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A STUDY TO IDENTIFY
THE DETERMINANTS OF PATIENT SATISFACTION
AT MARTIN ARMY COMMUNITY HOSPITAL
USING QUANTITATIVE AND QUALITATIVE METHODS

A Graduate Management Project
Submitted to the Faculty of
Baylor University
In partial fulfillment of the Requirements
For the Degree of
Master of Health Administration
by
Captain Charles E. Oliver, MS
June 1990

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MEMORANDUM THRU Colonel H. Dale Brown Jr., Deputy Commander for
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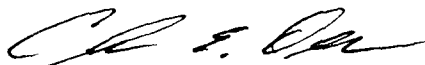
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FOR Chairman Residency Committee, U.S. Army-Baylor University
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SUBJECT: Graduate Management Project (GMP)

In accordance with the instructions contained in the
Administrative Residency Manual, three copies of my GMP, DD Form
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5 Enclosures


CHARLES E. OLIVER
CPT, MS
Administrative Resident

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ABSTRACT

What are the determinants of patient satisfaction at Martin Army Community Hospital (MACH) and how satisfied are the beneficiaries with the services provided? The results of this study indicated that 87% of the retirees and their families receiving care at MACH and its subordinate clinics were "very satisfied" or "satisfied" with the services provided. This was in stark contrast to the responses by active duty soldiers and their families where only 43% indicated the same level of satisfaction. The purpose of this study was to identify the determinants and predictors of patient satisfaction at Martin Army Community Hospital quantitatively, through the use of a beneficiary survey and qualitatively, through the use of focus group interviews. Multiple regression and Chi square analyses confirmed that there was a statistically significant difference between the perceptions of active duty and retiree families regarding patient satisfaction at MACH for both outpatient and inpatient services. Pareto analyses and diagrams revealed that the top five dissatisfiers were: waiting time for physicians, difficulty with scheduling appointments, gaining telephonic access into the health care system, waiting time at the pharmacy, and the perceived lack of sensitivity by the staff. The best predictor or determinant of outpatient satisfaction was the health care provider's willingness or perceived ability to answer the questions of the patient where $F(13, 486) = 11.7$, $p < .001$. The results of focus group interviews revealed that the inability of the physicians to answer questions was normally not due to a lack of technical expertise but was mainly due to a lack of documentation in the medical records (i.e., missing lab tests and consults). The best predictor of inpatient satisfaction was the comfort level of patients with the facility where $F(11, 488) = 21.2$, $p < .001$ and the largest inpatient dissatisfier for both groups was food services.

Introduction

Interest in, and research on, patient satisfaction have proliferated in the last decade. Considerable analysis has been devoted to clarifying the meaning of patient satisfaction, testing scales for its measurements, and identifying empirically its antecedents and consequents. The purpose of this study was to identify the determinants of patient satisfaction at Martin Army Community Hospital quantitatively through the use of a beneficiary survey by analyzing and comparing different outpatient and inpatient variables and to further analyze those results by conducting focus group interviews.

Sociodemographic variables have been studied on numerous occasions; however, a consistent picture of their effect on patient satisfaction has not emerged. This study incorporates some sociodemographic characteristics (e.g., age, military status, race, income, health status, and sex) that may predispose one toward satisfaction with care received. Additionally, the study introduces a complex of different types of attitudinal variables (e.g., continuity of care, confidence in the medical care system, and ability to access the system) that may predispose patients toward satisfaction or dissatisfaction with the military health care system.

Data is only meaningful for improving patient care to the extent that the patient satisfaction measures are methodologically sound. The evaluation of a patient feedback system should involve consideration of the representativeness of the patient sample surveyed, the appropriateness of the aspects of care included in the instrument, the validity and reliability of the measures used to collect patient feedback, and the usefulness of the data generated by the system (Nelson, 1989).

Patients are the central focus of both health care delivery and quality assurance (QA) efforts. It is therefore ironic that, until recently, patients' views were generally considered external to the process of health care (Weiss, 1987). Researchers have attempted to identify the key determinants of patient satisfaction because of the hypothesis that patient satisfaction can potentially influence certain health-related behaviors (e.g., compliance with medical regimens and use of medical services). Measuring patient satisfaction and exploring the subtleties of the resulting data are difficult and may be beyond the capabilities and expertise of most departments responsible for implementing such projects in military hospitals.

Rationale for Study

The increased level of attention being devoted to patient satisfaction is an indication of its perceived importance. Hospital commanders must identify the most effective methods for obtaining patient satisfaction data, institute programs to use this data to improve the delivery of health care in their institutions, and ultimately reduce the overall costs associated with providing care.

The concepts of quality improvement, patient satisfaction, and methods for monitoring the effectiveness of quality improvement techniques are important to military treatment facilities because a hospital's perceived lack of quality affects admissions.

Focus group interviews and a review of patient complaints indicate that variations in patient usage of military facilities in comparison to civilian facilities will occur when there is a perceived lack of quality of care in military treatment facilities (MTFs) and lack of overall satisfaction with the military health care system.

The primary goal of monitoring and responding to fluctuations in patient satisfaction is to improve the quality of care (Cleary, 1988). The data received from beneficiary surveys and focus groups will be utilized to routinely and systematically assess the quality of care and provide clinicians and administrators with useful data for developing Quality Improvement Teams (QIT). Several studies have related patient satisfaction with commitment to a physician and have documented that dissatisfied patients are more likely to "doctor shop." They found that a change of doctor was related to dissatisfaction with a variety of aspects of medical care, including unfavorable attitudes toward the physician's personal qualities and an unwillingness of the physician to spend adequate time with the patient (Heffring, 1986).

STATEMENT OF THE MANAGEMENT PROBLEM OR QUESTIONS

The problem of this study was to develop a methodology for identifying the determinants of patient satisfaction at MACH using quantitative methods (i.e., beneficiary survey) and qualitative methods (i.e., focus groups). The focus of the study was to find out "what do patients complain about the most?" To decrease their complaints what types of things can the hospital staff do?

LITERATURE REVIEW

Patient Satisfaction

Health care should follow the lead of other industries, which measure quality by the perceptions of those who receive the service. In health care, it's the patient's perception that is most important (Harper, 1988). What do patients complain about? To decrease their complaints, what things can the hospital staff do that might make a big difference? For what things do patients compliment the hospital? What might the patients need to feel optimally satisfied or to feel that they received quality care? (Droste, 1989).

Donabedian's perspective is helpful: "Quality is more perpetual than concrete in its orientation" (Donabedian, 1988). Accepting the perpetual component of quality helps caregivers change their focus from defending their actions to determining how to influence patients' perceptions in a more positive manner.

Over the past decade or so, increasing attention has been devoted to the assessment and interpretation of patient satisfaction with care. There are numerous ways of defining and measuring patient satisfaction; most focus on the health care recipients' reaction to salient aspects of care and measure the patients'

cognitive evaluation and emotional reaction to the structure, process, and/or outcome of care (Abramowitz, 1988).

Two assumptions are fundamental to any discussion of patient satisfaction data. First, patient satisfaction is strongly influenced by patients' participation in their care. Fritz states that, "participation in making treatment decisions restores to patients a sense of control and significantly affects their satisfaction." The second assumption is that patient perceptions are valid (Fritz, 1989). Patients' perceptions can differ from the caregivers' viewpoint of a given situation. Therefore, leadership staff might need to assist caregivers in accepting patient feedback as it is without making judgments about the patient being right, wrong, or not understanding.

Determinants of Patient Satisfaction

Several attempts have been made to identify a meaningful taxonomy of determinants of patient satisfaction. In many cases these taxonomies have been developed as a means to assist researchers in reviewing the patient satisfaction literature. While the specific categories used for organization of the

variables may vary, four major determinants of patient satisfaction are identified consistently. These determinants are:

1. Characteristics of patients, including sociodemographic characteristics, expectations of the medical encounter, and health status.

2. Characteristics of providers, including personality traits and the art and technical quality of care dispensed.

3. Aspects of the physician-patient relationship, including the clarity and completeness of communication between patient and provider and the outcome of the encounter.

4. Structural and setting factors, including accessibility, mode of payment, and treatment length, which may predispose patients toward a feeling of satisfaction or dissatisfaction.

Outcome Measurement

The emphasis on outcome measurement has led to an increased appreciation of the significance of the patient's perception of care. Patient satisfaction is now recognized as an expected outcome of care. As Donabedian stated: "Patient satisfaction may be considered to be one of the desired outcomes of care, even an element in health status itself" (Donabedian, 1988). It is futile to argue about the validity of

patient satisfaction as a measure of quality. Whatever its strengths and limitations as an indicator of quality, information about patient satisfaction should be as indispensable to assessments of quality as is the design and management of healthcare systems (Donabedian, 1988).

Donabedian and others have also pointed out that satisfied patients are more likely to adhere to their practitioners' recommendations for care and treatment. Furthermore, research has shown that patient satisfaction is a determinant of other patient behaviors, such as choice of healthcare provider or system, use of services, complaints, and malpractice suits (Harper, 1989).

Patient feedback can therefore be a useful tool for evaluating and improving quality. The aspects of care examined are normally multidimensional. The areas examined generally relate to either the environment and organization of the facility providing care (e.g., patients' satisfaction with physical surroundings, food service, and discharge procedures) or healthcare practitioners' behavior (e.g., patients' satisfaction with physicians, nurses, and therapists (Inguanzo, 1985)).

Quality of Care

Measuring the quality of health care (in the military and civilian sector) and its relationship to patient satisfaction is probably one of the most difficult challenges facing the health care industry today (Jensen, 1989). Satisfaction surveys are often the only channel through which patients can alert providers to their concerns, needs, and perceptions of treatment (Rowland, 1984).

In its recently developed principles of organization and management, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) notes that "total organizational commitment to continuously improve the quality of patient care is the central concern...[and] An ongoing, comprehensive, self-assessment system [that] supports and promotes continuous improvement in the quality of patient care...[is one that] seeks feedback on the quality of care from patients, practitioners, employees, as well as the community"(JCAHO, 1990).

Effective and efficient medical diagnosis and treatment often depend on accurate patient-physician communication and active patient participation in the treatment process. Since patient satisfaction is generally positively related to patient-physician communication, monitoring satisfaction may help

identify situations in which communication is not optimal (Davis, 1989).

Trends

Women are still the main health care decision makers in 7 out of 10 households nationally, a statistic that has remained fairly consistently over the past 5 years despite changes in the number of two-income families (Inguanzo, 1989). These findings are consistent with the results of the local focus group interviews where 9 out of 10 active duty families indicated that the wife or "spouse" was the primary user of the MTF and the decision maker for the household on health care issues.

Some 62% of military women are "satisfied" or "very satisfied" and only 18.5% are "dissatisfied" or very dissatisfied with treatment provided at military clinics and hospitals. Those findings come from the 1989 Active-Duty Health Care Survey. The Defense Manpower Data Center conducted the survey under the sponsorship of the Office of the Assistant Secretary of Defense (Health Affairs) in response to a request from the Defense Advisory Committee on Women in the Services (Harris, 1990).

The survey indicates that military care is equal to, and sometimes superior, to civilian care. The quickest way of correcting some of the problems may be

to increase education and awareness of the beneficiaries about available services and programs. For example, about 25% of the respondents expressed dissatisfaction with the time required to receive test results. Emphasizing and meeting turnaround times for test results would likely dispel that unhappiness, said experts. The findings of the Defense Manpower Data Center are consistent with the findings of this graduate project where the lack of education on pharmaceutical services and overall hours of operation are contributors to satisfaction or dissatisfaction levels of beneficiaries.

How consumers say they obtain most of their health care information is a further indication of the growing influence of friends and family members. For the first time, the consumers who say they rely on friends and relatives as their main source of health care information (50%) outnumber those who rely on physicians (21%) (Cleary, 1988).

Patients' satisfaction with their inpatient hospitalization experience seems to have leveled off or declined slightly. The lower satisfaction rates may be attributed in part to a better informed public with higher expectations. Still, hospitals are doing well in satisfying their inpatients. More than 90% of inpatients are "very satisfied" with the quality of

physicians and more than 80% are "very satisfied" with the attitudes of employees, room appearance, quality of nursing, and hospital billing procedures (Koska, 1989).

The real story with patient satisfaction is on the side of care experiencing the fastest growth--outpatient services. The percentage of outpatients who say they are "very satisfied" with the quality of their care is only 85.2%, down from 92.3% in 1988 (Inguanzo, 1988). The following factors have been identified as leading causes of outpatient dissatisfaction: a perception of poor quality care, waiting time for others to be treated first, a perceived lack of caring and discourteous nurses and staff. Emergency care also received significantly lower satisfaction marks from recent patients. The number of patients who say they are "very satisfied" with emergency care dropped to 72% (Inguanzo, 1988). Comparative analysis of outpatient satisfaction levels at MACH revealed that the retiree responses are consistent with the findings of Inguanzo; however, outpatient scores for active duty are somewhat lower.

Patient satisfaction data indicates that hospitals can improve their satisfaction rates by educating and informing their patients about the quality of other services available at the

hospital--capitalizing on one of the best consumer marketing opportunities available in hospitals today. However, this is only effective if managers ensure patient satisfaction occurs at every stage of the patient's visit and handle any problems, real or imagined, as soon as they arise. Simply making a better effort to communicate with patients, particularly if there is a delay in care, can change the patients perception of care. In the 1990s, quality--both quantifiable and intangible--will be demanded by health care customers, including payers, physicians, and consumers (Caldwell, 1989).

So, what do patients perceive quality to be? A review of the literature reveals that it is almost impossible for patients to measure technical quality. They generally assume it will be there" (Endresen, 1988). On the other hand, the services that patients can easily measure, they can easily criticize. For example, food service, which is ranked as a significant contributor to high quality care, may be the quickest way to satisfy patients. In fact, poor food service, noise, inadequate explanations, and rudeness of staff are the most common complaints that patients have about hospitals (Koska, 1989).

Patient Surveys

Surveys and questionnaires have been used extensively as a data collection technique for research in health care and other fields. A survey provides a method to obtain information from large samples of people and can reflect their subjective knowledge, attitudes, opinions, and/or self-reported behavior (Crosby, 1989). However, the survey as a research method has been criticized for its subjective, nonexperimental nature. At best, it has been referred to as quasi-experimental in scientific circles. Biases due to self-selection or non-response and lack of control over completion conditions have threatened its true experimental usefulness (Hunter, 1987).

A survey is the easiest and least expensive way to solicit feedback from the patient. It is a quantitative research tool designed to: (1) measure patients' overall satisfaction, (2) obtain diagnostic data that explains their satisfaction ratings, and (3) track levels of patient satisfaction over time (Weiss, 1988).

Taking a benchmark measurement of overall satisfaction tells you how well you are presently doing and provides the basis for setting short-term and long-term goals for the the levels of satisfaction

you want to achieve. The diagnostic data helps you identify opportunities and develop strategies to reach your goals. Tracking satisfaction levels will enable you to determine the effectiveness of the actions you have taken and the progress you have made toward achieving your customer satisfaction goals.

To be effective, a survey must be diagnostic. It must ask the questions that isolate performance or procedural problems. Survey data may not be conclusive, and further investigation may be necessary to validate the seriousness of a perceived problem. If the survey is not designed appropriately, considerable time may be wasted as insufficient or inaccurate data may prevent knowing where to target improvements.

An example of this is the outpatient questionnaire designed by Health Services Command (HSC Form 128-R). This questionnaire is inadequate in assessing the attitudes or level of patient satisfaction of beneficiaries that do not frequently use the military health care system, since the surveys are normally administered only at the time of the health care visit. Therefore, they present a biased or inaccurate picture of the patient satisfaction level of the catchment area since they exclude a large section of the eligible population or beneficiaries.

It is best if a variety of techniques is used to gather data because information from any one method helps validate data from another source (i.e., focus groups, patient surveys, and telephonic surveys) (Ramirez, 1988). Traditional techniques, programs, and surveys for listening and responding to patients and their families have frequently evolved haphazardly and do not connect or support each other. The data is not integrated to provide a composite of service delivery, there is little management accountability for the results, and information is rarely used to make changes in the organization (Gourley, 1988).

Designing a Questionnaire

"I believe I received competent medical care." Most patients have little or no ability to evaluate the quality of medical care that they receive (Harper, 1989). Yet, statements similar to this one appear regularly on questionnaires, inviting the patient to agree, disagree, or profess total ignorance by checking the "don't know" box. Although no one can deny that quality medical care is an important dimension of patient satisfaction, the questions asked to determine whether patients perceive that they receive good care should be based on the criteria that they most frequently use to evaluate competency and quality.

Patients generally return satisfaction questionnaires if they are exceptionally satisfied or exceptionally dissatisfied. Those whose expectations have merely been met will generally not respond unless some gentle prodding is done. If "middle of the roaders," do not respond the data will not be quantifiably sound (Davis, 1988).

For feedback to be of value, there should be a good rate of return and questions should be asked that will accurately evaluate if systems and people are performing to meet customer expectations. Far too many hospitals are led to believe that they are doing better than they actually are simply because data on which they rely is invalid or inconclusive. It is highly unlikely that any hospital satisfies 97% of its discharged patients, yet there are several hospitals that claim they do. It is far more accurate to presume that they satisfy 97% of those who returned their questionnaires, and even that presumption may be inaccurate.

