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AN EXAMINATION OF REFERRAL PHYSICIAN ATTITUDES
TOWARD BROOKE ARMY MEDICAL CENTER
AS A TERTIARY CARE MEDICAL CENTER

A Graduate Research Project
Submitted to the Faculty of
Baylor University
In Partial Fulfillment of the
Requirements for the Degree
of
Master of Health Administration

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By
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CHAPTER I

INTRODUCTION

For many years, the term marketing was an anomaly to most nonprofit health care organizations. However, recently the collective impact of four factors has conspired to dispel this perception. Rapidly rising health care costs, the advent of diagnosis-related groups, implementation of a prospective payment system, and increased competition from the for-profit sector have forced administrators to re-examine their position within the health care field.¹

Today, the concept of marketing health care services has suddenly become a topic of great interest among administrators and is now accepted as a legitimate management function. Professional societies such as the American College of Healthcare Executives, the American Hospital Association, and the American Management Association routinely schedule discussions of it at national symposiums; marketing consultants are rushing to prepare seminars to teach management all it needs to know on the subject; and health care trade journals regularly feature articles on this once taboo subject.² Today's administrator is looking to the field of marketing in the hope of finding effective strategies for identifying the needs and desires of his constituents, realizing that the well-being and the survival of an institution in today's competitive environment is dependent upon the ability to attract necessary resources to enable the hospital to meet the historical goals of patient care, teaching, and research.³

The trend to marketing has been much slower in the federal health care sector despite the fact that the environmental pressures that have impacted so strongly on the civilian sector are now also spilling over into the federal health care arena. Historically, the federal sector had been somewhat immune to competitive pressure, often taking for granted the large beneficiary populations, which it was felt were traditionally and economically tied to the institution. Funding and staffing were generally allocated based on workload performed and, with the exception of shortages in some physician specialties, was generally adequate to meet requirements. Patient census generally ran high and quality of care issues from the perspective of most beneficiaries was not a major issue. Because demand within the system often exceeded the available supply, there was little need for administrators to consider marketing to their constituents.

Recent events, however, have altered much of these perspectives. National interest in pursuit of a balanced federal budget has resulted in major funding cutbacks to federal hospitals' budgets. Military and Veterans Administration hospitals have been the subject of adverse media coverage on quality health care issues. The cases of litigation directed against these institutions have reached unprecedented numbers. More and more beneficiaries are questioning the appropriateness of their care and are increasingly demanding involvement in the development and delivery of health care services. Interservice squabbling and redundancy in health care programs and inefficiencies in medical supply and equipment procurement have led the Assistant Secretary of Defense (Health Affairs) to consider adoption of a Defense Health Agency. Already, the Surgeon General of each Armed Service has lost control over his service's medical construction program. Although

physician strength is at record levels, there still exist critical shortages in most surgical specialties and the attrition rate for physicians completing their initial service obligation is still alarmingly high.

This combination of a deteriorating image, a unique set of business problems, and a mandate to change direction has led federal administrators to seek new methods of evaluating the way they operate. Marketing, with its emphasis on exchange relationships with key constituents, can provide an approach for dealing with these issues. Properly applied, it can directly affect the perceptions of individuals and organizations with whom the hospital desires to establish a relationship, improve the capacity to respond to the needs and wants of the constituents, guide the organization in the development of long-range strategies and objectives, and more effectively allocate resources within the organization.

Conditions Which Prompted the Study

Brooke Army Medical Center (BAMC) is one federal institution which is currently feeling the impact of some of these changes. Built in 1936, BAMC is a 700-bed tertiary care treatment facility providing all major medical specialties with the exception of child psychiatry. As the Army's second largest medical facility and, after Walter Reed Army Medical Center, assuredly the best known, it is facing a critical juncture in its history. Principal among its problems is its antiquated and widely dispersed physical plant. Currently, the hospital conducts its operations from fifty-two separate buildings scattered around the Fort Sam Houston installation, most of which date back to the pre-World War II era.

Although the need for a new hospital has been documented for twenty years, only recently has Congress given approval for its construction. Initially, funding was appropriated for the design of a 450-bed replacement facility; however, recent developments have placed these plans on hold. Following recommendations from a General Accounting Office study on the need for a new BAMC facility and the Department of Defense (DoD) Blue Ribbon Panel on sizing of DOD treatment facilities, the Assistant Secretary of Defense (Health Affairs) has determined that BAMC should be replaced with a 150-bed station hospital. The main rationale cited for this decision is the fact that colocated in San Antonio is a large Air Force teaching hospital, Wilford Hall Medical Center (WHMC). Built as a 1,000-bed facility, WHMC currently is staffed to operate only 750 beds; however, this underutilized capacity is viewed as a major justification for reducing the size of a new BAMC facility. Final resolution on the size of the new BAMC facility will be determined in congressional hearings over the next six months. Undoubtedly, workload represents a critical yardstick on which this decision may rest. Properly utilized, marketing research and information provide the principles from which consumer perceptions, preferences, usage patterns, and demand potential can be determined in order to build that workload.

BAMC is also one of the eight medical centers (MEDCENS) operationally under the command of the United States Army Health Service Command (HSC). These eight medical centers are located geographically throughout the United States so as to provide coverage of all areas where active duty Army personnel and their dependents are located. This role as a MEDCEN places several unique responsibilities upon the institution that distinguish Brooke from non-MEDCENS within the command. Several of these missions are also relevant to the

conduct of this study.

As part of the initial organizational design of HSC, MEDCENs were delegated responsibility for providing a wide range of specialized medical care and consultative support for all Medical Department Activities (MEDDACs) within their region. As HSC matured and the command grew to over eighty-six organizations, broad span of control difficulties forced the delegation of more responsibility to MEDCEN commanders. In September, 1984, MEDCEN commanders were charged with assuming operational control over the MEDDACs within their region and were to be responsible for intermediate level supervision over and the continuous evaluation of the delivery and the quality of health care. The purpose of this regionalization was fourfold:

1. To establish a better working relationship among regional medical units.
2. To increase professional communications.
3. To improve the delivery of medical care.
4. To improve leadership/management opportunities and experiences.⁴

Placing the responsibility for supervising the delivery of medical care closer to the level where that care was provided was an effort by HSC to improve the system.

Today, the whole Army Medical Department (AMEDD) concept of command and control is again being examined by a task force convened by the Army Surgeon General. Among the issues being considered is the delegation of more responsibility to the MEDCEN regional commander. In order that any reorganization reflect an optimally efficient structure, BAMC must have the input of both its staff and the staffs of its regional MEDDACs. From this input a viable command and control structure can be designed that will enable

the MEDCEN to provide the best possible support within the limits of its staffing and financial resources. Again, marketing research can provide the needed feedback on the effectiveness of the current regional relationship.

Two other MEDCEN missions are relevant to the conduct of this study. First, MEDCENS are charged with conducting graduate medical education (GME) programs in a wide variety of medical disciplines. Among the clinical offerings at BAMC are residency and fellowship training programs in twenty-four different specialties.

A second major mission of a MEDCEN is its responsibility to serve as a tertiary care referral hospital for all the MEDDACs within its health service region. In this capacity, it is BAMC's role as a referral center to provide a wide range of specialized care and consultative support to the three MEDDACs within its region:

1. Darnall Army Community Hospital, Fort Hood, Texas
2. Reynolds Army Community Hospital, Fort Sill, Oklahoma
3. Bayne-Jones Army Community Hospital, Fort Polk, Louisiana.

These two missions of graduate medical education and referral care are closely interrelated. Referral workload from these three hospitals is integral to the conduct of BAMC's GME program because it provides an important source of complex teaching case material. An examination of referral workload for Calendar Year 1982 through Calendar Year 1985 (See Appendices A and B) reveals that five percent of BAMC's workload is derived from referrals within the region. In the Department of Pediatrics and the Department of Obstetrics and Gynecology, this is particularly important. At Fort Sam Houston, the local beneficiary population consists largely of military retirees and their dependents. While this generally older population serves as an excellent

source of teaching cases for most of BAMC's physician training programs, it provides a limited pool from which to find teaching cases in pediatrics and obstetrics. Although adequate workload is derived from the local beneficiary population to support the residency training requirements of pediatrics and obstetrics/gynecology, the chiefs of both departments have expressed some concern over the number and the type of cases which are available. A recent accreditation review of BAMC's pediatric residency training program by the American College of Pediatrician's Residency Review Committee expressed some concern over the low inpatient census in pediatrics in relation to the number of residents being trained. In obstetrics, a cooperative training program has been arranged with the University of Texas Health Science Center to provide BAMC residents with a four month rotation through the county medical center in order to supplement the low number of deliveries performed at this MEDCEN.

In contrast to the typical patient at BAMC, the beneficiary population of the three community hospitals in the BAMC Health Services Region is much younger. This fact alone creates the potential for more numerous pediatric and obstetric cases with complex diagnoses which are beyond the treatment capability of physicians assigned to these community hospitals.

Some critics of the Army's GME programs have questioned the need to maintain pediatric and obstetric/gynecology training programs since they do not contribute to the readiness of the AMEDD. Others propose that the solution to this problem is to relocate pediatric and obstetric/gynecology training programs to where the beneficiary population is located. A closer examination of this matter helps to explain why these arguments are fallacious and reveals why these programs are critically important.

GME training programs in any major teaching institution are often

interdependent upon each other. Residency Review Committees (RRC's), the national accrediting bodies for GME training programs, require that teaching programs in most major specialties be present in the same institution (See Appendix C). For example, in order to conduct a general surgery residency program, RRCs require that a pediatric program also be present in the same institution and an obstetrics/gynecology program is highly desired. Equally important is the fact that few physicians are going to be interested in joining an AMEDD which is devoid of major specialties such as pediatrics and obstetrics/gynecology.

BAMC can no longer take for granted that its community hospitals will refer all available workload. Viable alternative referral sites exist in the presence of other Armed Forces treatment facilities which are closer in proximity. The Pediatric and the Obstetrics/Gynecology Department at Wilford Hall Air Force Medical Center are already actively marketing for patients from Fort Hood. To support the need for a new Brooke Army Medical Center, to meet the challenges of regionalization, and to maintain its goal as a preeminent Armed Forces teaching institution, BAMC must become proactive and seek to maintain its referral workload. The referring physicians, therefore, have become the principal constituency group that holds the key to meeting this goal. In this regard, a marketing strategy must be developed.

Statement of the Research Problem

The intent of this study was to determine the attitudes of referring physicians at the three community hospitals within Brooke Army Medical Center's Health Service Region towards BAMC as a referral center as the basis

for developing a marketing strategy.

Objectives

The objectives of this research were to:

1. Review current literature on health care marketing with an emphasis on marketing to the referral physician.
2. Determine where the referred workload at the community hospitals of Fort Hood, Fort Sill, and Fort Polk is directed.
3. Conduct an analysis of BAMC's current consultant visit program.
4. Assess the perceptions of referring physicians at the community hospitals in the BAMC Health Service Region regarding qualities desired in a good subspecialty referral center by:
 - a. Developing an instrument which will survey selected attitudes that influence patient referral decisions as well as rate BAMC's performance in accomplishing these factors.
 - b. Coordinating with members of the BAMC staff for input into the appropriateness and the adequacy of the survey instrument and its revision as necessary.
 - c. Pretesting the survey with members of the BAMC house staff.
 - d. Distributing the survey to appropriate physician personnel at each community hospital.
 - e. Collecting and collating the surveys and analyzing the data statistically.
5. Formulate a marketing plan based on input from the referring physicians at the three community hospitals with the aim of mediating

documented dissatisfaction and capturing that portion of the workload which can best be managed at the medical center.

Criteria

The criteria for this research included the following:

1. Sample population to receive the survey instrument consisted of all staff physicians at the community hospitals at Fort Hood, Fort Sill, and Fort Polk.
2. Recommendations contained within the marketing strategy must be in consonance with the strategic goals/objectives and the resource constraints of BAMC.
3. Hypothesis testing of the survey results under Kendall's coefficient of concordance was based on the .01 level of significance.
- 4) Analysis of variance (ANOVA) testing was evaluated using the .01 level of significance.

Assumptions

For the purposes of this research, it was assumed that:

1. All resources necessary to conduct a detailed study would be made available.
2. The inpatient services at BAMC would remain constant throughout the course of the study.
3. The chiefs of BAMC's clinical departments desire to know the community hospital referring physicians' perceptions of and familiarity with the services offered at BAMC and their perceptions of the quality of care

provided.

4. The referring physicians within BAMC's Health Service Region are concerned with and interested in improving the inpatient services offered at BAMC.

5. The personnel at BAMC are willing to modify current practices in order to overcome any determined level of dissatisfaction with the current inpatient services offered.

6. The survey instrument, developed from key issues identified in the literature, could accurately measure the attitudes of the referring physicians toward BAMC as a referral medical center.

Limitations

This research was constrained by the following factors:

1. This study examined only the attitudes of referring physicians assigned to the community hospitals within BAMC's Health Service Region.
2. The research period covered a six-month time frame.
3. The distance to the community hospitals and the time requirements precluded on-site administration of the survey questionnaire and necessitated a mail-in response.

Research Methodology

The methodology used to conduct this research included the following:

1. A study of the marketing strategies used to facilitate the physician referral process was carried out by reviewing the literature. Findings from this research were used to aid in the development of a survey

instrument designed to accurately measure referral physicians' perceptions and dissatisfactions with the current referral process. Special emphasis was placed on survey instruments used in previous research projects of a similar nature. Well designed questions from these surveys were incorporated into this study's questionnaire. The literature search also aided in the development of an appropriate marketing strategy for BAMC to adopt to increase referral workload.

2. Coordination was effected with HSC's Patient Administration Systems and Biostatistics Activity to ascertain the magnitude of referral workload available and to examine to which treatment facilities this workload is currently directed.

3. A survey instrument was designed to assess the referral physicians' attitudes toward factors that affect their selection of a consultant/referral medical center for their patients. This survey consisted of two parts. Section A asked the physician to rank in order of importance fifteen factors which had been identified in the literature as considerations in the selection of a consultant or referral medical center. Section B of the survey instrument asked the referral physicians to use a five-point Likert scale to rate BAMC's performance as a referral medical center along a continuum ranging from Strongly Agree through Agree, Not Sure, Disagree, and Strongly Disagree. These statements were related to one of the fifteen referral factors listed in Section A of the questionnaire. To give the survey validity, several opinions were sought for each separate referral factor. For example, in Section A, a physician could rank patient outcome as the most important consideration in selection of a consultant. Section B then asked the physician to evaluate BAMC's capability to consistently meet these

criteria by responding to several statements that measured this particular referral factor. A copy of the survey instrument is attached as Appendix D.

4. To ensure that the survey instrument provided the desired information, key staff members at BAMC, including the Chief of Staff, the chiefs of the Department of Pediatrics and the Department of Obstetrics/Gynecology, the Technical Director at the Health Care Studies and Clinical Investigation Activity, and faculty representatives of the U.S. Army-Baylor University Program in Health Care Administration were asked to review and critique the adequacy of the proposed questionnaire. After appropriate modifications were accomplished, the survey was pretested by the third-year residents within each of BAMC's four major teaching departments: Surgery, Medicine, Pediatrics, and Obstetrics/Gynecology. The pretest was designed to measure the residents' comprehension of the sample questions. Proposed questions to be included in the final survey were asked and a space provided for responses and suggested changes in design, length, and clarity of the survey instrument. The results of the pretest were then utilized to design the final survey format.

5. Copies of the final survey were mailed to the administrative residents at the three community hospitals in the BAMC Health Service Region. Their cooperation was sought in distributing the survey to all staff physicians at their respective hospital who would be in the position to refer patients to BAMC. A letter accompanied each survey soliciting the physicians' input and clarifying the purpose of the evaluation. Because the survey population was limited, it was important to receive maximum return of these survey instruments. Thus, another role of the administration resident was to encourage the physicians' cooperation in this research project and provide

needed on-site follow-up to ensure a high rate of return. A letter was also sent to each hospital's Deputy Commander for Clinical Services to ensure command support for this project and to inform him of the nature of the study.

6. Results of the physicians' input regarding factors important to their selection of a referral hospital were analyzed using Kendall's coefficient of concordance. This statistical tool measured the strength of agreement among those physicians responding to the questionnaire and served as the basis for development of a null hypothesis, which was analyzed at the .01 level of significance. For this research problem, several null hypotheses of interest were tested:

a. H_0 : There is no consensus among the physicians responding to the survey on the relative importance of each of the fifteen referral factors.

H_a : There is a consensus among the physicians regarding this matter.

b. H_0 : There is no consensus among physicians at Fort Hood (Fort Sill, Fort Polk) regarding the relative importance of each of the fifteen referral factors.

H_a : There is a consensus among the physicians.

The following formulas were used to conduct this analysis:

$$W = \frac{12 \sum R_j^2 - 3m^2(n+1)^2}{m^2(n^2-1)}$$

where: n = Number of referral factors

m = Number of physicians responding to the questionnaire

R_j = sum of the ratings assigned to each referral factor

W = critical value of characteristic of interest

The critical value W could take on a value between zero and one. A zero occurred when there was a total lack of association of the rankings and a one resulted when there was perfect association or total agreement among the sets of rankings. Sufficiently large values of W , therefore, led to the rejection of the null hypothesis of no association. To compute the p value, the formula $\chi^2 = M(n-1)W$ was used and then compared for significance with the tabulated values of chi-square in Table A.12 from Wayne W. Daniel's book, Applied Nonparametric Statistics, using $n-1$ degrees of freedom. Significance was tested at the .01 level.

7. Section B of the survey questionnaire measured the referring physicians' attitude regarding BAMC's performance in accomplishing each of the separate referral factors. ANOVA was used to test a hypothesis that the attitudes of the physicians at Fort Hood, Fort Sill, and Fort Polk are all similar with regard to their opinion of BAMC as a referral center. Point values of from one to five were assigned to the Likert scale ratings of each question to arrive at an arithmetic mean value for each question from each responding physician. The answers of the physicians at each community hospital were then compared with those at the other community hospitals to see if there were similar views. To determine this answer, an ANOVA table was established for each question asked and the variance ratio computed and compared with the critical value of F obtained by using Table J from Daniel's Biostatistics: A Foundation for Analysis in the Health Sciences. This value was tested at the .01 level of significance. If the null hypothesis was rejected, a Tuckey's test was performed to determine which hospitals differed. This test was also performed at the .01 level of significance. Results of findings from these statistical tests served as the basis for developing a

marketing strategy designed to recapture that portion of the workload which can best be managed at this medical center. Specific elements of this strategy were dependent upon input received from the referral physicians.

