from the nursing staff	1	2	3	4	5
30. Patients should expect friendliness and courtesy from the clerical staff	1	2	3	4	5
31. Patients should expect a personal interest in them and their medical problems	1	2	3	4	5
32. Patients should be respected and their privacy protected	1	2	3	4	5
33. Patients should be given reassurance and support by their providers and the staff	1	2	3	4	5
34. Patients should expect the amount of time spent with the providers during a visit to be sufficient	1	2	3	4	5

35. How long should a patient have to wait between the time they make an appointment for routine care and the day they actually see the provider?

2 days and less.....7
3 days to 1 week.....6
1 to 2 weeks.....5
3 to 4 weeks.....4
5 to 6 weeks.....3
7 to 8 weeks.....2
8 weeks or more.....1

36. Once a patient gets to the provider's office, how long should they wait to see the provider when they have an appointment for care?

less than 10 minutes.....6
10 to 15 minutes.....5
16 to 30 minutes.....4
31 to 45 minutes.....3
46 to 60 minutes.....2
more than 1 hour.....1

37. When a patient goes for medical care, how often should they see the same provider?

Always.....4
Most of the time.....3
Sometimes.....2
Rarely or never.....1

(Circle the appropriate number)	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
38. Patients should be helped as an outcome to the medical care received	1	2	3	4	5
39. Patients should expect to receive quality medical care	1	2	3	4	5

(Circle the appropriate number)	Poor	Fair	Good	Very Good	Excellent
40. Convenience of the provider's office or clinic location in Irwin Army Hospital	1	2	3	4	5
41. The hours when the provider's office or clinic is open at Irwin Army Hospital	1	2	3	4	5

(Circle the appropriate number)	Poor	Fair	Good	Very Good	Excellent
42. Access to specialty care in Irwin Army Hospital when needed	1	2	3	4	5
43. Access to medical care at Irwin Army Hospital in an emergency	1	2	3	4	5
44. Arrangements for making appointments for medical care at Irwin Army Hospital by phone	1	2	3	4	5
45. Availability of medical information or advice by phone at Irwin Army Hospital	1	2	3	4	5
46. Access to medical care at Irwin Army Hospital when you need it	1	2	3	4	5
47. Services available for getting prescription filled at Irwin Army Hospital	1	2	3	4	5
48. Thoroughness of your examination and accuracy of the diagnosis by providers at Irwin Army Hospital	1	2	3	4	5
49. The skill, experience, and training of providers at Irwin Army Hospital	1	2	3	4	5
50. Thoroughness of treatment received at Irwin Army Hospital	1	2	3	4	5
51. Explanation of the medical procedures and tests by the staff at Irwin Army Hospital	1	2	3	4	5
52. Attention to what you have to say by the staff at Irwin Army Hospital	1	2	3	4	5
53. Advice you get about ways to avoid illness and stay healthy by the staff at Irwin Army Hospital	1	2	3	4	5

(Circle the appropriate number)	Poor	Fair	Good	Very Good	Excellent

54. Ease of seeing the provider of your choice at Irwin Army Hospital.....1....2.....3.....4.....5

55. Friendliness and courtesy shown to you by the medical providers at Irwin Army Hospital....1....2.....3.....4.....5

56. Friendliness and courtesy shown to you by the nursing staff at Irwin Army Hospital.....1....2.....3.....4.....5

57. Friendliness and courtesy shown to you by the clerical staff at Irwin Army Hospital.....1....2.....3.....4.....5

58. Personal interest in you and your medical problems by the staff.....1....2.....3.....4.....5

59. Respect shown to you and attention to your privacy while at Irwin Army Hospital.....1....2.....3.....4.....5

60. Reassurance and support offered to you by the providers and the staff of Irwin Army Hospital.....1....2.....3.....4.....5

61. The amount of time you spend with the providers and staff during a visit at Irwin Army Hospital.....1....2.....3.....4.....5

62. How long do you usually have to wait between the time you made an appointment for care at Irwin Army Hospital and the day you actually saw the provider?

2 days and less.....7
3 days to 1 week.....6
1 to 2 weeks.....5
3 to 4 weeks.....4
5 to 6 weeks.....3
7 to 8 weeks.....2
8 weeks or more.....1

63. Once you get to the provider's office or clinic at Irwin Army Hospital, how long do you usually wait to see the provider when you have an appointment for care?

less than 10 minutes.....6
10 to 15 minutes.....5
16 to 30 minutes.....4
31 to 45 minutes.....3
46 to 60 minutes.....2
more than 1 hour.....1

64. When you go for medical care, how often do you see the same provider at Irwin Army Hospital?

Always.....4
Most of the time.....3
Sometimes.....2
Rarely or never.....1

(Circle the appropriate number)	Poor	Fair	Good	Very Good	Excellent
65. The outcomes of your medical care, how much you are helped by the providers and staff at Irwin Army Hospital	1	2	3	4	5
66. Overall, rate the quality of care and services at Irwin Army Hospital	1	2	3	4	5

(Circle the appropriate number)	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
67. I am very satisfied with the medical care I receive at Irwin Army Hospital	1	2	3	4	5
68. There are some things about the medical care I receive that could be better	1	2	3	4	5
69. The medical care I have been receiving at Irwin Army Hospital is just about perfect	1	2	3	4	5

(Circle the appropriate number)	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree

70. I am dissatisfied with some things about the medical care I receive at Irwin Army Hospital.....1.....2.....3.....4.....5

71. Would you recommend Irwin Army Hospital to your family or friends if they needed care and could receive it here?

Definitely yes.....4
Probably yes.....3
Probably not.....2
Definitely not.....1

72. Hypothetically, if you had an opportunity to switch to a different health care facility for medical care, would you do so?

Definitely yes.....4
Probably yes.....3
Probably not.....2
Definitely not.....1

16 January 1995

Deputy Commander for Administration

Beneficiaries
Irwin Army Community Hospital
Ft. Riley, KS 66442

Dear Patients,

Enclosed is a questionnaire that has been designed to assess the quality of care received at Irwin Army Community Hospital. Please take a few minutes to complete this questionnaire and return it. We value your opinion about the services you receive here. Your honest response will help us to better serve you in the future.

The purpose of the survey is to conceptualize and operationalize service quality and customer satisfaction. Additionally, the purpose is to examine the relationship between service quality, customer satisfaction, and the customer's intention to return.

The goal of this survey is to promote awareness throughout Irwin Army Community Hospital of the commitment to continuously improve the quality of patient care as perceived by the patients. This survey will provide a reliable mechanism for evaluating plans initiated by managers to improve quality of service delivered.

Your anonymity will be protected at all times. Completion of this questionnaire will not be linked or connected to your name or social security number.

Thank you for taking the time to share your thoughts about the quality of care at Irwin Army Community Hospital.

Sincerely,

ORIGINAL SIGNED

Leon Woodley
Lieutenant Colonel, Medical Service
Deputy Commander for Administration

Enclosure