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14. ABSTRACT

Predictors of patient satisfaction for Brooke Army Medical Center Family Medicine Service primary care clinics was performed. Data was obtained from the Army Provider Level Patient Satisfaction Survey from May 2003-September 2007. An ordinal regression model was developed to determine the effect patient demographics, facility characteristics, and patient-provider interaction on patient satisfaction. Mean patient satisfaction was 4.635 (1-completely dissatisfied, 5-completely satisfied). Two key significant variables emerged in this study; whether the patient saw their primary care provider, $F(1, 13,863) = 102.953$, $p < .001$, and the type of provider $F(1, 13,862) = 33.951$, $p < .001$. The overall model resulted in a Nagelkerke pseudo R square of .593 and a chi-square goodness of fit of $X^2 (12, N = 13,865) = 8371.89$, $p < .05$.

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Army-Baylor University Graduate Program in Health and Business Administration

Quantitative Analysis of Contributing Factors Affecting Patient Satisfaction in Family Medicine

Service Clinics at Brooke Army Medical Center

Presented to MAJ Eric Schmacker, Ph.D.

In partial fulfillment of the requirements for

HCA 5661: Administrative Residency: Preceptor/Faculty Reader

By

ENS Timothy M. Gates

Fort Sam Houston, TX

6 June 2008

Disclaimer

The views expressed in this study are those of the author and do not reflect the official policy or

position of Brooke Army Medical Center, the Department of the Navy, the Department of the

Army, Department of Defense, or the United States Government.

Statement of Ethical Conduct in Research

Patient confidentiality was strictly adhered to during this research study. All patients' medical

information was protected at all times and under no circumstances will be discussed or released

to any outside agency.

Abstract

Predictors of patient satisfaction for Brooke Army Medical Center Family Medicine Service primary care clinics was performed. Data was obtained from the Army Provider Level Patient Satisfaction Survey from May 2003-September 2007. An ordinal regression model was developed to determine the effect patient demographics, facility characteristics, and patient-provider interaction on patient satisfaction. Mean patient satisfaction was 4.635 (1-completely dissatisfied, 5-completely satisfied). Two key significant variables emerged in this study; whether the patient saw their primary care provider, $F(1, 13,863) = 102.953, p < .001$, and the type of provider $F(1, 13,862) = 33.951, p < .001$. The overall model resulted in a Nagelkerke pseudo R square of .593 and a chi-square goodness of fit of $\chi^2(12, N = 13,865) = 8371.89, p < .05$.

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Introduction

Policy makers within the Department of Defense Military Health System (MHS) have long been concerned with the level of patient satisfaction provided to their beneficiary population (Mangelsdorf & Finstuen, 2003). Jackson & Kroenke suggest individual factors such as age, health status, and attitude regarding the care received; organizational factors such as the type and size of the facility, waiting times between appointment scheduling and appointment date, and wait times in the clinic, all have an effect of patient satisfaction. Significant correlations between these individual and organizational factors have also been found in numerous studies examining patient satisfaction levels solely in military treatment facilities within the United States (Mangelsdorf & Finstuen, 2003; Mangelsdorff, Finstuen, Larsen, & Weinberg, 2005).

Cost and demand for healthcare services are rising in the United States at an alarming rate. Healthcare expenditures have risen from $28 billion, or 5.2% of the Gross Domestic Product (GDP) in 1960, to $1.878 trillion, and 16% of GDP in 2004 (Henry J. Kaiser Family Foundation [KFF], 2007). As demand increases, new and innovative solutions must be utilized to allow the supply of primary care services to keep pace. During the last decade, many atypical types of providers have penetrated the healthcare marketplace to relieve some of the pressure of excess demand on physicians. These types of providers normally appear in one of two forms, Certified Nurse Practitioners and Physician Assistants. The training, education, and regulatory approval for clinical practice for nurse practitioners and physician assistants began in 1965. Since 1965, when the first nurse practitioners began their education at the University of Colorado, and the first class of physician assistants began their education at Duke University, the number of clinically licensed and credentialed providers has rise to 141,209 nurse practitioners,

and 63,609 physician assistants as of 2004 (Ream & Hughes, 2004); (American Academy of

Nurse Practitioners [AANP], 2002); (American Academy of Physician Assistants [AAPA],

2006). The purpose of the study is to examine the effects the type of primary care provider has

on the overall level of patient satisfaction within the MHS while controlling for possible

differentiation due to demographic and institutional characteristics. The secondary purpose of

this research study is to determine the magnitude of the effect the patient-provider interaction

during a healthcare encounter has on overall patient satisfaction. The analysis will also include

individual patient demographic variables and organizational variables in an effort to control for

these well researched and published factors contribution to overall patient satisfaction.

Problem Statement

As more scrutiny is brought upon the MHS, key decision makers must understand the

variables that drive overall patient satisfaction. Armed with that information, these decision

makers can focus the efforts of the staff and limited fiscal resources to the areas where the most

difference can be made. The MHS is a unique setting because of the readiness, combatant

support, and Warrior in Transition rehabilitation missions it must simultaneously balance with

the mission to provide quality healthcare services to the MHS beneficiaries.

The Army Provider-Level Satisfaction Survey (APLSS) is a comprehensive provider

level satisfaction tool designed to give healthcare providers and Military Treatment Facility

(MTF) leadership the timely and actionable feedback needed to improve the quality of healthcare

services provided to the beneficiary population served by Army Medical Treatment Facilities.

The APLSS program was initiated in 2003 to provide patient feedback to health care providers

and administrators throughout the Army Medical Command. The survey program randomly

selects patients within 24 hours after an encounter with a physician or other health care provider

in any Army facility throughout the United States, Guam, Japan, Korea, and Germany (Pollock, 2007). A complete copy of the APLSS can be seen in Appendix A.

The survey program selects active duty, dependents, and other beneficiaries in proportion to quantity seen by their respective health care providers. The goal of the APLSS program is to select a sufficient number of patients to have between 100 to 200 surveys returned per provider during each previous 12 month period. Patients are sent a letter asking them to complete the survey questionnaire using either the paper questionnaire, an internet-based survey instrument, or an interactive telephonic voice response system (Pollock, 2007).

In defining the quality of healthcare that is delivered within the MHS, patient satisfaction with the care received has become one of the benchmarks used for determining quality. The Army Provider Level Satisfaction Survey serves as an instrument to measure and quantify the quality of healthcare services performed within Military Treatment Facilities (MTF) under the control of the Army Medical Command. The APLSS is also used within the MTF to capture the beneficiaries' level of satisfaction with the support services such as convenience of the facility, telephone scheduling support services, and how your needs and schedule were considered; and ancillary services delivered such as laboratory, radiology, and pharmacy experiences during the visit.

The front page of the survey contains eight questions regarding the patient's level of satisfaction regarding the encounter with the provider. These questions are used to assess the performance of the provider in listening, understanding, and helping the patient regarding their problem or concern that prompted the visit. The back page of the survey instrument contains an additional twelve questions related to access and wait times, comfort and convenience of the facility, courtesy and helpfulness of the staff, and the experience with ancillary services utilized

during the visit.

Synovate, a market research firm contracted by the Army Medical Command, processes the survey results daily. All of the survey results received during the previous two weeks are tabulated and posted to APLSS web-based reporting system to allow near real time access to patient satisfaction conditions within the MTF. Access to the web-based reporting system is restricted to command authorized users and restricted based on the user's assigned responsibility within the MHS. Users can examine the data to determine the overall level of satisfaction from the Army Medical Department Level, Regional Medical Command Level, MTF level, clinic level, and individual provider level. The APLSS user instrument provides online access to results for various time periods that can be selected by the user. Civilian benchmarks are displayed on the output charts and are obtained annually by surveying civilian healthcare provider beneficiaries with the same survey instrument that is used to assess satisfaction levels within the MHS. The benchmarks displayed are the mean scores of the civilian results for each of the applicable questions. The benchmarking service is also conducted by Synovate and is a requirement of the contract with the Army Medical Department. The output charts also contain benchmarks for other Army MTFs by Regional Medical Command and Army Medical Department level. This allows users to assess performance compared to civilian counterparts as well throughout the Army Military Treatment Facilities which have similar operational missions and boundary of constraints.

Conditions that prompted the study

Brooke Army Medical Center (BAMC) at Fort Sam Houston, located in San Antonio, Texas, is part of the United States Army Medical Command. It is a University of Texas Health Science Center and Uniformed Services University of the Health Sciences affiliated teaching

hospital and contains the Army Burn Center and Institute for Surgical Research. BAMC's history dates back to 1879 when the first Post Hospital opened as a small medical dispensary located in a single story wooden building. During the early years the Post hospital was in temporary structures, and it was not until 1886 that the first permanent hospital was built. In 1907 an 84-bed Station hospital was constructed on the west side of Fort Sam Houston and at the time was one of the nation's most modern healthcare facilities.

In July 1936, the cornerstone was laid for the construction of a replacement Station Hospital and in November 1937, the new 418-bed hospital was opened at a total cost of $3 million dollars. In 1941, BAMC prepared for an overwhelming flow of casualties from World War II battlefields by converting a 220-person enlisted barracks into additional patient wards. This facility would prove instrumental in providing quality, responsive health care to wounded soldiers and would later become BAMC Headquarters. In 1942, the Station Hospital was renamed Brooke General Hospital in honor of Brigadier General Roger Brooke, the hospital commander from 1929-1933. Brooke is credited with instituting the first routine chest X-ray in military medicine. In 1946, Fort Sam Houston was chosen as the new site for the U.S. Army Medical Field Service School. The decision to centralize the Army's medical research and training at one location resulted in the re-naming of Brooke General Hospital to Brooke Army Medical Center.

In September 1987, the official groundbreaking took place for the construction of the current hospital. On July 18, 1995, ownership of the replacement hospital was given to the BAMC Commander by the U.S. Army Corps of Engineers during the key turnover ceremony. The new facility was dedicated on March 14, 1996, and opened on April 13 with the successful

transfer of inpatients from the old BAMC to the new BAMC (Brooke Army Medical Center, 2008).

Under the Base Realignment and Closure Committee, 2005 recommendations, BAMC is expected to expand its inpatient services as services currently at the across-town Air Force Wilford Hall Medical Center are relocated from the 59th Medical Wing. Under these recommendations BAMC will consolidate with WHMC to create a single, dual-campus healthcare system in San Antonio and will result in WHMC being named San Antonio Military Medical Center-South and BAMC named San Antonio Military Medical Center-North (San Antonio military Medical Center, 2008).

BAMC today is a modern state-of-the-art, 450-bed health care facility that provides level-one trauma services and graduate medical education. BAMC's mission statement is "We are Dedicated to Warrior Service!", and in addition to providing care for the over 220,000 military beneficiaries in the San Antonio area, BAMC also serves San Antonio's civilian population as one of three level-one trauma centers, and the South Texas population as the region's only comprehensive burn treatment center. BAMC is accredited by The Joint Commission and is expandable to 653 beds in the event of a major casualty or disaster. Major services available at BAMC include general medical and surgical care, adult and pediatric primary care clinics, 24-hour emergency department, specialty clinics, clinical services, wellness and prevention services, veterinary care, and environmental health services (Texas State Historical Association, 2008).

In early 2007, the Army Office of the Surgeon General (OTSG) established goals to improve patient satisfaction. In particular, the Office of the Surgeon General established a goal of 95% for each Access and Support service question on the APLSS. More specifically, the goal is for 95% of the survey respondents to rate the MTF in the top two blocks, a 4 or 5, on a 5-point

Likert scale, which corresponds to agree or strongly agree, respectively for each access and support service question. BAMC's most recent 52 weeks performance on the Access and Service standards question can be found in Table 1. The corresponding questions for this table can be found in Appendix A.

Table 1.

Brooke Army Medical Center Access and Service Support Services Performance; March 2007-February 2008.

Question	9	10	11	12	13	14	15	16	17	18	19	20	21
%	80.3	82.3	75.6	74.9	85.6	85.1	92.5	87.0	80.3	68.5	81.5	82.3	91.1

Note: % represents the number of respondents who check either of the top two block (very good or excellent) on the corresponding questions.

BAMC has consistently performed at a level above the Army Medical Department and Great Plains Regional Medical Command averages since the inception of the APLSS. However, while BAMC has consistently outperformed other comparable Army Medical Centers, they have failed to meet the civilian benchmark for any of the Access and Support services questions during any period. Army healthcare facilities commit resources to improve these satisfaction goals. Studies must be done to determine which variables have the greatest impact on overall patient satisfaction results so valuable resources may be allocated to the areas that will contribute the most benefit in helping the organization meet the established goals, while continuing to provide world class healthcare to the beneficiary population.

Purpose statement

The purpose of this study was to examine the effect on patient satisfaction that can be attributed to three sub-groups of variables. These three sub-groups were broadly defined as patient demographic variables, patient-provider interaction variables, and treatment facility variables. An analysis was conducted to determine the relationship of these variables and how they impact overall provider level patient satisfaction within the three Family Medicine Service

clinics at BAMC. These three clinics are the BAMC Family Medicine Service Clinic, McWethy

Troop Medical Clinic, located at Fort Sam Houston, and Camp Bullis Family Medicine Clinic.

Effects of the independent variables were analyzed to determine if there were significant

relationships that exist. Results of this study may be generalizable to other organizations

throughout the Department of Defense and can be used as an aide to guide policies and practices

within BAMC, the Army Medical Department, and the MHS clinics located throughout the

world in an effort to provide solid strategic and financial management to maximize the efficiency

of the finite resources available with the MHS.

Research Question

Patient satisfaction has been used as a proxy for the quality of medical care received by

the patient (Vuori, 1991). Many policies, directives, and initiatives have been instituted in an

effort to improve overall patient satisfaction of healthcare services. Without a full understanding

of the factors that drive the perceived quality of the healthcare encounter from the patient's point

of view, many of these policies, directives, and initiatives may be expending resources which can

be more effectively utilized in other areas of the organization. The research question for this

study was:

> Do the three sub-groups of independent variables; patient demographics, patient-
>
> provider interaction, and treatment facility variables affect overall patient
>
> satisfaction levels within Brooke Army Medical Center's Family Medicine
>
> Clinics

The null hypothesis for this research study was:

> H_0: The three sub-groups of independent variables; patient demographics, patient-
>
> provider interaction, and treatment facility variables have no effect on overall

patient satisfaction levels within Brooke Army Medical Center's Family Medicine

Clinics

The alternate hypothesis for this research study was:

H_a: The three sub-groups of independent variables; patient demographics, patient-

provider interaction, and treatment facility variables do effect overall patient

satisfaction levels within Brooke Army Medical Center's Family Medicine

Clinics

Dependent and independent variables

The dependent variable for this study was overall satisfaction with the visit as scored by

the patient on the APLSS. The independent variables for this study were the patient demographic

variables of age category, gender, beneficiary category, and branch of service; the patient-

provider interaction variables appointment duration, amount of time spent with provider, whether

the provider listened, whether the provider understood the patient's problem, whether the

provider treated the patient with courtesy and respect, whether the provider explained what was

been done and why, and whether the provider helped the patient with their problem during the

visit. All of the patient-provider interaction variables, with the exception of the appointment

duration, were obtained from the APLSS and should be seen as patient perceptions. The

treatment facility characteristics sub-group of variables of month and year of appointment,

whether the patient saw their PCM, the type of provider, clinic, and appointment type were

included as explanatory variables. A detailed table of variables used in the research study is

located in Appendix B.