Endnotes

¹ Leland R. Kaiser, "Survival Strategies for Not-for-Profit Hospitals." Hospital Progress 64 (December 1983): p. 40.

² Tim Garton, "Marketing Health Care: Its Untapped Potential." Hospital Progress 59 (February 1978): p. 46.

³ Stephen L. Tucker, "Introducing Marketing as a Planning and Management Tool." Hospital & Health Services Administration 22 (Winter 1977): p. 37.; Helen Okorafor, "Hospital Characteristics Attractive to Physicians and the Consumers: Implications for Public General Hospitals." Hospital & Health Services Administration 28 (March-April 1983): p. 50.

⁴ Brooke Army Medical Center. BAMC Regionalization Letter No. 1, 4 June 1985, p. 2-3.

CHAPTER II

LITERATURE REVIEW

Input from the hospital's various consumer publics at whom products or services are directed is the principal source of data needed to develop an effective marketing plan. Although patients are the nominal consumers in the health care industry, physicians are more often than not the actual consumers of health care services.¹ Arnold Relman, editor of The New England Journal of Medicine, argues in his treatise "The New Medical-Industrial Complex" that patients are almost totally dependent upon physician decisions. He further states that, "unlike consumers shopping for most ordinary commodities, patients do not often decide what medical services they need - doctors do that for them."² Thus, physicians form an important target population because of their primary control over the routing of patients into the health care system. For tertiary care teaching institutions this is especially true, for physician referrals serve as an important source of complex teaching case material so vital to the conduct of graduate medical education programs. Attempts, therefore, at developing a marketing plan to influence the referral patterns of this target population must first analyze the existing sources of satisfaction and dissatisfaction among referral hospitals.³ To approach the information concerned with this topic area, four main themes were followed within the scope of the literature review: (1) physician referral process, (2) marketing's application to the referral process, (3) physician referral studies, and (4) marketing implications.

Physician Referral Process

At some point in the process of delivering medical care, a physician may determine that a referral to another physician or medical center is appropriate. This decision may occur at any time in the treatment process, whether it be during or after diagnosis, before or after treatment. The literature cites three principal reasons for referral listed in order of importance: (1) second opinion for management, (2) lack of required facilities and/or skill, and (3) second opinion for diagnosis.⁴ Referral may also depend upon the scope of the referring physician's practice, the desire to unload an uncooperative patient, a patient request, the time constraints, or any number of other potential factors that relate to the physician-patient referral process. In contrast to consultation, in which responsibility for the patient remains with the initial physician and advice or special studies are sought, referral implies the transfer of all or partial responsibility either temporarily or permanently for part or all of a patient's care to some other physician or health care institution.⁵

A hospital can play an extremely important role in this referral process. Although the referral is often thought of as a transaction between two physicians, hospital resources invariably come into play. Workup or treatment of a patient by a consultant is often done in a hospital setting with the hospital ancillary and administrative services having a great deal of interface with the patient and the physician. A hospital successful at managing these encounters can enhance its reputation, which in turn may lead to increased referrals, greater demand for the hospital's services, and a lead on their competitors toward attracting the best physicians to their staff.⁶

Hospitals can also serve as the intermediary in the referral process.

In many instances, referrals are made directly to the hospital or the medical center for assignment to a consulting physician on the staff. Once the reason for the referral has been accomplished, hospitals again play a critical role in discharging the patient back to the referring physician.⁷

For teaching hospitals, the referral process also plays an important role in the growth and the stability of the institution. Not only do referrals serve as a vital source of patients, but they also provide the necessary range of complex cases so vital to the support of hospitals' education and research missions. The currently identified physician surplus has seen residency review committees enforce stricter standards in their graduate medical education review process. For example, already RRCs require specified numbers of cardiac catheterizations, obstetric deliveries, and other procedures as well as high occupancy rates for certain services in order to continue to meet accreditation standards.

The primary care physician's decision regarding whether to diagnose and/or treat the patient himself versus choosing referral has important implications for cost, utilization, and quality aspects of care received. In the cost area, referral involves two physicians; thus, fees for two providers are incurred. Additionally, the consultant is likely to be a specialist, whose services are generally more expensive than those of a general practitioner.⁸

In regard to the utilization aspects, the literature identifies several utilization review studies that show a strong correlation between the number of referrals a physician receives and the degree of medical specialization possessed. Other characteristics reported in the literature besides degree of specialization that impact upon referral rates include organization of

practice, location of practice, existence of a subspecialty, personal friendship with the consultant, and patient characteristics.⁹

In regard to quality of care, the choice of a consulting physician is also important. The issue of technical competence of the consultant has strong implications for the quality of care the referred patient receives. The importance of clear communication between the referring and the consulting physician can also have a definite impact on quality and continuity of care received. Although a physician may be excellent in a technical sense, it means nothing if no communication is received from him. Further, there is the inevitable conflict between the physician's desire to protect and build his practice versus the decision to refer the patient to another physician. Thus, in instances where referral is not clearly indicated, the physician may be inclined to treat the patient himself.¹⁰

Several secondary aspects play a role in the referral process. Referrals often serve as a means of professional control by which the medical profession exerts influence over its members. Offending or incompetent colleagues are generally not referred patients. This use of the referral process as a professional boycott is frequently employed to punish those who have violated deeply held professional norms. Another feature of the referral process often overlooked is its important educational function. Not only does it educate physicians on their colleagues' capabilities, but it also provides an important forum through which information about new types of diagnostic and therapeutic techniques are obtained.¹¹

Marketing's Application to the Referral Process

In order for hospital administrators to initiate appropriate measures to ensure a desired level of referrals, they need to be knowledgeable as to the key concept underlying the referral process--the concept of exchange. As defined by Stephen M. Shortell, a leading researcher into the physician referral process, "a physician will be motivated to interact through the referral process with another physician or hospital if the physician expects positive outcomes (rewards exceeding costs) to result from the interaction."¹² For example, the referring physician may be rewarded by responsive and informative communication, high quality patient care, satisfied patients, and cooperation in arranging the referral. Costs may include loss of prestige and income and possible permanent loss of the patient. For the consultant, the gains may be monetary or prestige rewards with the costs being possible receipt of an uncooperative or an improperly "worked up" patient. The literature again cites several studies confirming the theory that the consultant who provides the more positive outcomes through the exchange process is the one who receives the largest number of referrals.¹³

This exchange relationship between referring and consultant physician exists in a dynamic environment. This environment can include the referring physician's experiences, practice characteristics, and style; the consulting physician's availability, accessibility, values, and qualifications; the patient's values and experiences; and the availability, experience, and attitude of colleagues. For the consultant or referral hospital, this environment is effected by the experience, financial status, and capabilities of the consultant; the consultant-medical community relationship; the consultant-patient community relationship; and the availability and

qualifications of competing consultants.¹⁴ Perhaps the most critical of the environmental elements is the patient. Patients today are far more knowledgeable of and less intimidated by the health care system. In the referral process, they are often the initiators of their own referral either through their physician or on their own. This underscores the fact that an understanding of the patient-physician relationship is equally as important as an understanding of the exchange relationships between physicians and consultants.

Marketing is the attempt to understand and subsequently manipulate exchange relationships involving one's product. In order to pursue the exchange relationship, marketing efforts must be made to discover and directly affect the perceptions of individuals and organizations with whom the hospital has contact.¹⁵ To accomplish this, an organization must combine effective planning and management of its exchange relationships with the identification and qualification of the needs and wants of its key constituencies.¹⁶

Traditionally, the marketing concept begins with four major elements, known as the four Ps: (1) product, (2) place, (3) price, and (4) promotion.¹⁷ Cooper and Robinson have suggested that, when describing the health care industry, this marketing mix be modified somewhat. Adapting their suggestions to the physician referral concept, the marketing mix would reveal the following: In place of the traditional product element, Cooper and Robinson offer the term service since the health care industry deals more in the concept of services.¹⁸ In terms of physician referrals, service would refer to care provided to the patients, outcomes associated with that care, and any reciprocations directly provided the referring physician. Another aspect of service which affects physician referrals is the service's image. Fryzel has

suggested that an organization needs to make a determination of what images exist concerning a service or product and what, if anything, should be done to change or reinforce that image.¹⁹

In lieu of price, Cooper and Robinson have suggested that the health care industry use consideration since, in health care, price is usually predetermined due to the dominant role played by third-party insurers and the influence of government programs.²⁰ In the referral process, consideration conveys the cost of referring the patient to a consultant. This includes not only the consultant's fee but any travel costs incurred by the patient, lost wages from work, babysitting expenses, and any other out-of-pocket expenses incurred. Consideration also applies to nonquantifiable costs such as patient inconvenience and psychological and emotional costs related to the health care experience. In addition to these patient-associated considerations, the referring physician incurs costs. These may include lost income as a result of the patient not returning to the physician for care or having the consultant perform services which the referring physician could have performed.²¹

For place, Cooper and Robinson offer the concept of access since the health care industry must deal with the availability of health care services.²² Access to or availability of the referral process refers to the location and the reputation of a hospital, its hours, and the referral patterns.²³

No substitute is offered for promotion because Cooper and Robinson feel that promotion is as important in health care as it is in business.²⁴ In the referral process, this relates to all activities a consulting physician or a hospital undertakes to make the referring physician aware of the services and

the referral programs offered. Promotion also deals with effective two-way communication. It does not and cannot make people do what they do not want to do but rather stimulates demand by relating services to the consumers' latent needs and wants.²⁵

By properly combining the aforementioned elements of service, access, consideration, and promotion, hospitals can develop marketing strategies to influence the outcomes physicians in private practice or those in outlying community hospitals incur from the referral process. The first step which must be taken in this process requires research to identify, collect, and evaluate the components of the referral exchange relationship and its contextual environment that impacts on the establishment and the use of referral networks.²⁶

Physician Referral Studies

A review of the literature revealed numerous studies dealing with the issue of physician recruitment for the hospital staff, but, surprisingly, few studies dealt with the specifics of marketing to the referral physician. This is partly true because most of the early referral research (pre-1970) tended to examine the patient factors of the referral relationship such as age, sex, socioeconomics, and personality.²⁷ Only recently has research on the referral concept tended to focus on the physician.

In their basic primer for the hospital administrator, Rowland and Rowland discuss the importance of the referral physician relationship, citing its potential impact for increasing the business of a hospital. The authors contend, and findings in the literature support their arguments, that

referring physicians are seeking more than just a technically competent hospital. They cite five principal qualities that are sought by most referring physicians:

1. Harmonious physician-to-physician relationship--Referring physicians want a readily accessible consultant who is pleasant and easy to get along with. Since most referrals in the civilian sector are directed to a specific practitioner, referring physicians want someone with whom they have a good rapport.

2. Continued communications--Referring physicians desire prompt and continued communication with the consultant. They expect notification that their patient has arrived, reports on the patient's progress, and a promptly prepared, detailed narrative summary soon after the patient's discharge.

3. Comprehensive service--Physicians seek consultants who are affiliated with a hospital that provides a full range of services.

4. Quality Care--Physicians must feel confident that they are referring patients to an institution that delivers high quality patient care.

5. Patient satisfaction--The referral patient holds his primary physician partly accountable for the quality of care received during the referral so it is not surprising that the referring physician would expect a satisfactory patient care encounter.²⁸

One of the earliest and most comprehensive studies conducted into the physician referral process was by Shortell, whose model of physician referral behavior was based on the social exchange theory. Believing that referral behavior varied by physician specialty, Shortell focused strictly on the referring practices of internists. His basic hypothesis was that physicians occupy different levels of status within the community; consequently, they

perceive different rewards and costs associated with referring patients. Because a physician's status plays such an important role in interpreting Shortell's findings, it is important to have an understanding of this term as he uses it. Status, as defined by Shortell, is "the amount of professional prestige that a physician enjoys relative to other physicians of the same specialty in the local medical community."²⁹ For the purposes of his study, Shortell identified a seven item index from which to measure physician status: (1) number of leadership positions held on the medical staff where the physician spends the most time, (2) number of articles published by the physician in the last five years, (3) number of papers presented at professional meetings by the physician during the last two years, (4) number of presentations made by the physician at local medical society meetings in the last two years, (5) number of professional associations with which the physician is affiliated and leadership and fellowship positions held, (6) number of times the physician was named by his colleagues as being one of the five most influential physicians in the community (as measured by Shortell's survey questionnaire), and (7) the physician's own self-evaluation of his professional status relative to other colleagues (as measured by Shortell's survey questionnaire).³⁰

Using the concept of exchange theory, Shortell classified the rewards and the costs associated with the referral process into two categories: (1) those concerned with patient treatment and (2) those concerned with practice building. Two major conclusions were derived from his research. First, the professional status of a physician is a major determinant in the number of referrals received. Higher status physicians perceive more positive outcomes from the referral process than lower status physicians; therefore, they will

refer more often and receive a greater percentage of patients on referral. Second, where a physician refers to two or more colleagues in the same specialty, he will refer a greater number of patients to the colleague from whom he receives the most positive outcomes. Thus, differences in exchange of activity between physicians in terms of rates and patterns of referral will be related to the perceived rewards, costs, and outcomes associated with each physician's status in the medical community.³¹

Two lesser findings of Shortell's research are also worth discussing. The hospital in which the physician holds his primary staff appointment emerged as a dominant factor in relation to the selection of referral partners. This is not especially surprising, for one would expect that the primary hospital of affiliation through its formal and informal channels of communication would make the referring physician more aware of who is available for referral in the various specialties. The second finding, and one somewhat surprising, was the role friendship plays in the referral process. Shortell found that referrals are not always based on quality of care and technical competence criteria. Friendship plays a very strong role in determining referrals due to the good lines of communication that exist. Physicians generally feel that excellence in a technical sense means nothing if you can not get along with the consultant. Friendship also tends to lead to a reciprocal referral relationship in which both parties refer patients to each other.³²

In a subsequent study, Shortell and Vahcovich addressed the hypothesis that patient-related variables are the best predictor of referral rates for client-dependent physicians such as general practitioners and that physician-related variables are the most reliable predictors of referral for colleague-

dependent physicians such as general surgeons. This study confirmed that physician-related variables are indeed the most important determinant of referral for surgeons; however, it was also determined that this was equally true for general practitioners.³³

A more recent study on factors influencing physician referral and satisfaction was conducted by Williams and Woods. They selected sixteen items designed to measure satisfaction with specific aspects of referral hospitals which could be grouped under four major categories:

1. Patient feedback--Eight criteria that relate to the completeness and the promptness of patient discharge summary information and the quality of communication with hospital-based physicians.

2. Hospital facilities--Six criteria that relate to efficiency of hospital admitting procedures, quality of patient rooms, parking, overnight accommodations for families, ease of access to the hospital, and the neighborhood in which the hospital is located.

3. Paramedical care--Two criteria concerning quality of nursing and allied health services at the hospital.

4. Outpatient feedback--Two criteria concerning the receipt of information on outpatients and the promptness with which that information is relayed to the referring physician.

These latter two items also formed part of the criteria for patient feedback factors. A second part of the study determined the extent to which these sixteen factors were related to a physician's choice and utilization of a referral hospital.³⁴

Three principal findings evolved as a result of the Williams and Woods study. First, the patient feedback factors as a group were rated the

strongest of the four factors measuring physician satisfaction. Furthermore, these factors demonstrated a higher correlation with referral frequency than did any of the other factors.³⁵ The implication of this finding is clear to the hospital administrator seeking to market to the referral physician and confirms the earlier finding by Shortell. Prompt and effective communication regarding a patient's treatment and progress figures prominently in a physician's attitude toward a referral hospital.

A second finding, and one of some potential significance for teaching hospitals such as BAMC, was that a strong residency program is significant in drawing subsequent referrals from former residents in the immediate service area of the referral hospital. Again, it is believed that a resident develops an informal network of professional relationships during the graduate medical education experience that continues to influence referral patterns long after the physician has entered private practice.³⁶

The last of Williams and Woods' conclusions revealed that, in the absence of any special knowledge by which to compare private hospitals with university medical centers, physicians in outlying communities will tend to refer patients to the university teaching hospital.³⁷ Apparently physicians feel that large urban medical centers are better capable of meeting the needs of their patients.

Due to the limited number of studies available in the literature which examine the physician referral process, a recent study by Okorafor analyzing hospital characteristics attractive to physicians was also consulted. Because it has been found that characteristics attractive to referral physicians are not unlike those desired by physicians seeking admitting privileges at various hospitals, this study was felt to be beneficial to this research effort. This

particular study utilized seventeen hospital characteristics identified in the literature and during focus discussion groups as important factors that might be employed by physicians in the process of hospital selection. To make the differences in the responses more evident, these characteristics were classified into three categories: (1) medical factors, (2) reputational factors, and (3) convenience/amenity factors.³⁸

Responding physicians regard the characteristics included in the medical category as being of greatest importance in their selection of a hospital. These findings are fairly predicable and support the premise offered by Tucker that, in the exchange relationship with a hospital, physicians will value those characteristics that facilitate patient care.³⁹ In contrast to Shortell's findings, however, Okorafor found no statistical difference in the value different physician specialties placed on any of the seventeen selected referral characteristics.⁴⁰

The hospital's reputation, its cleanliness, and the reputation of its medical staff were regarded by the responding physicians as being of substantial influence in their hospital selection decisions. Okorafor acknowledges that a hospital's reputation is generally composed of a combination of factors usually encompassing its cleanliness, the medical staff's reputation, and those characteristics comprised in the medical category; thus, she feels that this finding may be a remeasurement of these same factors or variables.⁴¹

Although the size of a referral hospital was not a characteristic rated highly by the physicians, one interesting commentary did emerge. Responding physicians desired their hospital to be large enough to offer the necessary technological capabilities to support their practices, but many felt that

hospitals with more than 600 beds were too large. Apparently these physicians felt that large hospitals are associated with an inordinate amount of political "red tape" and are too impersonal.⁴²

One other finding of Okorafor's study which is relevant to this research project was that, although physicians rated being a teaching hospital as an important characteristic, they attributed very little importance to selecting a facility where they performed their residency training.⁴³ This finding directly contradicts Williams and Woods' earlier conclusions, which showed a strong correlation between residency training site and referral rates.⁴⁴ For the administrator, the only inference which can be made is that not all physicians are drawn to hospitals at which they trained.