If researchers are to receive value from their efforts in measuring patient satisfaction, they must ask the right questions--those that patients are qualified to evaluate. The dimensions measured must be the ones that patients feel are the most important. Second, questions must be asked that are relevant in

improving service delivery. A questionnaire is nothing more than a public relations gimmick if it does not isolate problems and is not used to remedy sources of dissatisfaction.

The design of the questionnaire also influences the probability of response. The following questions are useful in determining whether you have designed a questionnaire that encourages response.

* Is the questionnaire attractive? Patients are more likely to respond to questionnaires that are typeset rather than typewritten and printed rather than photocopied. The print should be easy to read. Effective use of white space (areas in which print does not appear) will contribute to a clean appearance.

* Is the questionnaire too long? If it appears that it will take a long time to complete the questionnaire, patients are less encouraged to respond.

* Is the questionnaire confusing? Confusion occurs and disincentives to respond exist if directions are unclear or if the design is cluttered or inconsistent.

* Is the questionnaire easy to return? A postage-paid, self-mailer will make the return easy and increase the rate of returned surveys.

Measurement Scales

The literature conflicts on the optimal types of questions to ask; however, it appears that a combination of different types will improve the validity and reliability of the data. The use of numerical, occurrence, quality, agreement, and evaluation type ratings was incorporated into the beneficiary survey to improve the content and convergent validity of the results.

Numerical Scale: A numerical scale of 1 to 5 can be used on some questions with 3 indicating neutrality. However, on several questions a specific "not applicable" or "no opinion" should be added for improved validity.

Quality ratings: Can be used to measure the perceived value of a particular service dimension or characteristic. Quality can be rated in the following manner:

☐ poor ☐ fair ☐ average ☐ good ☐ excellent

Occurrence ratings: Measure frequency of a desired occurrence or the consistency of a desired action. A scale of 5 can also be used for these types of ratings:

☐ never ☐ seldom ☐ sometimes ☐ almost always ☐ always

Agreement ratings: Are used to measure the respondent's concurrence with a statement. This type of rating was chosen for the two key questions in the beneficiary survey (number 39--outpatient services, and number 41, inpatient services). An example of an agreement rating used is provided below:

☐strongly disagree ☐disagree ☐neutral
☐agree ☐strongly agree

Expectation ratings: comprised the bulk of the focus group questions. Evaluations are always intended to measure postoccurrence perceptions of how well services met predetermined expectations. It is important to know, what factors contribute to patient satisfaction and what factors detract from it. Additionally, how can information received be used in targeting areas of improvement? Expectations are variable, but they are really what counts. It is for this reason that evaluating experiences against expectations is becoming a popular method. To rate against expectations, these types of phrases should be used:

☐much worse than I expected ☐worse than I expected
☐as I expected ☐better than I expected
☐much better than I expected

The literature reveals that the following criteria relating to performance should be assessed on a regular basis. These criteria are generally the most significant in influencing overall satisfaction with a hospital's service performance:

1. Responsiveness--Were your needs attended to promptly?
2. Courtesy--Were the employees courteous?
3. Information--Were procedures or therapies explained?

FOCUS GROUPS

The focus group is a form of qualitative research that is used to satisfy a variety of needs: to identify sources of satisfaction and dissatisfaction, to stimulate ideas from the users that will increase satisfaction in the future, to define expectations that will assist the hospital in designing a quantitative measurement tool, to measure reactions to a proposed product or service, and to define more specifically the characteristics that the user would value in a new product/service (Levy, 1989). The interaction between people who share a common experience (hospitalization) will often stimulate new ideas and insights. In focus group interviews participants feel more open to disclose opinions, ideas, and feelings in the group setting. The

interaction in group interviews is viewed as multiplicative, making each respondent a richer source of information than he would be alone.

Satisfied patients talk; so do dissatisfied patients. A Washington, D.C., consumer research group, the Technical Assistance Research Programs (TARP), has uncovered telling statistics about customer satisfaction: satisfied customers will tell between 4 and 5 other people about their satisfaction, dissatisfied customers will tell between 9 and 10 other people about their dissatisfaction, and 13% of the dissatisfied customers will tell over 20 people. These statistics are not health care specific. Therefore, based upon the severity of a hospital stay, and in light of the fact that hospitalization is a significant lifetime experience, it is not unrealistic to assume that patients will recount their positive experiences to far more than 5 other people and their negative experiences with even greater frequency. Focus groups can be used to capture negative information from dissatisfied beneficiaries or possibly change any false or negative perceptions.

The basic idea of the focus group is a simple one. A group of people is brought together to discuss some predetermined topics, commonly for one to 2 hours. The interviewer/moderator raises various

issues, focusing the discussion on matters of interest to the organization in accordance with an outline or general guide.

The optimal size of a focus group is usually about 8 people. Actual group sizes may range down from 12 people. Generally speaking, a minimum of 6 are required. If there are fewer than 6, the conversation may seem somewhat concentrated, too easily turning on the willingness of 1 or 2 to do most of the talking. At the other end, 10 or 12 people tend to be too many. As the group grows in size, opportunities for all participants to address the issues decline. The group is also more widely dispersed in the room or around the table. The tendency for the group to fragment becomes great, and, as a result, the problems of controlling the conversation are magnified. There are likely to be distractions, frequent murmuring, dissipation of remarks in side conversations, and sly antagonisms.

The composition of the group is based on the research problem. Sometimes a varied group is desired, for the interplay of diverse views on a topic that all can discuss. Usually, the group is selected to be a relatively homogenous one, brought together because of some unifying element out of which the discussion can grow.

The introduction of participants and the purpose of the meeting is the first step in conducting the focus group interviews. It seems better if the moderator does not have a canned opening, but explains the subject of the meeting in his own words. A tape recorder is essential because it serves as a kind of assistant to the moderator and reinforces the requirement to have participants keep just one conversation going. The data collected from focus groups should be compared to the quantitative data received from surveys for validity and reliability.

Validity/Reliability

Reliability is the degree to which the information produced is representative of the population to which it is generalized. The basic function of the focus group interviews was to determine "why" rather than "how many". The content of the questions presented was similar to the questions asked in the beneficiary survey, thereby improving the reliability of the data received. .

Validity, like reliability, is concerned with error; however, it is concerned with consistent or systematic error rather than variable error. A valid measurement reflects only the characteristics of interest and random error. There are three basic types of validity: content validity, construct

validity, and criterion-related validity (predictive and concurrent).

Content validity estimates are essentially systematic but subjective evaluations of the appropriateness of the measuring instrument for the task at hand. The term "face validity" has a similar meaning. However, it generally refers to "nonexpert" judgments of individuals completing the instrument and individuals who must approve its use. This does not mean that face validity is not important. Respondents may refuse to cooperate or may fail to treat seriously any measurements that appear irrelevant to them.

The most common use of content validity is with multi-item measures. In this case, the researcher or some other individual or group of individuals assesses the representativeness, or sampling adequacy, of the included items in light of the purpose of the measuring instrument.

Criterion-related validity can take two forms, based on the time period involved: concurrent and predictive validity. Concurrent validity is the extent to which one measure of a variable can be used to estimate an individual's current score on a different measure of the same or a closely related variable. Predictive validity is the extent to which an individual's future level on some variable can be

predicted by his performance on a current measurement of the same or a different variable. Predictive validity is of primary concern in this study. Some of the predictive validity questions that were confronted were: (1) Will a measure of attitude predict future utilization? (2) Will a measure of present usage predict future market share? (3) Will a measure of demographic characteristics of an area predict the future utilization of the facility?

Construct validity or understanding the factors that underlie the obtained measurement is the most complex form of validity. It involves more than just knowing how well a given measure works; it also involves knowing why it works. Construct validity requires that the researcher have a sound theory of the nature of the concept being measured and how it relates to other concepts.

Sociodemographic Characteristics

Statisticians frequently like to interpret responses according to the respondent's age and sex, since noticeable differences in responses frequently occur between men and women and among patients of varying age groups. The literature consistently indicates that women are more critical than men, and older patients are more satisfied than younger patients (Weiss, 1987). In order to adequately assess

patient perceptions and identify key determinants of patient satisfaction, most authors indicated that the following sociodemographic characteristics should be measured as a minimum:

AGE: While many studies performed in the last decade have found no relationship between age and patient satisfaction, other studies have shown a relationship. Typically, these studies have reported that older patients express more satisfaction with medical care received. Weiss speculates that older patients simply may view physicians more favorably or that physicians may feel a greater sense of urgency in treating older patients and actually provide them with better care (Weiss, 1988).

SEX: Most studies have found that satisfaction is unrelated to the patient's sex. However, some research has identified women as being slightly more satisfied than men with medical care received and with the physicians (Louden, 1989).

RACE: The relationship between patient's race and satisfaction with medical care is very inconclusive. Most studies have reported race and patient satisfaction to be unrelated. However, some studies have found whites to express greater satisfaction than blacks, while other studies have reported the opposite finding (Weiss, 1988).

INCOME: Some research has reported less patient satisfaction in the lowest social class or income grouping, while other studies have reported income and patient satisfaction to be unrelated (Endressen, 1988).

HEALTH STATUS: Numerous studies have examined the relationship between a person's health status (e.g., number of symptoms, extent of disability, or perceived health status) and satisfaction with care perceived. It is possible that people who are very sick may be more contrary or more demanding, and thus less satisfied; however, the very sick might be more appreciative, and thus more satisfied with medical care (Harper, 1989).

OTHER VARIABLES: The above variables were included in the beneficiary survey, as well as questions pertaining to distance traveled for care, military status, and overall rating of health. When referring to military status, the terms active duty and retirees are consistently used throughout this study and refer to the sponsors and families of both groups. Assessing the needs of the groups based on demographic variables is important in developing strategies to improve overall patient satisfaction since the needs of the groups will vary.

PURPOSE (VARIABLES/HYPOTHESES)

The purpose of this study was to identify the determinants of patient satisfaction at Martin Army Community Hospital through the use of quantitative and qualitative methods. It was also designed to examine the dissatisfiers associated with health care at Martin Army Community Hospital and to determine a methodology for reducing those dissatisfiers. The approach used in the study contributes to an understanding of consumer behavior by identifying the most important factors in explaining patients' overall satisfaction with hospitalization. Hospital commanders and administrative officers can use the data to help them decide how to concentrate limited resources in order to have the best chance for improving patient satisfaction.

Hypotheses

A major purpose of this research was to identify the key determinants of patient satisfaction. This required a comparison of the relative effects of the variables associated with outpatient and inpatient services, sociodemographic characteristics of the population, and predispositional factors that may affect patient satisfaction.

The rationale for these hypotheses was drawn from the patterns identified in the patient satisfaction

literature. The greater consistency found in the relationship between patient satisfaction and these predispositional factors is hypothesized to be supported in this research and, when controlled for, to explain the relationship with patient background characteristics.

H_o^1 : There is no relationship between outpatient satisfaction of beneficiaries and the areas that comprise outpatient services. (or)

Outpatient satisfaction $\neq f(x_a, x_b, \dots, x_m)$.

- (a) The appointment scheduling system
- (b) Telephonic accessibility
- (c) Courtesy of medical records staff
- (d) Hospital directions
- (e) Clinic receptionists
- (f) Health care provider answered questions
- (g) Overall care met satisfaction
- (h) Waiting time for medical records
- (i) Physician waiting time
- (j) Pharmacy waiting time
- (k) Satisfaction with x-ray services
- (l) Satisfaction with laboratory
- (m) Sensitivity of the staff

H_a^1 : There is an relationship between overall satisfaction with outpatient care and the variables (a) through (m) (Question #39, Appendix B).

DV: Overall care met satisfaction

IV: Variables (a) through (m).

FULL MODEL: Overall satisfaction $\neq f(x_a, x_b, \dots, x_m)$.

Restricted Models: The variables (a) through (m) were controlled for independently in each equation.

Stepwise: Satis. $\neq f(x_b, x_d, x_f, x_h, x_i, x_j, x_k, x_m)$.

H_o^2 There is no relationship between inpatient satisfaction and the following inpatient variables or

Inpatient satisfaction $\neq f(x_a, x_b, \dots, x_k)$.

- (a) Courtesy of admissions staff
- (b) Room was clean and neat
- (c) Doctor was polite
- (d) Doctor answered your questions
- (e) Nursing staff answered your questions
- (f) Physicians provided quality care
- (g) Satisfaction with nursing staff
- (h) Nursing staff politeness
- (i) Meals received were the ones ordered
- (j) The food was warm when served
- (k) Satisfaction with facilities and room

FULL MODEL: Overall satisfaction $\neq f(x_a, x_b, \dots, x_k)$.

Restricted Models: The variables (a) through (k) were controlled for independently in each equation.

DV: Overall care met satisfaction

IV: Variables (a) through (k).

Stepwise: Satisfaction $\neq f(x_b, x_h, x_i)$

H_a^2 : There is an association between inpatient satisfaction and the variables (a) through (k).

H_o^3 : There is not a statistically significant difference between the satisfaction levels of patients utilizing the family practice clinic, PRIMUS, civilian medical facilities, or MACH.

H_a^3 : There is a statistically significant difference between the satisfaction level of patients utilizing the family practice clinic, PRIMUS, civilian medical facilities, or MACH.

H_o^4 : Patient satisfaction with primary medical and inpatient care received is not related to or determined by patient sociodemographic characteristics (age, sex, race, military status, or income.)

H_a^4 : Patient satisfaction with primary medical and inpatient care received is related to or determined by patient sociodemographic characteristics (age, sex, race, military status, or income.)

- H_o⁵: Patient satisfaction with primary medical care received is not affected by predispositional factors (continuity of care, access, confidence in the military health care system, and satisfaction with health status).
- H_a⁵: Patient satisfaction with primary medical care received is affected by predispositional factors (continuity of care, access, confidence in the military health care system, and satisfaction with health status).

METHOD AND PROCEDURES

Beneficiary Survey

Questions for the beneficiary survey were developed based upon input from staff members, literature review, patient complaint data, and previously administered surveys. The draft questionnaire was reviewed and analyzed by the Marketing Committee of MACH. The Delphi technique was used by the marketing committee to determine the face validity of the survey and to determine the required content of the survey. Revisions were made incorporating the concerns and interests of the department chiefs. The resultant questionnaire contained 36 scaled items and 13 open-ended questions (a copy is attached as appendix B).

The survey was refined and distributed to all of the retirees in the Fort Benning "catchment area" by attaching it to the retiree news bulletin. The survey was also handdelivered to the major units at Fort Benning to be completed by married soldiers and their families.

The final survey included 49 questions in the areas of admission procedures, hospital rooms, quality of the food, nursing care, physician care, the emergency room, family practice clinic, and other direct patient contact areas.

Frequency percentages were computed for each question and multiple regression analysis was performed on questions 39 and 41 (using an "n" size of 500 for active duty and retirees). The correlation coefficients, means, and standard deviations for all variables are displayed in table format.

In questions 39 and 41 the respondents were asked to answer 5 point Likert scale type questions by indicating their strength of agreement on a scale ranging from "strongly agree" to "strongly disagree." The results are depicted using Pareto Diagrams, and the responses that were deemed the most important were further analyzed through the use of focus groups. The Pareto Principle says that "In any group of things that contribute to a common effect, a relative few

contributors account for a majority of the effect" (Caldwell, 1989).

Through the use of Pareto Diagrams and tables, one can see the differences between the attitudes of the groups with regard to perceptions about care at MACH. The analytic techniques that were employed identified the variables and factors that contributed most to overall satisfaction with MACH.

SAMPLE AND DATA COLLECTION

The data reported in this paper was collected as part of a large-scale community survey conducted from September 1989 through January 1990. The required sample size was calculated using the following formula which is common in marketing research (Crosby, 1989).

$$S = \frac{V(1-V)}{\frac{A^2}{Z^2} + \frac{V(1-V)}{N}}$$

S= Sample size

V= Variation (50% satisfied) $\frac{.5(1-.5)}{}$

A= Accuracy + .05 $S = \frac{.05^2}{1.96^2} \frac{5(1-.5)}{100,000} = 383$

Z= Confidence level 1.96^2 100,000

N= Population size (Fort Benning catchment area)

Due to the diversity between the active duty population and the retirees, a decision was made to conduct the statistical analyses using a sample size of 500 for each group.

Questionnaire Development

What are we attempting to measure? The survey contained a myriad of questions on all available services. However, the questions can basically be grouped into seven areas:

- (1) Sociodemographics
- (2) Facility utilization and accessibility
- (3) Satisfaction levels with different facilities
- (4) Outpatient services
- (5) Inpatient services
- (6) Preferred hours of operation
- (7) Open-ended questions

The open-ended questions and facility utilization questions were intermingled throughout the survey. This arrangement allowed an opportunity for patients to expound on their responses to the Likert Scale type questions. For example: Question 18 states "I am very satisfied with the care that I receive at MACH" (rated on a 5 point scale from strongly agree to strongly disagree). The following two questions are open-ended and ask "What do you think is the most desirable about the care received at MACH," and "What is the least desirable about care at MACH." The actual survey is listed as Appendix B.