Literature Review

The purpose of the literature review is to identify variables that contribute to overall patient satisfaction based on previous study results, determine if the hypothesis represents a solid theoretical basis for the research study, and whether there is potential utility to the current body of knowledge to justify conducting further research. Based on these fundamental assumptions of research the following literature was reviewed in an effort to maximize value the understanding of the factors that contribute to patient satisfaction.

Patient satisfaction ratings contain very important information about the structure, process, and outcomes that are present in an organization. Donabedian (1966) suggests that the quality of healthcare is the product of two factors; the science and technology of healthcare and the application of that science and technology in actual practice. He further suggests that this product can be characterized by several attributes which he refers to as the "components of quality".

Donabedian firmly believes that quality can be defined and rendered transparent through measurement against a standard. Donabedian (2003) suggests two ways of using this measured data; to troubleshoot existing problems within the healthcare delivery system, and to perform planned reconnaissance to find issues that management was unaware of or may have suspected but seek to confirm. This measurement and use of data to define quality is of paramount importance on the ability of the Military Healthcare System to not only survive but flourish in their goal to continue to provide world class healthcare services to their beneficiary population.

Healthcare quality has been defined by Donabedian (1966) by using three constructs; structures, processes, and outcomes. These constructs can not be empirically measured without further definition by quantifiable variables. Structure relates to the foundation of the healthcare

delivery system and can be defined by such variables as size of the facility, education and

certification of those the system employs, staffing levels, and organization characteristics of the

system as a whole. The structure of a healthcare delivery system is a semi-permanent fixture and

can be changed only given considerable time. The structure variable examined in this study are

the sub-group previously defined as facility characteristics and can be more accurately defined

by size of the facility, BAMC Family Medicine Service (FMS) Clinic, Troop Medical Clinic

(TMC) McWethey, and FMS Camp Bullis. The size of these facilities is representative of a large,

medium, and small healthcare delivery setting respectively. In today's healthcare environment,

leaders must focus on the "quick wins", or those variables within their system that may be

rapidly changed to adjust to the ever-changing healthcare landscape of the 21st century. Having

adequate structures in place undoubtedly contributes to quality, but even superb structure on its

own does not guarantee it (Donabedian, 1993).

Ransom, Maulik and Nash (2005) describe processes as the group of activities that take

place during the delivery of care. In this study, the processes are defined as the patient-provider

interaction variables. These variables include the patients perception of the quality of the

encounter, the amount of time spent with the provider during the visit, the ability of the provider

to communicate effectively with the patient, the courtesy of the provider during the visit, and the

overall effectiveness of the visit in addressing the patients need that prompted the encounter. It

should be noted that in the business of healthcare, excellent processes do not guarantee good

outcomes and good outcomes are not necessarily indicators of good processes. Many patients

may recover on their own despite encountering a poor and ineffective process, while others may

face morbidity or mortality even while receiving the best care possible for their given medical

condition. Even though processes, whether good or bad, do not guarantee a given outcome,

research has shown that there is a significant positive relationship between quality processes and quality outcomes (Ranson et al, 2005). Perin (2002) suggests that understanding how processes relate to outcomes is valuable because processes can be quickly manipulated and controlled in an effort to improve outcomes and realize the value of the "quick wins". By analyzing patient satisfaction, key processes and structures may be refined, as quality structures and processes are essential for any healthcare delivery system to achieve its mission (Handler, Issel & Turnock, 2001).

In their work, Maquis, Ross & Ware (1983) examined the effect that a change in provider had on overall patient satisfaction. They suggest that Donabedian's Structure, Process, and Outcomes Model (Donabedian, 1966) contains useful information about the ultimate outcome of the delivery of personal healthcare services. They examined data from the Health Insurance Experiment, a project started in 1971 and funded by the Department of Health, Education, and Welfare (now the Department of Health and Human Services). The Health Insurance Experiment was a 15-year, multimillion-dollar effort that to this day remains the largest health policy study in United States history. The study's conclusions encouraged the restructuring of private health insurance and helped increase the stature of managed care (RAND, 2007). Maquis, Ross & Ware examined 279 patients age 18 years or older who had used physician services in the year prior and the year of the experiment. They found that the one-third of the patients who were least satisfied were more than 57% more likely to have changed providers during the experiment and individuals scoring in the middle tertile of the satisfaction distribution were 27% more likely to have changed providers during the experiment. Additionally, the authors found significant differences in overall patient satisfaction based on the age of the subjects studied.

Young, Meterko & Desai (2000) examined the effects of demographical and institutional characteristic on overall patient satisfaction with hospital care. The data used for the analysis were extracted from the 1997 Veterans Health Affairs survey. The subjects were patients of the Veterans Administration Healthcare System, a federally funded and administered healthcare system and a subcomponent of the Department of Veterans Affairs. The Veterans Affairs Healthcare system comprises one of the largest integrated healthcare systems in the United States and conducts more than one million inpatient and thirty million outpatient visits per year. The patient survey used by the Department of Veterans Affairs is similar to the survey that is used by the Department of the Army to assess patient's attitudes toward accessibility, provider courtesy and support, and whether the care was beneficial and delivered in a professional manner. A copy of the APLSS and Veterans Health Affairs survey are included in Appendix A and Appendix C, respectively, for comparison. The results of their study indicate that significant changes in overall outpatient satisfaction can be predicted based on many institutional and patient demographic characteristics. Specifically, Young, Meterko & Desai (2000) found that patient age, facility size, race, and geographical region all had statistically significant effects on the dependent variable of overall patient satisfaction.

Since the inception of the primary care model, circa 1961, the term primary care has been defined in numerous ways, most often using one or more, or a combination, of the following categories. (Lee, 1992; Spitz, 1994):

The care provided by certain clinicians; some proposed legislation, lists the medical specialties for primary care providers as family medicine, general internal medicine, general pediatrics, and obstetrics and gynecology. Recently this definition has been expanded to include nurse practitioners and physician

assistants by some analysts and experts (OTA, 1986; Pew Health Professions

Commission, 1994).

An activity set whose functions define the parameters of primary care such

as curing or alleviating symptoms of common illnesses, disease, and disabilities.

A level of care or setting that is an entry point to a system that includes

secondary care, performed by hospitals and specialty providers; and tertiary care

performed by major medical centers and teaching hospitals (Fry, 1980).

A set of attributes, as in the 1978 Institute of Medicine's definition of

primary care: Care that is accessible, comprehensive, coordinated, continuous,

and accountable, or as defined by Starfield (1992) care that is characterized by

first contact, accessibility, longitudinality, and comprehensiveness.

The healthcare model in the United States is undergoing rapid and profound changes to

the organizational structure and financing mechanisms used to determine how healthcare is

delivered. These changes are being driven largely by concerns about the escalating costs of

health care, and some of the changes are being used as a means to control the growth of

expensive, specialized services, and to favor growth in the role of primary care. The desirability

of placing greater emphasis on primary care has long been recognized by the Institute of

Medicine and other groups and spurred the adoption of many public policies at both the state and

federal level. Some of the many efforts to encourage primary care include federal and state

support for training of primary care clinicians (Grumbach, Hart, Mertz, Coffman & Palazzo,

2003), direct support for the organization of primary care services to disadvantaged populations

(Miller, Crabtree, McDaniel & Stange, 1998) and development of health maintenance

organizations and other financing mechanisms that encourage primary care (Dror & Preker,

2002). These initiatives have not, however, been the major force in bringing about renewed emphasis on primary care. Laws, regulation, studies, and public policies intended to encourage primary care have been remarkably ineffective as the United States' healthcare system has continued its course of the past 50 years toward ever greater patient dependency on specialty services and the corresponding growth of hospital-based care. A growing body of evidence suggests that this trend toward expanded use of specialized services has significantly contributed to an unsustainable growth in health care costs, compounded problems of access to basic healthcare services for some of our population, and has failed to effectively address common health problems that cause morbidity and mortality within the population (Aaron, 1991).

There are many factors present in the United States that encourage specialization. Top among them are the continued growth of medical knowledge based on biomedical research; reimbursement methods for physicians and hospitals that support the expanded use of specialized and expensive medical technologies; and a Graduate Medical Education training system based in specialized care settings. Prior reports by the Institute of Medicine (1978) and other organizations such as the Physician Payment Review Commission (Lee, Ginsburg, LeRoy & Hammons, 1989) and the Council on Graduate Medical Education in their annual reports of the 1980s and 1990s have documented these trends and demonstrated how, until fairly recently, they overwhelmed the factors that promote primary care (Council on Graduate Medical Education [COGME], 1995; COGME, 1988).

Primary care is the logical foundation of an effective healthcare delivery system because it can address the large majority of the health problems present in the population. Primary care is also essential to achieving the goals that constitute value in healthcare services; quality of care, patient satisfaction, and efficient use of finite resources. The personal interactions between the

patient and provider, namely trust and partnership, are central to the primary care model which makes primary care the most important method for achieving stronger emphasis on health promotion, disease prevention, and care for chronic illnesses, especially among the elderly and other high risk populations of patients who often present with multiple co-morbidities. The current trend toward integrated healthcare systems in a managed care environment will continue and will provide both opportunities and challenges for primary care. With the current focus and initiatives in place to shift the focus of healthcare delivery from specialty to primary care, patient satisfaction with their primary care provider will become even more important. Patient confidence in their provider's ability to answer their questions, treat their illness, educate them about disease management and prevention, and ultimately help them overcome their illness or control their disease, is key to a successful healthcare system regardless of size.

Primary care within the current healthcare system is generally provided by one of three separate and distinct types of providers; physicians, Doctors of Medicine (M.D.) or Doctors of Osteopathy (D.O.); physician assistants; or clinical nurse practitioners. Physicians, physician assistants, and clinical nurse practitioners are each educated differently and each have a distinctly different focus on patient care; physicians focus primarily on curative medicine (Alpert, Fjone & Condela, 2002); nurse practitioners emphasize patient education, disease prevention, and health promotion (Sherwood, Brown, Fay, & Wardell, 1997) and generally go beyond medical care to include roles as a patient educator, motivator, administrator, and advocate (Alpert, Fjone, & Condela, 2002). Physician assistants are trained in the curative medical model similar to physicians but with a shorter duration, a more limited scope of practice, and a greater symptom relief focus (AAPA, 2006; Colorado State University, 2005).

There currently exist three paths for the training of nurse practitioners. The first path is through a master's degree in nursing in the clinical area of emphasis such as family practice, obstetrics, or pediatrics. The candidate using this route must first possess an accredited bachelor's degree in nursing, be licensed by the state board of nursing, and have a minimum of one year of nursing experience prior to applying for nurse practitioner training. The total time from entry into college as a freshman until qualified as a nurse practitioner is between seven to eight years, depending on specialty. The second path to becoming a certified nurse practitioner is to obtain a clinical doctorate in nursing. The prerequisite requirements are identical to the master degree track with total training time for the doctorate extended to between eight and nine years. The clinical doctorate in nursing provides additional education in training and research methods and prepares the nurse practitioner for both academic and clinical positions (AANP, 2002). The third path to certification as a clinical nurse practioner is through the attainment of a post-master's certification. This method is used when a nurse already possesses a master's degree in another nursing specialty and desires to broaden their knowledge and skills. Nurse practitioner's have a license to work independently can prescribe medications in accordance with practice guidelines and regulations of their respective state (Apert et al, 2002).

The training of a physician differs from a nurse practitioner in that it is more intense, requires a longer timeframe, and places a greater emphasis on the science of medicine. To be eligible to apply to medical school, prospective students must first obtain a bachelor's degree with a significant emphasis in mathematics, physical and life science, and chemistry. Students then choose between two different types of medical schools, allopathic or osteopathic. The allopathic medical school emphasizes curative medicine and surgery and confers the Doctor of Medicine (M.D.) degree. The osteopathic medical schools focus on primary care and holistic

treatment methods including spinal manipulation and the whole body concept and confer the Doctor of Osteopathy (D.O.) degree. After completion of medical school, both Doctors of Medicine and Doctors of Osteopathy are licensed by their state boards and may become board certified in any medical specialty (Princeton Review, 2006). Medical school for Doctors of Medicine and Doctors of Osteopathy is four years in duration, followed by a one year internship and two to five year residency. Total training time for physicians from entrance into college as a freshman, to board certification, is between eleven to fourteen years depending on medical specialty (American Medical Association [AMA], 2005).

The training continuum for physician assistants is very similar to that of physicians, but the training time is much shorter, and the curriculum less in depth. Physician assistants are trained with medical students at medical schools and may even take some of the same courses. Physician assistants graduate with a bachelor's or master's degree and may apply for board certification with a training time of four to six years. Physician assistants work under a supervising physician's license and often follow the practice pattern of his or her supervisor (American Academy of Physician Assistants, 2006).

By understanding the primary care delivery model and the educational differences between provider types, examination of patent satisfaction attitudes in the Brooke Army Medical Center primary care clinics can provide focused efforts to identify deficiencies, and improve the delivery of healthcare to the MHS beneficiaries.

In developing the model to be used for analysis prior research was examined to identify variables impacting overall patient satisfaction. The following section will provide the foundation used to generate the models used in this analysis.

Many previous research studies have found demographic variables such as age, gender, beneficiary category, and branch of service as explanatory variables when examining patient satisfaction levels within the MHS. Mangelsdorff, Finstuen, Larsen, & Weinberg (2005) sampled 154,893 patient responses from the Customer Satisfaction Survey from 1999-2000. Hierarchal regression results indicated that age, gender, and branch of service were all significant predictors of patient satisfaction levels at $p<.01$. This study essentially replicated previous studies on patient satisfaction levels within the MHS that also found the aforementioned variables as significant predictors of patient satisfaction.

Additionally Mangelsdorff, Finstuen, Larsen & Weinberg (2005) also included patients beliefs about the care provided and found the following patient-provider interaction variables below were also significant to the $p<.01$ level: thoroughness of treatment received; how well care meet your needs; explanation of medical procedures and tests; how much you were helped by the care received; and attention given to what you had to say. Positive correlations for these variables were found and all were $r >.655$. This study provided the basis for the inclusion of the patient-provider interaction variables that have been included in the model used for analysis here.

In researching the differences in patient satisfaction levels between traditional providers (physicians) and nurse practitioners, Linn (1976), found there were no significant differences between physicians and nurse practitioners on the Index of General Satisfaction or Index of Rapport scales used in his study. Linn did note however, that mean scores on both of these indexes were higher for nurse practitioners than for physicians. While not significant, this early research study provided the basis for other studies to examine if statistically significant differences exist between types of providers.

Ethical Considerations

The data used in this research study was obtained from the Department of the Army Office of the Surgeon General. The data contained no protected health information as defined by the Health Information Portability and Accountability Act. No effort was made to determine the identity of the patient or provider that from the APLSS raw data file.

Methods

Data

The data reported in this study were obtained from the Office of the Army Surgeon General. The data is collected and tabulated weekly as part of the APLSS as discussed previously. The sample of 13,865 was selected from the population of 27,629 responses to the APLSS at BAMC from May 2003 through September 2007. The prospective survey respondents are randomly selected each day by Synovate, the contractor for the Army Medical Department. The number of patients selected is determined so that each provider will receive a targeted number of returned surveys each year. Synovate ensures that no patient will be selected to complete a survey for an encounter with the same provider more than once each year. Synovate uses a stratified sampling method to ensure appropriate demographic dispersion among the sample is consistent with the population of MHS beneficiary encounters. This stratified sampling technique is used to reduce sampling error and ensure stratums in the population with a low incidence relative to the other stratums will not be disadvantaged in the analysis.