In 1980, Ludke conducted a study to identify the factors which two types of referring physicians, (1) general/family practitioners and (2) general surgeons, consider when deciding whether or not to refer the patient and where to refer the patient. Based on interviews with physicians in the target market, fifteen factors were identified which appeared to be important to the referring physician in this decision-making process. Like the earlier discussed studies of Williams and Woods and Okorafor, these factors could be grouped into three basic categories: (1) technical/care-related factors such as quality of patient management, patient results, and individualized patient management and care; (2) patient-related factors, which included inconvenience to the patient, cost, patient preference, and patient's prior satisfaction with consultant; and (3) physician-related factors, which encompassed lost income to the provider, reciprocations received, communication with consultant, respect/courtesy shown by consultant, patient attitude toward consultant, physician's personal knowledge of consultant, satisfaction with

previous referrals, and attitude of physician's colleagues toward consultant.⁴⁵

Several significant findings were determined. Like Okorafor, Ludke found no significant differences between physician specialties with regard to the relative importance of these referral factors. Although Shortell found a physician's specialty to be an important attitudinal discriminator, no other study located corroborated this belief. In Ludke's study, both groups of physicians rated the factors related to the treatment aspects of patient care and the physician's knowledge of the consultant as most important. Least important were the physician related factors of lost income from the referral, attitude of colleagues toward consultant, cost to patient, reciprocations received, and respect/courtesy shown to the physician.⁴⁶

The results of Ludke's study also indicated that the patient plays an important role in the referral process. Referring physicians place a great deal of importance on a patient's expectations for referral and preferences for certain consultants or medical centers and a patient's previous use of and satisfaction with prior referrals. Thus, an increasing amount of negative feedback from patients will probably cause a physician to begin decreasing the number of referrals to a certain hospital and test the acceptability of other institutions.⁴⁷

Marketing Implications

The collective findings of the above studies suggest several important implications for the hospital administrator concerned with capturing a share of the referral market. First, it is imperative that a medical center's

consultants possess the high degree of technical competency necessary to provide high quality patient care with positive results if a viable referral network is to be maintained. This factor, however, is not enough to perpetuate this network. From this starting point, a hospital must address the other physician and patient related factors important to the referring physician.⁴⁸

Personalized relations is a second characteristic which this constituency group highly desires. Unfortunately, the literature is replete with examples of consultants, especially those affiliated with university medical centers, who do not provide adequate and timely communication back to the referring physician. In many cases, this breach of etiquette is so severe that it means termination of the consultant-referring physician relationship. Referring physicians have indicated that in only the rarest of instances will this relationship continue--i.e., if the consultant has a unique area of expertise or if the consultant is so preeminent in his field that this annoyance must be overlooked.⁴⁹

Implementation of measures to achieve the desired flow of communication should be a top priority of administrators. This should include the development of a protocol for dealing with the referral patient that ensures timely and appropriate feedback of pertinent information. Later, to ensure the continued adequacy of communications, a hospital must also periodically conduct a satisfaction survey of those physicians who frequently refer patients. Information from this source as well as from patient feedback can serve as the basis for specific marketing strategies tailored to the needs of these constituency groups.⁵⁰ To overcome the traditional separation which commonly exists between community hospitals and university teaching centers,

popularly known as the "town-and-gown syndrome", consultants might consider visiting their potential referral clientele for the purpose of fostering this relationship and to better assist them in addressing their problems. This form of reciprocation could include providing services such as continuing education or establishing a special clinic to train office personnel in special procedures.⁵¹ A study by Mahan found strong evidence that an effective continuing education program can have a significant effect on physician referral rates.⁵²

A fourth finding which was substantiated by most studies was that physicians are not significantly drawn to practice in the hospitals in which they interned. Recognition of this fact should alert hospital administrators at teaching hospitals to the fact that they do not have a captive audience among their residents. Administrators must generate interest in the hospital through other means if they are to retain the interest of these young physicians.⁵³

Finally, Shortell's research found an important link between a consultant's status and the number of referrals he receives. Administrators should build on that principle and promote the development of the professional status of their medical staffs by encouraging endeavors in research, writing of articles for medical journals, and involvement in local and national professional societies.⁵⁴

This review has highlighted the current concepts in the literature dealing with the referral physician process. From this information, pertinent elements will be extracted to fit the referral scenario as practiced in the federal health care sector. The next step is to begin evaluating this segment of Brooke Army Medical Center's constituency population by performing original

market research.

Endnotes

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CHAPTER III

RESEARCH DESIGN

Marketing research is the process of systematically gathering, recording, and analyzing information which is needed by an organization in order for it to make planning and implementation decisions that affect the quality or the intensity of its interactions with its consumers.¹ For this research effort, the consumer element of interest is the referral physician at the three community hospitals within the Brooke Army Medical Center Health Service Region. Properly formulated and conducted, market research can generate information on attitudes, perceptions and preferences of these referring physicians regarding qualities desired in a good subspecialty referral center.

Survey Development

In order to properly develop an acceptable survey questionnaire, two important considerations were faced by this researcher. First, a fundamental principle of marketing research is that it must be objective and be implemented in an unbiased manner.² Most of the literature consulted cautioned that it would be difficult for an individual affiliated with the organization conducting the study to meet this condition. To obtain the necessary objectivity, it was the recommendation of the literature that expertise outside the organization be consulted for the development and

analysis of a questionnaire.

Second, none of the studies consulted dealing with the referring physician-consultant relationship examined a health care system which was comparable in organization to the military health care sector. Two aspects of the military system particularly influenced the survey development. From a referral perspective, the military health care system operates in a generally closed and structured environment which does not allow its medical practitioners as much freedom in the referral process as that found in the civilian sector. Additionally, two of the referring hospitals in this study are located in different states both over 500 miles from the regional hospital, a distance much greater than that found in any other study examined. Given these environmental conditions, it would be expected that a military physician's perceptions of the referral process would be influenced by different factors. Recognizing these constraints, the development of an acceptable, objective survey instrument for this research effort was subjected to numerous stages of review.

In the course of examining the literature for survey instruments used in previous studies of the physician referral process, thirteen factors consistently appeared in most questionnaires. With some modification to account for BAMC's unique environment, these factors were deemed appropriate for analysis of referrals in the military sector. Two additional factors specifically germane to the military setting were also incorporated, and a trial questionnaire was developed. This survey instrument consisted of two parts (See Appendix D). Section A asked the referral physician to rank-order fifteen factors which are important to them in their selection of a referral medical center for their patients requiring subspecialty services not offered

at their treatment facility. Definitions of the referral factors as used in the survey were provided with the questionnaire so as to minimize confusion over their meaning. Section B of the survey instrument asked the referral physician to use a five-point Likert scale to rate BAMC's performance as a referral medical center along a continuum ranging from Strongly Agree through Agree, Not Sure, Disagree, and Strongly Disagree. These statements were related to the fifteen referral factors listed in Section A of the questionnaire. To help validate the survey results, an internal consistency check was built into the questionnaire. For example, Question 3 asked the respondent to comment on the frequency and the quality of communication received from the consultant. This answer could then be compared to the answer for Question 7, in which the respondent was asked to indicate whether a discharge summary (an important aspect of physician communication) was provided.

To ensure that the survey instrument provided the desired information, the survey was staffed with three separate elements: (1) the department chiefs of both Pediatrics and Obstetrics/Gynecology, (2) the Technical Director for Health Service Command's Health Care Studies and Clinical Investigation Activity, and (3) faculty members of the U.S.Army-Baylor University Graduate Program in Health Care Administration. After appropriate modifications were accomplished, the survey was pretested with three staff members from each of BAMC's four major teaching programs that serve as referral agencies. The survey was accompanied by a letter requesting the staff member's support and explaining the purpose of the questionnaire. Although the response from this physician segment was initially slow in arriving, through persistent efforts, 100 percent of the pretest surveys were

returned. Several areas of the survey were subsequently changed based on input received and a final survey was prepared for distribution.

A mail survey was selected as the medium of choice because it enabled the respondents to answer at their convenience and provided a greater degree of privacy. Additionally, mail surveys are relatively inexpensive to implement and they more easily ensure the anonymity of the respondent. Studies have shown, however, that the major problem with a mail survey is that response rates of less than 10 percent are common.³ Because the survey population was limited, it was important to receive maximum return of these survey instruments. To overcome this problem, two steps were taken. First, all surveys for each community hospital were mailed to the administrative resident (See Appendix E). Their cooperation was sought for two primary reasons: (1) to assure distribution of the survey to all staff physicians who would be in a position to refer patients and (2) to ensure collection and return of these instruments once they were completed. A second measure adopted to ensure physician support was the drafting of a letter to the Deputy Commander for Clinical Services (DCCS) at each hospital advising him of the nature and the purpose of the study and requesting that he also encourage the participation of his staff (See Appendix F). This letter was signed by BAMC's DCCS and helped to lend credibility to the survey effort by reinforcing the fact that the BAMC command element was indeed interested in improving tertiary care referral support.

Based on the numbers provided by the administrative resident at each hospital, a total of 140 surveys were distributed. One hundred thirty-two were received back, for a 94 percent response rate. After exclusion of incomplete questionnaires and those completed by nonreferring physicians such as

pathologists, 121 usable surveys (86 percent) remained. Appendix G contains a complete listing of the survey results.

Survey Results

An analysis of the demographic characteristics of the 121 usable surveys revealed a profile of the average referral physician within the BAMC Health Service Region that would prove useful in the development of a marketing strategy. Although no specific age assessment was conducted, the typical referring physician is apparently young, holds the grade of captain, and has been assigned to his hospital for one year or less. This would seem to indicate that the physician has only recently completed his residency and is probably just beginning his first utilization tour. In contrast to this picture of the referring physician is the other half of the referral partnership, the consultant, who is predominantly a major or lieutenant colonel and has been on station for over two years.

The referring physician is also most likely to have completed a military-sponsored residency in family practice, pediatrics, obstetrics/gynecology, or orthopedics (in that order) at a medical center other than BAMC. Only nineteen of the respondents (15 percent) were products of BAMC's Graduate Medical Education Program. A complete distribution of the descriptive characteristics of the referring physician population is provided in Appendix H. Results of the physician input from Section A of the survey regarding factors important to the selection of a referral hospital were analyzed using Kendall's coefficient of concordance. This statistical tool, which measured the strength of agreement among responding physicians, served

as the basis for testing several hypotheses about the population of interest. In conducting this statistical test on Section A of the survey document, only 104 of the 121 surveys received could be utilized because nine physicians used the same numerical value on more than one referral factor and eight physicians provided weighted values instead of rank order data.

Physician Rankings of the Referral Factors

The initial hypothesis of interest tested the premise that there would be no consensus among physicians responding to the survey on the relative importance of the fifteen referral factors. Following analysis, this hypothesis was rejected. The evidence of this study clearly indicated that there was a high degree of consensus on this matter among the respondents, particularly with regard to where the factors of Quality of Patient Management, Communication/Feedback, and Attitude of Colleagues should be ranked. Sixty-one of the responding physicians (59 percent) indicated that the Quality of Patient Management is the most important factor in their referral decision. Only 10 percent of the physicians ranked this factor outside of their top five in importance. This high ranking is not particularly surprising and reinforces a primary finding of the literature: i.e., a hospital must provide high quality patient management with positive patient results if it is to successfully maintain a viable referral network.

Communication/Feedback from the consultant is also a top priority with referring physicians. Although it was deemed only fourth in importance overall, there was very little variance among the physicians as to where this factor should be ranked. Only four of the respondents ranked it outside their

top ten in importance, with 75 percent placing it in the top five.

There was also little variance in the physicians' opinion regarding the importance which Attitude of Their Colleagues plays in the selection of a consultant or a referral center. However, contrary to the high ranking given the Communication/Feedback factor, most physicians responded that their colleagues' attitude is of little importance in the decision-making process. This finding is in contrast to results identified in the literature, which found the opinion held by a physician's peers to be a strong determinant of the number of referrals which a consultant receives.

Those factors with the widest variation in opinion included Clinical Outcome, Reciprocalations Received, Knowledge of the Consultant, and Cost to the Patient. A complete listing of the mean responses and the ranking for the fifteen referral factors appears in Appendix I. Referral factors listed in the appendix are in the same sequence as they appeared on the survey form.

In order to more easily compare the responses of the military physicians in this study with those of studies conducted in the civilian sector, the fifteen referral factors were grouped into three major categorical areas as identified in the literature: (1) technical/care-related factors, (2) patient/family-related factors, and (3) physician-related factors (See Appendix J). The ranking of the major categories was derived from the average of the mean responses of the individual factors within each category. With the exception of the factors Reciprocalations Received and Attitude of Colleagues, there was no significant overlapping of the range of mean responses between major categories, so that the ranking of these three major categories can be considered to be clearly reflective of their individual importance.

As was expected, the technical/care related factors category, encompassing Quality of Patient Management, Clinical Outcome, Individualized Patient Management and Care, and Technical Expertise of the Consultant, was rated highest by the physicians. This supports Okorafor's and Tucker's findings that, in the exchange relationship with the hospital, the physician will desire those services that promote patient care, including high quality technical resources and skilled personnel.⁴

Least important were the patient/family-related factors, indicating that the patient's attitude and input are not as strongly considered in the referral decision-making process as the earlier discussed factors. This finding may reflect the fact that, in the military health care system, with its established referral networks, relatively few referral options are available to the physician. Patients residing within a hospital's catchment area must utilize the designated referral system; thus, very little patient-physician interaction occurs regarding selection of a referral facility. It would be wrong to conclude from this study that a patient's feelings and preferences are not important to the referral physician, because the survey did not attempt to measure the degree of importance of each referral factor.

Ranking of Referral Factors by Community Hospital

The second premise evaluated tested the hypothesis that there would be no consensus among the referring physicians at each of the three community hospitals with regard to the importance of the fifteen referral factors (see Appendix K). Again, the evidence from this study led to the rejection of this hypothesis. The strength of agreement among physicians within each

community hospital was greater than that displayed by the collective physician population.

The principal differences among these hospitals existed within five of the referral factors: (1) Patient Preference, (2) Attitude of Colleagues, (3) Cost to Patient, (4) Communication/Feedback, and (5) Respect/Courtesy Shown to Consultant. With the exception of the factor Respect/Courtesy Shown to the Consultant, the institution whose rankings consistently differed was the Fort Hood MEDDAC. An explanation for this difference might be found in the size of this facility and its proximity to BAMC. As a large MEDDAC, Fort Hood has a bigger staff, more depth per specialty, and a wider variety of available specialists than does Fort Sill or Fort Polk. It is also the only institution within a short drive of its designated referral center and the one hospital with other tertiary care referral options available to it (Wilford Hall Air Force Medical Center in San Antonio and Scott White Medical Center in Temple). Thus, its physicians may view themselves as less dependent upon BAMC.

Ranking of Referral Factors by Physician Specialty

The final premise evaluated in Section A of the survey was the hypothesis that there would be no consensus among the various referring specialties with regard to the importance of the fifteen referral factors. Five principal groupings of specialists were analyzed: (1) obstetricians /gynecologists, (2) pediatricians, (3) family practice physicians, (4) surgical specialists (general surgeons, orthopedic surgeons, urologists, etc.), and (5) medical specialists (internists, dermatologists, etc.). Once again, the survey findings led to rejection of this hypothesis. No

statistical difference was found relating to a physician's specialty and the degree of importance placed on these characteristics. Examined by specialty, obstetrician/gynecologists reflected the greater unanimity of opinion with regard to the referral factors, with family practice physicians showing the least degree of consensus.

Appendix L, which reflects the results of this analysis, shows that the technical/care-related factors of Quality of Patient Management, Clinical Outcome, Individualized Patient Management, and Technical Expertise of the Consultant were consistently ranked most important by all five physician specialties. The least important factors were Availability of CHAMPUS, Attitude of Physician's Colleagues, Availability of Patient Transportation, Reciprocations Received, and Cost to the Patient.

Again, the major differences among the physician specialties were concentrated within three of the variables: (1) Knowledge of Consultant, (2) Attitude of Physician's Colleagues, and (3) Availability of Patient Transport. For example, Knowledge of the Consultant was more important to the surgical specialties (ranked sixth) than it was to pediatricians (ranked twelfth) or family practice physicians (ranked eleventh). Apparently contact with a consultant through programs such as visiting consultants is far more important to surgeons than to pediatricians or family practice physicians.

Obstetricians/gynecologists felt that the Attitude of Their Colleagues was much more important (ranked ninth) than did pediatricians (ranked fifteenth). Whether this is reflective of unfavorable prior experiences or some other factor is unknown, but knowledge of this fact could be important to department chiefs who are concerned with physician-to-physician relationships.

Finally, the Availability of Patient Transportation was more important

to pediatricians (ranked ninth) than to physicians in the surgical specialties (ranked fourteenth). This may reflect recognition by pediatricians of the need for adult family members to accompany young patients and the potential that this travel can have for disrupting a family's home life. In general, concern for patient/family-related variables on the part of pediatricians and family practice physicians was higher than that reflected by the other physician specialties.

Physician Attitudes of BAMC as a Referral Center

Section B of the survey measured the referring physician's attitude regarding BAMC's performance as a referral medical center. Thirty-four questions were asked, each relating to one of the fifteen referral factors listed in Section A. For the purpose of simplifying the statistical computations, each response was numerically coded. The coding system is illustrated below:

<u>Response</u>	<u>Code</u>
Strongly Agree	1.0
Agree	2.0
Neutral	3.0
Disagree	4.0
Strongly Disagree	5.0

As a basis for interpreting the results, calculated mean scores between the range of 2.5 to 3.5 were considered to reflect a satisfactory performance by BAMC for that characteristic of interest. Mean responses of less than 2.5 were interpreted as evidence that BAMC is performing very well for that characteristic of interest. Those responses receiving a mean score greater than 3.5 were interpreted as denoting dissatisfaction for the referral

physician in the performance of BAMC.

Using the computed mean score values, ANOVA was used to test two hypotheses of interest:

1. Ho: The attitude of the physicians at Fort Hood, Fort Sill, and Fort Polk are all similar with regard to their opinion of BAMC as a referral center.

Ha: The physicians' attitudes are dissimilar.

2. Ho: The attitude of obstetricians/gynecologists and pediatricians is similar to that of other physician specialists with regard to their opinion of BAMC as a referral center.