Focus Groups

Ten focus groups consisting of 8 to 12 patients in each group (total of 98 beneficiaries) were assessed to obtain their perceptions of MACH, the PRIMUS Clinic, and civilian facilities in Columbus, Georgia. The focus groups were moderated by myself and included previous inpatients and outpatients who had recently utilized MACH, and patients that use the PRIMUS Clinic as their primary source of care. The questions were developed based upon the results of the beneficiary survey, with input from the managers of different departments (i.e., pharmacy, family practice, laboratory, etc.).

RESULTS/DISCUSSION

A statistically significant difference exists between the satisfaction levels of active duty personnel and retirees for inpatient and outpatient services. The determinants of patient satisfaction are similar; however, there is a greater variance in the scores pertaining to the active duty population. The overall mean scores for outpatient and inpatient services are also significantly lower for active duty personnel.

The results have implications for at least two audiences: administrative managers and chiefs of clinical services. Clinic chiefs can use the data to

assess the adequacy of service delivered by their departments, and senior administrators can use the data to target and limit resources to improve those areas most directly related to patient satisfaction.

The study confirms the following: beneficiaries who have accessed the system have a higher opinion of the facility; retirees tend to prefer the military treatment facility to civilian facilities; and, inpatient care is rated significantly higher than outpatient care by all beneficiaries. Personal interactions between caregivers and patients have been shown to be the most important influence on patient satisfaction (Weiss, 1988). This study supports the research of Weiss.

Unlike research that dichotomizes responses in a yes/no format, the beneficiary survey allows comparisons among levels or gradations of responses because a five item scale was used as the measure for patient satisfaction for inpatient and outpatient services (questions 39 and 41). Conclusions of the study are not restricted to a specific symptom or demographic group since personnel are asked a variety of demographic and open-ended questions.

During the month of September 1989, the 49 question survey was distributed to the retirees and married active duty soldiers in the Fort Benning

catchment area. The survey was attached to the retiree newsbulletin and mailed to approximately 30,000 retirees. An additional 2,500 surveys were distributed to soldiers assigned to Fort Benning. Approximately 3,250 surveys were returned, and these were analyzed to determine the perceptions of the beneficiary population.

The questionnaire was divided into seven sections for analysis. The purpose of the beneficiary questionnaire was to survey a homogenous group that may or may not be presently utilizing services at MACH to systematically assess the quality of care as perceived by beneficiaries" and to provide clinicians and managers with useful data for implementing quality improvement plans. A complete analysis of each question is included as Appendices C and D. A brief analysis of the seven areas is detailed below.

Sociodemographics

The questions pertaining to the demographics of the retirees (Table 1) revealed a population that is predominantly white (86%), over 65 years of age, and has a median income of approximately \$20,000 per year. This group travels distances of up to 200 miles to receive care at Martin Army Community Hospital. Their health status is either good or fair and only 16% require the use of crutches or canes.

Table 1: SOCIODEMOGRAPHICS

Variables	Active Duty & Family Members	Retirees & Family Members
AGE (Years)		
Under 30	67%	--
31-40	29%	--
41-50	4%	12%
51-65	--	39%
Over 65	--	49%
RACE		
Asian	2%	6%
Black	30%	6%
Hispanic	10%	0
White/Anglo	55%	86%
Other	2%	2%
Income		
<\$10,000	7%	9%
\$10,000-19,999	63%	19%
\$20,000-29,999	25%	21%
\$30,000-39,999	4%	16%
>\$40,000	2%	35%
Reside		
On Post (BEQ, BOQ)	20%	NA
On Post (Quarters)	26%	NA
Off Post (Columbus, GA/Phenix City, AL)	52%	88%
Other Cities	2%	12%

n=1000 (500 active duty responses and 500 retirees)

Responses were tabulated separately for the active duty and retiree families'.

Percentages were rounded to the nearest whole number.

As expected, the active duty respondents were approximately 25 years of age and 70% had an average income below \$20,000. There was a wider diversification in race, with 55% of the respondents being white and 30% black. Their reported health status was good (97%) and 46% reside on post. As noted in Table 1, age and income are related to military status so statistical calculations were conducted to determine the differences in perceptions based upon military status, and not race, sex or income.

Comparison of Facilities (X^2 Analysis)

There is a statistically significant difference between the satisfaction levels with the family practice clinic, PRIMUS clinic, civilian medical facilities, and the care received at MACH. The results of the Chi square analyses in Table 2 indicate that greatest variation in the level of satisfaction between active duty families and retirees occurs in the level of satisfaction with MACH ($X^2 = 47.7$, $df = 4$, $p < .001$).

Multiple Regression Analysis

Correlation coefficients were obtained to determine the relationship among the different variables in questions 39 (outpatient services) and 41 (inpatient care). The statistically significant

Table 2: SATISFACTION COMPARISON OF FACILITIES

SATISFACTION RESPONSES FOR MACH, PRIMUS, CIVILIAN FACILITIES,
AND FAMILY PRACTICE

(1) Strongly Agree----(5) Strongly Disagree

		SA	A	N	D	SD	X ²
14.	I am very satisfied with the care that I received in the family practice clinic.	16.9 54.4	38.0 24.5	23.9 5.3	12.6 0	8.5 15.8	*28.5
18.	I am very satisfied with the care that I received at MACH.	9.8 40.9	33.6 37.0	27.1 7.1	12.3 2.4	17.2 12.6	*47.7
22.	I am very satisfied with the care I received at PRIMUS.	9.3 29.1	23.7 29.1	18.5 20.9	24.7 6.3	23.7 14.6	*23.3
28.	I am very satisfied with the care received at a civilian medical facility.	30.0 20.6	20.0 35.3	11.7 23.6	11.7 9.8	26.7 10.8	*16.8

Note: (1) All responses are listed as percentages.

(2) X² calculations were performed by using the frequencies for each question.

(3) Active duty responses are listed in row 1.

(4) Retiree responses are listed in row 2.

(5) * indicates significance at the .001 alpha level

(6) n = 500 for active duty and 500 for retirees

HEADER DATA FOR: C:REOUTPT LABEL: Retiree outpatient responses #39
 NUMBER OF CASES: 500 NUMBER OF VARIABLES: 15

	appt	tel	medrec	direc	recep	HCprov	care	record
appt	1.00000							
tel	.54818	1.00000						
medrec	.43878	.39906	1.00000					
direc	.28361	.18386	.43769	1.00000				
recep	.47590	.37633	.44907	.28403	1.00000			
HCprov	.31036	.16434	.35580	.37887	.52632	1.00000		
care	.41756	.29341	.40185	.37670	.53021	.67446	1.00000	
record	.25602	.28259	.60754	.37345	.43567	.39771	.39483	1.00000
phywt	.51638	.30671	.55706	.29272	.44108	.37791	.51242	.52100
pharwt	.40217	.39121	.47209	.18683	.40765	.31800	.30664	.44600
xray	.19372	.23246	.46902	.23969	.29718	.27088	.40186	.33500
lab	.41960	.30663	.44686	.28787	.42453	.36443	.32371	.40900
staff	.56978	.36231	.47681	.29837	.64118	.51335	.62852	.49300
travel	.29682	.15554	.16378	.26881	.30827	.24364	.28969	.09000
discuss	.54627	.42709	.37960	.19354	.49709	.41594	.41986	.27100
	phywt	pharwt	xray	lab	staff	travel	discuss	
phywt	1.00000							
pharwt	.45412	1.00000						
xray	.31329	.32931	1.00000					
lab	.33830	.35972	.46076	1.00000				
staff	.59592	.40461	.33853	.63937	1.00000			
travel	.29709	.15376	.26813	.25369	.26542	1.00000		
discuss	.43959	.26069	.24785	.30278	.44035	.33268	1.00000	

CRITICAL VALUE (1-TAIL, .05) = + Or - .07366
 CRITICAL VALUE (2-tail, .05) = +/- .08771

N = 500

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correlations among the predictor variables in both questions indicate that many of the variables made a significant contribution to the overall patient satisfaction scores (Tables 3, 5, 8 and 10).

Multiple Regression analysis determined the multivariate impact of the independent variables on the dependent variable patient satisfaction for outpatient and inpatient services at MACH. Full model regression analysis was conducted on the outpatient and inpatient variables (separately) and, additionally, stepwise regression analysis was conducted to determine which variables had the greatest impact. These variables were then controlled for in a separate equation.

Table 4 depicts the results of multiple regression analysis for question 39 which pertains to outpatient care. Retiree respondents indicated their perceptions on a 5-interval scale ranging from strongly disagree (1) to strongly agree (5). The areas with the lowest mean scores (X) were: gaining telephonic access, waiting time at the pharmacy and the willingness of staff members to discuss health care questions over the telephone.

The results of multiple regression analysis revealed that the best predictor to determine whether overall outpatient care met the satisfaction of the

Table 4: MULTIPLE REGRESSION ANALYSIS

Responses to Outpatient Question (#39)
by Retirees and their Family Members

$$F = \frac{(R^2_{\text{full}} - R^2_{\text{rest}}) / (NLIPV - NLIPV_{\text{rest}})}{(1 - R^2_{\text{full}}) / (N - NLIPV_{\text{full}})}$$

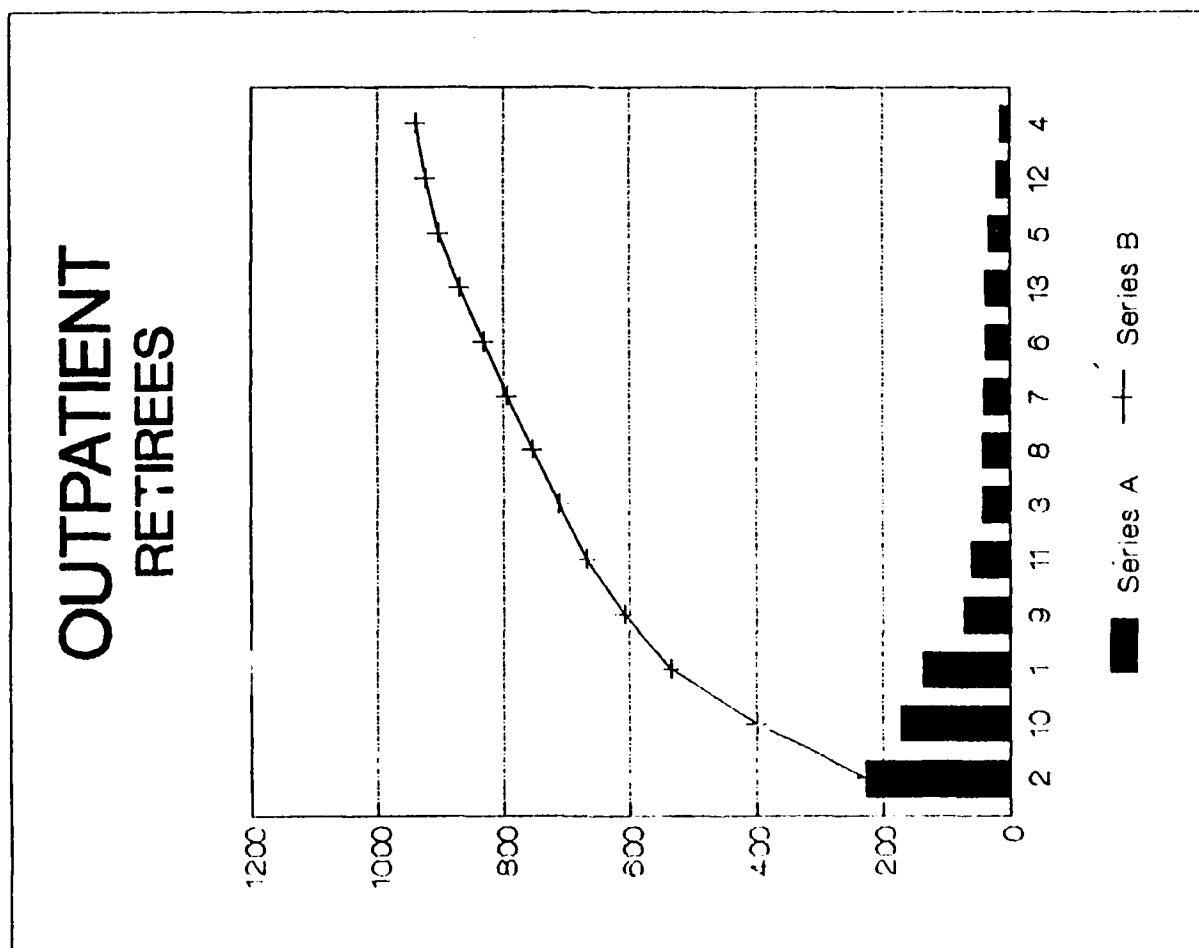
Variable Tested	R ²	F	d _{f1}	d _{f2}	p	$\bar{x}$	Std
Full Model	.6450	**62.9	13	486	.001		
H ₁ (Appt)	.6444	.06	13	486	n/s	3.59	1.52
H ₂ (Tel)	.6414	.37	13	486	n/s	2.89	1.46
H ₃ (Medrec)	.6438	.13	13	486	n/s	4.14	1.02
H ₄ (Direc)	.6400	.53	13	486	n/s	4.47	.77
H ₅ (Recep)	.6446	.04	13	486	n/s	4.34	.98
H ₆ (HCprov)	.5342	**11.7	13	486	.001	4.32	.98
H ₇ (Record)	.6448	.27	13	486	n/s	4.13	.99
H ₈ (Phywait)	.6386	.67	13	486	n/s	3.94	1.19
H ₉ (Pharwt)	.6442	.29	13	486	n/s	3.34	1.42
H ₁₀ (X-ray)	.6113	**3.55	13	486	.001	3.99	1.09
H ₁₁ (Lab)	.6153	**3.12	13	486	.001	4.23	.86
H ₁₂ (Staff)	.5986	**4.89	13	486	.001	4.15	1.03
H ₁₃ (Travel)	.6447	.03	13	486	n/s	4.26	1.04
H ₁₄ (Discuss)	.6449	.01	13	486	n/s	4.49	1.22
H ₁₅ (Stepwise)	.3680	**63.2	6	486	.001		

** significance at the .001 alpha level.

H₁₅ (Stepwise): In this equation the variables identified as being significant using step-wise regression were controlled for:
Variables 2, 4, 6, 8, 9, 10, 11, and 12.

H₁₃ pertains to question 34, and H₁₄ pertains to question 35.

PARETO DIAGRAM



When you last visited MACH:

1. Making an appointment was easy.
2. Gaining telephonic access to make an appointment to a specialty clinic was not difficult.
3. The medical records personnel were kind and helpful.
4. The directions within the hospital were sufficient and clear.
5. The clinic receptionist was courteous and helpful.
6. The healthcare provider answered your questions during your visit.
7. The overall care received met with your satisfaction.
8. The time that you waited in line for your records was minimal.
9. The time that you waited to be seen by a physician was reasonable.
10. The time that you waited for your prescription to be filled was reasonable.
11. Overall, you were satisfied with the x-ray staff and services.
12. Overall, you were satisfied with the laboratory staff and services.
13. Overall, the staff was sensitive and understanding to your needs.

Figure 1

beneficiary was whether the health care provider answered the questions of the patient-- $F(13, 486) = 11.7, p < .001$. A significant effect was also found in the full model equation, where none of the variables were controlled or restricted-- $F(13, 486) = 62.9, p < .001$.

Step-wise regression analysis indicated that variables 2, 4, 6, 8, 9, 10, 11, and 12 were contributing variables so those variables were also controlled. The result was: $F(6, 486) = 63.2, p < .001$. The other variables that were significant when independently controlled for were: satisfaction with MACH staff, x-ray, and laboratory services.

Figure 1 is a Pareto Diagram that depicts the largest dissatisfiers or the questions with the largest number of negative responses (either disagree or strongly disagree). Gaining telephonic access was the number one dissatisfier (226 negative responses), followed by waiting time for prescriptions to be filled, making an appointment, and waiting time for physicians. Appendices C and D contain the frequencies for each question.