In considering the sample for analysis, some decisions were made regarding missing data, incomplete survey results, recoding, and transformation. This section will describe in detail the decision making methodology and identify how the final sample was selected. The raw data obtained contained multiple demographic information including beneficiary category, branch of service and gender. One important missing variable was age. As addressed previously, prior research indicates age is a significant predictor of patient satisfaction levels and therefore must be controlled for in this study. Since the variable date of birth and appointment date were both available in the raw data file, a mathematical formula was used to compute age by assigning the date of birth and date of appointment a lineal number representing number of days elapsed since

January 1, 1900, then subtracting the date of birth from the date of appointment. The resulting difference was then divided by 365.25, representing the number of days in a year, and rounded down to the next lowest integer to accurately reflect the patient's actual age at the time of the encounter.

Beneficiary category was also recoded into simplified groups with similar characteristics. The original data file contained one hundred eighty-six different categories which were subsequently recoded into seven categories; active duty, active duty dependent, retiree, retiree dependent, reserve component, federal employee, and other. The original coding of beneficiary category can be found in Appendix C. Due to the relatively small representation of branches of beneficiaries by other than the four military branches within the Department of Defense, branch of service was recoded to five categories, Army, Navy, Air Force, Marine Corps, and other. Consistent with previous work by Mangelsdorf & Finstuen (2003), age was recoded into eight categories as defined in Appendix A.

The measurement of data recorded by the APLSS was based on 5 point Likert scale with a score of 5 representing a mark of "Completely Agree" and a 1 representing a mark of "Completely Disagree" with the survey question. The dependent variable, overall patients satisfaction was operationalized by the question "Overall, how satisfied do you feel about your visit with (PROVIDER'S NAME) ?" and measured using a 5 point Likert scale with a score of 5 representing a mark of "Completely Satisfied" and score of 1 representing a mark of "Completely Dissatisfied". Independent variables relating to demographics were operationally defined and coded as noted in Appendix A.

As a quality conscious organization, BAMC executive leadership is generally concerned with the overall quality or healthcare programs and services provided to their beneficiaries. To

determine the effects the independent variables on overall patient satisfaction, an ordinal

regression model was developed and analyzed using the PC-based version 11.5.1 of the

Statistical Package for the Social Sciences (SPSS). The design of this study was a post test-only

non-experimental design and is represented by the following experimental design notation.

$$X \quad O$$

This experimental design type was selected due to the retrospective nature of the APLSS

and lack of a control group for comparison. The study design also took no effort in the

assignment of treatments or controls to patients, or manipulation of any variable to observe

group differences. The X in the design notation above represents the treatment, the patient-

provider encounter. The O in the design notation above represents the observation, the survey

instrument used to collect the data used in the analysis, in thi study the APLSS. The independent,

or explanatory, variables in this study were classified into three predetermined sub-groups;

patient demographics, patient-provider interaction, and facility characteristics. The first sub-

group, patient demographics included the variables X_1, age_cat; X_2, gender; X_3, bencat; and X_4,

branch. The second sub-group, patient-provider interaction, included the explanatory variables

X_{11}, appt_dur; X_{12}, timespent; X_{13}, listen; X_{14}, undestnd; X_{15}, crt_resp; X_{16}, explain; and X_{17}, help.

The last sub-group included the variables X_5, month; X_6, year; X_7, see_pcm; X_8, provtype; X_9,

clinic; X_{10}, apptype.

To test for reliability of the explanatory variables measured by the APLSS, Cronbach's

Alpha test at a threshold value of .70 was used. This test was used to determine if sufficient

internal consistency existed among the patient-provider interaction measures. The Cronbach's

Alpha reliability of the six variables in the patient-provider interaction category was .950. This

indicates there is a high level of internal consistency reliability and that the results of the survey

truly reflect the sentiment of the beneficiary who responded to the APLSS.

The dependent variable, overall satisfaction with visit was coded using a five-point Likert scale with: 1 representing "Completely Dissatisfied", 2 representing "Somewhat Dissatisfied", 3 representing "Neither Satisfied nor Dissatisfied", 4 representing 'Somewhat Satisfied", and 5 representing "Completely Satisfied" with the visit. The primary focus of this study was the formulation of an ordinal regression model, the application of ordinal regression analysis, and the interpretation of the study results. The APLSS data were analyzed using the ordinal regression model to achieve the three study objectives; 1) identify significant explanatory variables, i.e., satisfaction items, within the patient-provider interaction and the facility characteristics that influenced overall patient satisfaction, while controlling for known variance in satisfaction attitude of differing beneficiaries with varying demographic attributes 2) to estimate thresholds (constants) and regression coefficients, 3) to determine the direction and magnitude of the relationship between the explanatory variables and overall patient satisfaction based on the sign (+ or -) and size of the regression coefficients.

Regression analysis examines the relationship of a dependent, or response variable, to specified independent, or explanatory variables. The mathematical model of the relationship between the dependent and independent variables is the regression equation. The dependent variable is modeled as a random variable because of uncertainty as to its value, given only the value of each independent variable. A regression equation contains estimates of one or more hypothesized regression parameters. These estimates are constructed using data for the variables from a sample. The estimates measure the relationship between the dependent variable and each of the independent variables and allow for a prediction of the value of the dependent variable to be made for a given value of each respective independent variable.

The regression equation for this research study is presented below.

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} +$$

$$\beta_{11} X_{11} + \beta_{12} X_{12} + \beta_{13} X_{13} + \beta_{14} X_{14} + \beta_{15} X_{15} + \beta_{16} X_{16} + \beta_{17} X_{17} + e$$

Results

For the period of analysis 13,865 results from the APLSS analyzed. These results represent patient feedback from the clinical encounter within BAMC's three primary care clinics, Family Medicine Service BAMC, McWethey Troop Medical Clinic, and Family Medicine Service Camp Bullis. The records were analyzed to ensure complete demographic information was provided and responses to all of the patient-provider interaction questions were complete. The records analyzed were from May 2003 through September 2009. The results of the APLSS are an adequate and representative sample of the users of BAMC primary care services.

Table 2 provides a breakout of the descriptive statistics by each of the subcategory of variables. The last two columns present the overall patient satisfaction levels for each of the subcategories for comparison between demographic groups.

Table 2.

Descriptive statistics for predictors of overall patient satisfaction.

	N	% of Total Sum	Overall Patient Satisfaction M	Overall Patient Satisfaction SD
PROVIDER SATISFACTION	13865	100	4.635	.889
AGE CATEGORY				
0-4	58	.42	4.621	.914
5-14	219	1.62	4.767	.681
15-17	126	.94	4.778	.758
18-24	649	4.39	4.345	1.131
25-34	1,077	7.41	4.422	1.110
35-44	2,119	14.85	4.504	1.026
45-64	7,346	53.38	4.670	.843
65+	2,271	16.99	4.809	.634
GENDER				

Female	7,705	55.32	4.614	.917
Male	6,160	44.68	4.662	.852
BENEFICIARY CATEGORY				
Active Duty	2,363	16.37	4.452	1.050
Active Duty Dependent	2,092	14.82	4.552	1.002
Retiree	4,409	32.42	4.726	.779
Retiree Dependent	4,654	33.95	4.688	.815
Reserve Component	347	2.44	4.522	.995
BRANCH OF SERVICE				
Army	8,807	62.99	4.596	.935
Navy	693	4.99	4.632	.892
Air Force	4,134	30.30	4.710	.791
Marines	231	1.72	4.779	.581
MONTH				
JAN	1,578	11.35	4.621	.936
FEB	1,266	9.14	4.637	.843
MAR	1,663	12.06	4.662	.861
APR	1,513	10.91	4.635	.901
MAY	1,255	9.04	4.630	.896
JUN	1,331	9.49	4.582	.932
JUL	772	5.54	4.611	.941
AUG	863	6.21	4.622	.918
SEP	807	5.83	4.639	.876
OCT	1,130	8.24	4.688	.821
NOV	704	5.07	4.632	.855
DEC	983	7.12	4.655	.874
YEAR				
2003	185	1.31	4.551	.977
2004	3,606	25.98	4.631	.897
2005	3,812	27.63	4.658	.844
2006	4,229	30.59	4.648	.872
2007	2,033	14.49	4.580	.979
SEE PCM				
NO	7,891	56.10	4.569	.964
YES	5,974	43.90	4.723	.771
PROVIDER TYPE				
Physician	7,433	53.76	4.648	.872
Physician Assistant	2,206	15.44	4.497	1.030
Nurse Practioner	4,226	30.81	4.685	.832
CLINIC				
CAMP BULLIS	1,150	8.40	4.695	.837

BAMC	7,642	55.38	4.657	.864
MCWETHY	5,073	36.22	4.588	.935
Wellness Appointment	2,129	15.76	4.757	.729
First Appointment with PCM	526	3.77	4.601	.950
Specialty Appointment	150	1.12	4.780	.674
APPOINTMENT DURATION				
20 Mins. Or less	7,324	52.43	4.600	.927
Greater than 20 mins.	6,541	47.57	4.674	.843
TIME SPENT				
Completely Agree	11,686	89.19	4.905	.387
LISTEN				
Completely Disagree	321	.88	1.757	1.371
UNDERSTAND				
Completely Disagree	319	.83	1.674	1.310
Somewhat Disagree	338	1.24	2.367	1.098
Neither Agree nor Disagree	458	2.20	3.085	1.062
Somewhat Agree	1,532	9.71	4.071	.863
Completely Agree	11,218	86.02	4.928	.337
Somewhat Agree	665	3.54	3.418	1.100
Completely Agree	12,578	94.45	4.826	.543
EXPLAIN				
Completely Disagree	272	.77	1.813	1.368
Somewhat Disagree	263	.85	2.087	1.028
Neither Agree nor Disagree	399	1.89	3.045	1.120
Somewhat Disagree	353	1.35	2.459	.991
Neither Agree nor Disagree	530	2.79	3.385	.995
Somewhat Agree	1,580	10.26	4.173	.796
Completely Agree	10,966	84.45	4.949	.270

As seen in Table 2, the mean overall patient satisfaction score is 4.635. This represents a

scale score between completely satisfied (5) and somewhat satisfied (4) on the 5-point bipolar

rating scale for the entire 13,865 surveys used in the sample. Variability, as shown by the

standard deviation measured ±.889, less than one rating scale point and is consistent with the

observed patient satisfaction attitudes in previous studies (Mangelsdorff, Finstuen, Larsen &

Weinberg, 2005). Table 2. also displays the individual patient demographics frequencies for

various analysis groups.

Consistent with previous research both age and gender emerged as significant predictors of overall patient satisfaction attitudes. Age category was stratified into eight categories and each of the corresponding categories was treated as a mutually exclusive and categorically exhaustive variable. This allowed an inspection and analysis of the representative groups to determine overall provider level satisfaction for each of the corresponding age category. Overall satisfaction attitudes ranged from 4.345 for the 18-24 year age category to 4.809 for the 65+ age category. Figure 1 shows the overall trend over age group. A rising trend can be seen over the first 3 age categories, followed by a sharp decline in the 18-24 year age category. This is followed by another rise trend as age increases to the 65+ age category. Analysis of overall patient satisfaction attitudes also show that males tend to be generally more satisfied that females. Mean overall patient satisfaction attitudes for males were 4.66 and for females 4.61.
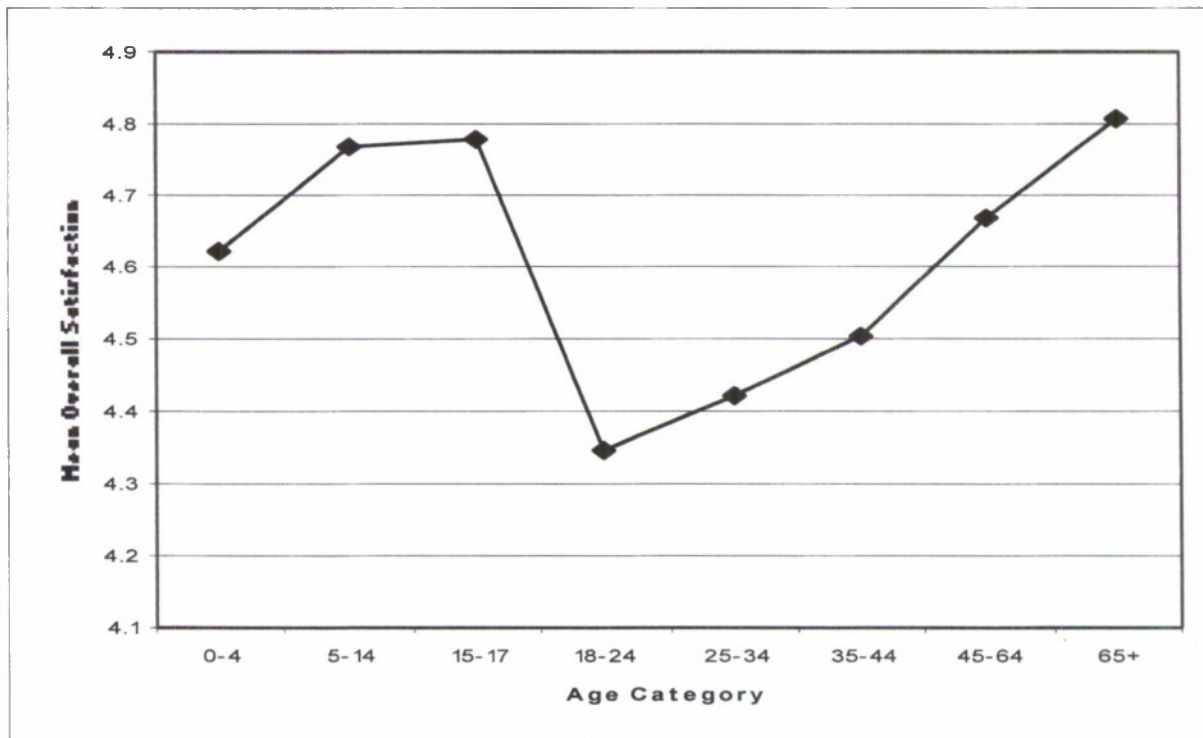
Figure 1. Trend showing overall patient satisfaction attitudes by age category.

Two additional categories of demographic variables were also analyzed in this study, beneficiary category and branch of service. As seen in Figure 2 results for beneficiary category indicate a definitively higher overall patient satisfaction attitude for the retired component beneficiaries, mean scale score of 4.688, and their family members, mean scale score of 4.552. Active duty service members display the lowest overall patient satisfaction attitudes with a mean score of 4.512, which still fall between the scale score of completely satisfied (5) and somewhat satisfied (4).

Figure 2. Trend showing overall patient satisfaction attitudes by beneficiary category.