Ha: The physicians' attitudes are dissimilar.

A third element of interest was also examined. Responses of physicians who performed their residency training at BAMC were isolated to see if their opinion of BAMC differed from their peers who were products of other GME programs. The hypothesis was that physicians who received their postgraduate training at BAMC would have a more favorable view of the hospital because of greater familiarity with BAMC or because of contacts established at the hospital during their residency. This information could be valuable in determining future utilization assignments.

Mean responses to each question by physician group for each of the hypotheses of interest are found in appendices M, N, and O, respectively. By totalling the mean responses given to each question by each population of interest and dividing that score by the number of questions measuring that value, a cumulative mean response was obtained for each referral factor of interest. This figure was then used to evaluate BAMC's performance for that referral factor.

Technical/Care-Related Factors

Quality of Patient Management encompassed thoroughness in treating the problem, explanation to patient/family member of treatment regimen, efficiency of treatment, thoroughness of workup, and comprehensiveness of rehabilitation. Three questions measured BAMC's performance on this factor.

Question # 1: The quality of patient management at BAMC is excellent.

Question #22: BAMC consultants take time to explain the treatment regimen to my patients and their families.

Question #33: I am satisfied with BAMC's performance as a referral center.

The results from these questions and their answers are shown in Table 1.

TABLE 1

PHYSICIAN RESPONSES TO QUALITY OF PATIENT MANAGEMENT

Responding Physician Element	N	Mean Response for the 3 Q's	Mean Score		
			Q#1	Q#22	Q#33
Collective Physician Response	117	2.65	2.46	2.70	2.79
Ft Hood Physician Response	37	2.91	2.78	2.83	3.11
Ft Sill Physician Response	40	2.54	2.20	2.68	2.75
Ft Polk Physician Response	40	2.51	2.40	2.60	2.53
Pediatrician Response	15	2.72	2.93	2.43	2.80
Ob/Gyn Response	11	2.94	2.73	2.73	3.36
Other Physician Spec Response	89	2.59	2.35	2.72	2.70
BAMC Residency Training	19	2.49	2.42	2.63	2.42
Other Residency Training	86	2.70	2.48	2.74	2.88

Mean response among all physicians for quality of patient management was 2.65, signifying general satisfaction with BAMC's performance in this area. However, considering that this referral factor was the most important quality desired of a referral center, this rating is cause for further analysis. ANOVA testing indicates that there are similar viewpoints among physicians at

all three hospitals regarding perceived quality of patient management. Of the three hospitals, Fort Hood's physicians appear to be the least satisfied with BAMC's performance in this area, rating consistently lower for all three questions measuring this attribute.

Examination of attitudes by physician specialty also indicated a high degree of consensus among all three physician groups evaluated. Question 33, which asked the respondents to rate their general satisfaction with BAMC, indicated a fair degree of dissatisfaction among obstetrician/gynecologists, although within the acceptance range established.

The population of interest with the highest opinion of BAMC's patient care management (2.49) was former BAMC residents. This may have been due to their greater familiarity with BAMC and their possible reluctance to criticize the institution at which they received their training.

Clinical Outcome concerned the desired patient outcome and pre-, during, and post mortality rates. One question measured BAMC's performance on this factor.

Question # 2: The best possible clinical outcome is assured patients treated at BAMC.

The results from this question and its answers are presented in Table 2.

TABLE 2

PHYSICIAN RESPONSES TO CLINICAL OUTCOME

Responding Physician Element	N	Mean Score Q#2
Collective Physician Response	117	2.74
Ft Hood Physician Response	37	3.16
Ft Sill Physician Response	40	2.53
Ft Polk Physician Response	40	2.55

Pediatrician Response	15	2.93
Ob/Gyn Response	11	2.91
Other Physician Spec Response	89	2.69
BAMC Residency Training	19	2.89
Other Residency Training	86	2.70

This referral factor was the second most important quality desired in a referral center, and mean response among all responding physicians was 2.74, signifying general satisfaction with BAMC's performance in this area. ANOVA testing led to rejection of the hypothesis of similarity of opinion among the physicians at the three community hospitals, with Fort Hood MEDDAC physician's views of this referral factor outside the acceptance range. This is the second critical factor in the technical/care-related referral grouping which Ft Hood physician's rated low and may be cause for further study.

Among the physician groups examined, there was a strong consensus of opinion on this referral factor and the original hypothesis of similarity in viewpoint must be accepted. In slight contrast with the first referral factor analyzed, BAMC-trained physicians rated BAMC's performance in this area slightly lower than did other physician elements.

Individualized Patient Management and Care involved management and care of the patient provided in accordance with specific needs and done so in a friendly, empathetic, and personal manner. Two questions measured BAMC's performance on this factor.

Question # 6: Patients at BAMC receive individualized patient management and care.

Question #25: Patients I refer to BAMC receive concerned medical care based on their personalized needs.

The results from these questions and their answers are shown in Table 3.

TABLE 3

PHYSICIAN RESPONSES TO INDIVIDUALIZED PATIENT MANAGEMENT AND CARE

Responding Physician Element	N	Mean Response for the 2 Q's	Mean Score	
			Q#6	Q#25
Collective Physician Response	117	2.72	2.85	2.59
Ft Hood Physician Response	37	2.91	3.00	2.81
Ft Sill Physician Response	40	2.59	2.72	2.45
Ft Polk Physician Response	40	2.69	2.83	2.54
Pediatrician Response	15	2.90	3.14	2.66
Ob/Gyn Response	11	2.69	2.73	2.64
Other Physician Spec Response	89	2.68	2.80	2.56
BAMC Residency Training	19	2.63	2.83	2.42
Other Residency Training	86	2.74	2.87	2.60

Mean response for this referral factor was 2.72, indicating general satisfaction with BAMC's performance in this area. Both hypotheses of interest regarding similarity in viewpoint on this referral factor were accepted. Among the referral population of interest, those physicians who performed residency training at Brooke again rated BAMC the highest on this referral factor.

Technical Capability and Expertise of the Consultant/Referral Center

indicates the degree the consultant/referral center is recognized for care in the medical field, papers are published, and presentations are made at national forums. Two questions measured BAMC's performance on this factor.

Question # 8: The consultants at BAMC are experienced and technically competent.

Question #30: BAMC has a reputation as an excellent health care institution.

The results of responses to these questions are listed in Table 4.

TABLE 4

PHYSICIAN RESPONSES TO TECHNICAL CAPABILITY AND EXPERTISE OF THE CONSULTANT

Responding Physician Element	N	Mean Response for the 2 Q's	Mean Score	
			Q#8	Q#30
Collective Physician Response	117	2.27	2.05	2.49
Ft Hood Physician response	37	2.48	1.97	3.00
Ft Hood Physician response	40	2.20	2.10	2.30
Ft Sill Physician Response	40	2.14	2.07	2.20
Pediatrician Response	15	2.47	1.87	3.07
Ob/Gyn Response	11	2.50	2.09	2.91
Other Physician Spec Response	89	2.22	2.07	2.36
BAMC Residency Training	19	2.16	1.89	2.42
Other Residency Training	86	2.28	2.05	2.50

Mean response for this referral factor was a 2.27, indicating a high regard for the technical competency of BAMC physicians and a general attitude that, reputation wise, BAMC is a good tertiary care teaching hospital. Respondents in general gave some of the highest marks recorded in the survey to this referral factor. Again, BAMC-trained physicians rated BAMC higher in this factor than did any other subpopulation of interest. Although both Question 8 and Question 30 were designed to measure the same variable, responses to Question 30 among some subpopulations differed markedly and led to rejection of both hypotheses of interest. While Fort Hood physicians rated the BAMC staff very highly in technical competency, there was a sharp contrast in their feelings on BAMC's reputation from the opinion expressed by the Fort Sill and Fort Polk staff. In fact, in all four referral characteristics that comprised the technical/care-related factors, the attitude of Fort Hood physicians was consistently more harsh. This writer has elected not to hypothesize why this difference exists; instead, this finding will be

considered in the development of a differentiated marketing strategy toward that hospital.

As a subpopulation of interest, pediatricians and obstetricians/gynecologists also differed markedly from the other physician specialties surveyed on this same question. Since 16 of the 26 physicians in these specialties who responded to the survey were from the Fort Hood MEDDAC, this may just be a reaffirmation of the same feelings already identified with that institution.

Physician Related-Factors

Communication/Feedback with the Consultant entailed prompt and detailed reports on the patient's progress and admission/discharge summaries provided. Three questions measured BAMC's performance in this area.

Question # 3: Frequent and comprehensive communication is established and maintained by the BAMC staff.

Question # 7: A discharge Summary is provided on all patients returned to my care.

Question #26: BAMC consultants keep me informed on the status of my referred patients.

The results of responses to these questions are presented in Table 5.

TABLE 5

PHYSICIAN RESPONSES TO COMMUNICATION/FEEDBACK

Responding Physician Element	N	Mean Response for the 3 Q's	Mean Score		
			Q#3	Q#7	Q#26
Collective Physician Response	117	3.62	3.58	3.68	3.61
Ft Hood Physician Response	37	3.74	3.73	3.68	3.81
Ft Sill Physician Response	40	3.51	3.53	3.43	3.58

Ft Polk Physician Response	40	3.63	3.50	3.93	3.45
Pediatrician Response	15	3.33	3.20	3.47	3.33
Ob/Gyn Response	11	3.58	3.64	3.73	3.36
Other Physician Spec Response	89	3.68	3.63	3.74	3.67
BAMC Residency Training	19	3.40	3.32	3.42	3.47
Other Residency Training	86	3.68	3.63	3.77	3.65

Mean response for this referral factor was 3.62, indicating general dissatisfaction with BAMC's performance in this area. The consensus response of each community hospital indicated dissatisfaction among all three facilities, and ANOVA testing led to acceptance of the first hypothesis of similarity in viewpoint. Fort Hood again expressed the deepest degree of dissatisfaction despite its closer proximity.

Analysis of this referral factor by physician specialty again showed strong dissatisfaction among all physician groups except pediatricians. The mean response of this physician group, although on the low side, was the only one within the established acceptance range. Apparently the Department of Pediatrics has implemented some procedures that have resulted in an improved image in this area.

BAMC-trained physicians also achieved a satisfactory rating for this factor. This particular finding could have been predicted since one would expect former members of the house staff to have personal acquaintances among the consultants and to be more familiar with BAMC's operating procedures.

Physician Satisfaction with Previous Referrals to Consultant or Referral Medical Center measured satisfaction with patient outcome, the way patients were treated, and the professional courtesy shown to referring physician. Three questions measured BAMC's performance on this factor.

Question # 18: My experience with the BAMC consultants has been

favorable.

Question # 23: BAMC is my facility of choice for my referral needs.

Question # 33: I am satisfied with BAMC's performance as a Referral Center.

The results of the responses to these questions are shown in Table 6.

TABLE 6

PHYSICIAN RESPONSES TO SATISFACTION WITH PREVIOUS REFERRALS

Responding Physician Element	N	Mean Response for the 3 Q's	Mean Score		
			Q#18	Q#23	Q#33
Collective Physician Response	117	2.61	2.41	2.64	2.79
Ft Hood Physician Response	37	2.87	2.70	2.81	3.11
Ft Sill Physician Response	40	2.57	2.36	2.60	2.75
Ft Polk Physician Response	40	2.42	2.20	2.53	2.53
Pediatrician Response	15	2.51	2.07	2.67	2.80
Ob/Gyn Response	11	3.33	3.09	3.55	3.36
Other Physician Spec Response	89	2.52	2.37	2.49	2.70
BAMC Residency Training	19	2.26	2.00	2.37	2.42
Other Residency Training	86	2.60	2.19	2.74	2.88

Mean response for this referral factor was 2.61, indicating a general satisfaction with BAMC's performance in this area. The hypothesis of similarity in opinion among the three community hospitals was accepted. Again, however, Fort Hood ranked BAMC's performance consistently lower across all three questions.

Comparison of rankings by physician specialty showed a strong similarity in viewpoint among all groups with the exception of obstetricians/gynecologists, whose rating was almost a full point lower than any other element. This ranking outlier was grounds for rejection of the second hypothesis of interest. BAMC trained residents again demonstrated the highest degree of satisfaction for this referral factor.

Respect/Courtesy Shown by the Consultant concerned consultant cooperation and attitude in coordinating arrangements for referral. Two questions measured BAMC's performance on this factor.

Question # 13: I am treated courteously and professionally by the BAMC consultants.

Question # 31: BAMC consultants are cooperative in arranging for referrals.

The results of the responses to these questions are presented in Table 7

TABLE 7

PHYSICIAN RESPONSES TO RESPECT/COURTESY SHOWN BY CONSULTANT

Responding Physician Element	N	Mean Response	Mean Score	
		for the 2 Q's	Q#13	Q#31
Collective Physician Response	117	2.28	2.18	2.37
Ft Hood Physician Response	37	2.71	2.68	2.73
Ft Sill Physician Response	40	2.14	2.00	2.28
Ft Polk Physician Response	40	2.02	1.90	2.13
Pediatrician Response	15	1.94	1.87	2.00
Ob/Gyn Response	11	2.96	2.91	3.00
Other Physician Spec Response	89	2.23	2.15	2.36
BAMC Residency Training	19	2.03	2.00	2.05
Other Residency Training	86	2.31	2.19	2.43

Mean response for this referral factor was 2.28, indicating a high degree of satisfaction with BAMC's performance. The hypothesis of similarity among community hospitals on the question of courteous and professional treatment was rejected, with Fort Hood's ranking significantly lower than that of the other hospitals, although its value still fell within the acceptable range established. Ratings by Fort Polk and Fort Sill physicians for this factor were among the most favorable achieved in the survey. Differences between obstetric/gynecologic physicians and other specialty groups were also

substantial although not enough to cause rejection of the hypothesis of similarity at the .01 level of significance. BAMC-trained physicians again rated this factor higher than physicians trained at other institutions.

Physician's Personal Knowledge of the Consultant referred to the consultant's cooperation and attitude in coordinating arrangements for referral. Three questions measured BAMC's performance on this factor.

Question # 10: I am knowledgeable of the inpatient services offered at BAMC.

Question # 27: I am visited at least quarterly by BAMC consultants.

Question # 32: I have met most of the staff physicians at BAMC.

The results from these questions are delineated in Table 8.

TABLE 8

PHYSICIAN RESPONSES TO PERSONAL KNOWLEDGE OF THE CONSULTANT

Responding Physician Element	N	Mean Response for the 3 Q's	Mean Score		
			Q#10	Q#27	Q#32
Collective Physician Response	117	3.06	2.22	3.37	3.58
Ft Hood Physician Response	37	2.79	2.05	3.38	2.95
Ft Sill Physician Response	40	3.29	2.40	3.43	4.03
Ft Polk Physician Response	40	3.08	2.20	3.30	3.73
Pediatrician Response	15	2.09	1.93	1.87	2.47
Ob/Gyn Response	11	3.15	2.09	4.36	3.00
Other Physician Spec Response	89	3.19	2.28	3.47	3.82
BAMC Residency Training	19	2.44	1.63	3.21	2.47
Other Residency Training	86	3.14	2.28	3.34	3.80

Mean response for this referral factor was 3.06, but, because of the wide range in responses to each question, it would be improper to conclude that this implied satisfaction. Knowledge of inpatient services was rated highly among all elements, but especially so among pediatricians and BAMC-

trained physicians. One would expect this finding among the BAMC-trained group but the pediatricians' awareness of these services was so much greater than their peers that this is cause for further investigation. Hypothesis testing among all groups for Question 10 reflected similarity in viewpoint. All physician groups except pediatricians indicate that they are seldom visited by their consultants. Response by obstetrician/gynecological physicians was so low that it is doubtful that any visits have taken place. As a result of this variance in response by physician specialty, the hypothesis of similarity among this group was rejected. This is one question where BAMC trained physicians' ranking concurred with the other physician respondents.

Responses measuring familiarity with the BAMC staff reflected an extremely wide range among the groups. Only pediatricians, BAMC-trained physicians, and Fort Hood staff members indicated an acceptable degree of familiarity. The latter two groups' responses were to be expected because of their past association with BAMC and their proximity to San Antonio, respectively, but, again, the Department of Pediatrics' efforts at meeting referral counterparts stands out as a possible model for emulation.

Reciprocations Received from the Referral Center/Consultant included continuing education, availability of consultant to telephonic inquiries, and specialty clinics held by the consultant at the referring physicians' hospital to train personnel in special procedures. Three questions measured BAMC's performance on this factor.

Question # 4: The BAMC consultants provide support to the continuing education program at my hospital.

Question # 5: The BAMC consultants are easily accessible to me for telephonic consults.

Question #28: BAMC supports the physician needs of my hospital during periods of personnel shortage.

The results to the responses to these questions are shown in Table 9.

TABLE 9

PHYSICIAN RESPONSES TO RECIPROCATIONS RECEIVED

Responding Physician Element	N	Mean Response for the 3 Q's	Mean Score		
			Q#4	Q#5	Q#28
Collective Physician Response	117	3.23	3.32	2.45	3.92
Ft Hood Physician Response	37	3.61	3.86	2.81	4.16
Ft Sill Physician Response	40	3.02	3.05	2.23	3.78
Ft Polk Physician Response	40	3.10	3.10	2.35	3.85
Pediatrician Response	15	3.02	3.27	2.20	3.60
Ob/Gyn Response	11	3.51	3.55	2.36	4.63
Other Physician Spec Response	89	3.25	3.34	2.51	3.89
BAMC Residency Training	19	3.40	3.42	2.42	4.37
Other Residency Training	86	3.21	3.29	2.45	3.90

Although the mean response for this referral factor was 3.23, indicating a weak but acceptable degree of satisfaction, the variance among responses per question by all segments was so extreme that this figure is meaningless. To obtain a truer picture of the physicians' feelings on this matter, each question must be examined individually. Physician satisfaction with the consultants' accessibility by telephone was the one measure of this factor that remained fairly positive, with a very strong degree of consensus across all physician segments. There was less of a consensus for the other two questions regarding physician satisfaction with support provided to continuing education programs and with physician support provided during periods of personnel shortage. At best, physicians expressed only a marginal degree of

satisfaction for the former and serious levels of dissatisfaction for the latter. Fort Hood's physicians again rated BAMC support of this nature much more poorly than did physicians at the other community hospitals for both questions. Their feelings of discontent are so extreme on the continuing education issue that this was grounds for rejection of the first hypothesis of similarity between the three hospitals. A possible explanation for the much lower rating by Fort Hood is that the installation is close enough to BAMC that the staff physicians at Darnall feel support of this nature is entirely feasible and expected and its lack of availability has created negative feelings. Fort Sill and Fort Polk physicians, on the other hand, realize that the distance between the referral center and their hospital is so great that support of this nature is not an expectation and thus a less severe attitude regarding this issue has resulted.