Table 6 provides the responses of active duty respondents. The best predictor of overall satisfaction with outpatient care by this group was also related to the physician answering their

----- CORRELATION MATRIX -----

HEADER DATA FOR: C:ADOUTPT LABEL: Active duty outpatient responses #39
 NUMBER OF CASES: 500 NUMBER OF VARIABLES: 15

	appt	tel	medrec	direc	recep	HCprov	care	record
appt	1.00000							
tel	.59875	1.00000						
medrec	.16509	.17272	1.00000					
direc	.24173	.24045	.42236	1.00000				
recep	.33910	.36210	.40599	.41982	1.00000			
HCprov	.39474	.35807	.41663	.43607	.52423	1.00000		
care	.52824	.38374	.45520	.41041	.37970	.67613	1.00000	
record	.22567	.30902	.48798	.35881	.42937	.41056	.44661	1.00000
phywt	.44052	.37497	.27455	.22137	.28113	.35294	.57972	.50793
pharwt	.25996	.37765	.21514	.14802	.30254	.21028	.31837	.42396
xray	.20041	.33090	.33308	.35441	.29634	.37436	.30270	.38798
lab	.43816	.47793	.24315	.39013	.38323	.41222	.44173	.38292
staff	.48607	.39662	.37671	.39948	.51546	.54175	.72609	.44797
travel	.12422	.09100	.28318	.38283	.20299	.33141	.41293	.27391
discuss	.29466	.23849	.25076	.18202	.33837	.43048	.48757	.41092
	phywt	pharwt	xray	lab	staff	travel	discuss	
phywt	1.00000							
pharwt	.45770	1.00000						
xray	.22314	.26232	1.00000					
lab	.35015	.33769	.70025	1.00000				
staff	.58742	.38950	.40645	.63035	1.00000			
travel	.26102	.08521	.19159	.21264	.36972	1.00000		
discuss	.36891	.25306	.20729	.24738	.50786	.28146	1.00000	

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CRITICAL VALUE (1-TAIL, .05) = + Or - .07366

CRITICAL VALUE (2-tail, .05) = +/- .08771

N = 500

Table 6: MULTIPLE REGRESSION ANALYSIS

Responses to Outpatient Question (#39)
by Active Duty Soldiers and their Family Members.

$$F = \frac{(R^2_{full} - R^2_{rest}) / (NLIPV - NLIPV_{rest})}{(1 - R^2_{full}) / (N - NLIPV_{full})}$$

Variable Tested	R ²	F	d _{f1}	d _{f2}	p	$\bar{x}$	Std
Full Model	.7288	**93.0	13	486	.001	3.32	1.19
H ₁ (Appt)	.7133	+2.14	13	486	.05	2.99	1.25
H ₂ (Tel)	.7288	0	13	486	n/s	3.52	1.05
H ₃ (Medrec)	.7162	+1.74	13	486	.05	4.02	.81
H ₄ (Direc)	.7277	.15	13	486	n/s	3.64	1.06
H ₅ (Recep)	.7103	*2.55	13	486	.01	3.70	1.00
H ₆ (HCprov)	.6609	**9.36	13	486	.001	3.38	1.20
H ₇ (Record)	.7288	0	13	486	n/s	3.25	1.14
H ₈ (Phywait)	.7196	1.27	13	486	n/s	2.80	1.26
H ₉ (Pharwt)	.7286	.03	13	486	n/s	2.98	1.26
H ₁₀ (X-ray)	.7272	.22	13	486	n/s	3.55	1.01
H ₁₁ (Lab)	.7282	.08	13	486	n/s	3.55	.93
H ₁₂ (Staff)	.6831	**6.30	13	486	.001	3.24	1.17
H ₁₃ (Travel)	.7239	.68	13	486	n/s	4.03	.94
H ₁₄ (Discuss)	.7270	.25	13	486	n/s	3.17	1.17
H ₁₅ (Stepwise)	.3473	**52.6	6	486	.001		

+ = Significance at the .05 alpha level. * = .01 level

** = Significance at the .001 level

Stepwise controlled for Variables 1, 3, 5, 6, 8, 10, 12, 13, and 14.

Table 7: BENEFICIARY SURVEY RESPONSES TO QUESTION 39

When you last visited MACH:	(1) Strongly Disagree---		--(5) Strongly Agree		
	SD	D	N	A	SA
a. Making an appointment was relatively easy.	10.2 18.8	13.6 8.4	26.8 7.2	32.8 26.8	16.6 38.8
b. Gaining telephonic access to make an appointment to a special clinic was not difficult.	17.4 25.6	15.4 19.6	29.0 11.2	27.6 27.2	10.6 16.4
c. The medical records personnel were kind and helpful.	4.8 1.6	9.6 7.2	33.6 14.0	32.6 29.2	19.4 48.0
d. The directions within the hospital were sufficient and clear.	0 0	3.8 3.2	20.2 7.6	45.8 28.0	30.2 61.2
e. The clinic receptionist was courteous and helpful	4.2 2.4	9.4 4.4	28.0 8.8	35.0 25.2	23.4 59.2
f. The health care provider answered your questions during your visit.	2.6 2.0	9.2 5.6	26.0 8.0	39.6 36.8	22.6 51.6
g. The overall care met your satisfaction.	10.6 2.0	10.8 6.4	25.8 12.4	35.2 34.8	17.6 44.4
h. The time that you waited in line for your records was minimal.	8.4 8.0	17.6 6.8	27.2 5.6	33.8 42.4	13.0 37.2
i. The time that you waited to be seen by a physician was reasonable	21.4 15.2	21.2 19.2	21.2 6.0	29.0 35.6	7.2 24.0
j. The time that you waited for your prescription to be filled was reasonable.	17.8 4.4	16.2 7.6	25.4 10.8	30.8 38.4	9.8 38.8
k. Overall, you were satisfied with the X-ray staff and services.	5.0 1.6	5.0 2.4	39.4 11.2	31.6 40.8	19.0 44.0
l. Overall, you were satisfied with the laboratory staff and services.	4.2 4.4	5.0 3.2	36.6 10.4	40.6 36.8	13.6 45.2
m. Overall, the staff was sensitive and understanding to your needs.	7.4 4.4	21.0 3.2	27.6 10.4	28.0 36.8	16.0 45.2

Active duty (row 1) n = 500

Retirees (row 2) n = 500

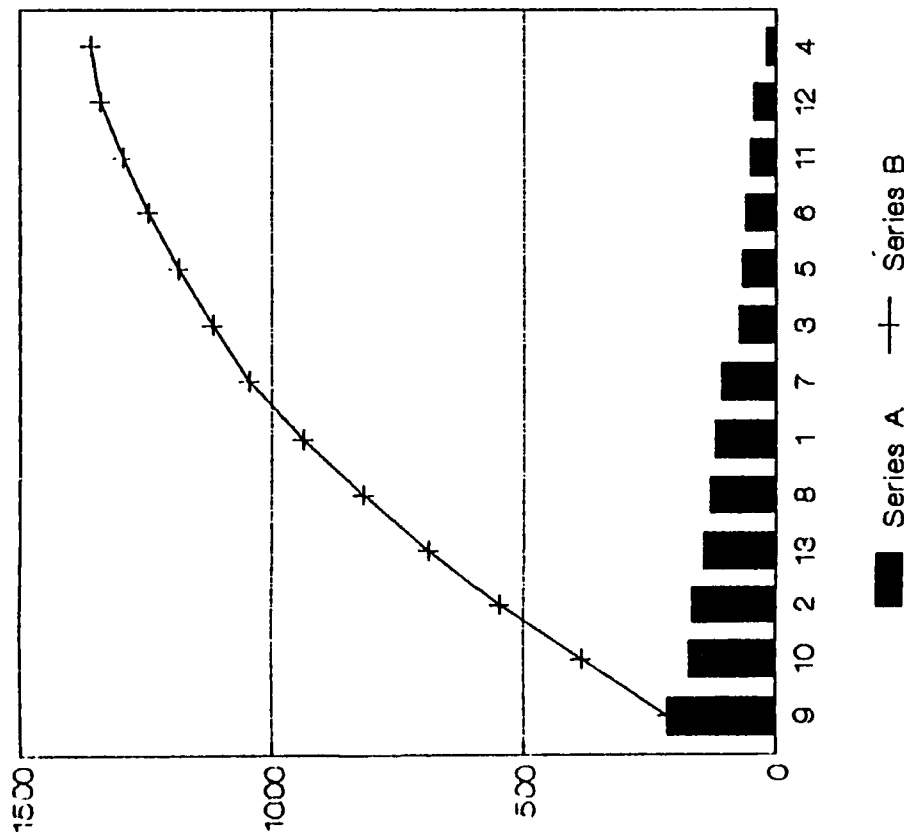
Responses are listed as percentages.

questions-- $F(13, 486) = 9.36, p < .001$. The full model equation produced a much higher value for this group-- $F(13, 486) = 93.0, p < .001$. The results of controlling the variables identified in step-wise regression (variables 1, 5, 6, 8, 12, 13, and 14) also showed a high degree of significance-- $F(6, 486) = 52.6, p < .001$. The variables, staff, courtesy of receptionists, and appointment scheduling process, demonstrated significance at a lower alpha level.

The Pareto Diagram in Figure 2 depicts the largest dissatisfiers by active duty regarding outpatient services. Waiting time to see a physician was the largest (213 negative responses). The other top dissatisfiers were: waiting time for prescriptions, gaining telephonic access, and the sensitivity of the staff.

Tables 9 and 11 provide the results based upon the responses for inpatient care. These responses were also evaluated on a five point interval scale. The overall scores for both groups were significantly higher for inpatient services than outpatient services. The areas receiving the lowest score for active duty families were the variables satisfaction with food ($\bar{X}=3.64$) and the overall rating of the facility ($\bar{X}=3.67$). The lowest scores for retirees were pertaining to the question that meals received

OUTPATIENT ACTIVE DUTY



When you last visited MACH:

1. Making an appointment was easy.
2. Gaining telephonic access to make an appointment to a specialty clinic was not difficult.
3. The medical records personnel were kind and helpful.
4. The directions within the hospital were sufficient and clear.
5. The clinic receptionist was courteous and helpful.
6. The healthcare provider answered your questions during your visit.
7. The overall care received met with your satisfaction.
8. The time that you waited in line for your records was minimal.
9. The time that you waited to be seen by a physician was reasonable.
10. The time that you waited for your prescription to be filled was reasonable.
11. Overall, you were satisfied with the x-ray staff and services.
12. Overall, you were satisfied with the laboratory staff and services.
13. Overall, the staff was sensitive and understanding to your needs.

Figure 2

"REPRODUCED AT GOVERNMENT EXPENSE"

CORRELATION MATRIX

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HEADER DATA FOR: C:REINPT41 LABEL: Inpatient Retiree Responses to #41
 NUMBER OF CASES: 500 NUMBER OF VARIABLES: 13

	STAFF	ROOM	DRPOL	DRQUEST	NURQUEST	QUALCARE	SATNUR	NURSPOL
STAFF	1.00000							
ROOM	.82959	1.00000						
DRPOL	.84230	.91482	1.00000					
DRQUEST	.80334	.84081	.90956	1.00000				
NURQUEST	.89060	.88729	.90301	.88390	1.00000			
QUALCARE	.86484	.90656	.94468	.92851	.92271	1.00000		
SATNUR	.83103	.89579	.93254	.86521	.93899	.92728	1.00000	
NURSPOL	.82318	.86418	.87758	.79616	.91179	.87136	.93008	1.00000
MEALSREC	.72716	.68171	.68961	.67151	.77495	.71028	.72505	.67789
WARMFOOD	.73889	.67598	.70143	.66584	.70599	.71317	.72531	.70258
SATFOOD	.66118	.61200	.66911	.61579	.70576	.65122	.73036	.66918
SATFAC	.83951	.85314	.85673	.79840	.86993	.87488	.87614	.84883
OVERALL	.86244	.90735	.93326	.86323	.93768	.94099	.95682	.91523
	MEALSREC	WARMFOOD	SATFOOD	SATFAC	OVERALL			
MEALSREC	1.00000							
WARMFOOD	.72750	1.00000						
SATFOOD	.80672	.81839	1.00000					
SATFAC	.70386	.69625	.68387	1.00000				
OVERALL	.75788	.76694	.73779	.93078	1.00000			

"REPRODUCIBLE"

CRITICAL VALUE (1-TAIL, .05) = + Or - .07366
 CRITICAL VALUE (2-tail, .05) = +/- .08771

N = 500

were the ones ordered ($\bar{X}=4.11$) and overall satisfaction with food ($\bar{X}=4.12$).

The full model F value for retirees was $F(11,488) = 1252, p < .001$. The F value for active duty was also extremely high-- $F(11, 488) = 252, p < .001$. Based upon the high correlations exhibited in the correlation matrices, high F values were expected for each group (see Tables 8 and 10).

The best predictor for inpatient satisfaction for retirees was overall satisfaction with the facility. The variables: food was warm when served, satisfaction with nursing services, quality of care, physicians answering the patients questions and nurses answering questions, also demonstrated significance at the .001 alpha level.

The best predictor for inpatient satisfaction of active duty personnel is also satisfaction with the facility but at a lower F value-- $F(11, 488) = 9.38, p < .001$. The meals received, satisfaction with the room, satisfaction with the nursing staff, and quality of care were also significant at the .001 alpha level. Controlling for the variables identified by using step-wise regression resulted in a F value of: $F(4,488) = 30.0, p < .001$.

There were observable differences in the Pareto Diagrams between the retirees and active duty

Table 9: MULTIPLE REGRESSION ANALYSIS

Responses to Inpatient question (#41)
by Retirees and their family Members.

$$F = \frac{(R^2_{full} - R^2_{rest}) / (NLIPV - NLIPV_{rest})}{(1 - R^2_{full}) / (N - NLIPV_{full})}$$

Variable Tested	R ²	F	d _{fl}	d _{f2}	p	$\bar{x}$	Std
Full Model	.9686	**1252	11	488	.001		
H ₁ (Staff)	.9676	1.41	11	488	n/s	4.28	.80
H ₂ (Room)	.9686	0	11	488	n/s	4.23	.88
H ₃ (Drpol)	.9669	*2.40	11	488	.01	4.33	.87
H ₄ (Drquest)	.9669	*2.40	11	488	.01	4.24	.89
H ₅ (Nurquest)	.9670	*2.26	11	488	.01	4.26	.86
H ₆ (Qualcare)	.9661	**3.53	11	488	.001	4.29	.86
H ₇ (Satnur)	.9661	**3.53	11	488	.001	4.31	.83
H ₈ (Nurspol)	.9684	.28	11	488	n/s	4.29	.86
H ₉ (Mealsrec)	.9684	.28	11	488	n/s	4.11	.93
H ₁₀ (Warmfood)	.9660	**3.67	11	488	.001	4.20	.78
H ₁₁ (Satfood)	.9686	0	11	488	n/s	4.12	.91
H ₁₂ (Satfac)	.9536	**21.2	11	488	.001	4.25	.86
H ₁₃ (Stepwise)	.9158	**74.6	4	488	.001	4.29	.83

**Significant at the .001 alpha level

H₁₃ (Step-wise) controlled for variables 2, 8, 9 and 11.

HEADER DATA FOR: C:ADINPT41 LABEL: Active duty inpatient question
 NUMBER OF CASES: 500 NUMBER OF VARIABLES: 13

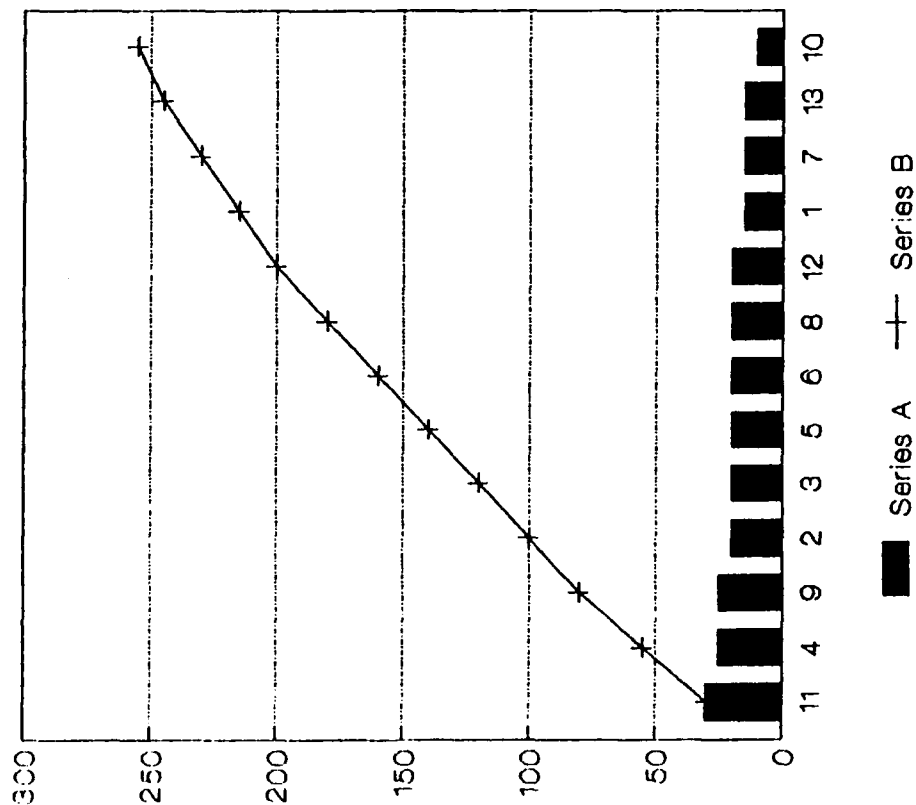
	STAFF	ROOM	DRPOLITE	DRQUEST	NURQUEST	QUALCAR	SATNUR	NURSPOL
STAFF	1.00000							
ROOM	.75318	1.00000						
DRPOLITE	.76939	.66431	1.00000					
DRQUEST	.63317	.61910	.82955	1.00000				
NURQUEST	.68146	.59172	.68376	.80545	1.00000			
QUALCAR	.73825	.73329	.78567	.88337	.74702	1.00000		
SATNUR	.69757	.54107	.57662	.68295	.83577	.67820	1.00000	
NURSPOL	.79345	.74553	.63786	.75128	.77005	.81982	.82285	1.00000
MEALSREC	.73655	.65795	.61154	.70754	.85068	.76505	.76856	.77700
WARMFOOD	.78066	.65591	.54102	.63112	.68822	.75303	.68947	.78833
SATFOOD	.65338	.57588	.50244	.61070	.75146	.69052	.65342	.67306
SATFAC	.66502	.79635	.54773	.65004	.59237	.71329	.56740	.78177
OVERALL	.65185	.58947	.59439	.77788	.80440	.80230	.78614	.79700
	MEALSREC	WARMFOOD	SATFOOD	SATFAC	OVERALL			
MEALSREC	1.00000							
WARMFOOD	.80718	1.00000						
SATFOOD	.88797	.79412	1.00000					
SATFAC	.66109	.72514	.63826	1.00000				
OVERALL	.84800	.72887	.77043	.72631	1.00000			

CRITICAL VALUE (1-TAIL, .05) = + Or - .07366
 CRITICAL VALUE (2-tail, .05) = +/- .08771

N = 500

PARETO DIAGRAM

INPATIENT RETIREES



When you were last an inpatient at MACH:

1. The staff of the Admissions Office was courteous and helpful.
2. The room that you occupied was clean and presented a neat and pleasant appearance.
3. Your doctor was polite to you and your family.
4. Your doctor(s) took enough time to answer your questions.
5. The staff nurse(s) took the time to answer your questions.
6. You were provided high quality care by your physician.
7. You were overall satisfied with the care provided by the nursing staff.
8. The nursing staff was polite to you and your family.
9. The meals that you received were the ones that you ordered.
10. The food was warm when served.
11. Overall, you were satisfied with the food.
12. You were overall satisfied with the facilities and comfort of your room.
13. When you departed MACH, you were overall satisfied.