For the final demographic category branch of service, distinctions between branches of service can also be seen Figure 3. The range of mean overall patient satisfaction attitude scores is 4.596 for Army to 4.780 for Marines. It should be noted however, that there were very few

survey results for both Navy (693) and Marines (231) due to the size of the beneficiary

population covered in the San Antonio Multi-Service Market. While these results show clear

trends, they were inconsistent with previous research and should not be used to make

generalizable assumptions regarding overall satisfaction with military care between branch of
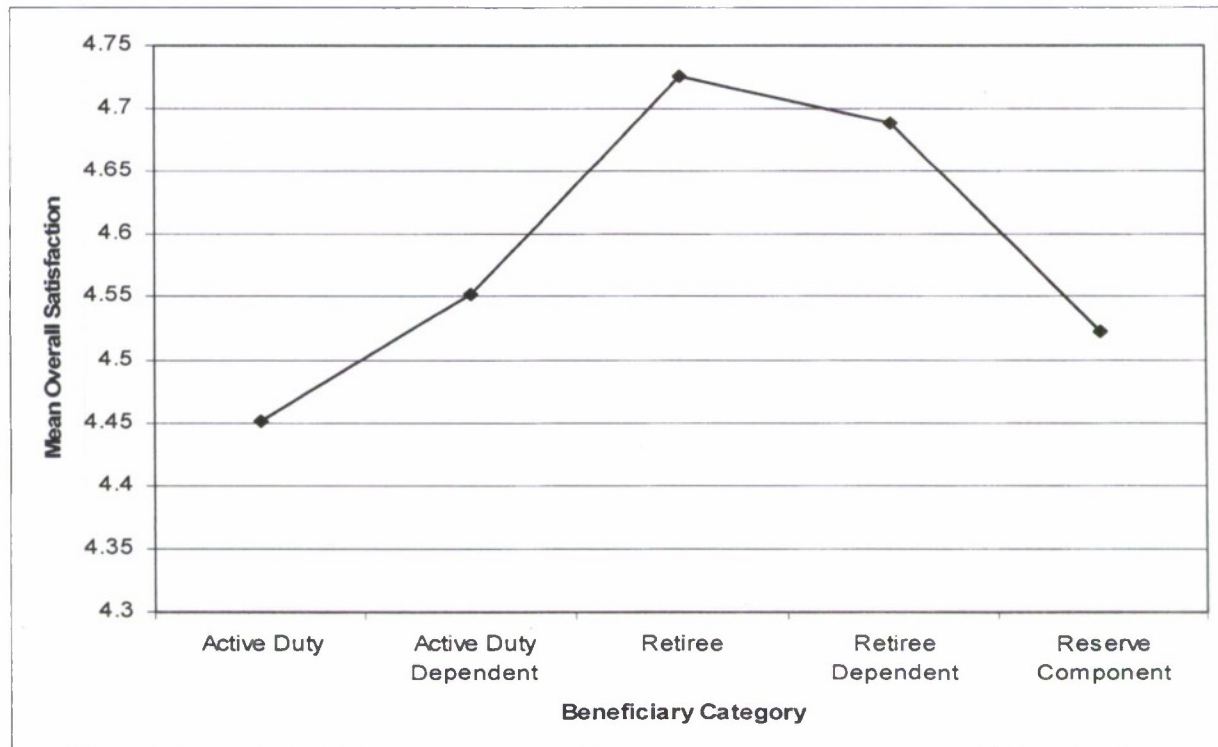
service.
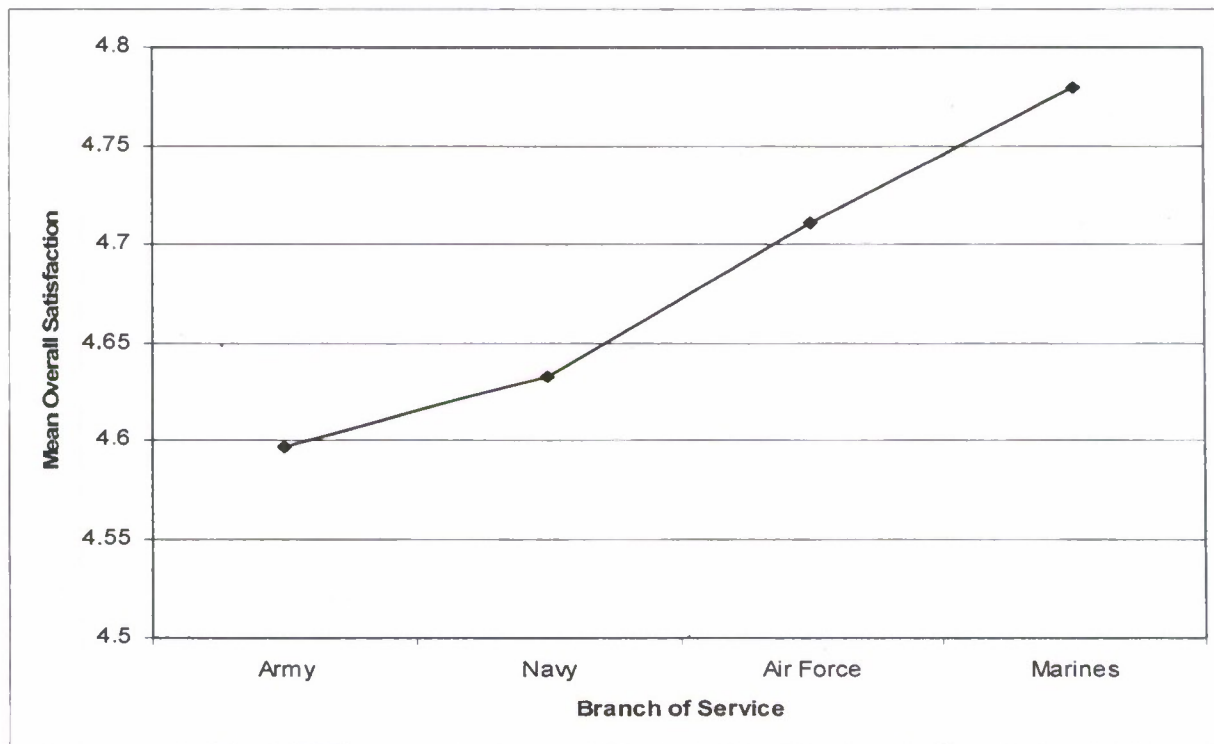
Figure 3. Trend showing overall patient satisfaction attitudes by branch of service.

Three of the five institutional characteristic variables were analyzed independently to

determine if trends existed in overall patient satisfaction attitudes. For the dependent variable did

the patient see their primary care provider (PCP), significant differences were found between the

means. For patients who indicated they saw their PCP, the mean overall patient satisfaction

attitudes score was 4.72, compared to 4.57 for patients who indicated they did not see their PCP.

The results of a one-way ANOVA can be seen in Table 3 below.

Table 3.

Analysis of Variance for overall patient satisfaction attitudes by whether respondent saw their
primary care provider.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	80.819	1	80.819	102.953	.000
Within Groups	10,882.546	13,863	.785		
Total	10,963.365	13,864			

The type of provider seen by the patient was also independently analyzed in the study.

The results of this analysis indicates there is significant differences in overall patient satisfaction

attitudes depending on the type of provider seen. Figure 4 below shows that Nurse Practitioners

have the highest mean overall patient satisfaction results (4.685), followed by Physicians (4.648)

and Physician Assistants (4.497), respectively. A one-way ANOVA was also performed and

results of this can be seen in Table 4.

Figure 4. Mean overall patient satisfaction attitudes by type of provider seen.

Table 4:

Analysis of Variance for overall patient satisfaction attitudes by type of provider seen.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	53.441	2	26.720	33.951	.000
Within Groups	10,909.924	13,862	.787		
Total	10,963.365	13,864			

The final institutional characteristic variable independently examined in this study was the appointment duration. This variable was recoded to a binomial variable where 0 represented a scheduled appointment duration of 20 minutes or less and 1 represented a scheduled appointment duration of greater than 20 minutes. An independent analysis of this variable indicated that appointments that are scheduled for 20 minutes or less results in significantly lower overall patient satisfaction attitudes than appointments that are scheduled for greater than 20 minutes. These results can be seen in Figure 5 and Table 5 below.
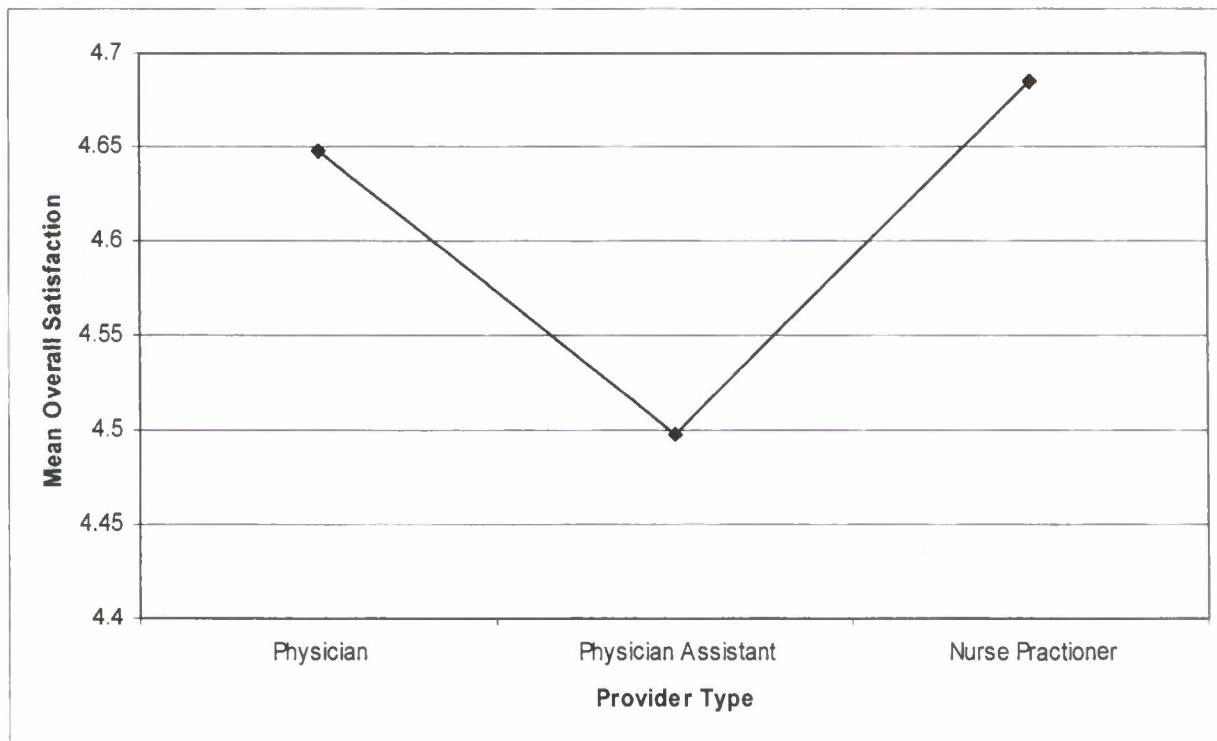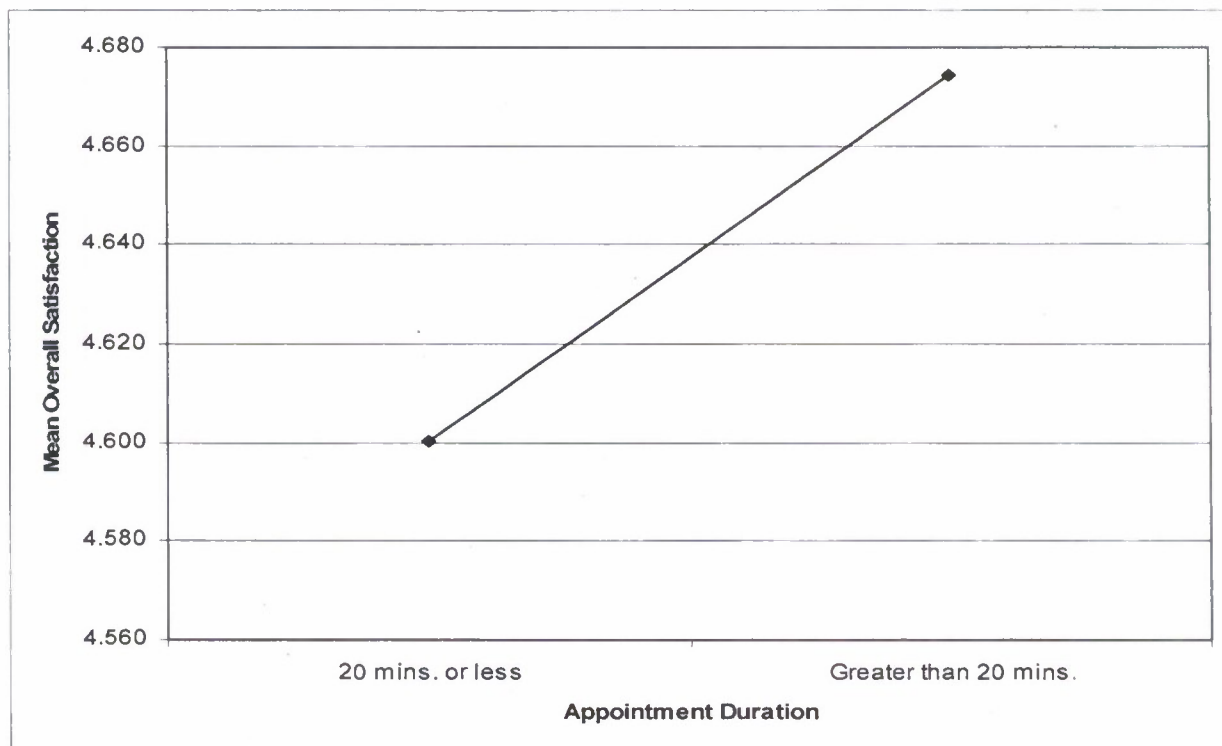

Figure 5. Mean overall patient satisfaction attitudes by appointment duration.

Table 5.

Analysis of Variance for overall patient satisfaction attitudes by appointment duration.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	18.986	1	18.986	24.049	.000
Within Groups	10944.379	13,863	.789		
Total	10963.365	13,864			

The third group of variables analyzed in this study was variables associated with the patient-provider interaction with the encounter. In this study, six independent variables were placed in this category. Table 6 below shows the correlations for all variables in this study. The asterisk in the column to the right indicates whether the variable was significant in the overall regression model at the alpha level $p < .05$. Further examination of the correlation matrix reveals that the final six independent variables q1-q6 resulted in the highest correlations among all of the variables examined. This would suggest that while demographics can be used as predictors of overall patient satisfaction, the patient-provider interaction that takes place during the encounter in of much higher importance.

For the patient-provider interaction variables, whether the visit helped had the highest correlation resulting in $r = .837$. This value was statistically significant at the $p < .05$ level and would suggest that the single most important predictor of patient satisfaction is whether the visit helped the patient with the problem that prompted the visit. All of the other patient-provider interaction variables also resulted in statistically significant results with very high correlations as seen in Table 6.

Table 6.