Obstetrician/gynecologic physicians again expressed much stronger feelings against BAMC than any other specialty group examined although not so extreme as to reject the second hypothesis. This physician group's response to the question measuring support provided during personnel shortages can be characterized as nothing less than extreme dissatisfaction. It is hypothesized that this deep resentment is based on the relatively low live birth to physician ratio at BAMC as opposed to that which exists at the community hospitals. Apparently BAMC is perceived as a well staffed facility with a relatively light workload, yet unwilling to share resources. For this Reciprocations Received referral factor, BAMC-trained physicians departed from their generally more favorable viewpoints and were more critical than their peers of the referral center's support in this area.

Attitude of Colleagues Toward Consultant/Referral Medical Center

indicated general feelings of the physician staff at a hospital toward the referral center or consultant based on prior encounters. Two questions measured BAMC's performance on this factor.

Question # 14: Physician colleagues at my hospital have the highest professional regard for BAMC consultants.

Question # 34: My colleagues are satisfied with BAMC's performance as a referral center.

The results of the responses to these questions are shown in Table 10.

TABLE 10

PHYSICIAN RESPONSES TO ATTITUDE OF COLLEAGUES

Responding Physician Element	N	Mean Response for the 2 Q's	Mean Score	
			Q#14	Q#34
Collective Physician Response	117	2.91	2.84	2.97
Ft Hood Physician Response	37	3.35	3.27	3.43
Ft Sill Physician Response	40	2.67	2.60	2.73
Ft Polk Physician Response	40	2.73	2.68	2.78
Pediatrician Response	15	3.17	3.13	3.20
Ob/Gyn Response	11	3.59	3.45	3.73
Other Physician Spec Response	89	2.78	2.72	2.84
BAMC Residency Training	19	2.90	2.95	2.84
Other Residency Training	86	2.95	2.84	3.05

This referral factor was ranked only fourteenth in importance to the respondents, and the findings indicate that the colleagues of the referral physicians have mixed feelings with regard to BAMC. Once again Fort Hood physicians' responses were more negative than those of the other community hospital physicians, and this wide variance in attitude was grounds for rejecting the first hypothesis of interest for both Questions 14 and 34.

Again, the obstetrician/gynecologic physicians' responses were also

lower than those of the other physician specialties, indicating that their colleagues do not regard BAMC as highly as other physician segments. Unlike the Fort Hood physician response, however, the obstetrician/gynecologists ranking was not so different from that of other physician specialists as to cause rejection of the hypothesis of similarity. No difference was detected between the responses of BAMC trained residents and the other physician respondents on this factor.

Patient/Family Factors

Convenience to Patient encompassed the distance involved, the existence of suitable nearby accommodations for the patient's family, and the disruption to the patient's home life. Four questions measured BAMC's performance in this area.

Question # 12: Lodging facilities are available for family members of patients I refer to BAMC.

Question # 15: Treatment at BAMC is convenient to my patients.

Question # 19: Good facilities are available at Ft Sam Houston to support the physical needs of family members of patients.

Question # 29: Family members of referral patients prefer BAMC as a referral center.

The results to the responses to these questions are presented in Table 11.

TABLE 11

PHYSICIAN RESPONSES TO PATIENT CONVENIENCE

Responding Physician Element	Mean Response		Mean Score			
	N	for the 4 Q's	Q#12	Q#15	Q#19	Q#29
Collective Physician Response	117	2.99	2.71	3.41	2.90	2.95
Ft Hood Physician Response	37	3.11	2.81	3.38	3.14	3.11
Ft Sill Physician Response	40	3.02	2.68	3.58	2.80	3.03
Ft Polk Physician Response	40	2.86	2.65	3.28	2.78	2.73
Pediatrician Response	15	2.83	2.40	3.27	2.73	2.93
Ob/Gyn Response	11	3.21	2.82	3.55	3.09	3.36
Other Physician Spec Response	89	2.98	2.73	3.40	2.89	2.90
BAMC Residency Training	19	3.01	2.84	3.21	3.11	2.89
Other Residency Training	86	3.00	2.67	3.47	2.87	2.98

Mean response for this referral factor was 2.99, indicating a mixed attitude toward the convenience of BAMC as a referral center. Measurement of this referral factor was accomplished by assessing the respondent's attitude to two different elements that measured convenience: (1) distance, especially time spent in travel, and (2) availability of accommodations. Regarding the accommodation element, two questions measured Fort Sam Houston's ability to support the lodging needs of family members of referred patients. Each of these questions received a slightly higher rating than did the question which asked the respondents to rate BAMC's convenience to their needs. Despite this difference, the hypothesis of similarity in attitude among all three hospitals on the convenience factor was accepted for all four questions. Fort Hood physicians again rated this factor slightly lower than did physicians at the other community hospitals in spite of its closer proximity.

Among the various specialties surveyed, obstetrician/gynecologic physicians rated this factor as higher in importance to their referral needs and lower in satisfaction with outcome. Again, this difference was not so

significant as to reject the hypothesis of similarity in attitude among the various physician specialties. No evidence could be found that receiving residency training at Brooke had any bearing on the physician's attitude on this factor.

Patient Preference for Consultant/Referral Center reflected the expressed patient preference for consultant/referral center due to satisfaction with previous encounter and convenience for family. Two questions measured BAMC's performance in this area.

Question # 9: Patients of mine who require specialized medical care prefer to receive their treatment at BAMC.

Question #11: Patients who are referred to BAMC are satisfied with the management and care provided.

The results of the responses to these questions are delineated in Table 12.

TABLE 12

PHYSICIAN RESPONSES TO PATIENT PREFERENCE

Responding Physician Element	Mean Response		Mean Score	
	N	for the 2 Q's	Q#9	Q#11
Collective Physician Response	117	2.73	2.86	2.61
Ft Hood Physician Response	37	3.00	3.03	2.97
Ft Sill Physician Response	40	2.62	2.80	2.43
Ft Polk Physician Response	40	2.62	2.78	2.45
Pediatrician Response	15	2.87	2.87	2.87
Ob/Gyn Response	11	3.32	3.64	3.00
Other Physician Spec Response	89	2.68	2.86	2.49
BAMC Residency Training	19	2.69	2.79	2.58
Other Residency Training	86	2.74	2.87	2.60

Mean response for patient preference for BAMC was 2.73, indicating that

patient feedback to the physicians reflects general satisfaction with BAMC as a referral center. Among all the physician groups evaluated, only obstetrician/gynecologic physicians indicated any real dissatisfaction among their patients toward BAMC. Their response was so different from that of the other specialties as to cause rejection of the hypothesis of similarity in viewpoint.

Responses from Fort Hood physicians for this factor were, once again, lower than those received from the other community hospitals although not so different as to cause rejection of the hypothesis of similarity in attitude. Site of residency training played no significant bearing on any responses received.

Cost to Patient covered food, lodging, and travel costs incurred; personal expense if referred to a civilian facility under CHAMPUS coverage; baby sitting and lost wages, etc. One question measured BAMC's performance in this area.

Question # 16: Personal expenses incurred by patients referred to BAMC are minimal.

The results of the response to this question are shown in Table 13.

TABLE 13

 PHYSICIAN RESPONSES TO PATIENT COST

Responding Physician Element	N	Mean Score
		Q#16
Collective Physician Response	117	2.96
Ft Hood Physician Response	37	2.92
Ft Sill Physician Response	40	2.85
Ft Polk Physician Response	40	3.10
Pediatrician Response	15	3.00
Ob/Gyn Response	11	3.09

Other Physician Spec Response	89	2.92
BAMC Residency Training	19	2.95
Other Residency Training	86	2.94

Mean response for this referral factor was 2.96, indicating an unsure response by the physicians regarding the issue of patient expenses. There was little variance in the physicians' response to this question across all subpopulations examined; thus, the hypothesis of similarity in viewpoint was accepted for the community hospitals and the different physician specialties. Source of residency training had no bearing on individual responses.

Patient Transport consisted of coordination for acceptance and transfer of patient to and from referral hospital accomplished in a timely and efficient manner. Three questions measured BAMC's performance in this area.

Question # 17: I am always notified of the return transfer of my patients.

Question # 20: The return transfer of my patients is always well coordinated.

Question # 24: Military transportation is readily available for patients referred to BAMC.

The results of the responses to these questions are illustrated in Table 14.

TABLE 14

PHYSICIAN RESPONSES TO PATIENT TRANSPORT

Responding Physician Element	N	Mean Response for the 3 Q's	Mean Score		
			Q#17	Q#20	Q#24
Collective Physician Response	117	3.26	3.76	3.53	2.50
Ft Hood Physician Response	37	3.14	3.59	3.57	2.27

Ft Sill Physician Response	40	3.26	3.78	3.60	2.40
Ft Polk Physician Response	40	3.39	3.90	3.43	2.83
Pediatrician Response	15	3.40	3.80	3.67	2.73
Ob/Gyn Response	11	3.45	4.09	3.91	2.36
Other Physician Spec Response	89	3.20	3.70	3.44	2.47
BAMC Residency Training	19	2.98	3.42	3.16	2.37
Other Residency Training	86	3.36	3.88	3.64	2.56

Mean response for this referral factor was 3.26, indicating slight dissatisfaction with BAMC's performance in this area. However, upon closer analysis, most of the dissatisfaction was found to center around questions 17 and 20. It is this investigators belief that these questions may actually have remeasured dissatisfaction with the Communication/Feedback variable rather than with the Patient Transfer variable since each addresses the coordination of return transfers. Isolating the responses to these two questions revealed a mean response of 3.65, almost identical to the 3.62 rating given the Communication/Feedback factor, assessed earlier.

The degree of dissatisfaction with this variable was equally high among all elements of the physician population but particularly so with the obstetrician/gynecologic physicians, whose mean response for this variable was among the lowest received on the survey. The hypothesis of similarity in viewpoint among the three community hospitals and the physician specialists examined was accepted. BAMC-trained residents had the most favorable viewpoint on this referral factor although the mean response was low enough to reflect dissatisfaction on their part with this variable.

CHAMPUS Coverage of Referred Diagnosis referred to nonavailability slips provided and CHAMPUS coverage for care the patient may receive at a civilian referral center. One question measured BAMC's performance in this area.

Question #21: My referral patients prefer BAMC to CHAMPUS.

The results of the responses to this question are shown in Table 15.

TABLE 15

PHYSICIAN RESPONSES TO AVAILABILITY OF CHAMPUS COVERAGE

Responding Physician Element	Mean Score	
	N	Q#21
Collective Physician Response	117	2.84
Ft Hood Physician Response	37	3.16
Ft Sill Physician Response	40	2.78
Ft Polk Physician Response	40	2.60
Pediatrician Response	15	3.07
Ob/Gyn Response	11	3.64
Other Physician Spec Response	89	2.69
BAMC Residency Training	19	2.68
Other Residency Training	86	2.92

This was considered to be the least important referral factor among the respondents. The mean response for this variable was 2.84, indicating that when an option is available patients prefer BAMC for their referral health care needs to CHAMPUS coverage. Among the community hospitals, Fort Hood physicians again rated BAMC lower than did physicians at the other two community hospitals. It is speculated that this may be due to Darnall Hospital's proximity to two other relatively large metropolitan areas, Temple and Austin, that offer CHAMPUS alternatives. Despite this lower rating, the hypothesis of similarity in viewpoint was accepted for the community hospitals.

Among the physician specialties, obstetrician/gynecologic respondents reflected a strong preference for alternative inpatient facilities over BAMC. Their rating was significantly lower than that of any other responding element and led to the rejection of the hypothesis of similarity in viewpoint among

the physician specialties. BAMC-trained residents again gave BAMC a higher rating than did those who received their training at other institutions.

Summary of Findings

BAMC's performance within the factors comprising the technical/care-related category, which was rated highest in importance to the referral physician, was generally rated satisfactory by the respondents. The technical capability of the BAMC staff was rated particularly high, and in only one instance did any segment of the sample population rank BAMC's performance in this categorical grouping lower than a 3.0 (Fort Hood rated Clinical Outcome a 3.16). Given the high importance of this referral category as ranked by the referral physician, BAMC has a solid base from which to build a marketing strategy.

Among the physician-related referral factors, three variables received unsatisfactory ratings. Lack of Timely Communication/Feedback from the Consultant was unquestionably the biggest irritant among all physician segments. Ranked fourth in importance to the referral physicians, it received the lowest rating of any of the referral factors by over three-tenths of a point. Although personal comments were not solicited in the survey, it was not uncommon for the respondents to remark that BAMC's failures within this factor represent the largest area of concern to the referral physician.

Reciprocalations Received from the Consultant in the form of support to continuing education and the conduct of specialty clinics received the next lowest rating; however, the referring physicians ranked it much lower in importance (twelfth). Because no weighted value was associated with the rankings of these referral factors, it is impossible to determine if this is

cause for significant concern.

The third referral factor in the physician-related grouping receiving an unsatisfactory rating was Personal Knowledge of the Consultant. Examination of the after action reports from consultant visits to the three community hospitals during the last sixteen-month period (January, 1985 - April, 1986) reflected the reasons for this dissatisfaction. With the exception of Gastroenterology, Pediatric Cardiology, Dermatology, Physical Medicine, and Hematology-Oncology Service, no documented evidence could be found of the existence of an effective consultant visit program. Visits are sporadic and reflect the appearance of a courtesy call rather than an effort at establishing a working relationship. Apparently the BAMC staff have taken for granted that the referral workload is theirs, and little effort is expended to cultivate the referral relationship.

Two referral factors in the physician-related grouping were deemed as strong points. Physicians rated the respect/courtesy shown by the BAMC consultants very high and expressed general satisfaction with the outcome of previous referrals. This latter point is somewhat surprising given the high level of disenchantment reflected in the Communication/Feedback area.

The referral factor rated lowest in the patient/family-related category was Patient Transport. As discussed in the section analyzing this factor, the bulk of this dissatisfaction appeared to be from the lack of effective communication on patient returns, a reiteration of a finding already identified.

Among the community hospitals, no statistical difference was found relating to the physician's attitudes toward BAMC as a referral center; however, physician responses from the Fort Hood MEDDAC were consistently lower

than those recorded by the other two regional facilities. In fact, on 24 of the 34 questions asked in Section B of the survey, Fort Hood physicians rated BAMC's performance lower than did physicians at the other two hospitals. Apparently there is deep-seated discontent with the current referral relationship and a great deal of repair work needs to be done to improve the situation.

Similarly, obstetrician/gynecologic physicians showed significantly more discontent with BAMC than any other physician specialty analyzed. On 23 of 34 questions asked, these physicians rated BAMC's performance lowest.

Analysis of the attitude of BAMC-trained physicians provided some positive results. These physicians invariably rated BAMC much higher than did any other subpopulation of interest. This finding contradicts some earlier studies in the literature by Okorafor and Ludke but supports the conclusions reached by Shortell. Apparently physicians who are products of postgraduate programs at the area tertiary care center do show preference in their referral habits.

Endnotes

¹ William A. Flexner and Eric N. Berkowitz, "Marketing Research in Health Services Planning: A Model." Public Health Reports 94 (November-December 1979): p. 503.

² Roberta N. Clarke and Linda Shyavitz, "Marketing and Market Research, Valuable Tools for Managers." Health Care Management Review 6 (Winter 1981): p. 77.

³ David A. Drachman, "A Community Marketing Survey of a Proposed Ambulatory Care Facility." Journal of Health Care Marketing 3 (Spring 1983): pp. 52-53; Robert E. Pitts, "Conducting a Successful Survey." Health Services Manager 13 (March 1980): p. 6.

⁴ Helen Okorafor, "Hospital Characteristics Attractive to Physicians and the Consumers: Implications for Public General Hospitals." Hospital & Health Services Administration 28 (March-April 1983): pp. 53-56; Stephen L. Tucker, "Introducing Marketing as a Planning and Management Tool." Hospital & Health Services Administration 22 (Winter 1977): pp. 37-44.

CHAPTER IV

RECOMMENDATIONS/CONCLUSION

This section of the study will focus on some possible marketing strategies which Brooke Army Medical Center could employ to develop and manage a successful physician referral program. Recommended marketing techniques attempt to address those factors specifically identified by the referral physicians in this study as weaknesses in the current referral relationship [and are directed toward two major goals: (1) improving the relationship between BAMC and the practitioners at the three Army community hospitals within its Health Service Region and (2) increasing patient and family satisfaction with the referral process.

In order to ensure the acceptance of these strategies by the BAMC command and physician staff, it was felt that they had to meet two important prerequisites. First, each strategy must be consistent with the mission and the strategic goals of the hospital. Second, the adoption of these strategies must fit within the limits of the hospital's staffing and financial resources. With these prerequisites in mind, each goal is supported by a number of recommended strategies which are suggested for consideration. (SNO)

Physician Coordinator Program

After a hospital's capability to provide quality patient care with a satisfactory patient outcome, the factor most important to the surveyed

referral physicians was communication/feedback from the consultant. The results of this study suggest that BAMC is doing less than an adequate job in meeting this expectation. Dissatisfaction with BAMC on this factor was pervasive throughout the three community hospitals and across all physician specialties examined. It is, in fact, the principal contributor to the "town-and-gown" or "we versus them" syndrome prevalent within the military regional health care system. Manifestations of the dissatisfaction with this one factor were also apparent in the responses achieved on other factors including Reciprocations Received, Coordination of Patient Transport, and Personal Knowledge of the Consultant. In this regard, BAMC's performance is not unique, for studies have shown that consultants affiliated with teaching hospitals have historically provided inadequate and untimely communication back to referring physicians.¹

To improve the communication and coordination of care between the consultants and the referring physicians, some formalized communication mechanism must be established. In the civilian sector, the establishment of a physician coordinator program has proven very successful in solving problems of a similar nature.² Adaptation of this concept to an Army medical center would not be difficult or excessively manpower intensive and could be the answer to this chronic and pervasive problem.