Figure 3

regarding inpatient services (Figures 3 and 4). The largest dissatisfiers for the active duty were: doctors not answering their questions, nurses not answering questions, overall dissatisfaction with the facility, and overall dissatisfaction with nursing services. In contrast, the retirees were most dissatisfied with: the food, doctors not answering their questions, meals received, and the cleanliness of the rooms.

Open-Ended Questions

The open-ended questions provided information regarding community perceptions of MACH, major strengths and weaknesses, what distinguished users from nonusers, and information pertaining to consumer awareness. There was a high degree of satisfaction indicated by both retirees and active duty regarding care in the family practice care. The literature reveals that this is consistent with findings throughout the United States where patients expect continuity of care.

Some of the things they liked were: seeing the same physician each time, ease of access into the healthcare system, less waiting time, and the perception of better physicians in the family practice clinics. The things they did not like were the constant turnover of physicians (PCS moves),

Table 11: MULTIPLE REGRESSION ANALYSIS

Responses to Inpatient Question (41)
by Active duty Soldiers and their Family Members.

$$F = \frac{(R^2_{full} - R^2_{rest}) / (NLIPV - NLIPV_{rest})}{(1 - R^2_{full}) / (N - NLIPV_{full})}$$

Variable Tested	R ²	F	d _{fl}	d _{f2}	p	$\bar{x}$	Std
Full Model	.8609	**251	11	488	.001		
H ₁ (Staff)	.8608	.03	11	488	n/s	3.74	.86
H ₂ (Room)	.8465	**4.59	11	488	.001	3.78	.87
H ₃ (Drpol)	.8578	.99	11	488	n/s	3.73	.90
H ₄ (Drquest)	.8580	.92	11	488	n/s	3.72	.87
H ₅ (Nurquest)	.8608	.03	11	488	n/s	3.71	.91
H ₆ (Qualcare)	.8493	**3.70	11	488	.001	3.77	.78
H ₇ (Satnur)	.8477	**4.21	11	488	.001	3.74	.90
H ₈ (Nurspol)	.8607	.06	11	488	n/s	3.80	.86
H ₉ (Mealsrec)	.8406	**6.47	11	488	.001	3.69	.89
H ₁₀ (Warmfood)	.8555	1.72	11	488	n/s	3.77	.77
H ₁₁ (Satfood)	.8604	.16	11	488	n/s	3.64	.84
H ₁₂ (Satfac)	.8315	**9.38	11	488	.001	3.71	.79
H ₁₃ (Stepwise)	.7667	**30.0	4	488	.001	3.67	.89

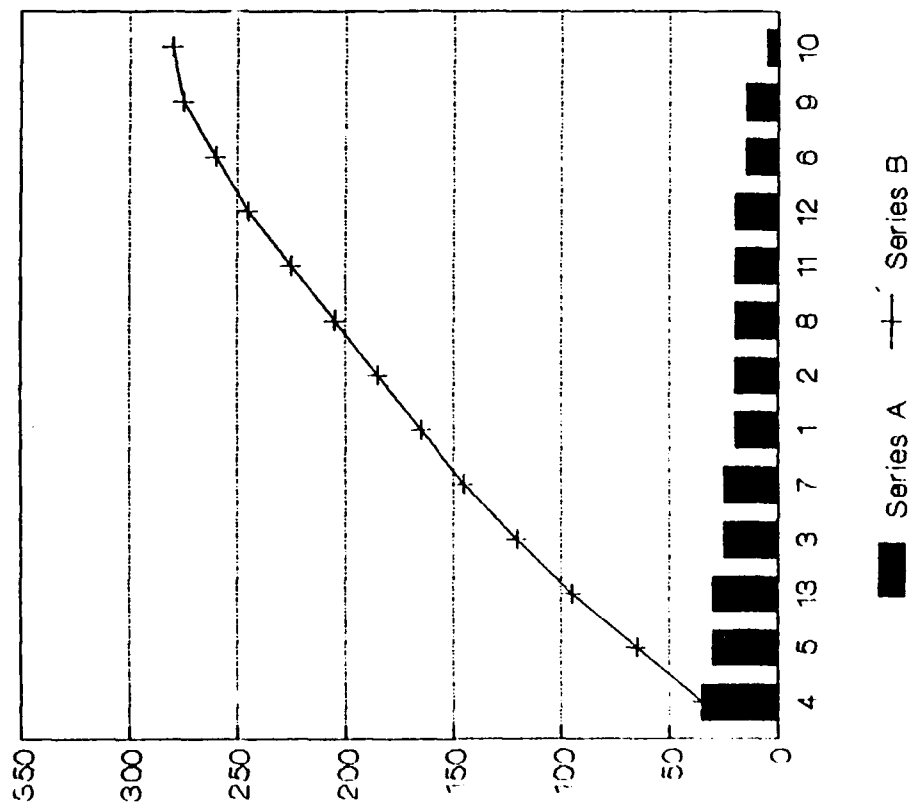
Note: Stepwise controlled for variables: 2, 3, 4, 6, 7, 9, 10, and 12.

** Indicates significance at the .001 alpha level

n = 500

PARETO DIAGRAM

INPATIENT ACTIVE DUTY



When you were last an inpatient at MACH:

1. The staff of the Admissions Office was courteous and helpful.
2. The room that you occupied was clean and presented a neat and pleasant appearance.
3. Your doctor was polite to you and your family.
4. Your doctor(s) took enough time to answer your questions.
5. The staff nurse(s) took the time to answer your questions.
6. You were provided high quality care by your physician.
7. You were overall satisfied with the care provided by the nursing staff.
8. The nursing staff was polite to you and your family.
9. The meals that you received were the ones that you ordered.
10. The food was warm when served.
11. Overall, you were satisfied with the food.
12. You were overall satisfied with the facilities and comfort of your room.
13. When you departed MACH, you were overall satisfied.

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Figure 4

Table 12: BENEFICIARY SURVEY RESPONSES TO QUESTION 41

QUESTION	RESPONSE				
	(1) Strongly Disagree---(5) Strongly Agree				
When you were last an inpatient at MACH:	SD	D	N	A	SA
1. The staff of the admissions office was courteous and helpful.	0 0	4.0 3.0	42.0 13.2	31.0 36.0	23.0 47.8
2. The room that I occupied was clean and presented a neat and pleasant appearance.	1.0 1.0	3.0 3.0	36.0 14.4	37.0 35.2	23.0 46.4
3. Your doctor was polite to you and your family.	1.0 1.0	4.0 3.0	40.0 12.0	31.0 30.0	24.0 54.0
4. Your doctor(s) took enough time to answer your questions.	0 1.0	7.0 4.0	35.0 13.0	37.0 34.0	21.0 48.0
5. The staff nurse(s) took the time to answer your questions.	1.0 1.0	5.0 3.0	39.0 12.0	32.0 37.0	23.0 47.0
6. You were provided high quality care by your physician.	0 1.0	3.0 3.0	36.0 11.0	42.0 35.6	19.0 49.4
7. You were overall satisfied with the care provided by the nursing staff.	1.0 1.0	4.0 2.0	39.0 12.0	32.0 35.0	24.0 50.0
8. The nursing staff was polite to you and your family.	0 1.0	4.0 3.0	37.0 12.0	34.0 33.4	25.0 50.6
9. The meals that you received were the ones that you ordered.	2.0 2.0	1.0 3.0	44.0 18.0	32.0 36.0	21.0 41.0
10. The food was warm when served.	0 0	1.0 2.0	41.0 16.0	38.0 42.0	20.0 40.0
11. Overall, you were satisfied with the food.	2.0 1.0	2.0 5.0	42.0 15.0	33.0 39.0	16.0 40.0
12. You were overall satisfied with the facilities and comfort of your room.	0 1.0	4.0 3.0	38.0 12.0	41.0 38.0	17.0 46.0
13. When you departed MACH you were overall satisfied.	2.0 1.0	4.0 2.0	38.0 12.0	37.0 37.0	19.0 48.0

Active duty (row 1) n= 500

Retirees (row 2) n = 500

* Responses are listed as percentages

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physicians not answering questions, and rude receptionists.

The things they liked about the PRIMUS clinic were consistent with those of family practice: short waiting time, close to home, physicians answering their questions, and pleasant staff. An interesting note is the perception by the active duty that soldiers are treated better at PRIMUS clinics than at military treatment facilities. The things that are least desirable were: usage of foreign physicians, waiting time, not enough specialty services, and rude staff members.

Is the care any better in a civilian facility? A majority of respondents felt that the staff in civilian facilities responded quicker, were more courteous, and the physicians did what was asked of them. The physicians were also willing to discuss problems in more detail. What is the largest dissatisfier with civilian medicine. The cost!! This response far outnumbered the others. The next largest dissatisfiers were the rudeness of the staff and excessive waiting times. Even though civilian medicine was regarded fairly high, patients normally do not go to civilian facilities because they are dissatisfied with the care at MACH. The majority are seeking care while on leave or vacation, or an

emergency occurs while they are not in the proximity of MACH.

The things that contribute to their satisfaction while hospitalized are the: nursing staff, food, visitors, physicians, and the cleanliness of the room. The responses from active duty personnel differed only slightly from those of the retirees.

How can we improve our services? We live in a society where patients expect services to be provided in a timely manner. One of the purposes of the focus group interviews was to determine optimal waiting times for services based upon group consensuses. Patients that have waited for medical records, physician appointments, laboratory procedures, and x-rays do not have a large tolerance for waiting a half hour at the pharmacy.

Overall the beneficiaries felt that a new emergency room was needed, as well as more telephone lines, more parking, and elimination of open bays on wards. The retirees leading response regarding making their visit more comfortable as an inpatient was "Nothing else is required--keep up the good work."

Facility Satisfaction

As stated earlier, a high degree of satisfaction was expressed by the retirees who were enrolled in family practice. Those not enrolled expressed a great

desire to be enrolled. Approximately 80% of the retirees who were enrolled in the family practice program and 54% of the active duty personnel indicated that they were satisfied with the family practice clinic.

This figure is consistent with those pertaining to the satisfaction expressed with MACH by both groups. Eighty- seven percent of the retirees and 43% of the active duty were satisfied with MACH.

The retirees rated satisfaction with PRIMUS lower than satisfaction with the care received at MACH. The satisfaction level of the active duty population with PRIMUS was lower than expected; only 33% of the respondents indicated that they were satisfied with PRIMUS, 48% indicated that they were dissatisfied, and 18% neither agreed nor disagreed.

The care received at civilian medical treatment facilities was rated fairly high by active duty personnel; 50% indicated that they were satisfied and 37% indicated dissatisfaction.

A larger percentage of retirees would recommend the military healthcare system to their friends (88%) and this supports the findings that they are more satisfied than the active duty, where only 63% would recommend a military MTF. Approximately 50% of the active duty personnel and 21% of the retirees

indicated that they would switch to another healthcare system if given the opportunity.

Facility Information/ Services

The retirees' loyalty to MACH appears to be stronger than that of the active duty population. Fifteen percent of the active duty personnel and only 8.5% of the retirees consider PRIMUS to be their usual source of healthcare for their families. MACH was listed as the primary source of care for 70% of the retirees and 12% utilize civilian physicians.

The figures involving family practice enrollment appear to be distorted at first glance, since only 39% of the active duty personnel indicated that they were enrolled in the family practice program and 33% of the retirees indicated likewise. This is inconsistent with the data found in the family practice clinic. The figures should have been 60% active duty and approximately 10% retirees. However a large number of retirees who are enrolled in the family practice program responded to the survey due to their high level of satisfaction with the clinic. These individuals live in the immediate area so their response rate to the survey was also greater.

There also appears to be some problems with active duty personnel being enrolled in the family practice program. Thirty-one percent indicated that

they had applied for the program but had not been enrolled. The enrollment time varied from one month to one year for those individuals. These figures conflicted with the data base in the family practice clinic which indicated enrollment for all active duty within six months.

There is no doubt that the telephone system leaves much to be desired with both populations. The active duty members tend to call more and are also more dissatisfied with the information received. Both groups tend to call civilian facilities about half as often and tend to be more satisfied with the answers received. Due to the Privacy Act, medical information is normally not released over the telephone. Apparently in the civilian hospitals the rules are not quite as stringent because patients indicated that they receive information via the telephone on a regular basis from civilian facilities.

Was there parking available within walking distance of the hospital? The response to this question differed from normal expectations. Thirty percent of the active duty respondents felt that parking was not available and only 8.5 percent of the retirees felt this way. This question might have been biased by the following question which asked if they were willing to pay for parking. Even though parking

was deemed not readily available by a large group of active duty personnel, the number desiring to pay to obtain better parking was not very high. Eighteen percent of the active duty families and 30% of the retirees indicated a willingness to pay for parking.

Hours of Operation

There is not a single best time to provide health care for either group. It is interesting to note, though, that the active duty members prefer the early morning hours, 0700, and the late hours 1100-1930, at about the same frequency. Numerous respondents indicated a need for 24-hour services, especially for the outpatient clinic. The retirees tend to prefer clinics starting before 1100.

Itemized Analysis of all Questions

This survey was a compilation of 49 questions pertaining to outpatient, inpatient, ancillary services, patient sociodemographic characteristics, perceptions, and attitudinal behaviors. The itemized responses for each question for the two distinct groups, active duty families and retiree families, are listed in Appendices C and D.

RESULTS OF FOCUS GROUP INTERVIEWS

Why use focus groups? It is not enough to look only at the data when measuring patient satisfaction. We need to look at the process from which the data was

derived. The demand for more in-depth attitude survey data requires the collection and analysis of qualitative data.

There were ten focus-group sessions conducted with a total of 98 beneficiaries. The participants were randomly selected from the central appointment scheduling roster. The demographic composition of the groups included retiree and active duty family members, users of several different outpatient clinics and inpatient services at MACH, and members who had utilized PRIMUS and civilian facilities.

The following areas were determined to be linked to the behavioral attitudes of beneficiaries in utilization of services:

- (1) Awareness
- (2) Knowledge/perceived differences
- (3) Opinions/perceived differences
- (4) Results/expectations
- (5) Acceptance/rejection
- (6) Preference/Intention

Awareness relates to making beneficiaries aware of services and the times of those services. This technique can be essential in at least beginning to influence behavior. In some cases, awareness may be enough to precipitate behavior as when an individual already committed to obtaining a service learns that

the service is available at the military treatment facility.

To determine the awareness state of a particular audience, questions such as the following were asked in the focus group discussions: Are you aware of the operational hours of the outpatient clinic, pharmacy, family practice clinic, and other services. Do you know how to schedule appointments at MACH?

Knowledge involves information about services or providers beyond their mere existence. To distinguish it from opinions, knowledge involves only facts or features of the service or provider in question. Do you know where PRIMUS is located? Can you find the outpatient clinic?

Opinions may be based on knowledge of fact, but are, by definition, subjective judgments attributed to services or providers; therefore, they are attributes. To learn how people perceive competing options, questions were asked, "How is MACH outpatient clinic different from the PRIMUS Clinic and the family practice clinic?" I felt that detecting differences in opinions was as useful as learning what opinions people have of services. If beneficiaries think one service or provider has a particular attribute and have no idea or are not sure whether others do, that service or provider enjoys an advantage, at least on

that attribute. Also, if beneficiaries think one provider has more of an attribute, for example, is a little more friendly, cheerful, or competent, that also represents an advantage. Opinions of beneficiaries were probed to determine what tangible features or past experiences were responsible for or at least influenced them.