Correlation matrix for predictors of patient satisfaction.

	a	g	bc	bos	m	y	pcm	pt	c	at	ad	q1	q2	q3	q4	q5	q6
Overall Satisfaction	.096 *	.027 *	.073 *	.061 *	.007	-.009	.086 *	.010	-.041	.051 *	.042 *	.771 *	.792 *	.803 *	.686 *	.759 *	.837 *
Age (a)		.049 *	.317 *	.203 *	.010	-.044 *	.202 *	-.134 *	.041 *	.131 *	.082 *	.093 *	.089 *	.085 *	.089 *	.073 *	.093 *
Gender (g)			-.212 *	-.021 *	.000	.036 *	.003	-.029 *	-.127 *	-.058 *	.000	.011	.019 *	.018 *	.029 *	.002	.011
Beneficary Category (bc)				.206 *	.009	.010	.112 *	-.038 *	-.171 *	.113 *	.022 *	.080 *	.079 *	.070 *	.071 *	.069 *	.080 *
Branch of Service (bos)					.009	.018 *	.077 *	-.026 *	-.145 *	.077 *	.002	.072 *	.063 *	.058 *	.049 *	.057 *	.056 *
Month (m)						-.134 *	-.026 *	.000	-.052 *	.003	-.009	.008	.014	.012	.002	.002	.003
Year (y)							-.085 *	-.078 *	.020 *	.027 *	.143 *	-.014	-.014	-.008	-.016	-.014	-.011
See PCM (pcm)								-.145 *	-.076 *	.185 *	.039 *	.073 *	.077 *	.085 *	.066 *	.074 *	.090 *
Provider Type (pt)									-.182 *	-.075 *	-.147 *	.003	.005	.000	-.007	.009	.003
Clinic (c)										-.107 *	.189 *	-.039 *	-.034 *	-.037 *	-.024 *	-.034 *	-.034 *
Appt. Type (at)											.496 *	.040 *	.044 *	.051 *	.034 *	.051 *	.059 *
Appt. Duration (ad)												.037 *	.039 *	.038 *	.028 *	.034 *	.039 *
Time Spent (q1)													.832 *	.779 *	.711 *	.758 *	.748 *
Listened (q2)														.823 *	.766 *	.792 *	.768 *
Understanding (q3)															.724 *	.795 *	.821 *
Courtesy (q4)																.743 *	.658 *
Explain (q5)																	.770 *

* Correlation is significant at the 0.05 level (2-tailed).

The hypothesis tested in the research study was whether the three sub-groups of independent variables; patient demographics, patient-provider interaction, and treatment facility variables have an effect on overall patient satisfaction levels within Brooke Army Medical Center's Family Medicine Clinics. To test this model the ordinal regression method was used to model the relationship between the ordinal outcome variable, e.g., different levels of overall patient satisfaction regarding the experience during the clinical encounter, and the explanatory variables concerning patient demographics, facility characteristics, and patient provider interaction variables within the FMS BAMC service line. The outcome variable for overall patient satisfaction was measured on an ordered, categorical, five-point Likert scale as 'completely dissatisfied', 'somewhat dissatisfied', 'neither satisfied nor dissatisfied', 'somewhat satisfied', and 'completely satisfied'. Explanatory variables included four demographic variables, age category, gender, beneficiary category, and branch of service; seven facility characteristic variables, appointment month and year, whether the patient saw their PCM, type of provider, clinic, appointment type and appointment duration; and six questionnaire items related to the patient-provider interaction that took place during the clinical encounter. The major decisions involved in the model building for ordinal regression were deciding which explanatory variables should be included in the model and choosing the link function (e.g., logit link or complementary link) that demonstrated the model appropriateness. In addition, the model fitting statistics, the accuracy of the classification results, and the validity of the model assumption, e.g., parallel lines, were essentially assessed for selecting the best model. The research findings indicated that the explanatory variables relating to the patient-provider interaction such as did the provider listen and understand your problem and whether the visit helped you with your problem were

significantly associated with the overall patient level satisfaction. This discovery suggests that the environment facilitated by the clinical providers and the attentiveness and ability to address the medical condition presented by the patient should be the primary focus of efforts to improve satisfaction. It is also important to understand the demographic and facility characteristics present and understand their importance to the model and the role they play in the overall satisfaction levels within the MTF.

The ordinal regression model used in this study examined all of the 13,865 survey responses that were selected for this study. The study results for the complete model containing all satisfaction items revealed a number of interesting findings.

Table 7 shows the resulting coefficients of the full model and highlights the explanatory

variables that were significantly different from zero and substantially contributed to the values of

the response probability. In addition, the overall patient satisfaction level was significantly

associated with ten of the explanatory variables, two patient demographic variables, two facility

characteristic variables, and all six of the patient-provider interaction variables. The six patient-

provider interaction explanatory variables exhibited positive regression coefficients, indicating

that patients who rated higher levels of satisfaction on these explanatory variables were likely to

rate a higher overall patient satisfaction level for the experience. Furthermore, the appointment

duration was not significant in the model, it should be noted that the variable whether the patient

saw their PCM resulted in $p = .54$ in the model.

Table 7.

Explanatory variables associated with overall patient satisfaction based on the complete model with the logit function.

	Regression Coefficient	p-value	
AGE CATEGORY	.062	.011	*
GENDER	.153	.009	*
BENEFICIARY CATEGORY	-.009	.703	
BRANCH	.013	.676	
MONTH	-.004	.643	
YEAR	.005	.855	
SEE PCM	.118	.054	
PROVIDER TYPE	.073	.030	*
CLINIC	-.128	.013	*
APPOINTMENT TYPE	-.005	.846	
APPOINTMENT DURATION	.106	.121	
TIME SPENT	.544	.000	*
LISTEN	.492	.000	*
UNDERSTAND	.636	.000	*
COURTESY RESPECT	.197	.000	*
EXPLAIN	.324	.000	*
HELP	1.489	.000	*

* significant at $p<.05$

The results of the chi square goodness of fit test for the overall model was χ^2 (17, $N =$ 13,865) = 9999.87, $p < .05$. Table 8 displays these results.

Table 8.

Chi square test for goodness of fit result for complete model.

	-2 Log Likelihood	χ^2	df	Sig.
Intercept Only	19913.165			
Final	9913.299	9999.866	17	.000

Note: Link function: Logit.

The model-fitting statistic, namely the pseudo R square, measured the success of the model in explaining the variations in the data. The pseudo R square was calculated depending

upon the likelihood ratio. For example, the McFadden's R square compared the likelihood for the intercept only model to the likelihood for the model with the explanatory variables in order to assess the model goodness of fit. The interpretation of pseudo R square in the ordinal regression model was similar to that of the R square (coefficient of the determination) in the linear regression model. The pseudo R square indicates that the proportion of variation in the outcome variable that is accounted for by the explanatory variables. The larger the pseudo R square value, the better the model fitting. The pseudo R squares for McFadden (.500), Cox and Snell (.514), and Nagelkerke (.673) in the complete model with the logit function suggest that the more than half of the variation of the data can be explained by the explanatory variables analyzed in this study.

Due to the high degree of colinearity between the patient-provider interaction variables, the ordinal regression model was also analyzed using only the variable pertaining to whether the provider help the patient with their medical problem during the visit. This model reduced the pseudo R square values for the model to McFadden (.418), Cox and Snell (.453), and Nagelkerke (.593). While this reduction accounts for less of the overall variation of the response variable, it presents a more accurate reflection of the true explanatory value of the independent variables.

Table 9 below presents the resulting coefficients of this modified model that resulted in a chi square test result of $\chi^2(12, N = 13{,}865) = 8371.89, p < .05$. These results of the chi square test are presented in Table 10.

Table 9.

Explanatory variables associated with overall patient satisfaction based on the reduced model with the logit function.

	Regression Coefficient	p-value	
AGE CATEGORY	.069	.003	*
GENDER	.200	.000	*
BENEFICIARY CATEGORY	.020	.384	
BRANCH	.073	.017	*
MONTH	.005	.506	
YEAR	.007	.795	
SEE PCM	.143	.013	*
PROVIDER TYPE	.070	.028	*
CLINIC	-.147	.002	*
APPOINTMENT TYPE	-.030	.255	
APPOINTMENT DURATION	.167	.010	*
HELP	2.410	.000	*

    * significant at $p<.05$

Table 10.

Chi square test for goodness of fit result for reduced model.

	-2 Log Likelihood	χ^2	df	Sig.
Intercept Only	19717.034			
Final	11345.146	8371.888	12	.000

    Note: Link function: Logit.

Discussion

The reduced model with the logit link became the best model based on the validity of model assumption, the fitting statistics (Person's chi-square and pseudo R squares), the accuracy of the classification results, and the principle of parsimony.

The eight explanatory variables that related to overall patient satisfaction levels (age, gender, branch of service, saw PCM, provider type, clinic, appointment duration, and helped) were identified in the best model. Overall patient satisfaction significantly contributes to the probability of patients remaining enrolled to the MTF for their primary care needs and subsequent specialty care referral needs. In this time of "A Nation at War" it is also imperative that focus be given to overall patient satisfaction levels to ensure patients who are forced into the network for care due to deployment of their provider are willing to return to the MTF once the provider returns and capacity increases. The results of this study suggest that the aspect of overall experience that most significantly contributes to high overall patient satisfaction scores is the variables associated with the actual patient-provider interaction that takes place during the visit.

While other demographic and facility characteristics emerged as significant predictors of overall satisfaction levels, little can be done to influence these factors with the exception of understanding the difference in the beneficiary population and adjusting the provider's actions during the encounter to account for these differences. The study suggested that the vast majority of patient respondents expressed high levels of satisfaction with their provider, but much more can be done to improve the overall results.

Overall, this study should be viewed as an important first step for the healthcare provider and administrator to explore the relationship between the patient and provider and the impact the patient perceptions play on the overall experience. The knowledge gained from this study would be beneficial to the BAMC staff and its beneficiaries. The goal was to obtain information from patient responses to establish benchmarks that could be helpful to decision makers within the MTF for improving provider education and patient expectations. For example, the MTF could pursue its ultimate goal of exceeding civilian patient satisfaction benchmarks by enhancing provider awareness of the patients perceptions. Patient education would also help to ensure patients actively participate in the delivery of their care.

The ordinal regression method provides a viable alternative to linear or logistic regression to analyze patient satisfaction data with the ordered categorical outcome. It does not treat an ordinal outcome as binary or dichotomous measure like logistic regression analysis, which may lead to the loss of inherent information. Also, it does not falsely assume a continuous measure and the properties of normality and constant variance necessary to analyze the categories of ordinal outcome for linear regression which may lead to incorrect analysis. Clearly, the ordinal regression modeling is a unique statistical technique in that the ordinal outcome variable is frequently encountered in the field of satisfaction research and the model assumption of parallel lines is easily assumed and verified.

Conclusions

The purpose of this retrospective quantitative analysis was to determine the predictors of overall patient satisfaction within the BAMC family medicine service and troop medical clinics. Specific interest was given to determine magnitude and direction that the type of provider (physician, physician assistant, or nurse practitioner), demographic, facility characteristics, and patient-provider interaction had on overall patient satisfaction results. The results of this study indicated that there was a statistically significant difference in provider types. Nurse practitioners scored higher on overall patient satisfaction scores, followed by physicians, and then physician assistants. This is consistent with other studies in the literature (Laurant, et al, 2005). Whether the patient saw their primary care provider also emerged as significant in the reduced model that eliminated the colinearity between the patient-provider interaction independent variables. Age, gender, branch of service, appointment duration, clinic, and whether the visit helped were also statistically significant in the reduced model. These findings are consistent with the previous work Mangelsdorf & Finstuen (2005).

The best model identified in the analysis for accurately predicting overall patient satisfaction results is the reduced model that includes only whether the visit helped the patient in the ordinal regression analysis. The multiple colinearity between the six patient-provider interaction variables inflates the overall prediction capability of the full model and masks some important explanatory variables such as appointment duration and whether the patient saw their primary care provider. The overall shared variance accounted for in the reduced model can be seen in the pseudo R square values of McFadden (.418), Cox and Snell (.453), and Nagelkerke (.593). A Venn diagram depicting this shared variance can be seen in Figure 6. This suggests that

approximately 40-60% of the variability of the dependent variable can be explained by the independent variables used in the analysis.

Figure 6. Venn diagram of Nagerkerke pseudo R square, shared variance of reduced model.

Y-PROVSAT $X_1, X_2, X_3, \ldots$
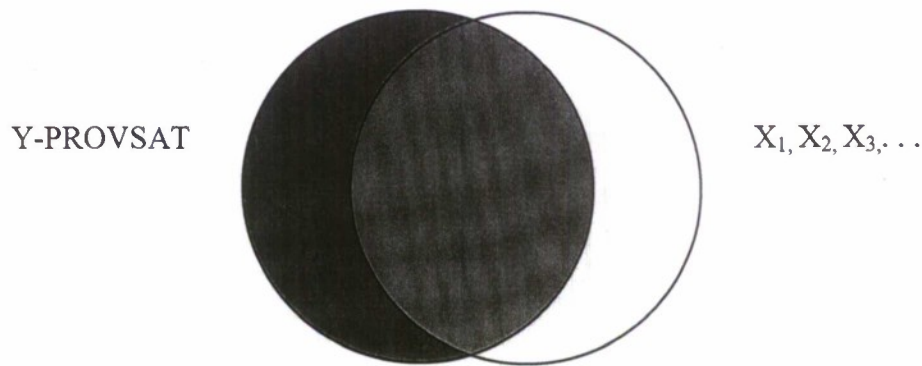
Limitations

Though much insight has been gained in the analysis a few limitations should be noted. This study examined of patient responses that were complete and submitted using the APLSS at BAMC. Regional variations of provider practices and patient perceptions were not analyzed in this study and as such, this study may not be generalizable to other MTFs. BAMC is also a large tertiary care facility with a robust graduate medical education program. The training of physicians, nurses and administrative personnel is a core mission of BAMC and may have an impact on the overall patient perceptions with the visit. Future studies should compare data obtained from facilities of varying size to determine if the size, scope and training mission of the facility may have an impact an overall patient satisfaction. Due to the small size of some of the branch of service categories represented in the study, validity of the significance of branch of service as a predictor of overall satisfaction should be verified in future studies.

Recommendations

The results from this study indicate a very high overall level of satisfaction with the BAMC FMS clinics. This satisfaction is not surprising given the expertise of clinic staff, and the ability of the family medicine service to provide a full service operation and some degree of walk-in and same day care. Based on these findings, the following is recommended:

1. BAMC leadership should continue to utilize the APLSS results in a real time fashion to monitor performance within the FMS clinics in an effort to rapidly respond to real or perceived downturns in overall patient satisfaction. The APLSS survey instrument, with its strength in assessing satisfaction patient-provider interaction aspect of care, should be retained and enhanced. The further use of this instrument will provide a statistically validated tool for meeting The Joint Commission requirements to assess key components of patient satisfaction.

2. Continued study of patient satisfaction, using the APLSS in conjunction with the Department of Defense Patient Satisfaction Survey, will yield positive results, and an opportunity for the Executive Leadership team at BAMC to better define and detect areas of concern. A Lean Six Sigma project could further enhance patient satisfaction by mapping the process of care for the patient in an effort to reduce the non-value added steps and standard procedures that could provide the patient with a consistent standard of care on each visit.

3. The results of this study suggest that there are significantly different overall patient satisfaction outcomes depending on the type of provider that saw the patient. This study provides quantitative results to present to the primary care providers so an assessment of the clinical practices of each provider type can be made. This would allow a gathering of

best practices between the different groups of providers and could lead to a better understanding of patient expectations that would lead to higher overall patient satisfaction levels.

4. As this study suggests, whether the patient was seen by their primary care provider is a significant determinant of overall patient satisfaction. Each year a great deal of resources are allocated to inform patients of their primary care provider. An assessment of the effectiveness of this program should be made and steps to further communicate with the patients who will manage their care should also further increase patient satisfaction levels.