The functions of a physician coordinator program as envisioned by this author fall into three general categories. First, the office should handle direct patient referrals from physicians throughout the Military Health Services System. As the sole liaison between the referral medical center and the referring physicians, this office's responsibility should include facilitating the referrals; providing timely information on patient location,

clinical status, and discharge; monitoring the completeness of information contained in patient discharge summaries and insuring that these summaries are promptly returned to the referring hospital; and serving as the link for determining levels of physician satisfaction and areas of dissatisfaction.

A second major function of this office would be to monitor the consultant visit program. This study has found that knowledge of the consultant is an important factor in the referral relationship, and nothing works better to foster this concept than having the consultant visit the referring physician for one-on-one consultations or provide seminars to expand the referral physicians' knowledge of new procedures for diagnosis and treatment. The increased dialogue between specialist and referring physician created as a result of a vigorous consultant visit program will improve facility relationships by stimulating the community hospital physician and reducing the need for expensive civilian consultations.

In order that the consultant visit program achieve its maximum potential it must be planned and coordinated on a regular basis. It is envisioned that the physician coordinator office would annually survey the community hospitals to determine their needs in this area. From this needs assessment, coordination would be established with the medical center consultants to arrange for the best means of accomplishing this program. Following this coordination, a formal schedule would be published and provided to all parties concerned. Part of this coordination would involve consolidating the visits of separate specialists to maximize available military transportation. Command support would then be necessary to insure that these visits were carried out on the day planned and that visits would be one full day in duration at Fort Hood and two full days at Fort Sill and Fort Polk.

Itineraries for each visit should be coordinated a month in advance to allow for the scheduling of patients as appropriate. Visiting patients at the community hospital would minimize the costly and inconvenient patient travel currently performed by many referral patients. Finally, the physician coordinator office would collect and review all after action reports to identify any requirements for follow-up action.

The third major function of the physician coordinator office would be to foster more coordination and cooperation in continuing education. Continuing medical education programs can increase the medical skills of referral physicians while at the same time informing them of the facilities and the services available at the referral hospital.³ Much of this responsibility could be accomplished concurrently with the consultant visit program by encouraging visiting specialists to spend time teaching new procedures or conducting continuing education seminars. Additionally, this office would be charged with organizing periodic jointly sponsored regional seminars to share with the referral physicians opportunities to hear the many nationally renowned physicians that frequently teach at the medical center's graduate medical education programs.

Paul Torrens has suggested that the success of physician coordinator programs depends upon their adherence to several principles.⁴ First, a centralized program managed from a separate and distinct office within the hospital is the ideal model. Allowing each department to manage its own programs would be adding more responsibility on to already overburdened medical staffs and allows too many loopholes from which a referred patient could slip in or out unnoticed. Establishing a centralized program within the Office of Graduate Medical Education where the Deputy Commander for Clinical

Services could exercise oversight might be the most functional alignment to insure operational efficiency.

Second, the program must have the support of both the hospital command and the physician staff. To help ensure this acceptance, it should be formally incorporated into the Table of Distribution and Allowances of each medical center, with responsibilities written into the organization and functions manual of each hospital.

Third, arrangements for referral must begin at the office of the community hospital physician and all coordination be effected solely with the liaison office at the referral medical center. This would allow for identification of the desires of the referral physician immediately and establishes a single point of contact for the physician on all future inquiries or follow-ups. The creation of this office would be an attempt not to replace physician-to-physician contact but rather to help facilitate that contact through the coordination of clinic appointments and required specialized procedures to support admissions as well as serving as a message center for telephonic communication.

Finally, and perhaps most important, it is critical that this program not become just another bureaucratic mechanism through which only paper coordination is accomplished. Physicians in the community hospitals are not looking for more paperwork as the answer to their communication needs but rather expect that face-to-face contact will be established periodically through which real and meaningful communication can take place.

Physician Assignments

This study found that physicians who had received their training at BAMC had a significantly more favorable viewpoint towards BAMC as a referral center than did physicians who had trained at other medical centers. It is speculated that the reason for this finding lay with these physicians' greater familiarity with the BAMC staff, the hospital's operations, and the unique environmental problems associated with the medical center. In view of this finding, Medical Corp Affairs, Office of The Surgeon General, should consider adopting a policy whereby, when feasible, graduating residents are initially assigned to the community hospitals within the region where they train. Not unlike the Army's regimental concept, retaining physicians as a group within the region where trained should greatly improve the cohesiveness of the medical team.

Residency Training Rotations

The Department of Obstetrics/Gynecology currently has established a cooperative training program with the University of Texas Health Science Center to provide its' residents with a four-month rotation through the county medical center in order to supplement the low number of deliveries performed at BAMC. Although this is an excellent training program and is reflective of the cooperative spirit that exists in San Antonio among the three medical centers, BAMC's first priority should be to seek this training through its own Army facilities, especially when they are so understaffed. Such an opportunity exists at the nearby Fort Hood MEDDAC and would represent an excellent chance for the BAMC obstetric/gynecology staff to begin repairing

the poor relationship which currently exists between these two hospitals' departments.

Guest House Accommodations

Families of patients transferred to BAMC for care must currently make lodging arrangements on their own. Because of the distance involved from these community hospitals, BAMC's administrators should make a greater effort at facilitating overnight accommodations for this clientele. Coordination with installation housing officials to secure a block of rooms in the post guest house exclusively for the hospital's use and providing temporary meal cards for family members to eat in the dining facility are but a few of the measures which could be adopted. Most hospitals probably have written policies which outline procedures of this nature, but written policies do not always translate into action. Greater commitment on the part of administration is required to make these policies effective. The results of this study, corroborated by findings in the literature, indicate that the patient does play a role in the referral process.⁵ Hospitals need to be reminded that every patient is a potential "spokesman" regarding his/her health care experiences at the referral institution and one bad experience can result in negative feedback not only to the referring physician but also to friends and neighbors back at the home installation.

Conclusion

This study has attempted to focus on the needs of the referral physicians at the community hospitals in the BAMC Health Service Region, and

the results attained suggest that BAMC has not been satisfactorily meeting the expectations of this important segment of its target market. In response to the findings of the study, several marketing proposals have been offered in an attempt to improve the hospital's performance in this area. For these proposals to succeed, however, will require recognition by both the administration and the clinical staff within the hospital that the responsibilities in this area have been long overlooked. The Department of Pediatrics has already started taking steps to improve its working relationships and the results are clearly reflected in the study. A similar commitment by the rest of the staff will start the hospital on the road to recovery.

Endnotes

¹ Chris Holmes, Robert L. Kane, Marilyn Ford, and Jess Fowler, "Toward the Measurement of Primary Care." Milbank Memorial Fund Quarterly 56 (1978): pp. 231-252.

² Ellen C. Fitzgerald, "Evaluation of a Referring Physician Coordinator Program." Journal of American Medical Record Association 56 (April 1985): pp. 28-31; Mel Nicholson, "A Successful Physician Marketing Program." Health Care Strategic Management 2 (February 1984): pp. 9-12.

³ Daniel J. Fink, "Developing Marketing Strategies for University Teaching Hospitals." Journal of Medical Education 55 (July 1980): p.578.

⁴ P. R. Torrens, "A Pilot Program in Coordination of Care Between an Urban Teaching Hospital and the Community's General Practitioners." American Journal of Public Health 59 (1969): pp. 62-64.

⁵ Robert L. Ludke, "A Examination of the Factors That Influence Patient Referral Decisions." Medical Care 20 (August 1982): p. 793.

APPENDIX A

PATIENT TRANSFERS TO BAMC

CALENDAR YEAR 1982-1985

PATIENT TRANSFERS TO BAMC CY 82-85
From Community Hospitals within Brooke's Health Service Region

Initial MTF	CY 82	CY 83	CY 84	CY 85
Darnall Army Community Hospital Ft Hood, Texas	258	300	226	280
Bayne-Jones Army Community Hospital Ft Polk, Louisiana	246	223	280	241
Reynolds Army Community Hospital Ft Sill, Oklahoma	324	423	400	398
Total	828	946	906	919

SOURCE: Data obtained from US Army Patient Administration and Biostatistics Activity

APPENDIX B

TRANSFER ADMISSIONS TO BAMC

BY CLINICAL SERVICE

CALENDAR YEAR 1982-1985

TRANSFER ADMISSIONS TO BAMC BY CLINICAL SERVICE CY 82-85
From Community Hospitals within Brooke's Health Service Region

Initial MTF	Clinical Service	CY 82	CY 83	CY 84	CY 85	Total
Hood	Cardiology	32	41	26	31	130
Polk		25	26	43	29	123
Sill		42	54	39	38	173
Total						272
Hood	Dermatology	0	0	1	0	1
Polk		1	1	0	3	5
Sill		0	0	0	1	1
Total						7
Hood	Endocrinology	1	1	0	4	6
Polk		0	4	0	1	5
Sill		1	3	5	1	10
Total						21
Hood	Gastroenterology	1	10	7	9	27
Polk		17	9	14	11	51
Sill		20	22	16	17	75
Total						153
Hood	Gynecology	2	5	6	4	17
Polk		4	8	4	5	21
Sill		9	61	24	20	114
Total						152
Hood	Hematology	0	0	0	1	1
Polk		0	0	0	0	0
Sill		0	0	0	2	2
Total						3
Hood	Inst of Surgical Research	5	8	6	2	21
Polk		1	4	1	1	7
Sill		1	4	2	1	8
Total						36
Hood	Internal Medicine	6	21	16	26	69
Polk		18	22	15	15	70
Sill		28	27	35	43	133
Total						272

TRANSFER ADMISSIONS--Continued

Initial MTF	Clinical Service	CY 82	CY 83	CY 84	CY 85	Total
Hood	Nephrology	5	2	7	0	14
Polk		2	0	3	0	5
Sill		5	2	5	2	14
Total						33
Hood	Neurology	12	8	3	0	23
Polk		22	4	10	3	39
Sill		29	16	4	6	55
Total						117
Hood	Obstetrics	33	11	12	20	76
Polk		15	7	6	4	32
Sill		9	13	8	16	46
Total						154
Hood	Oncology	13	23	22	18	76
Polk		21	17	33	27	98
Sill		29	21	48	57	155
Total						329
Hood	Ophthalmology	7	7	3	7	24
Polk		9	13	10	6	38
Sill		12	14	28	7	61
Total						123
Hood	Orthopedics	14	21	10	16	61
Polk		17	19	39	57	132
Sill		42	67	53	58	220
Total						413
Hood	Otorhinolaryngology	5	5	4	7	21
Polk		1	4	6	11	22
Sill		6	6	5	7	24
Total						67
Hood	Pediatrics	50	63	32	45	190
Polk		21	13	10	6	50
Sill		14	14	15	14	57
Total						297
Polk	Adolescent Pediatrics	0	0	0	2	2
Total						2
Hood	Nursery (Newborn)	0	0	1	0	1
Total						1
Hood	Podiatry	1	0	0	0	1
Polk		0	0	1	1	2
Total						3

TRANSFER ADMISSIONS--Continued

Initial MTF	Clinical Service	CY 82	CY 83	CY 84	CY 85	Total
Hood	Psychiatry	28	14	3	3	48
Polk		5	15	4	2	26
Sill		3	3	0	12	18
Total						92
Hood	Pulmonary/Up Resp Disease	1	2	5	1	9
Polk		3	0	1	0	4
Sill		3	3	3	1	10
Total						23
Polk	Rheumatology	2	2	0	0	4
Total						4
Hood	Surgery-Cardio/Thoracic	6	12	10	13	41
Polk		7	7	15	6	35
Sill		11	20	11	10	52
Total						128
Hood	Surgery-General	12	15	2	17	46
Polk		17	12	16	9	54
Sill		16	26	16	21	79
Total						179
Polk	Surgery-Hand	0	1	0	0	1
Sill		0	0	0	1	1
Total						2
Hood	Surgery-Neurologic	20	26	38	50	134
Polk		9		26	14	60
Sill		26	19	33	27	105
Total						299
Hood	Surgery-Oral	1	1	0	0	2
Polk		2	0	0	0	2
Sill		0	0	0	7	7
Total						11
Hood	Surgery-Plastic	1	0	0	0	1
Polk		2	6	1	0	9
Sill		1	5	6	4	16
Total						26
Hood	Surgery-Peripheral Vas	1	2	4	3	10
Polk		0	2	2	5	9
Sill		1	5	23	12	41
Total						60

TRANSFER ADMISSIONS--Continued

Initial MTF	Clinical Service	CY 82	CY 83	CY 84	CY 85	Total
Hood	Urology	1	2	8	3	14
Polk		25	16	20	23	84
Sill		16	18	21	13	68
Total						166

SOURCE: Data obtained from US Army Patient Administration and Biostatistics Activity

APPENDIX C

RESIDENCY INTERDEPENDENCE CHART

National Accrediting Bodies Have Determined That CME Programs
Must Have Other Residency Programs Present At The Same Institution In Order
To Be Accredited

	Derm (r)	Dia (r)	Emer Med (r)	Int Med (r)	Med/ Ped (r)	Neuro Surg (r)	Neuro (r)	Ob/ Gyn (r)	Ophth (r)	Ortho Surg (r)	Ortho Ped (r)	Path (r)	Peds (r)	Psych (r)	Surg (r)	Thera Rad (r)	Trans (r)	Urolo (r)
Residency Programs																		
Dermatology				x									x		x		x	
Diagnostic Rad																		
Emergency Med																		
Internal Medicine	d						d	d	d	d	d			d				
Medicine/ Peds																		
Neuro Surg	x		x	x			x		d	d	d	d	x	d	x		x	
Neurology			d			d							d	d				
Ob/Gyn																		
Ophthalmology			x	x			x						x		x		x	
Oral Surgery																		
Orthopedics				x														
Otolaryngology															x			
Pathology																		
Pediatrics																		
Psychiatry			x										x					
Surgery		d	x	x				d				d	x					
Therapeutic Rad																		
Transitional			x	x			x	x					x		x			
Urology	x		x	x								x	x		x		x	

x - required d - desired (r) - residency (l) - fellowship
Source: Chart derived from the 1986 - 1987 Directory of Residency Training Programs (Accreditation Council for Graduate Medical Education)

National Accrediting Bodies Have Determined That GME Programs
Must Have Other Residency Programs Present At The Same Institution In Order
To Be Accredited

Fellowship Programs	Derm Dia		Emer Med		Int Med		Med/ Ped		Neuro Surg		Neuro Ob/ Gyn		Ophth Oral Surg		Ortho Oto lrgn		Path		Peds		Psych Surg		Thera Trans Urolo	
	(r)	(r)	(r)	(r)	(r)	(r)	(r)	(r)	(r)	(r)	(r)	(r)	(r)	(r)	(r)	(r)	(r)	(r)	(r)	(r)	(r)	(r)	(r)	(r)
Allergy/Immun																								
Cardiology																								
Colon Rect Surg																								
Diagnostic Rad																								
Nucl Med	x																							
Nucl Rad	x																							
UI/CT	x																							
Endocrinology																								
Gastroenterology																								
Hematology																								
Infectious Dis																								
Nephrology																								
Neurology																								
Neuro Ophthalm																								
Oncology																								
Peds Infect Dis																								
Pulmonary																								
Rheumatology																								
Thoracic Surg																								
Vascular Surg																								

x - required d - desired (r) - residency (f) - fellowship
Source: Chart derived from the 1986 1987 Directory of Residency Training Programs (Accreditation Council for Graduate Medical Education)

APPENDIX D

BROOKE ARMY MEDICAL CENTER REFERRAL ASSESSMENT SURVEY

Brooke Army Medical Center Referral Assessment Survey

Dear Referring Physician,

Attached to this cover letter is a survey designed to solicit your opinions on qualities important to you in your selection of a referral medical center. It is part of a graduate research project in Health Care Administration which will be submitted to the U.S. Army-Baylor University Graduate Program in Health Care Administration. The survey consists of two parts. Section A will ask you to rank order fifteen factors that are important to you in your selection of a referral medical center for your patients requiring subspecialty services not offered at your treatment facility. Section B consists of thirty-four statements soliciting your opinion on BAMC's performance as a referral medical center. These statements relate directly to the factors that effect your selection of a consultant as identified in Section A. You are asked to respond to these questions within the context of the five evaluation criteria provided.

Please complete this survey privately and not in consultation with other physicians at your hospital. To insure the confidentiality of your response, no name or social security number is associated with the survey. Your input is highly desired in order for the results to have any relevance. An accurate picture of the referring physician's opinion is vital to this MEDCEN in order that we may more successfully support your needs. Your help is most appreciated.

To acquire demographic information with which to interpret the data, certain information is required. Please answer the following questions by writing your response in the space provided.

1. Please indicate the special* area in which you currently serve _____.
2. How long have you been assigned to the hospital in this specialty? _____.
3. Years of experience in this specialty? _____.
4. If you have completed a residency, please indicate where _____.

Explanation of Referral Factors

Quality of Patient Management - thoroughness in treating the problem; explanation to patient/family member of treatment regimen; efficiency of treatment; thoroughness of workup; comprehensiveness of rehabilitation.

Clinical Outcome - desired patient outcome: pre-, during, and post mortality rates.

Individualized Patient Management and Care - management and care of the patient provided in accordance with their specific needs and done so in a friendly, empathetic, personal manner.

Communication/Feedback with the Consultant - prompt and detailed reports on the patient's progress; admission/discharge summaries provided.

Reciprocal Relations Received from the Referral Center/Consultant - continuing education; availability of consultant to telephonic inquiries; specialty clinics held by the consultant at the referring physicians hospital to train personnel in special procedures.

Technical Capability and Expertise of the Consultant/Referral Center - consultant/referral center is recognized for care in this field; papers published; presentations at national forums.

Patient Preference for Consultant/Referral Center - expressed patient preference for consultant/referral center due to satisfaction with previous encounter; convenience for family.

CHAMPUS Coverage of Referred Diagnosis - non-availability slips provided and CHAMPUS coverage for care patient may receive at a civilian referral center.

Respect/Courtesy Shown by the Consultant - consultant's cooperation and attitude in coordinating arrangements for referral.

Physician's Personal Knowledge of the Consultant - knowledge gained thru prior referrals, meetings, conferences, or thru working or training with the consultant/at the referral center.

Physician's Satisfaction with Previous Referrals to Consultant or Referral Medical Center - satisfaction with patient outcome, the way patients were treated, and professional courtesy shown to referring physician.

Attitude of Colleagues Toward Consultant/Referral Medical Center - general feelings of the physician staff at your hospital towards the referral center or consultant based on prior encounters.