Expectations of results regarding outcome of care were found to be linked to the beneficiaries' knowledge of specific features and opinions of provider attributes. While differential expectations of outcomes may not be common for health care providers, they can be among the most powerful determinants of preference where they exist.

To learn whether differential expectations exist in the minds of particular customers, beneficiaries were asked, "If you are choosing a hospital for maternity, emergency or other type of care, where do you think you would get the best results?" Differential result expectations and confidence levels most frequently arise from personal experiences. In this case, probing questions were asked to learn what specific features, attributes, or experiences beneficiaries thought were causes of past results.

The strength of preference was indicated by comparison type questions. Would you say that MACH is

much better, a little better, about equal, a little worse, or much worse compared to civilian facilities in Columbus?

Any of the areas identified might under some circumstances, be the sole focus of marketing efforts. However, the ultimate proof of awareness, knowledge, acceptance or preference is how people behave rather than how they respond to survey questions.

The focus group interviews were conducted in a semi-structured format. A set of well defined questions was developed based upon the dissatisfiers identified in the beneficiary survey. These questions were presented and beneficiaries were allowed to interject or provide information on any health care issue they deemed relevant. When a group member brought up a new idea, however tangential, the group as a whole was given the opportunity to react to it.

All group sessions started with an introduction of myself, a brief explanation of the purpose of the study, and projected use of the data to make changes as needed. The participants were then invited to introduce themselves to the group members. This action served as a tension or ice breaker to place the members more at ease. The following is a summation of the questions and answers that were deemed to be the most important.

Q: How often have you utilized MACH within the past year?

A: The responses ranged from twice to 18. Most individuals that had not utilized the clinics had utilized the pharmacy services. Several beneficiaries expressed difficulty with being able to schedule appointments especially in the internal medicine clinic.

Q: What facility do you consider to be your usual source of health care?

A: MACH was by far the most often given response; however, several members who were employed with major firms in Columbus indicated that their insurance coverage with their employers was extremely comprehensive, and they preferred the convenience of utilizing civilian physicians.

Q: How often do you utilize PRIMUS?

A: Several members had utilized PRIMUS on a frequent basis when the clinic first opened but had decided that the services were not as good as MACH. The groups also indicated that it was easier to see a specialist if consult was received from a physician at MACH rather than PRIMUS.

Q: How long did you have to wait to see a physician at PRIMUS and what do you consider to be a reasonable waiting time?

A: The responses from retirees and active duty personnel differed on this question. Most retirees felt that an hour to an hour and a half was reasonable. The active duty families felt that under no circumstances should they have to wait more than an hour. The response on this question was similar to their perceptions on waiting time for most services.

Q. What is a reasonable time to wait at the pharmacy for a prescription to be filled?

A: The retiree responses ranged from a half-hour to two hours, and the active duty responses ranged from fifteen minutes to one hour.

Q: How long do you expect to wait before receiving an appointment?

A: The groups were extremely critical of the Fort Benning telephone system and the MACH patient appointment scheduling system. Surprisingly, many active duty participants could not fathom the fact that there were not enough appointments or physicians available to provide care on what they considered a timely basis. The retirees who had much more experience with different health care systems indicated that on numerous occasions they were not able to schedule appointments with civilian physicians because they were booked up.

Q: How do you perceive the quality of health care services provided by MACH?

A: The retirees indicated that once they got into the system the care was extremely good; however, if they were not enrolled in family practice they must wait to get appointments--and "heaven" forbid if they had to go to the emergency room because it could take hours to receive care. The active duty personnel felt that physicians did not spend enough time explaining their problems, and that on numerous occasions they were perceived as a nuisance to the physician. A major concern was the availability of test results being in the medical record. Several respondents indicated that the physicians could not answer their questions because test results or completed consults were unavailable.

Q: How were you treated by the staff?

A: Both groups indicated that staff members were courteous and helpful, but if they did not ask questions regarding anticipated waiting time for services, no one would bother to tell them.

Q: What can you tell me about the inpatient service of MACH?

A: "The physicians and staff nurses were extremely helpful and all I had to do was ask for something and I received it." This was the primary

response given by retirees. The active duty personnel were also extremely positive when referring to inpatient services, and many indicated that it was their first time to be hospitalized. The perceptions that they had of MACH were somewhat changed by being an inpatient, and many indicated that the services were a lot better than they expected. Their expectations were based upon previous conversations with neighbors and friends who had related to them a negative experience with MACH.

Q: Did your physician answer your questions?

A: Most active duty participants felt that the physicians were too busy to answer questions most of the time. Several individuals indicated that on numerous occasions they would ask the nurses to talk to the physician to find out when they were going home or whether or not they could go on a pass or eat certain foods. The retiree concerns were somewhat different. Most retirees indicated that they were more concerned with the severity of their illness and that the physicians did not always keep them informed of test results. Both groups indicated a willingness to know in advance whether or not additional tests were required so they could tell family members when to visit without interfering with the care being provided.

Q: How was the food?

A: Most responded that the food was extremely good and that ample portions were served. Individuals who were not satisfied were normally on specialized diets and found the food to be bland. The retirees indicated that being provided a second cup of coffee or additional snacks would have made their stays more pleasant.

Q: How was the overall comfort of your room?

A: The common response was it was adequate. When asked how things could be improved, most indicated that the lack of private rooms, carpeting, and the poor quality of furniture were the things that differentiated military hospitals from civilian facilities. However, it was not expected that a military facility would be as plush as a civilian hospital. Several retirees indicated that they would rather have their tax dollars used to acquire more physicians for the specialty services than buy fancy furniture.

Comparison of results

How did the results of the focus groups compare to the quantitative beneficiary survey? The results were extremely similar, and this was expected because the interviews were designed to expound upon the responses identified in the beneficiary survey. The

overall rating of the hospital was higher in the group interviews. This rating can conceivably be attributed to the fact that the group being interviewed had accessed the system and many had positive encounters with the physicians, staff, and ancillary services. The willingness to switch systems was not identified in any groups. Many participants indicated that on occasion when they hear someone "bad mouth" MACH they speak up and inform those individuals that the services provided at MACH are as good or better than most hospitals, military and civilian.

The need to expand the beneficiary survey to study the differences between the perceptions of beneficiaries based upon education, rank of sponsor, and health care insurance coverage was identified in the interviews. The wives of officers, retired and active duty, were more vocal in their perceptions of the care received. The enlisted wives were primarily concerned with gaining access through the appointment system and excessive waiting times; however, the officers' wives tended to compare the services of different facilities more in-depth. The enlisted wives indicated that their husbands often told them not to complain about any services on post (medical or others) because they did not want to get into trouble with their first sergeant or commander.

RECOMMENDATIONS

This study revealed several areas of concern that were previously known, however the magnitude of those concerns had not previously been studied. As a result of this study, an action plan was developed to improve upon the areas of dissatisfaction. Several of the actions had previously been initiated; however, the information was not consolidated into a single document to specifically address problem areas. Recommendations for improvements of some of the top dissatisfiers are briefly highlighted below:

- (1) Concern: Difficulty in gaining telephone access.
Actions: Upgrade the telephone and wiring system of MACH, install commercial telephone lines in high volume clinics, and install telephone call sequencers.
- (2) Concern: Difficulty in scheduling appointments.
Actions: Install a new computerized appointment system, establish Coordinated Care (Managed Care) office to improve access by initiating partnership agreements and contracts, and monitoring the workload of PRIMUS and the outpatient clinic.
- (3) Concern: Waiting time for physicians to provide care.

Actions: Keep patients informed of any delays and increase the length of appointments as needed.

- (4) Concern: Waiting time for prescriptions.

Actions: Install a full service pharmacy at the Post Exchange mall, upgrade CPU of pharmacy computer, expedite patients based on medical needs, and continuously educate beneficiaries on services available.

- (5) Concern: Waiting time in the Emergency room.

Actions: Renovate the emergency room to improve patient flow, and implement a system to rapidly triage patients.

- (6) Concern: Lack of family practice services for retirees.

Actions: Continuously review the patient panels and add additional families when possible, recruit family physicians under the partnership program, and develop a family practice clinic for retirees and family members.

- (7) Concern: Physicians do not take enough time to answer the questions of patients.

Actions: Address this issue in medical staff meetings on a frequent basis and establish a patient education center.

There are several areas that can be studied in more detail to ascertain exactly why the beneficiaries responded in the manner they did. Specifically, studies in the areas of pharmacy, emergency room, and outpatient services should be conducted. Based upon the types of individuals who utilize the emergency room and the number of respondents that indicated the outpatient clinic hours were not satisfactory, consideration should be given to adjusting the outpatient clinic hours so that the clinic is open later in the evening. This action would reduce the patient load in the emergency room, thereby decreasing the emergency room waiting time.

The variables of education, occupation, rank of the sponsor, and health care insurance coverage were not included in this study. Based upon the differences observed in the focus group interviews, these variables could conceivably be significant in determining the utilization rates by retirees and active duty families. Future studies should incorporate these variables to ascertain their effect on patient satisfaction and utilization of military treatment facilities.

CONCLUSION

What did we learn? The active duty population does not rate the healthcare received at MACH as highly as the retiree population does, and active duty families are more likely to switch to civilian facilities. The active duty families perceive that excessive waiting times at the emergency room or pharmacy occur because of the large retiree population being served by MACH. The retirees are a lot more cognizant of the long waiting times that may occur in civilian facilities and are therefore more tolerant of the military health care system.

The majority of the beneficiaries have not voluntarily sought treatment in a civilian facility. On numerous occasions they were referred by personnel at MACH or they were out of the immediate area on leave or vacation when an emergency occurred. The lack of certain services, such as dermatology, cardiology, and optometry, has frustrated a large group of our clientele.

Although the trends identified in the HSC outpatient survey and the MACH inpatient survey were consistent with the beneficiary survey, the results or the satisfaction index of the beneficiary survey were a lot lower. These low results can be attributed to several factors, the first being individuals who have

gained access to the system complain less. Also those beneficiaries who are hospitalized are normally satisfied if their health gets better. This is consistent with the literature on inpatient hospital stays.

The largest dissatisfiers or areas that receive the most complaints are not necessarily the best predictors of overall satisfaction with the facility. If the patient has a positive encounter with the physician, the excessive waiting time at the pharmacy, or difficulties with scheduling appointments are somewhat lessened. The role of physicians in the military can not be underestimated when looking for ways to improve overall satisfaction. These findings are consistent with the findings of Heffring, who indicated that patient satisfaction and perceptions were most influenced by physicians (Heffring, 1986).

It is obvious that the differences between the perceptions and expectations of active duty and retiree inpatients must be considered when attempting to improve inpatient satisfaction. The hotel amenities, such as cleanliness of the room and warm food, appear to be much more important to retirees. The active duty population demands to have their questions answered and wants to be involved in making health care decisions.

This study was designed to support the marketing efforts of MACH by examining the variables associated with patient satisfaction in the military health care sector. The expectations of military beneficiaries are concordant with those of the civilian population, however these similarities are not always considered when establishing programs for improving health care.

The results of this paper were assimilated into the development of the strategic plan for MACH. This ensures that the needs of the beneficiaries are considered when making long and short range plans. Additionally, the results of this survey were briefed to the Deputy Inspector General of the Army, and the health consumer committee of MACH. Briefings for the Fort Benning leadership (i.e., Commanders and CSM's) will occur in the near future in conjunction with articles that will be circulated to the retiree and active duty population citing the improvements that have occurred based upon their input. The marketing committee will conduct surveys on a semi-annual basis to determine if the perceptions of the beneficiaries are changing and if their needs are being met. Patient satisfaction is similar to most management problems "If you can not measure it, you can neither manage nor improve it."

References

- Abramowitz, Susan (1987). Analyzing patient satisfaction: A multianalytic approach. Quality Review Bulletin, April 1987, 122-130.
- Berwick, Donald (1989). Continuous improvement as an ideal in healthcare. New England Journal of Medicine, 320(1) 53-56.
- Berwick, Donald (1988). Measuring healthcare quality. Pediatrics in Review, 10(1): 11-16.
- Boscarino, Joseph (1988). The public's rating of hospitals. Hospital and Health Services Administration, 33(2) 189-199.
- Caldwell, Chip (1989). Policy and Service Strategy in Hospital-Wide Quality Improvement. Juran Institute Conference, 8A 29-45.
- Cleary, Paul (1988). Patient assessments of hospital care. Quality Review Bulletin, June 1988, 172-179.
- Crosby, Frances (1989). Examination of a survey methodology: Dillman's total design method. Nursing Research, 38(1), 56-58.

Curry, Wesley (1989). Doing it right the first time.

Physician Executive, July-August, 17-19.

Davis, Diane (1989). Measuring outpatient

satisfaction with rehabilitation services. Quality

Review Bulletin, June, 192-197.

Donabedian, Avedis (1988). The quality of care: How

can it be assessed? Journal of American Medical

Association, 260(12) 1743-1748.

Droste, Theresa (1988). Hospitals learn quality

control from businesses. Hospitals, 5 November,

41-42.

Droste, Theresa (1989). Research and customer

satisfaction top agenda. Hospitals, 5 January,

38-39.

Endresen, Karen (1988). Psychographic segmentation

for marketing success, Healthcare Executive,

March/April, 26-29.

Friedman, John (1989). Applied marketing--a practical approach to implementing new models. Decisions in Imaging Economics, 7-12.

Fritz, Rita & Annis, Lynn (1989). Customer satisfaction protecting your bottom line. Healthcare Executive, 2(6), 1-5.

Gourley, Dennis (1988), Marketing and Planning in Multihospital Systems, Hospital and Health Services Administration, 33(3), 45-58.

Harris, Evelyn (1990), Most women satisfied with military health care, Stripe, January 12, p.10.

Harper, Mary (1989). Using patient satisfaction data: An ongoing dialogue to solicit feedback. Quality Review Bulletin, June, 168-171.

Heffring, Michael (1986). High tech, high touch: Common denominators in patient satisfaction. Hospital and Health Services Administration, March/April, 81-93.

Hudak, Ronald (1989). A comparison of patient populations between two types of military primary care health clinics. Military Medicine, 154, 609-613.

Hungate, Robert (1989). Lessons from Industry. Physician Executive, January/February, 13-16.

Hunter, Susan (1987). Marketing and Strategic Management: Integrating skills for a better hospital. Hospital and Health Services Administration, May, 205-217.

Inguanzo, Joe (1985). What makes consumers select a hospital? Hospitals, March, 90-94.

Inguanzo, Joe (1985). Consumer satisfaction with hospitalization, Hospitals, May, 81-83.

Jensen, Richard (1989). Contracting out Military Health Care, Military Medicine, 154, 394-398.

Johns, Horace (1989). An empirical analysis of consumers' attitudes toward hospital advertising, Health Care Supervisor, 7(4), 11-21.

Koska, Mary (1989). Satisfaction data: Patient perception is reality, Hospitals, July, 40-41.

Louden, Teri (1989). Customer perception counts in quality assurance, Hospitals, January, 84-85.

Nelson, Eugene (1989). The patient judgment system: Reliability and Validity, Quality Review Bulletin, June, 185-191.

Ramirez, Amelie & Shepperd, James (1988). The use of focus groups in health research, Scand Journal Primary Health care Suppl, 1: 81-90.

Rowland, S. & Rowland, B. Hospital Administration Handbook, Aspen publications, 1984, 179-205.

Strickland, Jack, Total Quality Management, Office of the Secretary of Defense, March/April 1989.

Weiss, Gregory, (1988). Patient satisfaction with primary medical care, Medical Care, 26(4), 383-392.

Weiss, Gregory, (1987). Regular source of primary medical care and patient satisfaction, Quality Review Bulletin, June, 180-184.

DEFINITIONS

Chi-square test: A test of statistical significance used to assess whether or not a relationship exists between two nominal-level variables symbolized as X^2 .

Closed-ended question: A question that offers respondents a set of mutually exclusive and jointly exhaustive alternative replies.

Concurrent validity: The degree to which an instrument can distinguish individuals who differ on some other criterion measured or observed at the same time.

Confidence interval: The range of values within which a population parameter is estimated to lie.

Confidentiality: Protection of participants in a study such that their individual identities will not be linked to the information they provided.

Construct validity: The degree to which an instrument measures the construct under investigation.

Content validity: The degree to which the items in an instrument adequately represent the universe of content.

Correlation: A tendency for variation in one variable to be related to variation in another variable.

Correlation coefficient: An index that summarizes the degree of relationship between two variables.

Correlation coefficients typically range from +1.00 (for a perfect direct relationship) to 0.0 (for no relationship) to -1.00 (for a perfect inverse relationship).

Criterion variable: The quality or attribute used to measure the effect of an independent variable; sometimes used instead of dependent variable.

Degrees of freedom: A concept used in tests of statistical significance; degrees of freedom (df) is usually $N-1$, but different formulas are relevant for different tests.