5. The Consult and Appointment Management Office should also ensure that when a patient calls for a primary care appointment, all possible effort is made to schedule the appointment with the patient's primary care provider. This may mean that the first available appointment is not given to the patient, but will ensure continuity of care and potentially improve overall patient satisfaction results.

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Appendix A: Army Provider Level Satisfaction Survey

00002114 F703 5254 021   0813040204 25 26 2111

DEPARTMENT OF THE ARMY
OFFICE OF THE SURGEON GENERAL
SURVEY PROGRAM OFFICE (SUITE 669)
5109 LEESBURG PIKE
FALLS CHURCH, VA 22041-3258

Please use pen or dark pencil to mark an "X" in the answer box.

	Correct	Incorrect
EXAMPLES:	☒	☑ Ⓠ ◖

Please return your completed questionnaire in the enclosed envelope to, P.O. Box 9033, Chicago, IL 60590.

Army Patient Satisfaction Survey

We need your help. We are trying to improve the quality of care we give our Soldiers and their families.

According to our records you recently had a healthcare visit with (PROVIDER'S NAME) on (VISIT DATE) at the Martin Army Community Hospital. Is this correct?

Yes .... ☐ → Please continue with the survey.
No, saw someone else... ☐ → Please continue with Q9.
No, didn't have visit .... ☐ → Please stop and return your survey now.

Thinking specifically about your visit with (PROVIDER'S NAME) on (VISIT DATE) at the Martin Army Community Hospital, please rate how much you disagree or agree with each of the following. Please mark an "X" in the box for the answer that is closest to your opinion.

	Completely Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Completely Agree
1. This provider, (PROVIDER'S NAME), spent the time with you that your medical problem required	☐	☐	☐	☐	☐
2. This provider listened to you carefully about your concerns and questions	☐	☐	☐	☐	☐
3. This provider understood your problem or condition	☐	☐	☐	☐	☐
4. This provider treated you with courtesy and respect	☐	☐	☐	☐	☐
5. This provider explained what was being done and why	☐	☐	☐	☐	☐
6. This provider helped you with your problem	☐	☐	☐	☐	☐

	Completely Dissatisfied	Somewhat Dissatisfied	Neither Satisfied nor Dissatisfied	Somewhat Satisfied	Completely Satisfied
7. Overall, how satisfied do you feel about your visit with (PROVIDER'S NAME)?	☐	☐	☐	☐	☐

8. Which of the following best describes your familiarity with (PROVIDER'S NAME)?

This provider is my Primary Care Manager (PCM) whom I see for most of my routine care .... ☐
This provider is not my PCM, but I had met or heard of him/her before this visit .... ☐
This provider is not my PCM, I had a referral to see this provider .... ☐
This provider is not my PCM, and I had never met or heard of him/her before this visit...................................... ☐

Please turn over and continue on the back page.

Please tell us how you were treated by staff before and after you saw the healthcare provider. Still thinking about your visit with (PROVIDER'S NAME) on (VISIT DATE), please rate the following aspects of your care and service during that visit:

	No Experience	Poor	Fair	Good	Very Good	Excellent
9. The overall phone service you received in scheduling the appointment for this visit........	☐	☐	☐	☐	☐	☐
10. How well your needs and schedule were taken into consideration when this appointment was scheduled........................	☐	☐	☐	☐	☐	☐
11. The amount of time from when you made the appointment until you actually saw the healthcare provider	☐	☐	☐	☐	☐	☐
12. The amount of time you waited at the clinic to see the healthcare provider	☐	☐	☐	☐	☐	☐
13. Courtesy and helpfulness of the staff during this visit	☐	☐	☐	☐	☐	☐
14. The coordination among all the people who cared for you during this visit	☐	☐	☐	☐	☐	☐
15. The cleanliness of the facility you visited.............................	☐	☐	☐	☐	☐	☐
16. The comfort of the facility you visited	☐	☐	☐	☐	☐	☐
17. The convenience of the facility you visited	☐	☐	☐	☐	☐	☐

If you also went to the Pharmacy, Laboratory or Radiology Department in conjunction with your visit on (VISIT DATE), please rate your experience with these services:

	No Experience	Poor	Fair	Good	Very Good	Excellent
18. Overall, how would you rate your visit to the Pharmacy?................................	☐	☐	☐	☐	☐	☐
19. Overall, how would you rate your visit to the Laboratory?..............................	☐	☐	☐	☐	☐	☐
20. Overall, how would you rate your visit to the Radiology Department?........................	☐	☐	☐	☐	☐	☐

Do you have any comments about your visit with (PROVIDER'S NAME) on (VISIT DATE)?

_____

_____

_____

21. Everything considered, how satisfied were you with Martin Army Community Hospital during this visit?

Completely Dissatisfied	Somewhat Dissatisfied	Neither Satisfied nor Dissatisfied	Somewhat Satisfied	Completely Satisfied
☐	☐	☐	☐	☐

Thank you very much for your opinions. Please return this survey today in the self-addressed envelope.

ATTN: AMEDD SURVEY CENTER
P.O. BOX 5033
CHICAGO, IL 60680

Appendix B: Code Sheet for Variables

Y	Overall Patient Satisfaction	1=Completely Disagree 2=Somewhat Disagree 3=Neither Agree nor Disagree 4=Somewhat Agree 5=Completely Agree
X_1	Age Category	years: 00-99* *Ages 100 and over were recoded to 99
X_2	Gender	1=Male 2=Female
X_3	Beneficiary Category	1=Active Duty 2=Active Duty Dependent 3=Retiree 4=Retiree Dependent 5=Other
X_4	Branch of Service	1=Army 2=Navy 3=Air Force 4=Marines 5=Other
X_5	Appointment Month	1=January 2=February 3=March 4=April 5=May 6=June 7=July 8=August 9=September 10=October 11=November 12= December
X_6	Appointment Year	2003-2007
X_7	PCM	0=No 1=Yes
X_8	Provider Type	1=Physician 2=Physician Assistant 3=Nurse Practioner
X_9	Clinic	1= Family Medicine Service BAMC 2= Family Medicine Service McWethy 3= Family Medicine Service Camp Bullis
X_{10}	Appointment Type	1=Acute Appointment 2=Established Patient 3=Routine Appointment

		4=Wellness Appointment 5=First Appointment with PCM 6=Specialty Appointment
X_{11}	Appointment Duration	0=20 minutes or less 1=Greater than 20 minutes
X_{12}	Provider spent time with you	1=Completely Disagree 2=Somewhat Disagree 3=Neither Agree nor Disagree 4=Somewhat Agree 5=Completely Agree
X_{13}	Provider listened to concerns and questions	1=Completely Disagree 2=Somewhat Disagree 3=Neither Agree nor Disagree 4=Somewhat Agree 5=Completely Agree
X_{14}	Provider understood problem or condition	1=Completely Disagree 2=Somewhat Disagree 3=Neither Agree nor Disagree 4=Somewhat Agree 5=Completely Agree
X_{15}	Provider treated you with courtesy and respect	1=Completely Disagree 2=Somewhat Disagree 3=Neither Agree nor Disagree 4=Somewhat Agree 5=Completely Agree
X_{16}	Provider explained what was being done and why	1=Completely Disagree 2=Somewhat Disagree 3=Neither Agree nor Disagree 4=Somewhat Agree 5=Completely Agree
X_{17}	Provider helped you with your problem	1=Completely Disagree 2=Somewhat Disagree 3=Neither Agree nor Disagree 4=Somewhat Agree 5=Completely Agree

Appendix C: Department of Veterans Affairs Patient Satisfaction Questionnaire

SURVEY OF HEALTHCARE
EXPERIENCES OF PATIENTS
AMBULATORY CARE 2007

In order for the VA to carry out its mission to provide the best possible medical care and services to all veterans, it is extremely important that you complete and return this questionnaire. Your answers will help ensure that all veterans receive the high quality care they have earned and so richly deserve.

We want to remind you that all information is strictly confidential. It will not be shared with your doctor or affect your VA care.

Please read each question and fill in the circle that best describes your experience. Use blue or black ink pen, or pencil. Please be sure to read all pages of this booklet.

ABOUT YOUR RECENT VISIT

We realize that you may receive care at more than one VA location. However, it is important that you answer the questions in this survey based on your recent VA clinic visit on February 5, 2005 at:

Oak Creek Medical Clinic

Thank you very much!

001AMD14   0060421

GETTING AN APPOINTMENT IN THE VA

1. **What was the reason for your most recent clinic visit?** *(You may choose more than one)*11702
   - ① Routine Physical
   - ② Routine follow-up
   - ③ Flare-up of a long term problem
   - ④ Get help with a new problem
   - ⑤ Prescription refill
   - ⑥ Other

2. **What happened when you called for an appointment?** *(You may choose more than one)* 11804
   - ① My call was answered promptly and courteously
   - ② The person I spoke to was able to readily schedule my appointment
   - ③ The phone rang many times before it was answered
   - ④ I talked to several different people before talking to the right person
   - ⑤ I left a message and no one called me back
   - ⑥ I was put on hold too long
   - ⑦ I got a busy signal
   - ⑧ I was disconnected
   - ⑨ None of the above
   - ⑩ I didn't make an appointment by phone

3. **Were you able to get an appointment as soon as you wanted?**8857
   - ① Yes ② No

4. **How would you rate the courtesy of the person who made your appointment?**8860
   - ① Poor ② Fair ③ Good ④ Very Good ⑤ Excellent

ARRIVAL AND REGISTRATION IN THE VA

5. **On the day of your appointment, how long did you wait in line to check in?**9304
   - ① No wait ② 1 to 15 minutes ③ 16 to 30 minutes ④ Greater than 30 minutes

6. **How long after the time when your appointment was scheduled to begin did you wait to be seen?**9305
   - ① No wait ③ 11 to 20 minutes ⑤ 31 to 60 minutes ⑦ Can't remember
   - ② 1 to 10 minutes ④ 21 to 30 minutes ⑥ More than 1 hour

7. **Did you have to wait too long in the *waiting room*?**8863
   - ① Yes, definitely ② Yes, somewhat ③ No

IN THE PROVIDER'S OFFICE IN THE VA

8. **The word "provider" can refer to a doctor, nurse, or physician assistant. Was the provider you saw <u>during your most recent visit</u> your regular provider--the one you usually see when you come to the VA?**11805
   - ① Yes ② No ③ Do not have a regular VA provider

9. **When you saw your health care provider, did he or she give you a chance to explain the reasons for your visit?**9164
   - ① Yes, completely ② Yes, somewhat ③ No ④ Provider already knew

10. **Did the provider listen to what you had to say?**9165
    - ① Yes, completely ② Yes, somewhat ③ No ④ Had nothing to discuss

11. **Were you involved in decisions about your care as much as you wanted?**8877
    - ① Yes, definitely ② Yes, somewhat ③ No

12. Was the provider willing to talk to your family or friends about your health or treatment?9308
① Yes   ② No   ③ No family/friends involved

13. Did the provider ask how your family or living situation might affect your health?9309
① Yes   ② No   ③ Not necessary

14. Did you have concerns that you wanted to discuss but did not?9310
① Yes   ② No

15. If you and the provider did not talk about your concerns, was it because...11703
[1] You were embarrassed about bringing them up
[2] You didn't have time to bring them up
[3] You forgot to bring them up
[4] Provider didn't have time to listen
[5] Provider didn't ask about your concerns
[6] Too many interruptions/no privacy
[7] Did not have concerns

16. Did you have confidence and trust in the provider you saw?9312
① Yes, completely   ② Yes, somewhat   ③ No

17. Did you have trouble understanding the provider because of a language problem?9353
① Yes, definitely   ② Yes, somewhat   ③ No

18. When you asked questions, did you get answers you could understand?9313
① Yes, always   ② Yes, sometimes   ③ No   ④ Did not ask any questions

19. Did the provider explain why you needed tests in a way that you could understand?9314
① Yes, completely   ② Yes, somewhat   ③ No   ④ Did not need any tests

20. Did someone tell you *how* you would find out the results of your tests?9315
① Yes   ② No   ③ Not sure   ④ Didn't need any tests

21. Did someone tell you *when* you would find out the results of your tests?9316
① Yes   ② No   ③ Not sure   ④ Didn't need any tests

22. After tests were done, did the provider explain the results in a way that you could understand?9317
① Yes, completely   ③ No   ⑤ Didn't get my test results yet
② Yes, somewhat   ④ Didn't need an explanation   ⑥ Didn't need any tests

23. Did someone explain the purpose of any prescribed medicines in a way that you could understand?11704
① Yes, completely   ② Yes, somewhat   ③ No   ④ Already knew   ⑤ No medicines prescribed

24. Did someone tell you about side effects of your medicines in a way you could understand?9318
① Yes, completely   ② Yes, somewhat   ③ No   ④ Already knew   ⑤ No medicines prescribed

25. Did the provider explain what to do if problems or symptoms continued, got worse, or came back?9319
① Yes, completely   ③ No   ⑤ No problems or symptoms
② Yes, somewhat   ④ Already knew

26. Did you get as much information about your condition and/or treatment as you wanted from the provider?9320
① Yes, completely   ② Yes, somewhat   ③ No

27. Did you spend as much time with your provider as you wanted?11806
① Yes   ② No

28. Overall, how would you rate the courtesy of your provider?8884
① Poor   ② Fair   ③ Good   ④ Very Good   ⑤ Excellent

001AMD36   0060421

AFTER YOUR VISIT IN THE VA

29. **If you needed another visit with *this provider*, did the staff do everything they could to make the necessary arrangements?**8890
    ① Yes   ② No   ③ No other visit was needed   ④ Not sure

30. **If you were referred to *another provider*, did the staff do everything they could to make the necessary arrangements?**9356
    ① Yes   ② No   ③ No referral was needed   ④ Not sure

31. **Did you know who to call if you needed help or had more questions after you left your appointment?**9184
    ① Yes   ② No   ③ Not sure

OVERALL IMPRESSIONS OF YOUR MOST RECENT VA CLINIC VISIT

32. **Was the main reason you came for this visit addressed to your satisfaction?**9357
    ① Yes, completely   ② Yes, somewhat   ③ No

33. **How well organized was the clinic you visited?**9321
    ① Not at all organized   ② Somewhat organized   ③ Very organized

34. **Overall, how would you rate the quality of this visit?**9322
    ① Poor   ② Fair   ③ Good   ④ Very Good   ⑤ Excellent

ABOUT ALL YOUR VA CLINIC VISITS DURING THE PAST TWO MONTHS

Now please think about all of the care you have received <u>in the past two months</u> at a VA clinic, a VA doctor or nurse's office, a VA specialist's office, a VA emergency room, or a VA pharmacy.