Convenience to Patient - distance involved; existence of suitable, nearby accommodations for the patient's family; disruption to the patient's home life.

Cost to Patient - food, lodging, travel costs incurred; personal expense if referred to civilian facility under CHAMPUS coverage; baby-sitting; lost wages, etc.

Patient Transport - coordination for acceptance and transfer of patient to and from referral hospital accomplished in a timely and efficient manner.

SURVEY QUESTIONNAIRE

Section A

Listed below are 15 factors that affect a physician's selection of a consultant / referral medical center for their patient who requires subspecialty care. Rank order these factors in order of importance to you in making this referral decision. Definitions of the referral factors as used in this survey are provided on the accompanying page.

1 = highest priority

15 = lowest priority

<u>Referral Factor</u>	<u>Preference</u>
Quality of patient management	_____
Clinical outcome	_____
Individualized patient management and care	_____
Communication/Feedback with the Consultant	_____
Reciprocations received from Referral Center/ Consultant	_____
Technical capability and expertise of the Consultant/ Referral Center	_____
Patient preference for Consultant/ Referral Center	_____
CHAMPUS coverage for referred diagnosis	_____
Respect/courtesy shown by Consultant	_____
Personal knowledge of the Consultant	_____
Satisfaction with previous referrals to Consultant/ Referral Center	_____
Convenience to patient	_____
Cost to patient	_____
Attitude of Colleagues toward Consultant/ Referral Center	_____
Patient Transport	_____
Other _____	_____

Section B

The following questions are designed to indicate how well you feel BAMC performs its mission as a referral center. For each statement below, check one box which most closely indicates your satisfaction or dissatisfaction with BAMC as a regional referral medical center. Even if you have had no direct experience with the situation described, please answer every question.

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
1. The quality of patient management at BAMC is excellent	_____	_____	_____	_____	_____
2. The best possible clinical outcome is assured patients treated at BAMC	_____	_____	_____	_____	_____
3. Frequent and comprehensive communication is established and maintained by the BAMC staff	_____	_____	_____	_____	_____
4. The BAMC consultants provide support to the continuing education program at my hospital	_____	_____	_____	_____	_____
5. The BAMC consultants are easily accessible to me for telephone consults	_____	_____	_____	_____	_____
6. All patients at BAMC receive individualized patient management and care	_____	_____	_____	_____	_____
7. A discharge summary is provided on all patients returned to my care	_____	_____	_____	_____	_____
8. The consultants at BAMC are experienced and technically competent	_____	_____	_____	_____	_____
9. Patients of mine who require specialized medical care prefer to receive their treatment at BAMC	_____	_____	_____	_____	_____

	Strongly Agree	Not Disagree	Strongly
	Agree	Sure	Disagree
10. Patients who are referred to BAMC are satisfied with the management and care provided	_____	_____	_____
11. Lodging facilities are available for family members of patients I refer to BAMC	_____	_____	_____
12. I am treated courteously and professionally by the BAMC consultants	_____	_____	_____
13. I am knowledgeable of the inpatient services offered at BAMC	_____	_____	_____
14. Physician colleagues at my hospital have the highest professional regard for BAMC consultants	_____	_____	_____
15. Treatment at BAMC is convenient to my patients	_____	_____	_____
16. Personal expenses incurred by patients referred to BAMC are minimal	_____	_____	_____
17. I am always notified of the return transfer of my patients	_____	_____	_____
18. My experience with the BAMC consultants has been favorable	_____	_____	_____
19. Good facilities are available at Ft Sam Houston to support the physical needs of family members of patients	_____	_____	_____
20. The return transfer of my patients is always well coordinated	_____	_____	_____
21. My referral patients prefer BAMC to CHAMPUS	_____	_____	_____

Strongly Agree Not Disagree Strongly
Agree Sure Disagree

22. BAMC consultants take
time to explain the treat-
ment regimen to my patients
and their families _____

23. BAMC is my facility
of choice for my referral
needs _____

24. Military transportation
is readily available for
patients referred to BAMC _____

25. Patients I refer to
BAMC receive concerned
medical care based on their
personalized needs _____

26. BAMC consultants keep
me informed on the status
of my referred patients _____

27. I am visited at least
quarterly by BAMC
consultants _____

28. BAMC supports the
physician needs of my
hospital during periods
of personnel shortage _____

29. Family members of
referral patients prefer
BAMC as a referral center _____

30. BAMC has a reputation
as an excellent health-
care institution _____

31. BAMC consultants are
cooperative in arranging
for referrals _____

32. I have met most of the
staff physicians at BAMC _____

33. I am satisfied with
BAMC's performance as a
referral center _____

Strongly Agree Not Disagree Strongly
Agree Sure Disagree

34. My colleagues are
satisfied with BAMC's
performance as a referral
center

APPENDIX E

LETTER TO ADMINISTRATIVE RESIDENTS



DEPARTMENT OF THE ARMY
BROOKE ARMY MEDICAL CENTER
FORT SAM HOUSTON, TEXAS 78234-6200

REPLY TO
ATTENTION OF:

HSHE-ADR

2 April 1986

SUBJECT: BAMC Referral Assessment Survey

Major Edward Lacy
Administrative Resident
Bayne-Jones Army Community Hospital
Fort Polk, Louisiana 71459-6000

1. As part of my graduate research project, I am conducting a study of the opinions of the physician staff at the outlying community hospitals at Forts Hood, Sill and Polk regarding factors important to them in selecting a consultant/referral hospital. The principal instrument to be utilized in measuring these attitudes is a survey which consists of two parts: Section A requests the physician to rank, in order of importance, 15 factors that influence the referral process; Section B consists of 34 statements which solicit the physician's opinion of BAMC as a referral center.

2. I am requesting your assistance in helping me distribute this survey to physicians at your hospital who might be in a position to refer patients to BAMC and to ensure that I receive an adequate response from those selected. Each enclosed survey has a cover letter which explains the purpose of the survey and provides adequate instructions for its completion. I realize there may be some resistance on the part of some of your staff to taking time to complete this survey, but I need their input if BAMC is to improve its tertiary care support capability.

3. Completed surveys may be returned to me at BAMC, Attention: Administrative Resident. Once the surveys have been analyzed, I will provide you with a copy of the findings. Your help is most appreciated.

BRUCE G. FURBISH
Major, MS
Administrative Resident

APPENDIX F

LETTER TO DEPUTY COMMANDER FOR CLINICAL SERVICES



DEPARTMENT OF THE ARMY
BROOKE ARMY MEDICAL CENTER
FORT SAM HOUSTON, TEXAS 78234-6200

REPLY TO
ATTENTION OF

April 8, 1986

Office of the Deputy Commander for
Clinical Services

Colonel Hugh J. Donohue, Jr.
Deputy Commander Clinical Services
Bayne-Jones Army Community Hospital
Fort Polk, Louisiana 71459-6000

Dear Colonel Donohue:

In an effort to improve the tertiary care support provided the community hospitals within BAMC's Health Services Region, the administrative resident at BAMC has developed a survey instrument designed to measure the opinions of the physician staff at your hospital regarding factors important to them in selecting a consultant/referral hospital. This survey instrument consists of two parts: Section A requests the physician to rank, in order of importance, 15 factors that influence the referral process; Section B consists of 34 statements which solicit the physician's opinion of BAMC as a referral center. A copy of this survey instrument is enclosed for your information.

To insure proper distribution and timely collection of the survey instrument, coordination has been established with your facilities' administrative resident. I realize there may be some resistance on the part of some of your staff to taking time to complete this survey, and it is in this regard that your support is also sought. An accurate picture of the referring physician's opinion is vital to this MEDCEN if we are to more successfully support your consultation and specialty care needs.

Returned surveys will be statistically analyzed and the findings used to develop an appropriate strategy aimed at improving documented dissatisfaction. Upon completion, a copy of this research project will be provided your headquarters.

I would appreciate any assistance you can offer in gaining support for this project from among the medical staff and thank you in advance for your help in this matter.

Sincerely,

Michael R. Antopol
Colonel, Medical Corps
Deputy Commander for
Clinical Services

APPENDIX G

SURVEY RESULTS

BROOKE ARMY MEDICAL CENTER REFERRAL ASSESSMENT SURVEY SURVEY RESULTS

Survey Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Demographics:																					
HOSPITAL																					
ASSIGNED SPECIALTY	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TIME ASSIGNED IN SPECIALTY	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
GRADE	2	5	2	4	4	4	4	4	2	2	3	1	4	2	2	3	5	2	4	3	2
RESIDENCY TRAINING SITE	1	3	1	2	3	4	1	2	1	1	1	3	3	2	2	2	4	1	2	1	1
Referral Factors:	1	9	9	8	2	2	2	1	0	1	9	1	2	1	9	5	1	5	1	0	1
QUALITY OF PATIENT MANAGEMENT	2	14	7	1	1	1	1	2	1	1	0	1	1	2	1	0	1	1	1	1	1
CLINICAL OUTCOME	4	1	2	6	4	2	1	4	3	6	0	15	6	3	5	0	2	3	1	9	2
PATIENT MANAGEMENT & CARE	1	2	13	7	3	8	3	3	2	7	0	2	8	9	0	9	0	9	2	4	8
COMMUNICATION/FEEDBACK	5	6	4	4	6	3	7	7	4	9	0	3	7	4	7	0	10	9	8	2	5
RECIPROCATIONS RECEIVED	15	7	14	15	7	9	15	8	5	11	0	10	9	15	10	0	14	4	9	3	15
TECHNICAL EXPERTISE	3	4	1	5	2	4	4	1	6	2	0	14	3	1	2	0	3	8	3	10	3
PATIENT PREFERENCE	9	12	9	14	14	7	13	12	12	0	6	16	13	11	0	8	11	12	12	12	12
AVAILABILITY OF CHAMPUS	6	13	5	13	10	16	14	15	15	10	0	5	14	14	15	0	15	13	13	13	13
RESPECT/COURTESY	7	3	6	12	15	10	9	9	7	13	0	8	5	9	6	0	13	6	10	6	7
KNOWLEDGE OF CONSULTANT	8	16	15	2	13	14	5	13	14	0	12	4	11	4	0	4	7	14	6	8	8
SATISFACTION PREVIOUS REFERRAL	10	8	3	3	5	8	5	8	4	0	13	8	10	3	0	5	5	2	4	4	4
CONVENIENCE TO PATIENT	12	9	8	10	8	12	6	11	9	5	0	11	10	5	12	0	7	12	11	15	9
COST TO PATIENT	13	10	10	11	9	11	10	10	11	8	0	4	12	6	14	0	12	14	16	14	14
ATTITUDE OF COLLEAGUES	11	11	11	8	12	6	11	14	14	15	0	9	11	12	8	0	11	10	5	11	10
PATIENT TRANSPORT	14	5	12	9	11	13	12	13	10	3	0	7	13	7	13	0	6	15	6	7	11
Evaluation:																					
QUALITY OF PATIENT MANAGEMENT	2	3	2	2	4	4	3	3	3	4	3	2	4	3	2	2	4	2	3	2	2
CLINICAL OUTCOME	3	4	2	3	4	4	3	3	4	4	3	4	3	3	2	2	4	2	4	2	3
COMMUNICATION/FEEDBACK	3	4	4	2	3	4	4	4	4	4	2	3	5	2	2	1	5	2	4	4	4
RECIPROCATIONS RECEIVED	4	5	5	3	4	2	4	3	4	4	4	5	5	2	5	1	4	2	3	4	3
PATIENT MANAGEMENT & CARE	2	2	1	2	2	4	2	2	1	2	4	4	2	2	2	1	2	4	4	3	2
COMMUNICATION/FEEDBACK	2	3	3	2	2	4	3	4	3	4	3	3	5	3	2	3	4	3	3	3	2
TECHNICAL EXPERTISE	4	4	2	2	2	4	4	4	4	4	3	4	5	4	2	4	5	2	2	3	4
PATIENT PREFERENCE	2	2	1	2	2	2	1	2	2	2	2	2	1	2	2	1	2	2	2	1	2
KNOWLEDGE OF CONSULTANT	2	3	2	3	2	3	4	3	4	3	3	3	3	2	2	2	4	3	4	2	3
PATIENT PREFERENCE	1	2	2	1	1	3	2	1	4	2	2	2	2	2	3	4	2	2	1	2	2
CONVENIENCE TO PATIENT	2	3	3	2	2	4	4	3	3	3	3	2	4	2	2	2	3	2	3	2	3
RESPECT/COURTESY	2	2	3	3	2	4	2	2	3	2	3	3	4	3	3	2	4	3	4	3	2
ATTITUDE OF COLLEAGUES	4	3	2	3	3	3	4	5	4	2	4	2	4	2	3	1	3	2	2	3	2
CONVENIENCE TO PATIENT	2	4	1	3	4	3	4	3	4	4	3	3	6	4	2	1	4	4	2	4	4
COST TO PATIENT	3	2	2	4	3	3	3	4	3	4	2	3	5	3	3	3	4	3	2	2	1
PATIENT TRANSPORT	4	4	1	4	5	4	4	5	4	4	4	4	5	2	2	4	4	2	2	2	4
SATISFACTION PREVIOUS REFERRAL	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
CONVENIENCE TO PATIENT	2	2	3	4	2	3	3	3	3	3	2	4	3	3	3	3	4	3	4	3	4
PATIENT TRANSPORT	4	4	2	4	5	4	4	5	4	4	3	3	5	3	3	3	4	2	2	4	3
AVAILABILITY OF CHAMPUS	3	4	2	3	2	4	3	3	3	3	3	4	3	3	2	3	4	3	2	2	4
QUALITY OF PATIENT MANAGEMENT	2	2	2	2	2	3	0	2	3	3	3	3	3	3	3	4	3	2	2	3	4
SATISFACTION PREVIOUS REFERRAL	2	3	2	2	2	4	2	2	2	4	4	2	2	2	2	1	3	2	3	2	2
PATIENT MANAGEMENT & CARE	3	2	2	3	2	2	2	2	2	2	3	2	4	2	2	2	2	2	1	2	2
COMMUNICATION/FEEDBACK	2	2	3	2	2	4	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3
KNOWLEDGE OF CONSULTANT	4	4	2	2	2	2	4	4	4	4	4	4	5	2	2	4	4	4	4	4	4
RECIPROCATIONS RECEIVED	2	2	1	2	2	2	2	2	1	2	3	4	5	2	2	2	5	2	3	4	5
CONVENIENCE TO PATIENT	3	3	3	3	2	4	3	5	3	4	3	4	5	4	3	3	5	3	3	4	5
TECHNICAL EXPERTISE	3	3	3	2	3	4	3	2	4	4	3	4	2	2	2	3	3	2	2	3	3
RESPECT/COURTESY	2	2	2	2	2	3	2	2	2	2	2	2	2	2	2	2	3	2	2	2	2
KNOWLEDGE OF CONSULTANT	1	4	4	2	2	4	2	2	4	1	2	3	4	4	3	4	5	4	2	2	3
QUALITY/SATISFACTION	2	3	2	2	3	4	2	2	4	3	4	2	4	2	2	2	3	4	2	2	2
ATTITUDE OF COLLEAGUES	4	4	4	2	2	4	2	2	4	4	4	4	4	2	2	4	4	2	2	2	4

SURVEY RESULTS--Continued

52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81
2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	3
4	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
2	3	2	3	1	2	2	3	3	2	3	2	2	3	4	2	4	4	3	1	3	3	2	2	2	2	2	2	2	2
2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
3	1	0	9	9	9	0	9	8	5	7	12	13	6	7	3	5	12	7	2	1	3	2	5	3	5	9	5	8	1
9	0	8	1	0	2	1	1	1	0	1	1	1	3	4	5	0	1	0	1	3	0	2	1	1	1	0	1	7	0
11	0	7	2	0	10	8	2	3	0	2	2	2	7	1	9	2	0	2	0	5	9	0	4	3	4	0	3	8	0
12	0	2	4	0	9	6	6	6	0	3	8	5	2	8	4	0	10	0	11	2	0	5	2	5	0	7	10	0	7
5	0	6	5	0	8	2	7	7	0	4	7	6	9	1	3	0	3	0	3	0	10	0	7	5	6	0	6	6	0
13	0	14	10	0	7	8	12	7	0	12	14	3	14	14	8	0	5	0	15	12	0	14	11	7	0	15	11	0	1
3	0	1	3	0	6	3	4	2	0	5	6	2	5	2	1	0	12	0	7	1	0	1	4	2	3	0	2	9	0
4	0	11	12	0	13	10	13	11	0	11	13	4	10	3	14	0	19	0	4	11	0	11	12	3	0	8	4	0	14
14	0	15	15	0	14	12	15	15	0	7	15	9	11	15	15	0	13	0	8	15	0	15	13	8	0	12	15	0	10
6	0	5	8	0	12	9	9	8	0	13	3	8	12	11	9	0	6	0	12	6	0	9	7	9	0	13	12	0	6
7	0	4	6	0	1	4	3	9	0	15	4	13	15	10	7	0	8	0	2	4	0	3	10	10	0	14	5	0	5
15	0	3	7	0	5	5	5	10	0	9	5	10	6	5	2	0	7	0	13	5	0	6	8	11	0	9	13	0	3
1	0	12	13	0	15	14	12	5	0	8	9	11	7	6	12	0	4	0	10	7	0	12	9	12	0	4	2	0	12
8	0	9	14	0	4	13	11	13	0	6	10	12	8	7	11	0	14	0	3	8	0	13	14	13	0	5	1	0	13
10	0	10	9	0	11	11	10	14	0	14	11	15	13	12	6	0	11	0	14	13	0	8	15	14	0	10	14	0	15
2	0	13	11	0	3	15	14	4	0	10	12	14	4	13	13	0	15	0	9	14	0	10	6	15	0	11	3	0	11
2	1	2	4	3	3	1	2	1	2	4	2	2	2	2	1	4	2	3	3	1	4	0	1	2	2	2	3	1	2
3	1	3	3	4	1	4	4	4	2	2	2	4	3	2	1	4	2	4	4	2	4	0	2	3	3	2	3	2	1
2	2	2	2	4	1	3	2	2	3	1	2	2	2	2	2	2	2	2	2	2	2	0	3	3	2	2	2	2	2
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2	2	2	2																										