Delphi technique: A method of obtaining information from a panel of experts. The experts provide information independently and a summary of the results are circulated to the entire panel.

Dependent variable: The outcome variable of interest; the variable that is hypothesized to depend on or be caused by another variable (called the independent variable); sometimes referred to as criterion variable.

Descriptive statistics: Statistics used to describe and summarize the researcher's data set (e.g., mean, standard deviation).

Hypothesis: A statement of predicted relationships between the variables under investigation; hypotheses lead to empirical studies that seek to confirm or disconfirm those predictions.

Inferential statistics: Statistics that permit one to infer whether relationships observed in a sample are likely to occur in a larger population of concern.

Likert scale: A type of composite measure of attitudes that involves summation of scores on a set of statements to which respondents are asked to indicate their level of agreement or disagreement.

Multiple correlation coefficient: An index that summarizes the degree of relationship between two or more variables and a dependent variable; symbolized as R .

Multiple regression: A statistical procedure for understanding the simultaneous effects of two or more independent variables on a dependent variable.

Pareto diagram: A graphic presentation of data in a histogram displaying the highest number of negative responses in a descending order.

BENEFICIARY SURVEY

Martin Army Community Hospital

DEPARTMENT OF THE ARMY
Headquarters United States Army Medical Department
Fort Benning, Georgia 31905-6100

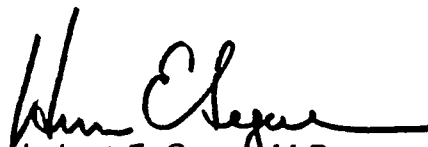
August 11, 1989

Dear Beneficiary:

I am committed to ensuring that Martin Army Community Hospital (MACH) continues to meet the healthcare needs of all our beneficiaries. We at MACH are very much interested in learning how well we meet your needs and in gaining insights as to how we might better provide quality care.

We are requesting that you please complete the attached questionnaire, even if you haven't used MACH. Your response will provide us with the information needed to better meet your needs. Your completed questionnaire will be invaluable in this effort, and will only take a few moments of your time. Thank you for your assistance.

Sincerely,



Herbert E. Segal M.D.
Colonel, U.S. Army
Commanding

"REPRODUCED AT GOVERNMENT EXPENSE"

"MARTIN CARE"
A Tradition of Quality!

We at Martin Army Community Hospital (MACH) want to insure that we are meeting your needs by providing high quality health care to our beneficiary population. We would appreciate it very much if you would take a few minutes of your time to answer the questions outlined in this survey. The answers that you provide will enable us to better forum our efforts in providing the health care services that you are entitled to.

The questions in this survey are demographic in nature. **Either complete the blank spaces OR CIRCLE THE NUMBER to answer each question, as appropriate. Please answer the questions as accurately and as completely as you can.**

1. What is your current status?

1=Active Duty 2=Family Member of Active Duty 3=Retiree 4= Family Member of Retiree

2. What is your date of birth? Month ____ Day ____ Year ____

3. What is your race? 1=Asian 2=Black 3=Hispanic 4=White 5=Other _____

4. What is your gender? 1=Male 0=Female

5. Approximately what was your family's total income last year before taxes?

1=Less than \$10,000 2=\$10,000-\$19,999 3=\$20,000-\$29,999 4=\$30,000-\$39,999
5=\$40,000-\$49,999 6=\$50,000-\$59,999 7=\$60,000-\$69,999 8=\$70,000-\$79,999
9=\$80,000-\$89,999 10=Over \$90,000

6. Overall, how would you rate your health? 1=Excellent 2=Good 3=Fair 4=Poor

7. If you are handicapped, do you require the assistance of a:

1=Wheelchair 2=Walker 3=Crutches 4=Cane 5=Other (Please specify) _____
6=NA

8. Where do you reside?

1=On Post (Barracks, BOQ, BEQ) 2= On Post (Quarters) 3=Off Post (Columbus, Phenix City)

4=Other (Please Specify) _____

9. What is the approximate distance in miles from your residence to MACH? _____ Miles

In this section of the survey, we are interested in your level of satisfaction with the services available at MACH and at civilian health care sources. **Please answer the questions as accurately and completely as you can.**

10. Which type of facility do you consider to be your usual source of health care?

1=Martin Army Community Hospital (MACH) Clinics and Emergency Room

2=Civilian Doctor's Office, Clinic, Emergency Room, etc.

3=Winder Family Practice, 197th Family Practice, Aviation Medicine or Troop Medical Clinic

4=PRIMUS 5=Other sources not listed. (Please specify) _____

11. Are you enrolled in Family Practice at MACH? 1=Yes 2=No

(If yes, please skip to #14)

12. If your answer to question #11 above is no, have you applied for enrollment in family practice?

1=Yes 2=No

13. If your answer to question #12 above is yes, how long have you been waiting to be enrolled?

(If you answered no to question #11, skip #14-17)

14. I am very satisfied with the care that I received in the Family Practice Clinic at MACH.

1=Strongly agree 2=Agree 3=Not sure 4=Disagree 5=Strongly Disagree

6=Not applicable

15. If there one physician in Family Practice who you consider to be your primary provider of care? 1=Yes 2=No

16. What do you think is **most desirable** about the care received in the Family Practice Clinic?

17. What do you think is the **least desirable** about care received in the Family Practice Clinic?

18. I am very satisfied with the care that I receive at MACH.

1=Strongly agree 2=Agree 3=Not sure 4=Disagree 5=Strongly Disagree 6=Not applicable

19. What do you think is most desirable about the care received at MACH?

20. What do you think is least desirable about the care received at MACH?

21. Have you ever received care at the PRIMUS Clinic in Columbus? 1=Yes 2=No

22. I am very satisfied with the care that I receive at the PRIMUS Clinic.

1=Strongly agree 2=Agree 3=Not sure 4=Disagree 5=Strongly Disagree

6=Not applicable

23. What do you think is most desirable about the care received at PRIMUS?

24. What do you think is least desirable about the care received at PRIMUS?

25. Would you switch to a different health care system if you had the opportunity?

1=Definitely yes 2=Probably yes 3=Probably no 4=Definitely not

26. Would you recommend the military health care system to your family or friends if they needed care?

1=Definitely yes 2=Probably yes 3=Probably no 4=Definitely not

27. Have you received care at a civilian medical facility within the last 2 years?

1=Yes 2=No

28. I am very satisfied with the care received at a civilian medical facility.

1=Strongly agree 2=Agree 3=Not sure 4=Disagree 5=Strongly Disagree

6=Not applicable

29. What do you think is **most desirable** about the care received in a civilian facility?

30. What do you think is **least desirable** about the care received in a civilian facility?

31. Why did you seek care at a civilian facility rather than at MACH?

32. During the past 12 months, how many times have you telephoned MACH for health service?

a. _____ Telephone Calls

b. Were you satisfied with the information you received? 1=Yes 2=No

33. During the last 12 months how many times have you telephoned civilian sources for health advice?

a. _____ Telephone Calls

b. Were you satisfied with the results? 1=Yes 2=No

The next set of questions concerns your opinion about access to care and who you feel should take care of your health related problems. **There are no right or wrong answers. Please answer all of the questions as accurately and completely as possible.**

	Strongly Agree	Somewhat Agree	No Opinion	Somewhat Disagree	Strongly Disagree
34. Travel to MACH for care care is convenient.	5	4	3	2	1
35. Personnel at MACH are willing to discuss my health questions with me over the phone.	5	4	3	2	1

In the following set of questions, we are interested in your opinion about the encounters that you may have had with the MACH and within the facilities in general.

36. It was easy for me to get care at MACH. 1=Yes 2=No

37. Were there parking available within walking distance of the hospital? 1=Yes 2=No

38. Would you be willing to pay for parking close to the hospital like most civilian hospitals?

1=Yes 2=No

39. When you last visited MACH:

	Strongly Agree	Somewhat Agree	No Opinion	Somewhat Disagree	Strongly Disagree
a. Making an appointment was relatively easy.	5	4	3	2	1
b. Gaining telephonic access to make an appointment to a special clinic was not difficult.	5	4	3	2	1
c. The medical records personnel were kind and helpful.	5	4	3	2	1
d. The directions within the hospital were sufficient and clear.	5	4	3	2	1
e. The clinic receptionist was very courteous and helpful.	5	4	3	2	1
f. The health care provider answered your questions during your visit.	5	4	3	2	1
g. The overall care received met with your satisfaction.	5	4	3	2	1
h. The time that you waited in line for your records was minimal.	5	4	3	2	1
i. The time that you waited to be seen by a physician was reasonable.	5	4	3	2	1
j. The time that you waited for the pharmacy to fill your prescription was reasonable.	5	4	3	2	1

	Strongly Agree	Somewhat Agree	No Opinion	Somewhat Disagree	Strongly Disagree
k. Overall, you were satisfied with the X-Ray staff and services.	5	4	3	2	1
l. Overall, you were satisfied with the laboratory staff and services.	5	4	3	2	1
m. Overall, the staff was sensitive and understanding with your needs.	5	4	3	2	1

The next set of questions concerns your opinion about inpatient care that you may have received at MACH. If you have been admitted to MACH for treatment within 2 years, please answer all questions as accurately and completely as possible. If you have not been admitted to MACH within the last 2 years, skip to question number 42.

40. When were you last an inpatient at MACH? Month _____ Year _____

41. When you were last an inpatient at MACH:

	Strongly Agree	Somewhat Agree	No Opinion	Somewhat Disagree	Strongly Disagree
a. The staff of the Admissions Office was courteous and helpful.	5	4	3	2	1
b. The room that you occupied was clean and presented a neat and pleasant appearance.	5	4	3	2	1
c. Your doctor was polite to you and your family.	5	4	3	2	1
d. Your doctor(s) took enough time to answer your questions.	5	4	3	2	1
e. The staff nurse(s) took the time to answer your questions.	5	4	3	2	1
f. You were provided high quality care by your physician.	5	4	3	2	1

	Strongly Agree	Somewhat Agree	No Opinion	Somewhat Disagree	Strongly Disagree
g. You were overall satisfied with the care provided by the nursing staff.	5	4	3	2	1
h. The nursing staff was polite to you and your family.	5	4	3	2	1
i. The meals that you received were the ones that you ordered.	5	4	3	2	1
j. The food was warm when served.	5	4	3	2	1
k. Overall, you were satisfied with the food.	5	4	3	2	1
l. You were overall satisfied with the facilities and comfort of your room.	5	4	3	2	1
m. When you departed MACH, you were overall satisfied.	5	4	3	2	1
42. What hours of operation for the Outpatient Clinic (OPC) would best meet your needs?					
1=0700-1700 2=0800-1630 3=10-1830 4=1100-1930 5=Other _____					
43. What hours of operation for the Pediatric Clinic would best meet your needs?					
1=0700-1700 2=0800-1630 3=10-1830 4=1100-1930 5=Other _____					
44. What hours of operation for the OB-GYN Clinic would best meet your needs?					
1=0700-1700 2=0800-1630 3=10-1830 4=1100-1930 5=Other _____					
45. What hours of operation for the Community Mental Health Service would best meet your needs?					
1=0700-1700 2=0800-1630 3=10-1830 4=1100-1930 5=Other _____					
46. What two things contributed most to your comfort and satisfaction during your stay at MACH?					

47. What are two things that we at MACH might do to improve our services?

48. How might we improve the services offered within the PX and Snack Bar?

49. What could we do from a facility standpoint to make your visit to MACH more comfortable?

THANK YOU for taking time to complete the survey! It is hoped that we at MACH will be better able to serve you as a result of the information that you provided to us.

Please fold the completed questionnaire at the dotted line and mail or place the questionnaire in one of the questionnaire "Survey Boxes" located near the information desk, pharmacy and laboratory. (Save taxpayers' dollars for mailing costs!)

ITEMIZED ANALYSIS OF THE BENEFICIARY SURVEY
RESPONSES OF RETIREES

APPENDIX C

ANALYSIS OF THE BENEFICIARY SURVEY

(RETIREEES)

There were 1845 completed surveys returned by retirees from three different states, Florida, Georgia, and Alabama. The distribution of the survey was accomplished by attaching and mailing it with the Retiree newsletter. It is virtually impossible to accurately determine the number of surveys that were not delivered due to incorrect mailing addresses therefore one can not accurately calculate a rate of return.

1. What is your current status?

89.4% of the surveys were completed by retirees and 10.5% by family members, mostly widows.

2. What is your date of birth?

The majority of the respondents were over age 65 and the birth dates ranged from 1904 to 1948.

3. What is your race?

85.9% of the respondents were White, 5.6 % Black, 6.3% Asian and 2.1% were others.

4. What is your gender?

87.1% were male and 12.9% were female.

5. Approximately what was your family's total income last year before taxes?

Less than \$10,000--8.6%	\$10,000-19,999----19.4%
\$20,000-29,999-----21.6%	\$30,000-39,999----15.6%
\$40,000-49,999-----11.1%	Above \$50,000-----17.7%

6. Overall, how would you rate your health?

Excellent---18.4%	Good---44.8%
Fair-----30.2%	Poor----6.6%

7. If you are handicapped, do you require the assistance of a:

wheelchair---0	Walker---0	Crutches---10.5%
Cane---6.5%	83% replied NA	

8. Where do you reside?

87.6 % in the Columbus/Phenix city area. Others ranged throughout Florida, Georgia, and Alabama.

9. What is the approximate distance from your residence to MACH?

The distances ranged from 5-190 miles.

10. Which type of facility do you consider to be your usual source of health care?

MACH--- 69.3% Civilian Doctor's Office-----11.7%
PRIMUS-- 8.5% Winder/197th Family Practice-- 8.5%

11. Are you enrolled in Family Practice at MACH?

YES---34.8% NO---65.3%

12. If your answer to question 11 is no, have you applied for enrollment in family practice?

YES---33% NO---67%

13. If your answer to question 12 is yes, how long have you been waiting to be enrolled?

The responses ranged from 1 to 11 years. A large percentage indicated that they had a desire to be enrolled.

14. I am very satisfied with the care that I received in the Family practice clinic at MACH.

Strongly agree-----54.4% Agree-----24.5
Strongly disagree----15.8% Disagree----5.3%

(See Table 2 for comparison to other facilities)

15. Is there one physician in Family Practice who you consider to be your primary provider of care?

YES---85% NO---15%

16. What do you think is most desirable about the care received in the Family practice clinic?

The top ten responses were:

- | | |
|-----------------------|------------------------|
| (1) You see the same | (6) Call-in system |
| physician each time | (7) Pediatric services |
| (2) It's quicker | (8) OB-Gyn care |
| (3) Better physicians | (9) Convenience |
| (4) Better staff | (10) Caring attitude |
| (5) The care is free | |

17. What do you think is least desirable about care received in the family practice clinic?

- | | |
|--|---------------------------|
| (1) Physicians change too often | (6) Nursing staff is rude |
| (2) Physicians don't answer questions. | (7) Need more Doctors |
| (3) Waiting time to see physicians | (8) Access |
| (4) Receptionists are rude | (9) Pediatric care |
| (5) Records | (10) Too many consults |

18. I am very satisfied with the care that I receive at MACH.

Strongly Agree--40.9% Agree--37.0% Not Sure--7.1%
Disagree-----2.3% Strongly Disagree-----12.6%

19. What do you think is the most desirable about the care received at MACH?

- | | |
|-----------------------------------|-----------------------|
| (1) It's free | (6) Nursing Staff |
| (2) Care provided in one building | (7) Family practice |
| (3) Pharmacy services | (8) Emergency room |
| (4) Internal Medicine Clinic | (9) Outpatient clinic |
| (5) Physicians | (10) Quality of care |

20. What do you think is the least desirable about the care received at MACH?

- | | |
|---|------------------------------|
| (1) Emergency room is too slow | (6) Appointment System |
| (2) Waiting time for: pharmacy, laboratory, x-ray, etc. | (7) Physicians communication |
| (3) Lack of Family Practice slots | (8) Telephones |
| (4) Lack of Cardiology services for retirees | (9) No optometry services |
| (5) Lack of Dermatology services | (10) Rude Staff |

21. Have you ever received care at the PRIMUS clinic in Columbus?

YES---51.1% NO--48.9%

22. I am very satisfied with the care that I receive at the PRIMUS clinic.

Strongly Agree---29.1% Agree--29.1% Not Sure--20.8%
Strongly Disagree--14.5% Disagree--6.2%

23. What do you think is the most desirable about the care received at PRIMUS.

- | | |
|------------------------|--|
| (1) Short waiting time | (6) Physicians |
| (2) No cost | (7) Receptionists |
| (3) Close to my home | (8) Medications are free |
| (4) Staff is Pleasant | (9) Less Hassle |
| (5) Nurses are helpful | (10) Ancillary services (x-ray, lab, etc.) |

24. What do you think is least desirable about the care received at PRIMUS?

- | | |
|-------------------------|---------------------------|
| (1) Foreign Doctors | (6) Poor quality of care |
| (2) Waiting time | (7) Medical records |
| (3) Lack of services | (8) Limited Pharmacy |
| (4) Staff is rude | (9) No Mammography |
| (5) Nurses are too loud | (10) Limited lab services |

25. Would you switch to a different healthcare system if you had the opportunity?

Definitely yes--8.1%	Probably yes-- 13.9%
Definitely no--32.8%	Probably no -- 45.3%

26. Would you recommend the military healthcare system to your family or friends if they needed care?

Definitely yes--49.3%	Probably yes -- 37.1%
Definitely no -- 2.1%	Probably no -- 11.4%

27. Have you received care at a civilian medical facility within the last 2 years?

YES---50%	NO---50%
-----------	----------

28. I am very satisfied with the care received at a civilian medical facility?

Strongly agree--20.6%	Agree--35.3%	Not sure--20.6%
Strongly disagree-10.8%	Disagree--9.8	NA-----2.9%

29. What do you think is most desirable about the care received in a civilian facility?

- | | |
|----------------------------------|------------------------|
| (1) Response is quicker by staff | (6) Better care |
| (2) More specialists | (7) Short waiting time |
| (3) Courtesy of staff | (8) Closer to home |
| (4) Physicians do what you ask | (9) Appointment system |
| (5) Physician communication | (10) Less hassle |

30. What do you think is least desirable about the care received in a civilian facility?

- | | |
|----------|--------------------|
| (1) COST | (6) Too many tests |
|----------|--------------------|

- | | |
|---|----------------|
| (2) Rudeness of staff | (7) Food |
| (3) Waiting time | (8) Nurses |
| (4) Different locations
for services | (9) Physicians |
| (5) Impersonal service | (10) Paperwork |

31. Why did you seek care at a civilian facility rather than at MACH?

- | | |
|---|---------------------------------|
| (1) Out of state emergency | (6) Distance from MACH |
| (2) I was referred by MACH | (7) Private Insurance |
| (3) Specialty services | (8) Private Physician
wanted |
| (4) Shorter waiting time | (9) Rudeness of staff |
| (5) No appointments were
available at MACH | (10) Nursing personnel |

32. During the past 12 months, how many times have you telephoned MACH for Health Service?

Average: 4 times Range of 1-20

b. Were you satisfied with the information received?