35. **On how many days did you visit the VA for care <u>in the past two months</u>?**11697
    ① 0 visits
    ② 1 visit
    ③ 2 visits
    ④ 3 visits
    ⑤ 4 visits
    ⑥ 5 or more visits

36. **Is there one provider or team in charge of your VA care?**9323
    ① Yes   ② No   ③ Not sure

37. **Were the providers who cared for you familiar with your most recent medical history?**9330
    ① Yes, always   ② Yes, sometimes   ③ No

38. **Were there times when one of your providers did not know about tests you had or their results?**11807
    ① Yes   ② No   ③ Do not know   ④ No tests in the past two months

39. **Were there times when one of your providers did not know about changes in your treatment that another doctor recommended?**11808
    ① Yes   ② No   ③ Do not know   ④ No changes in the past two months

40. **Were there times when you were confused because different providers told you different things?**9333
    ① Yes   ② No

41. **Did you know what the next step in your care would be?**9334
    ① Yes, always   ② Yes, sometimes   ③ No   ④ Further care unnecessary at this time

42. **Did you know who to ask when you had questions about your health care?**9335
  ① Yes, always   ② Yes, sometimes   ③ No   ④ Did not have any questions

43. **If there was a time in the past two months when you needed medical advice or help right away; how long did it take to get the help you needed?**11705
  ① No wait
  ② Within 1 hour
  ③ More than 1 hour, but within 24 hours
  ④ Greater than 24 hours
  ⑤ Never got the help I needed
  ⑥ Didn't need help

44. **Do you think your problem should have been handled sooner?**9337
  ① Yes   ② No   ③ Didn't need help

ABOUT YOUR SPECIALIST CLINIC VISIT DURING THE PAST TWO MONTHS IN THE VA

These next questions are about getting to see a specialist provider other than your usual (primary care) provider.
If you had more than one specialist visit during the past two months, please tell us about the most recent one.

45. **Please think about your most recent specialist visit during the past two months. What kind of specialist visit was it?**11825
  ① First time visit with this type of specialist   ③ Didn't have a specialist visit in the past two months
  ② Repeat visit with this type of specialist

46. **Was this specialist:**11660
  ① A VA specialist
  ② A Non-VA specialist referred to by VA provider
  ③ A Non-VA specialist seen on my own (not referred by a VA provider)
  ④ Didn't have a specialist visit in the past two months

47. **How long did you wait between the time you were told you needed to see a specialist and the day you actually saw the specialist?**9325
  ① Same day   ⑤ 61 to 120 days (3 to 4 months)
  ② 1 to 14 days   ⑥ More than 120 days (over 4 months)
  ③ 15 to 30 days   ⑦ Didn't have a specialist visit in the past two months
  ④ 31 to 60 days (1 to 2 months)

48. **How long do you think it is reasonable to wait to see this type of specialist?**11706
  ① Same day
  ② 1 to 14 days
  ③ 15 to 30 days
  ④ 31 to 60 days (1 to 2 months)
  ⑤ 61 to 120 days (3 to 4 months)
  ⑥ More than 120 days (over 4 months)

49. **Were you given enough information about why you were to see this specialist?**11707
  ① Yes, completely
  ② Yes, somewhat
  ③ No
  ④ Didn't have a specialist visit in the past two months

50. **Did this specialist have the information he or she needed from your medical records?**11708
  ① Yes, completely
  ② Yes, somewhat
  ③ No
  ④ Didn't have a specialist visit in the past two months

51. Overall, how would you rate the quality of your most recent specialist visit?11709
- ① Poor
- ② Fair
- ③ Good
- ④ Very Good
- ⑤ Excellent
- ⑥ Didn't have a specialist visit in the past two months

USING THE VA PHARMACY DURING THE PAST TWO MONTHS

52. How long did you usually wait for your prescriptions to be filled at the VA pharmacy?11710
- ① 1 to 10 minutes
- ② 11 to 20 minutes
- ③ 21 to 30 minutes
- ④ 31 to 40 minutes
- ⑤ More than 40 minutes
- ⑥ Did not wait at the VA pharmacy; I had my prescriptions mailed to me
- ⑦ Didn't use the VA pharmacy during the past two months

53. Have you had any concerns with VA pharmacy services during the past 2 months?11711
- ① I have had no concerns
- ② I received the wrong medication through the mail out program
- ③ I received the wrong medication at the VA pharmacy pick up window
- ④ I received too large a supply of one or more medications through the mail out program
- ⑤ I received too large a supply of one or more medications through the VA pharmacy pick up window
- ⑥ There was an unexplained change to the medication I received through the mail out program
- ⑦ There was an unexplained change to the medication that I received through the VA pharmacy pick up window

54. If you had any of the concerns listed above, did you know whom to contact?11712
- ① Yes, and it was resolved
- ② Yes, but it was not resolved
- ③ No, I did not know who to contact
- ④ I had no concerns

55. Overall, how would you rate VA pharmacy services during the past two months?11713
- ① Poor
- ② Fair
- ③ Good
- ④ Very Good
- ⑤ Excellent
- ⑥ Didn't use the VA pharmacy services in the past two months

OVERALL IMPRESSION OF YOUR VA CLINIC CARE IN THE PAST TWO MONTHS

Please think about all of the care you have received in the past two months at a VA clinic,
VA doctor or nurse's office, or a VA emergency room.

56. Overall, how would you rate the quality of care you received during the past two months?11809
- ① Poor   ② Fair   ③ Good   ④ Very Good   ⑤ Excellent

001AMD69   0060421

57. If you could have free care outside the VA, would you choose to come here again?9343
① Definitely would not   ② Probably would not   ③ Probably would   ④ Definitely would

58. Did you have a complaint about how you were treated (medically or personally) during your last healthcare visit?27468
① Yes   ② No

59. If you reported this complaint to someone at the VA location where you received your care, to whom did you report this complaint?27470
① Treatment Team   ③ Patient Advocate
② Other VA Staff   ④ Did not report the complaint to a VA employee

60. If you had a complaint, how easy was it for you to find someone to hear your complaint? (Fill in only one circle)27472

Very easy	Easy	Difficult	Very difficult	Not Applicable
①	②	③	④	⑤

61. If you spoke with someone at the VA location about a complaint, how satisfied were you with the way your complaint was handled?27474
① Very satisfied   ② Satisfied   ③ Dissatisfied   ④ Very dissatisfied

62. How long did it take the VA hospital to resolve your complaint?27476
① Same day   ③ 8-14 days   ⑤ More than 21 days   ⑧ I did not have a complaint
② 2-7 days   ④ 15-21 days   ⑥ Complaint is not resolved

63. Overall, how does the care you received from the VA over the last two months compare to your perception of non-VA care?19492
① VA care is much better
② VA care is somewhat better
③ No difference between VA and non VA care
④ VA care is somewhat worse
⑤ VA care is much worse

64. All things considered, how satisfied are you with your health care in the VA?11826
① Completely satisfied
② Very satisfied
③ Somewhat satisfied
④ Neither satisfied nor dissatisfied
⑤ Somewhat dissatisfied
⑥ Very dissatisfied
⑦ Completely dissatisfied

65. Who helps care for you at home?9348
① Husband or wife   ③ Visiting nurse   ⑤ Didn't need help
② Other relative or friend   ④ Need help but have no one

The following questions will help us better understand the quality of care given to patients with different needs.

66. Has your provider or anyone on your health care team discussed home care needs with you?9349
① Yes   ② No   ③ Don't need help

ABOUT YOUR HEALTH

Instructions: The following questions ask for your views about your health.

Please answer every question by filling in one circle for each answer. If you are unsure about how to answer a question, please give the best answer you can.

67. In general, would you say your health is...11811
⑩ Excellent   ⑧ Very Good   ⑥ Good   ③ Fair   ① Poor

001AMD7A   0060421

68. The following two questions are about activities you might do <u>during a typical day</u>. Does *your health now limit you* in these activities? If so, how much? 1054

    a. **Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf?**11814
      ① Yes, Limited A Lot   ② Yes, Limited A Little   ③ No, Not Limited At All

    b. **Climbing several flights of stairs?**11815
      ① Yes, Limited A Lot   ② Yes, Limited A Little   ③ No, Not Limited At All

69. <u>During the past 4 weeks</u>, have you had any of the following problems with your work or other regular daily activities *as a result of your physical health*? 1055

    a. **Accomplished less than you would like**11816
      ① No, none of the time
      ② Yes, a little of the time
      ③ Yes, some of the time
      ④ Yes, most of the time
      ⑤ Yes, all of the time

    b. **Were limited in the kind of work or other activities**11817
      ① No, none of the time
      ② Yes, a little of the time
      ③ Yes, some of the time
      ④ Yes, most of the time
      ⑤ Yes, all of the time

70. <u>During the past 4 weeks</u>, have you had any of the following problems with your work or other regular daily activities as a *result of any emotional problems (such as feeling depressed or anxious)*?1056

    a. **Accomplished less than you would like**11818
      ① No, none of the time
      ② Yes, a little of the time
      ③ Yes, some of the time
      ④ Yes, most of the time
      ⑤ Yes, all of the time

    b. **Didn't do work or other activities as *carefully* as usual**11819
      ① No, none of the time
      ② Yes, a little of the time
      ③ Yes, some of the time
      ④ Yes, most of the time
      ⑤ Yes, all of the time

71. <u>During the past 4 weeks</u>, how much did *pain* interfere with your normal work (including both work outside the home and housework)?11820
    ⑤ Not at all   ④ A little bit   ③ Moderately   ② Quite a bit   ① Extremely

These three questions are about how you feel and how things have been with you <u>during the past 4 weeks</u>. <u>For each question, please give the one answer</u> that comes closest to the way you have been feeling.

72. How much of the time <u>during the past 4 weeks</u>:1061

    a. **Have you felt calm and peaceful?**11821
      ① All of the time   ③ A good bit of the time   ⑤ A little of the time
      ② Most of the time   ④ Some of the time   ⑤ None of the time

    b. **Did you have a lot of energy?**11822
      ① All of the time   ③ A good bit of the time   ⑤ A little of the time
      ② Most of the time   ④ Some of the time   ⑥ None of the time

72. How much of the time <u>during the past 4 weeks</u>:1061

    c. Have you felt downhearted and blue?11823
      ① All of the time   ③ A good bit of the time   ⑤ A little of the time
      ② Most of the time   ④ Some of the time   ⑥ None of the time

73. <u>During the past 4 weeks</u>, how much of the time has your *physical health* or *emotional problems* interfered with your social activities (like visiting with friends, relatives, etc.)?11824
    ① All of the time   ③ A good bit of the time   ⑤ A little of the time
    ② Most of the time   ④ Some of the time   ⑥ None of the time

Now we'd like to ask you some questions about how your health may have changed.

74. <u>Compared to one year ago</u>, how would you rate your *physical health* in general now?11687
    ① Much better
    ② Somewhat better
    ③ About the same
    ④ Somewhat worse
    ⑤ Much worse

75. <u>Compared to one year ago</u>, how would you rate your *emotional problems* (such as feeling anxious, depressed or irritable) *now*?11688
    ① Much better
    ② Somewhat better
    ③ About the same
    ④ Somewhat worse
    ⑤ Much worse

76. How much of the time <u>during the past week</u>, did you feel depressed?11689
    ① Rarely or none of the time (less than 1 day)
    ② Some or a little of the time (1-2 days)
    ③ Occasionally or a moderate amount of the time (3-4 days)
    ④ Most or all of the time (5-7 days)

77. <u>In the past year</u>, have you had 2 weeks or more when you felt sad, blue or depressed or when you lost interest or pleasure in things that you usually cared about or enjoyed?11690
    ① Yes   ② No

78. Have you had 2 years or more in your life when you felt depressed or sad most days, even if you felt okay sometimes?11691
    ① Yes   ② No

79. Have you been treated by a VA provider for chronic pain in the past 12 months?11716
    ① Yes   ② No

80. If you have been treated by a VA provider for chronic pain, please rate the effectiveness of your pain treatment?11717
    ① Poor   ③ Fair   ⑥ Good   ⑧ Very Good   ⑩ Excellent

<p align="center">***OTHER QUESTIONS ABOUT YOU***</p>

Please answer the following questions. We want to remind you that all information is strictly confidential. It will not be shared with your doctor or affect your VA care.

81. Are you of Hispanic or Latino origin or descent?11812
    ① Yes, I am Hispanic or Latino   ② No, I am not

82. What is your race? (mark all that apply)11685
- ① White (Caucasian)
- ② Black or African American
- ③ Asian
- ④ Native Hawaiian or Pacific Islander
- ⑤ American Indian or Alaska Native

83. What is the last year of school you have completed?11718
- ① Did not complete high school
- ② High school graduate or GED
- ③ Some college
- ④ College graduate or beyond

84. What is your current marital status?11813
- ① Married ② Divorced ③ Separated ④ Widowed ⑤ Never married

85. Are you currently...11684
- ① Employed for wages
- ② Self-employed
- ③ Unable to work
- ④ Looking for work and unemployed for more than 1 year
- ⑤ Looking for work and unemployed for less than 1 year
- ⑥ Homemaker
- ⑦ Student
- ⑧ Retired

86. What was your total household income (income from all sources) during the past 12 months?11686
- ① $15,000 or less
- ② $15,001 to $30,000
- ③ $30,001 to $60,000
- ④ $60,001 or more

87. How tall are you without shoes on? (Fill in feet (ft.) and inches (in.)) (If 1/2" round up)11664
- ① 5ft 0in or less ④ 5ft 3in ⑦ 5ft 6in ⑩ 5ft 9in ⑬ 6ft 0in ⑯ 6ft 3in or more
- ② 5ft 1in ⑤ 5ft 4in ⑧ 5ft 7in ⑪ 5ft 10in ⑭ 6ft 1in
- ③ 5ft 2in ⑥ 5ft 5in ⑨ 5ft 8in ⑫ 5ft 11in ⑮ 6ft 2in

88. How much do you weigh? (In pounds) (Fill in one)11662
- ① 90 lbs. or less ⑥ 131-140 lbs. ⑪ 181-190 lbs. ⑯ 231-240 lbs. ㉑ 281-290 lbs.
- ② 91-100 lbs. ⑦ 141-150 lbs. ⑫ 191-200 lbs. ⑰ 241-250 lbs. ㉒ 291-300 lbs.
- ③ 101-110 lbs. ⑧ 151-160 lbs. ⑬ 201-210 lbs. ⑱ 251-260 lbs. ㉓ 301-310 lbs.
- ④ 111-120 lbs. ⑨ 161-170 lbs. ⑭ 211-220 lbs. ⑲ 261-270 lbs. ㉔ 311 lbs. and over
- ⑤ 121-130 lbs. ⑩ 171-180 lbs. ⑮ 221-230 lbs. ⑳ 271-280 lbs.

89. During the past 12 months, have you been seen by...(fill in one)11667
- ① VA providers only
- ② Non-VA providers only
- ③ VA and non-VA providers
- ④ No providers

90. Do you have one person who you think of as your regular doctor?11668
- ① Yes, a VA doctor ② Yes, a non-VA doctor ③ No

91. Do you have **Medicare coverage?** (mark all that apply) *Medicare is a federal health program for seniors over 65 and certain younger disabled people.*11669
    - ① Yes, for hospital care (Part A)
    - ② Yes, for doctor office visits (Part B)
    - ③ Yes, for the Medicare+Choice or HMO plan (Part C)
    - ④ No, I have no Medicare coverage

92. Do you have **Medicaid?** *Medicaid is a state-run health insurance program for people whose income is below a certain level.*11670
    - ① Yes
    - ② No

93. Do you have any other health **insurance coverage?** (mark all that apply)11671
    - ① Yes, a Medigap policy
    - ② Yes, other private health insurance
    - ③ No, I have no other insurance

QUESTIONS ABOUT YOUR HEALTH BEHAVIORS

94. Do you now smoke every day, some days or not at all?23815
    - ① Every day
    - ② Some days
    - ③ Not at all, have not smoked more than 100 cigarettes in entire life
    - ④ Not at all currently, but smoked previously
    - ⑤ Do not know

95. How long has it been since you quit smoking cigarettes?23821
    - ① 12 months or less   ② More than 12 months   ③ Do not know

96. In the past 12 months, on how many visits were you advised to quit smoking by a VA doctor or other VA health provider?23826
    - ① None   ③ 2 to 4 visits   ⑤ 10 or more visits
    - ② 1 visit   ④ 5 to 9 visits   ⑥ I had no visits in the last 12 months.