SURVEY RESULTS--Continued

	112	113	114	115	116	117	118	119	120	121		MEAN	SUM	COUNT
3	3	3	1	1	1	1	1	1	1	1		2.02	244	121
12	1	2	2	2	2	2	2	11	13	13		3.93	476	121
2	5	5	4	3	2	5	5	5	2	2		4.77	577	121
2	2	2	2	1	2	2	1	1	2			4.73	572	121
0	1	7	2	7	2	1	10	3	2			9.15	1107	121
0	1	0	1	5	3	0	1	2	1			4.31	521	121
0	0	0	6	4	1	0	9	13	2			8.21	993	121
0	11	0	5	2	4	0	3	8	10			10.92	1321	121
0	4	0	2	3	5	0	2	7	5			7.12	861	121
0	14	0	8	15	11	0	10	15	15			7.43	899	121
0	5	0	4	1	10	0	8	1	3			5.51	667	121
0	10	0	14	10	12	0	14	4	12			7.48	905	121
0	13	0	12	14	14	0	15	10	14			8.59	1039	121
0	6	0	7	8	2	0	7	12	8			9.58	1159	121
0	7	0	10	9	13	0	13	11	13			9.17	1109	121
0	8	0	3	7	6	0	4	3	6			2.36	285	121
0	12	0	9	11	7	0	6	5	11			2.64	320	121
0	3	0	11	12	9	0	12	6	4			3.46	419	121
0	15	0	15	6	8	0	11	14	9			3.21	389	121
0	9	0	13	13	15	0	5	9	7			2.37	287	121
3	2	5	4	3	2	2	3	2	2	3		2.73	330	121
3	2	5	5	5	4	5	4	5	5			3.55	430	121
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3	3	4	5	5	4	3	4	2	4			2.77	335	121
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3	2	3	3	3	3	5	3	3	1			2.62	317	121
3	2	5	4	5	4	5	4	3	4			2.11	255	121
3	3	5	4	5	4	5	4	3	4			2.74	332	121
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3	0	5	5	4	4	5	4	2	5			2.31	280	121
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3	2	5	4	4	4	4	5	5	3	5		3.41	413	121
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3	2	5	5	4	4	3	5	4	2	5		2.29	277	121
5	2	1	4	4	2	1	4	2	4			3.46	419	121
3	2	5	5	4	4	5	4	4	4			2.69	325	121
3	2	2	5	5	5	5	4	4	4			2.87	347	121

APPENDIX H

DISTRIBUTION OF DESCRIPTIVE CHARACTERISTICS
OF THE PHYSICIAN SAMPLE

DISTRIBUTION OF DESCRIPTIVE CHARACTERISTICS OF THE PHYSICIAN SAMPLE

CHARACTERISTICS	Fort Hood	Fort Sill	Fort Polk	Total
Survey Response				
Surveys mailed	50	45	45	140
Surveys returned	45	44	43	132
Surveys improperly completed	6	2	3	11
Usable surveys	39	42	40	121
Physician Specialty				
Pediatrics	11	1	3	15
Obstetrics/Gynecology	5	3	3	11
General Surgery	2	2	6	10
Ophthalmology	2	1	1	4
Orthopedics	6	2	3	11
ENT	2		1	3
Urology	2	1		3
Psychiatry	1	2	3	6
GMO	2	1	1	4
Internist	2	1	5	8
Family Practice		20	12	32
Radiology	1	2		3
Emergency Medicine	3	3		6
Dermatology		1	1	2
Oral Surgery			1	1
Did not indicate		2		2
Total	39	42	40	121
Time assigned in Specialty at Hospital				
Less than 6 months	1	2	2	5
6 months - 1 year	16	19	14	49
1 year - 2 years	7	13	12	32
2 years - 3 years	10	5	11	26
Greater than 3 years	5	3	1	9
Total	39	42	40	121
Respondents Rank				
Captain	15	24	22	61
Major	16	13	12	41
Lieutenant Colonel	5	3	4	12
Colonel	3	2	2	7
Total	39	42	40	121
Residency Training Site				
BAMC	11	5	3	19
Civilian Institution	5	5	8	18
Other Military Institution	18	28	25	71
Not Indicated	5	4	4	13
Total	39	42	40	121

APPENDIX I

PHYSICIAN RANKINGS OF THE REFERRAL FACTORS

PHYSICIAN RANKINGS OF THE REFERRAL FACTORS

VARIABLE	RANK	MEAN VALUE
Quality of patient management	1	3.16
Clinical outcome	2	5.07
Individualized patient management	5	5.91
Communication/Feedback	4	5.87
Reciprocations Received	12	10.30
Technical expertise	3	5.43
Patient preference	10	9.34
Availability of CHAMPUS	15	12.06
Respect/Courtesy	7	8.26
Knowledge of consultant	8	8.57
Satisfaction w/ previous referral	6	6.65
Convenience to patient	9	8.62
Cost to patient	11	9.73
Attitude of colleagues	14	10.73
Patient transport	13	10.31
Kendall coefficient of concordance	.3714 ($p < .005$)	

APPENDIX J

REFERRAL FACTORS GROUPED BY MAJOR CATEGORY

REFERRAL FACTORS GROUPED BY MAJOR CATEGORY

<u>REFERRAL FACTOR</u>	<u>MEAN VALUE</u>	<u>INDIV RANK</u>	<u>RANK OF MAJOR CATEGORY</u>
Technical/Care Related Factors			
Quality of patient management	3.16	1	
Clinical Outcome	5.07	2	
Individualized patient management	5.91	5	
Technical expertise	5.43	3	
Category Mean	4.89		1
Patient/Family Related Factors			
Convenience to patient	8.62	9	
Patient preference	9.34	10	
Cost to patient	9.73	11	
Patient transport	10.31	13	
Availability of CHAMPUS	12.06	15	
Category Mean	10.01		3
Physician Related Factors			
Communication/Feedback	5.87	4	
Satisfaction w/ previous referral	6.65	6	
Respect/Courtesy	8.26	7	
Knowledge of consultant	8.57	8	
Reciprocations received	10.30	12	
Attitude of colleagues	10.73	14	
Category Mean	8.40		2

APPENDIX K

PHYSICIAN RANKINGS BY HOSPITAL

PHYSICIAN RANKINGS BY HOSPITAL

Variable	Ft Hood		Ft Sill		Ft Polk	
	Mean		Mean		Mean	
	Value	Rank	Value	Rank	Value	Rank
Quality of patient management	2.06	1	2.78	1	2.26	1
Clinical Outcome	4.89	3	4.69	2	4.17	2
Individualized patient care	5.43	5	5.54	4	5.76	5
Communication/Feedback	5.49	6	5.64	5	5.42	3
Reciprocalations received	11.31	11	10.64	12	10.03	12
Technical Expertise	4.69	2	4.85	3	5.55	4
Patient preference	10.74	13	9.10	10	8.82	9
Availability of CHAMPUS	12.71	15	12.44	15	13.03	15
Respect/Courtesy	7.94	7	7.75	7	9.27	10
Knowledge of consultant	8.86	8	8.90	9	8.20	7
Satisfaction w/ previous referral	5.34	4	6.89	6	7.08	6
Convenience to patient	9.17	9	8.36	8	8.64	8
Cost to patient	10.86	14	9.56	11	9.61	11
Attitude of colleagues	10.14	10	12.08	14	11.27	14
Patient transport	10.37	12	10.78	13	10.91	13
Kendall coefficient of concordance	.4901 (p<.005)		.4169 (p<.005)		.4291 (p<.005)	
Kendall coefficient of concordance between average Ft Hood, Ft Sill, and Ft Polk referring physician rankings =			.9452 (p<.005)			

APPENDIX L

PHYSICIAN RANKINGS OF REFERRAL FACTORS
BY PHYSICIAN SPECIALTY

PHYSICIAN RANKINGS OF REFERRAL FACTORS (BY PHYSICIAN SPECIALTY)

VARIABLES	OB/GYN		PEDIATRICS		SURGICAL		MEDICAL		FAMILY	
	MEAN	RANK	MEAN	RANK	MEAN	RANK	MEAN	RANK	MEAN	RANK
Quality of patient management	2.83	1	2.64	1	2.18	1	2.00	1	2.56	1
Clinical Outcome	3.08	2	2.93	2	4.86	2	6.64	5	4.65	2
Individualized patient management	4.50	5	5.07	4	5.79	4	6.82	6	5.52	3
Communication/Feedback	3.83	3	5.21	5	5.86	5	5.73	4	5.55	4
Reciprocal relations received	10.67	9	11.00	13	10.75	13	10.36	12	9.81	12
Technical expertise	3.83	3	4.00	3	4.93	3	3.45	2	6.05	5
Patient preference	11.67	13	10.64	11	9.29	10	10.73	13	8.94	9
Availability of CHAMPUS	13.83	15	11.79	14	13.32	15	13.45	15	12.26	15
Respect/Courtesy	6.67	7	8.86	7	8.75	8	9.18	8	8.45	8
Knowledge of consultant	10.67	9	10.93	12	6.96	6	6.91	7	9.77	11
Satisfaction with previous referral	5.25	6	6.29	6	7.29	7	4.45	3	7.19	6
Convenience to patient	9.17	8	9.14	8	8.96	9	9.45	10	7.77	7
Cost to patient	11.50	12	9.79	10	9.82	11	9.36	9	9.26	10
Attitude of physician's colleagues	10.67	9	12.00	15	10.46	12	11.82	14	11.68	14
Patient transport	11.83	14	9.71	9	10.79	14	9.64	11	10.55	13
Kendall Coefficient of Concordance	.7298 (p<.005)		.5456 (p<.005)		.4302 (p<.005)		.5152 (p<.005)		.3740 (p<.005)	
Kendall Coefficient of Concordance between average Ob/Gyn, Pediatric, Surgical Specialist, and Medical Specialist's rankings =					.8580 (p<.005)					

APPENDIX M

MEAN RESPONSE OF PHYSICIANS AT THE COMMUNITY HOSPITALS

MEAN RESPONSES OF PHYSICIANS AT COMMUNITY HOSPITALS
REGARDING BAMC'S PERFORMANCE AS A REFERRAL CENTER

Referral Factor	PHYSICIAN MEAN RESPONSE			
	All	Fort Hood	Fort Sill	Fort Polk
Quality of Patient Management	*2.46	2.78	*2.20	*2.41
Best Possible Clinical Outcome	2.74	3.16	2.53	2.55
Frequent and Comprehensive Communication	3.58	3.73	3.53	3.50
Support to Continuing Education	3.32	3.86	3.05	3.10
Accessible for Telephone Consults	*2.45	2.81	*2.23	*2.35
Individualized Patient Management	2.85	3.00	2.72	2.83
Discharge Summary Provided	3.68	3.68	3.43	3.93
Technical Competence of Consultants	*2.05	*1.97	*2.10	*2.07
Patient Preference for BAMC	2.86	3.03	2.80	2.78
Knowledge of Inpatient Services	*2.22	*2.05	*2.40	*2.20
Patient Satisfaction with Care	2.61	2.97	*2.43	*2.45
Availability of Lodging Facilities	2.71	2.81	2.68	2.65
Treated Courteously and Professionally	*2.18	2.68	*2.00	*1.90
Colleagues Opinion of BAMC	2.84	3.27	2.60	2.68
Convenience of BAMC for Patients	3.41	3.38	3.58	3.28
Minimal Personal Expenses Incurred	2.96	2.92	2.85	3.10
Notification of Return Transfer	3.76	3.59	3.78	3.90
Favorable Prior Experiences	*2.41	2.70	*2.36	*2.20
Availability of Support Facilities	2.90	3.14	2.80	2.78
Coordination of Return Transfer	3.53	3.57	3.60	3.43
Preference for BAMC vs CHAMPUS	2.84	3.16	2.78	2.60
Explanation of Treatment to Patients	2.70	2.83	2.68	2.60
BAMC is Referral Facility of Choice	2.64	2.81	2.60	2.53
Availability of Military Transportation	2.50	*2.27	*2.40	2.83
Personalized and Concerned Care	2.59	2.81	*2.45	2.54
Informed on Status of Patients	3.61	3.81	3.58	3.45
Visited Quarterly by Consultants	3.37	3.38	3.43	3.30
Support of Hospital Physician Needs	3.92	4.16	3.78	3.85
Family Members Preference for BAMC	2.95	3.11	3.03	2.73
BAMC Has Excellent Reputation	*2.49	3.00	*2.30	*2.20
Cooperation in Arranging Referrals	*2.37	2.73	*2.28	*2.13
Met Most of Staff Physicians	3.58	2.95	4.03	3.73
Personal Satisfaction with BAMC	2.79	3.11	2.75	2.53
Colleagues Satisfaction with BAMC	2.97	3.43	2.73	2.78
Number of Respondents	117	37	40	40

Rating System

- 1.00 Strongly Agree
- 2.00 Agree
- 3.00 Neutral
- 4.00 Disagree
- 5.00 Strongly Disagree

Bold indicates area of concern
*Bold indicates strong point

APPENDIX N

MEAN RESPONSE OF PHYSICIANS BY SPECIALTY

MEAN RESPONSE BY PHYSICIAN SPECIALTY
REGARDING BAMC AS A REFERRAL CENTER

Referral Factor	PHYSICIAN MEAN RESPONSE		
	Peds	Ob/Gyn	Other
Quality of Patient Management	2.93	2.73	*2.35
Best Possible Clinical Outcome	2.93	2.91	2.69
Frequent and Comprehensive Communication	3.20	3.64	3.63
Support to Continuing Education	3.27	3.55	3.34
Accessible for Telephone Consults	*2.20	*2.36	2.51
Individualized Patient Management	3.14	2.73	2.80
Discharge Summary Provided	3.47	3.73	3.74
Technical Competence of Consultants	*1.87	*2.09	*2.07
Patient Preference for BAMC	2.87	3.64	2.86
Knowledge of Inpatient Services	*1.93	*2.09	*2.28
Patient Satisfaction with Care	2.87	3.00	*2.49
Availability of Lodging Facilities	*2.40	2.82	2.73
Treated Courteously and Professionally	*1.87	2.91	*2.15
Colleagues Regard for BAMC	3.13	3.45	2.72
Convenience for Patients	3.27	3.55	3.40
Minimal Personal Expenses Incurred	3.00	3.09	2.92
Notification of Return Transfer	3.80	4.09	3.70
Favorable Prior Experience	*2.07	3.09	*2.37
Availability of Support Facilities	2.73	3.09	2.89
Coordination of Return Transfer	3.67	3.91	3.44
Preference for BAMC vs CHAMPUS	3.07	3.64	2.69
Explanation of Treatment to Patients	*2.43	2.73	2.72
BAMC is Referral Facility of Choice	2.67	3.55	*2.49
Availability of Military Transportation	2.73	*2.36	*2.47
Personalized and Concerned Care	2.66	2.64	2.56
Informed on Status of Patients	3.33	3.36	3.67
Visited Quarterly by Consultants	*1.87	4.36	3.47
Support of Hospital Physician Needs	3.60	4.63	3.89
Family Members Preference for BAMC	2.93	3.36	2.90
BAMC has Excellent Reputation	3.07	2.91	*2.36
Cooperation in Arranging Referrals	*2.00	3.00	*2.36
Met Most of Staff Physicians	*2.47	3.00	3.82
Personal Satisfaction with BAMC	2.80	3.36	2.70
Colleagues Satisfaction with BAMC	3.20	3.73	2.84
Number Of Respondents	15	11	89

Rating System

- 1.00 Strongly Agree
- 2.00 Agree
- 3.00 Neutral
- 4.00 Disagree
- 5.00 Strongly Disagree

Bold indicates area of concern
*Bold indicates strong point

APPENDIX 0

MEAN RESPONSE OF PHYSICIANS BY
SOURCE OF RESIDENCY TRAINING

MEAN RESPONSES OF PHYSICIANS BY SOURCE OF RESIDENCY TRAINING
REGARDING BAMC'S PERFORMANCE AS A REFERRAL CENTER

Referral Factor	PHYSICIAN MEAN RESPONSE		
	All Physicians	BAMC Residency Training	Other Residency Training
Quality of Patient Management	*2.47	*2.42	*2.48
Best Possible Clinical Outcome	2.73	2.89	2.70
Frequent and Comprehensive Communication	3.57	3.32	3.63
Support to Continuing Education	3.31	3.42	3.29
Accessible for Telephone Consults	*2.45	*2.42	*2.45
Individualized Patient Management	2.87	2.83	2.87
Discharge Summary Provided	3.71	3.42	3.77
Technical Competence of Consultants	*2.02	*1.89	*2.05
Patient Preference for BAMC	2.86	2.79	2.87
Knowledge of Inpatient Services	*2.16	*1.63	*2.28
Patient Satisfaction with Care	2.60	2.58	2.60
Availability of Lodging Facilities	2.70	2.84	2.67
Treated Courteously and Professionally	*2.15	*2.00	*2.19
Colleagues Opinion of BAMC	2.86	2.95	2.84
Convenience of BAMC for Patients	3.42	3.21	3.47
Minimal Personal Expenses Incurred	2.94	2.95	2.94
Notification of Return Transfer	3.80	3.42	3.88
Favorable Prior Experiences	*2.42	*2.00	*2.19
Availability of Support Facilities	2.91	3.11	2.87
Coordination of Return Transfer	3.55	3.16	3.64
Preference for BAMC vs CHAMPUS	2.88	2.68	2.92
Explanation of Treatment to Patients	2.72	2.63	2.74
BAMC is Referral Facility of Choice	2.68	*2.37	2.74
Availability of Military Transportation	2.52	*2.37	2.56
Personalized and Concerned Care	2.57	*2.42	2.60
Informed on Status of Patients	3.62	3.47	3.65
Visited Quarterly by Consultants	3.31	3.21	3.34
Support of Hospital Physician Needs	3.98	4.37	3.90
Family Members Preference for BAMC	2.96	2.89	2.98
BAMC Has Excellent Reputation	*2.49	*2.42	2.50
Cooperation in Arranging Referrals	*2.36	*2.05	*2.43
Met Most of Staff Physicians	3.56	*2.47	3.80
Personal Satisfaction with BAMC	2.80	*2.42	2.88
Colleagues Satisfaction with BAMC	3.01	2.84	3.05
Number of Respondents	105	19	86

Rating System

- 1.00 Strongly Agree
- 2.00 Agree
- 3.00 Neutral
- 4.00 Disagree
- 5.00 Strongly Disagree

Bold indicates area of concern
***Bold** indicates strong point

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