Yes--41%

No--59%

33. During the last 12 months how many times have you telephoned civilian sources for health advice?

Average: 2.3 times

b. Were you satisfied with the information received?

Yes--48%

No--52%

34. Travel to MACH for care is convenient?

Strongly agree--0 Agree---80.8% No opinion--0
Strongly disagree-- 2.0% Disagree---7.0%

35. Personnel at MACH are willing to discuss my problems?

Strongly agree--32.1% Agree--16.4% No opinion--32.8%
Strongly disagree--10.0% Disagree-- 8.6%

36. It was easy for me to get care at MACH.

Yes-----70.8% No-----29.2%

37. Was there parking available within walking distance of the hospital?

Yes-----91.5% No-----8.5%

38. Would you be willing to pay for parking close to the hospital like most civilian hospitals?

Yes-----31.1% No-----68.9%

39. When you last visited MACH:

This question contained 13 variables and is listed as table 3 in the text.

The 6 areas that had the lowest scores were:

- | | |
|-------------------------------|--------------------------------------|
| (1) Gaining telephonic access | (4) Waiting time for physicians |
| (2) Pharmacy waiting time | (5) Satisfied with X-ray |
| (3) Scheduling of appts. | (6) Waiting time for medical records |

40. When were you last an inpatient at MACH:

The responses ranged from 1975-1989 with 85% occurring within the past 4 years.

41. When you were last an inpatient:

This question is also listed as a table and contained 13 variables pertaining to inpatient care.

The six lowest scores were in the following areas:

- (1) Overall you were satisfied with the food
- (2) Meals received were the ones ordered
- (3) Food was warm when served
- (4) Room was clean and neat
- (5) Doctors took time to answer questions
- (6) Satisfied with facilities and room

*NOTE the mean average of all scores was higher than 4 on a 5 point Likert scale (5= Strongly Agree---1= Strongly Disagree).

42. What hours of operation for the Outpatient Clinic (OPC) would best meet your needs?

0700-1700---38%
0800-1630---39.5%
1000-1830---11.7%
1100-1930--- 7.5%
Other----- 2.5% (24 hours)

43. What hours of operation for the Pediatric Clinic would best meet your needs? (Response rate was 35%)

0700-1700---37.2%
0800-1630---19.6%
1000-1830---21.5%
1100-1930---21.5%
Other----- 0.0%

44. What hours of operation for the OB-GYN Clinic would best meet your needs?

0700-1700---32.8%
0800-1630---24.6%
1000-1830---22.9%
1100-1930---19.7%
Other----- 0.0%

45. What hours of operation for the Community Mental Health Service would best meet your needs?

0700-1700---25.0%
0800-1630---29.7%
1000-1830---26.6%
1100-1930---18.7%
Other----- 0.0%

46. What two things contributed most to your comfort and satisfaction during your stay at MACH?

(1) Nursing staff	(4) Food
(2) Visitors	(5) Physicians
(3) Staff workers	(6) Cleanliness of the room

47. What are two things that we at MACH might do to improve our services?

- (1) Decrease waiting time at: Pharmacy, laboratory, X-ray, Emergency room, OB-GYN, and Med records
- (2) Add the following services: Optometry, Dermatology, Cardiology
- (3) Staff should have a caring attitude
- (4) Improve the telephone appointment system
- (5) Physicians should communicate with the patients

48. How might we improve the services offered within the PX and snack bar?

* Not used by over 75% of the respondents

- (1) Improve the directions
- (2) Stock more items
- (3) Deliver to patients on the wards
- (3) More hot food in the snack bar
- (4) Lower the prices

49. What could we do from a facility standpoint to make your visit to MACH more comfortable.

- (1) *Leading response NOTHING Keep up the good work!
- (2) Remodel the rooms (more private rooms needed)
- (3) More parking
- (4) Add more televisions
- (5) Provide music
- (6) Improve the food selection
- (7) Carpet the floors
- (8) Reduce the noise level on the wards
- (9) More Paintings on the walls
- (10) Remove the high walls at the information desk

ITEMIZED ANALYSIS OF THE BENEFICIARY SURVEY
RESPONSES OF ACTIVE DUTY

APPENDIX D

ANALYSIS OF THE BENEFICIARY SURVEY (ACTIVE DUTY)

There were 1396 completed surveys returned by married active duty soldiers. The surveys were distributed to the larger units on post and the return rate for completed surveys was approximately 65%.

1. What is your current status?

90.8% of the surveys were completed by Active duty and 9.2% by family members. *Based upon the nature of the responses it appears that input was provided by the spouses however since the survey was distributed to the active duty soldiers and not the family member most respondents listed their status as active duty.

2. What is your date of birth?

The majority of the respondents were below age 25. The date of births ranged from 1947-1967.

3. What is your race?

54.5% of the respondents were White, 30.0 % Black, 9.66% Hispanic, 2.1% Asian, and 4.1% others.

4. What is your gender?

90.0% were male and 10% were female.

5. Approximately what was your family's total income last year before taxes?

Less than \$10,000--6.5%	\$10,000-19,999---63.3%
\$20,000-29,999----24.5%	\$30,000-\$39,999---3.6%
\$40,000-49,999---- 2.2%	Above \$50,000--0%

6. Overall, how would you rate your health?

Excellent--23.9% Good--67.6% Fair--6.3%
Poor-2.1%

7. If you are handicapped, do you require the assistance of a:

wheelchair---2.7	Walker--2.7	Crutches---5.3
Cane---0	*89.3% replied N/A	

8. Where do you reside?

On post (barracks, BOQ)--20.0% Quarters 25.5%
Off post (Columbus, Phenix city)-- 52.4%

9. What is the approximate distance from your residence to MACH?

The distances ranged from 1-40 miles. 51% were within 5 miles and 10% lived beyond 15 miles

10. Which type of facility do you consider to be your usual source of healthcare?

MACH----63.4% Civilian Doctor's Office-----8.5%
PRIMUS--14.1% Winder/197th Family Practice-14.1%

11. Are you enrolled in Family Practice at MACH?

YES---40% NO---60%

12. If your answer to question 11 is no, have you applied for enrollment in family practice?

YES---32.1% NO---67.9%

13. If your answer to question 12 is yes, how long have you been waiting to be enrolled?

The responses ranged from immediately to two years with a large number indicating that they were immediately enrolled. 16.6% had been waiting for less than one month.

14. I am very satisfied with the care that I received in the Family practice clinic at MACH?

16.9% strongly agreed 38.0% agreed
8.5% strongly disagreed 12.7% disagreed

(See Table 2 for comparison to other facilities)

15. Is there one physician in Family Practice who you consider to be your primary provider of care?

YES---32% NO---68%

16. What do you think is most desirable about the care received in the Family Practice Clinic?

- | | |
|--|--------------------------|
| (1) You see the same physician each time | (5) Call-in system |
| (2) Ease of access | (6) More caring attitude |
| (3) Better staff | (7) Pediatric services |
| (4) Quality of care | (8) OB-GYN care |
| | (9) Convenient |

17. What do you think is least desirable about care received in the family practice clinic?

- | | |
|---------------------------------------|---------------------------|
| (1) Physicians PCS too fast | (6) Staff |
| (2) Records get lost | (7) Too many consults |
| (3) Physicians don't answer questions | (8) Too many tests |
| (4) Waiting time | (9) Not enough physicians |
| (5) Receptionists are rude | (10) Need more magazines |

18. I am very satisfied with the care that I receive at MACH?

Strongly Agree--9.8% Agree---33.6% Disagree--12.3%
Strongly Disagree---17.2% No opinion---27.1%

19. What do you think is the most desirable about the care received at MACH?

- | | |
|-----------------------------------|-----------------------------|
| (1) Care is free | (6) Nursing Staff |
| (2) Care provided in one building | (7) Family practice |
| (3) Medicines are free | (8) Outpatient appt. system |
| (4) Child care is close | (9) Laboratory |
| (5) Physicians | (10) Emergency room |

20. What do you think is the least desirable about the care received at MACH?

- | | |
|-------------------------------|----------------------------------|
| (1) ER is too slow | (7) Lost medical records |
| (2) Appointment system | (8) Waiting time for (lab,x-ray) |
| (3) Waiting time for Pharmacy | (9) Nursing staff |
| (4) OB-GYN services are poor | (10) Telephones don't work |
| (5) Physicians are slow | |
| (6) Staff is rude | |

21. Have you ever received care at the PRIMUS clinic in Columbus?

YES---32.5%

NO--67.5%

22. I am very satisfied with the care that I receive at the PRIMUS clinic.

Strongly Agree--9.2% Agree----23.7% Not Sure--18.5%
Strongly Disagree--0 Disagree--23.7%

23. What do you think is the most desirable about the care received at PRIMUS?

- | | |
|--------------------------------------|-------------------------|
| (1) Short waiting time | (6) No cost |
| (2) Physicians answer your questions | (7) Quality of care |
| (3) Close to my home | (8) Building looks good |
| (4) Staff is pleasant | |
| (5) Nurses answer questions | |

24. What do you think is least desirable about the care received at PRIMUS?

- | | |
|--------------------------------|----------------------------|
| (1) Foreign Doctors | (6) Quality of care |
| (2) Waiting time has increased | (7) Too many return visits |
| (3) Distance to the clinic | (8) Nurses |
| (4) Not enough services | (9) Limited Pharmacy |
| (5) Staff is rude | (10) Limited X-ray |

25. Would you switch to a different healthcare system if you had the opportunity?

Definitely yes--9.2% Probably yes-- 40.1%
Definitely no-- 0 Probably no -- 50.4%

26. Would you recommend the military healthcare system to your family or friends if they needed care?

Definitely yes-- 8.9% Probably yes -- 53.7%
Definitely no -- 8.9% Probably no-----28.4%

27. Have you received care at a civilian medical facility within the last 2 years?

YES---36.4% NO---63.6%

28. I am very satisfied with the care received at a civilian medical facility?

Strongly agree--30% Agree-----20% Not sure--11.7%
Strongly disagree-0 Disagree-- 2.4% NA-----26.7%

29. What do you think is most desirable about the care received in a civilian facility?

- | | |
|---------------------------------------|---------------------------------|
| (1) Response is quicker by staff | (2) Better care |
| (3) More specialists | (4) Shorter waiting time |
| (5) Courtesy of staff | (6) Closer to home |
| (7) Physicians do what you ask | (8) Appt. scheduling |
| (9) Physician discusses your problems | (10) Select the doctor you want |

30. What do you think is least desirable about the care received in a civilian facility?

- | | |
|---|------------------------|
| (1) *COST (75% of respondents) | (6) Too much paperwork |
| (2) Rudeness of staff | (7) Food services |
| (3) Waiting time | (8) Quality of care |
| (4) Location of services | (9) Physicians |
| (5) Don't understand the military requirement | (10) Staff |

31. Why did you seek care at a civilian facility rather than MACH?

- | | |
|--|--------------------------------|
| (1) I was on leave. | (6) Distance from MACH |
| (2) I was referred by MACH. | (7) I wanted a second opinion. |
| (3) Specialty services unavailable at MACH | (8) Private insurance |
| (4) Shorter waiting time | (9) Private Physician |
| (5) I couldn't get an appointment at MACH. | (10) Better Staff |

32. During the past 12 months, how many times have you telephoned MACH for health service?

Average: 5 times. Responses ranged from 0-40.

b. Were you satisfied with the information received?

Yes--35%

No--65%

33. During the last 12 months how many times have you telephoned civilian sources for health advice?

Average: 3 times. Responses ranged from 0-15.

b. Were you satisfied with the information received?

Yes--41%

No--59%

34. Travel to MACH for care is convenient.

Strongly agree--44.5% Agree---34.3% No opinion--12.4%
Strongly disagree--6.6% Disagree---- 2.1%

35. Personnel at MACH are willing to discuss my health questions with me over the telephone.

Strongly agree--20.7% Agree---19.3% Disagree--17.1%
Strongly disagree--14.3% No opinion-----28.6%

36. It was easy for me to get care at MACH.

Yes----62.5% No----37.5%

37. Was there parking available within walking distance of the hospital?

Yes-----70.2% No-----29.8%

38. Would you be willing to pay for parking close to the hospital like most civilian hospitals?

Yes-----18.6% No-----81.4%

39. When you last visited MACH:

This question contained 13 variables (other questions) and is included as a table.

The 6 areas that had the lowest scores were:

- | | |
|---|--|
| (1) Physician waiting time | (4) Staff was sensitive |
| (2) Gaining telephonic access to schedule appts | (5) Waiting time for medical records |
| (3) Waiting time at the pharmacy. | (6) Overall care met your satisfaction |

40. When were you last an inpatient at MACH:

75% of the respondents had not been hospitalized at MACH. 40% of those responding were hospitalized in 1988 and 60% were hospitalized in 1989.

41. When you were last an inpatient:

This question is also listed as a table and contained 13 variables pertaining to inpatient care.

The six lowest scores were in the following areas:

- (1) Overall you were satisfied with the food.
- (2) When you departed MACH you were overall satisfied.
- (3) Satisfied with facilities
- (4) Doctors took enough time to answer your questions
- (5) Meals received were the ones ordered.
- (6) Staff nurses answered your questions

42. What hours of operation for the Outpatient Clinic (OPC) would best meet your needs?
- 0700-1700---31.9%
0800-1630---15.1%
1000-1830---12.6%
1100-1930---27.7%
Other-----12.6% (24 hours)
43. What hours of operation for the Pediatric Clinic would best meet your needs?
- 0700-1700---21.3%
0800-1630---22.1%
1000-1830---16.4%
1100-1930---32.8%
Other----- 7.3%(24 hours)
44. What hours of operation for the OB-GYN Clinic would best meet your needs?
- 0700-1700---27.6%
0800-1630---25.0%
1000-1830---10.3%
1100-1930---26.7%
Other-----10.3% (24 hours)
45. What hours of operation for the Community Mental Health Service would best meet your needs?
- 0700-1700---32.7%
0800-1630---17.3%
1000-1830---12.1%
1100-1930---25.0%
Other-----12.9%
46. What two thing contributed most to your comfort and satisfaction during your stay at MACH?
- | | |
|-------------------|-----------------------------|
| (1) Nursing staff | (5) Staff workers |
| (2) Food | (6) Television |
| (3) Visitors | (7) Cleanliness of the room |
| (4) Physicians | |
47. What are two things that we at MACH might do to improve our services?
- (1) Decrease waiting time at: Pharmacy, laboratory, X-ray, and especially the emergency room.
(2) Add Optometry and Dermatology services for family members.
(3) Staff should have a caring attitude.
(4) Improve the telephone appointment system.
(5) Physicians should communicate with the patients.

48. How might we improve the services offered within the PX and snack bar?
- (1) Stock more items
 - (2) Deliver to patients on the wards
 - (3) More hot food in the snack bar
 - (4) Lower the prices
49. What could we do from a facility standpoint to make your visit to MACH more comfortable?
- (1) Get rid of the open bays
 - (2) More parking
 - (3) Add more televisions
 - (4) Provide music
 - (5) Improve the food selection