97. On how many visits was medication recommended or discussed to assist you with quitting smoking (for example: nicotine gum, patch, nasal spray, inhaler, prescription medication)?23827
    - ① None   ③ 2 to 4 visits   ⑤ 10 or more visits
    - ② 1 visit   ④ 5 to 9 visits   ⑥ I had no visits in the last 12 months.

98. On how many visits did your VA doctor or VA health provider recommend or discuss methods and strategies (other than medication) to assist you with quitting smoking?23828
    - ① None   ③ 2 to 4 visits   ⑤ 10 or more visits
    - ② 1 visit   ④ 5 to 9 visits   ⑥ I had no visits in the last 12 months.

99. How often did you have a drink containing alcohol **in the past 12 months**? Consider a "drink" to be a can or bottle of beer, a glass of wine, a wine cooler, or one cocktail or a shot of hard liquor (like scotch, gin or vodka). (Please mark only one.)19484
    - ① Never (Go to #103)   ③ 2-4 times a month   ⑤ 4-5 times a week
    - ② Monthly or less   ④ 2-3 times a week   ⑥ 6 or more times a week

100. How many drinks containing alcohol did you have on a **typical** day when you were drinking **in the past 12 months**?19485
    - ① 0 drinks (Did not drink in the past 12 months) (Go to #103)   ③ 3-4 drinks   ⑤ 7-9 drinks
    - ② 1-2 drinks   ④ 5-6 drinks   ⑥ 10 or more drinks

101. How often did you have **6 or more** drinks on one occasion **in the past 12 months**?19486
    - ① Never   ② Less than monthly   ③ Monthly   ④ Weekly   ⑤ Daily or almost daily

102. **In the past 12 months** has a VA doctor or other VA health care provider **advised you** about your drinking (to drink less or not to drink alcohol)?19487
    - ① Yes   ② No

103. Did you get a flu vaccine in September 2006 or later? (Please mark only one)22026
    - ① Yes, Flu Shot (Go to #105)
    - ② Yes, FluMist (a flu vaccine sprayed into the nose) (Go to #105)
    - ③ No
    - ④ Do Not Know (Go to #106)

104. If you did not get a flu vaccine in September 2006 or later, why not? Mark the MAIN reason:22027
　　① I was told I was not eligible to get the flu vaccine this year because of the shortage
　　② Flu vaccine not available and I didn't get it elsewhere
　　③ Medical advice not to get a flu shot (such as allergy, illness)
　　④ No time/Didn't get around to it
　　⑤ Inconvenient to get it at the VA
　　⑥ Don't like needles/injections
　　⑦ I believe it might make me sick
　　⑧ Don't believe in it/Prefer other methods of prevention
　　⑨ Did not think I needed a flu shot
　　⑩ Did not want a flu vaccine
　　⑪ I plan to get my flu vaccine at a later date
　　⑫ Other

105. Where did you get your flu vaccine?22029
　　① At the VA (such as a hospital, clinic, outreach mobile unit)
　　② Vet Center
　　③ Non-VA hospital, clinic, doctor's office, visiting nurse or Health Department
　　④ Community source (drug store, church, grocery store, etc.)
　　⑤ Other
　　⑥ Do not remember

106. The pneumonia vaccine (Pneumovax) is recommended for certain age groups or medical conditions. It is usually only needed once in your lifetime. Have you ever had a pneumonia vaccination?22030
　　① Yes　　② No　　③ Do not know

107. Did someone else help you complete this survey?11715
　　① Yes　　② No, I completed it alone, without help

If you have a specific question or need help with your VA care, you may contact the VA:
1. By telephone:
a. VA Benefits: 1-800-827-1000
b. Health Care Benefits: 1-877-222-8387
c. Telecommunications Device for the Deaf (TDD): 1-800-829-4833
2. Information on a broad range of veterans' benefits is available on our home page at www.va.gov.
3. At your local VA medical center. Either contact the department that you think can help you or ask for the Patient Advocate.

Your answers are important to help us improve VA care. Thank you for completing this questionnaire. Please place the completed questionnaire in the envelope we sent you. No stamp is required. Simply place the envelope in any mailbox and return the survey to:

OQP/Data Center
C/O National Research Corporation
P.O. Box 82660
Lincoln, NE 68501-2660
I 123ABC March 0000000000 Version 1 #BWNHDJZ

Appendix D: Raw Data File Beneficiary Categories

A00	Army Deceased Sponsor
A11	Army Active Duty
A12	Army Reserve
A13	Army Ad Recruit
A14	Army Service Academy Cadet
A15	Army National Guard
A21	Army ROTC
A22	Army Reserve On (Inactive Duty For Training)
A23	Army National Guard On (Inactive Duty For Training)
A24	Army Former Active Duty/Reserve/National Guard - Transition Assistance Act
A25	Army Dependent Of Former Active Duty/Reserve/National Guard - Transition Assistance Act
A26	Army Applicant/Registrant
A27	Army Former Service Member - Maternity Care Only
A28	Army Newborns Of Former Service Member
A29	Army Newborns Of Sponsor's Daughter
A31	Army Retirees Length Of Service
A32	Army PDRL
A33	Army TDRL
A36	Army Inactive Guard/Reserve
A37	Army Inactive Guard/Reserve Dependent
A41	Army Dependents Of Active Duty (Exclude Former Spouse)
A43	Army Dependents Of Retired (Living), Exclude Former Spouse
A45	Army Dependents Of Deceased Ad, Exclude Former Spouse
A47	Army Dependents Of Deceased Retired, Exclude Former Spouse
A48	Army Dependents Of Unremarried Former Spouse
A49	Army Dependents Of Dependent Unremarried Former Spouse
B00	NOAA Deceased Sponsor
B11	NOAA Active Duty
B26	NOAA Applicant/Registrant
B29	NOAA Newborn of Sponsor's Daughter
B31	NOAA Retirees Length Of Service
B32	NOAA PDRL
B33	NOAA TDRL
B41	NOAA Dependents Of Active Duty (Exclude Former Spouse)
B43	NOAA Dependents Of Retired (Living), Exclude Former Spouse

B45	NOAA Dependents Of Deceased Ad, Exclude Former Spouse
B47	NOAA Dependents Of Deceased Retired, Exclude Former Spouse
B48	NOAA Dependents Of Unremarried Former Spouse
B49	NOAA Dependents Of Dependent Unremarried Former Spouse
C00	Coast Guard Deceased Sponsor
C11	Coast Guard Active Duty
C12	Coast Guard Reserve
C13	Coast Guard Active Duty Recruit
C14	Coast Guard Service Academy Cadet
C22	Coast Guard Reserve On (Inactive Duty For Training)
C24	Coast Guard Former Active Duty/Reserve/National Guard - Transition Assistance Act
C25	Coast Guard Dependent Of Former Active Duty/ Reserve/National Guard - Transition Assistance Act
C26	Coast Guard Applicant/Registrant
C27	Coast Guard Former Service Member - Maternity Careonly
C28	Coast Guard Newborns Of Former Service Member
C29	Coast Guard Newborns Of Sponsor's Daughter
C31	Coast Guard Retirees Length Of Service
C32	Coast Guard PDRL
C33	Coast Guard TDRL
C36	Coast Guard Inactive Guard/Reserve
C37	Coast Guard Inactive Guard/Reserve Dependent
C41	Coast Guard Dependents Of Active Duty (Exclude Former Spouse)
C43	Coast Guard Dependents Of Retired (Living), Exclude Former Spouse
C45	Coast Guard Dependents Of Deceased Ad, Exclude Former Spouse
C47	Coast Guard Dependents Of Deceased Retired, Exclude Former Spouse
C48	Coast Guard Dependents Of Unremarried Former Spouse
C49	Coast Guard Dependents Of Dependent Unremarried Former Spouse
F00	Air Force Deceased Sponsor
F11	Air Force Active Duty
F12	Air Force Reserve
F13	Air Force Active Duty Recruit
F14	Air Force Service Academy Cadet
F15	Air Force National Guard
F21	Air Force ROTC
F22	Air Force Reserve On (Inactive Duty For Training)
F23	Air Force National Guard On (Inactive Duty For Training)
F24	Air Force Former Active Duty/Reserve/National Guard-Transition Assistance Act

F25	Air Force Dependent Of Former Active Duty/Reserve/National Guard - Transition Assistance Act
F26	Air Force Applicant/Registrant
F27	Air Force Former Service Member - Maternity Care Only
F28	Air Force Newborns Of Former Service Member
F29	Air Force Newborns Of Sponsor's Daughter
F31	Air Force Retirees Length Of Service
F32	Air Force PDRL
F33	Air Force TDRL
F36	Air Force Inactive Guard/Reserve
F37	Air Force Inactive Guard/Reserve Dependent
F41	Air Force Dependents Of Active Duty (Exclude Former Spouse)
F43	Air Force Dependents Of Retired (Living), Exclude Former Spouse
F45	Air Force Dependents Of Deceased Ad, Exclude Former Spouse
F47	Air Force Dependents Of Deceased Retired, Exclude Former Spouse
F48	Air Force Dependents Of Unremarried Former Spouse
F49	Air Force Dependents Of Dependent Unremarried Former Spouse
K00	Other Deceased Sponsor
K51	State Department U.S. Civilian Employee-Overseas
K52	State Department U.S. Civilian Dependent-Overseas
K53	Other Federal Agencies/Depts. U.S. Civilian Employee
K54	Other Federal Agencies/Depts. U.S. Civilian Dependent
K55	DOD U.S. Civilian Remote Area Employee-Conus
K56	DOD U.S. Civilian Remote Area Dependent-Conus
K57	DOD U.S. Civilian Employees/Dependents Occupational Health
K58	U.S Civilian Employees/Dependents Disability Retirement Exam
K59	U.S. Civilian Employees/Dependents Other
K61	Other Beneficiaries Of U.S. Govt. Veterans Administration
K62	Other Beneficiaries Of U.S. Govt. Owcp
K63	Other Beneficiaries Of U.S. Govt. Service Home - Other Than Military Retiree
K64	Other Beneficiaries Of U.S. Govt. Other Federal Agencies/Depts.
K65	Other Beneificiaries Of U.S. Govt. Contract Employee
K66	Other Beneficiaries Of U.S. Govt. Federal Prisoner
K67	Other Beneficiaries Of U.S. Govt. American Indian,Aleut, Eskimo
K68	Other Beneficiaries Of U.S. Govt. Micronesian, Samoan, Trust Territories
K69	Other Beneificiaries Of U.S. Govt.
K71	Foreign Nationals/Dependents Imet/Sales
K72	Foreign Nationals/Dependents Nato Military
K73	Foreign Nationals/Dependents Nato Dependent

K74	Foreign Nationals/Dependents Non-Nato Military
K75	Foreign Nationals/Dependents Non-Nato Dependent
K76	Foreign Nationals/Dependents Foreign Civilian
K78	Foreign Nationals/Dependents Prisoner Of War/ Internees
K79	Foreign Nationals/Dependents Other
K82	Defense Department Designee Secretary Of Army
K83	Defense Department Designee Secretary Of Navy
K84	Defense Department Designee Secretary Of Air Force
K91	Civilian, No Govt. Connection Humanitarian
K92	Civilian, No Govt. Connection Emergency
K99	Patient Not Elsewhere Classified
M00	Marine Corps Deceased Sponsor
M11	Marine Corps Active Duty
M12	Marine Corps Reserve
M13	Marine Corps Ad Recruit
M22	Marine Corps Reserve On (Inactive Duty For Training)
M24	Marine Corps Former Active Duty/Reserve/National Guard - Transition Assistance Act
M25	Marince Corps Dependent Of Former Active Duty/ Reserve/National Guard - Transition Assistance Act
M26	Marine Corps Applicant/Registrant
M27	Marine Corps Former Service Member - Maternity Care Only
M28	Marine Corps Newborns Of Former Service Member
M29	Marine Corps Newborns Of Sponsor's Daughter
M31	Marine Corps Retirees Length Of Service
M32	Marine Corps PDRL
M33	Marine Corps TDRL
M36	Marine Inactive Guard/Reserve
M37	Marine Inactive Guard/Reserve Dependent
M41	Marine Corps Dependents Of Active Duty (Exclude Former Spouse)
M43	Marine Corps Dependents Of Retired (Living), Exclude Former Spouse
M45	Marine Corps Dependents Of Deceased Ad, Exclude Former Spouse
M47	Marine Corps Dependents Of Deceased Retired, Exclude Former Spouse
M48	Marine Corps Dependents Of Unremarried Former Spouse
M49	Marine Corps Dependents Of Dependent Unremarried Former Spouse
N00	Navy Deceased Sponsor
N11	Navy Active Duty
N12	Navy Reserve
N13	Navy Active Duty Recruit

N14	Navy Service Academy Midshipman
N21	Navy ROTC
N22	Navy Reserve On (Inactive Duty For Training)
N24	Navy Former Active Duty/Reserve/National Guard - Transition Assistance Act
N25	Navy Dependent Of Former Active Duty/Reserve/ National Guard - Transition Assistance Act
N26	Navy Applicant/Registrant
N27	Navy Former Service Member - Maternity Care Only
N28	Navy Newborns Of Former Service Member
N29	Navy Newborns Of Sponsor's Daughter
N31	Navy Retirees Length Of Service
N32	Navy PDRL
N33	Navy TDRL
N36	Navy Inactive Guard/Reserve
N37	Navy Inactive Guard/Reserve Dependent
N41	Navy Dependents Of Active Duty (Exclude Former Spouse)
N43	Navy Dependents Of Retired (Living), Exclude Former Spouse
N45	Navy Dependents Of Deceased Ad, Exclude Former Spouse
N47	Navy Dependents Of Deceased Retired, Exclude Former Spouse
N48	Navy Dependents Of Unremarried Former Spouse
N49	Navy Dependents Of Dependent Unremarried Former Spouse
P00	Public Health Service Deceased Sponsor
P11	Public Health Service
P12	Public Health Service Reserve
P22	Public Health Service Reserve On (Inactive Duty For Training)
P26	Public Health Service Applicant/Registrant
P29	Public Health Service Newborn of Sponsor's Daughter
P31	Public Health Service Retirees Length Of Service
P32	Public Health Service PDRL
P33	Public Health Service TDRL
P41	Public Health Service Dependents Of Active Duty (Exclude Former Spouse)
P43	Public Health Service Dependents Of Retired (Living), Exclude Former Spouse
P45	Public Health Service Dependents Of Deceased Ad, Exclude Former Spouse
P47	Public Health Service Dependents Of Deceased Retired, Exclude Former Spouse
P48	Public Health Service Dependents Of Unremarried Former Spouse
P49	Public Health Service Dependents Of Dependent Unremarried Former Spouse
R72	NATO Recipient Agreement
R73	NATO Recipient Agreement - Family Member
R74	Non-NATO Recipient Agreement

| R75 | Non-NATO Recipient Agreement - Family Member |

(M2 Data Dictionary, 2006)