NAVAL POSTGRADUATE SCHOOL
Monterey, California

THESIS

MILITARY RETIREES
AND THEIR PERCEIVED HEALTH CARE NEEDS

by

Wanda F. Hereford

June, 1992

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Military Retirees
And Their Perceived Health Care Needs

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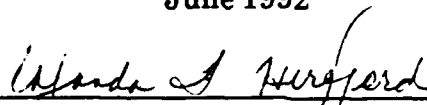B.S., Alabama A&M University, 1984

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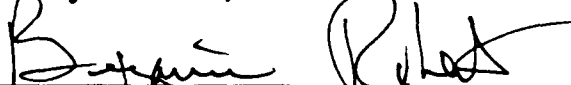
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ABSTRACT

This thesis focuses on the identification of perceived health care needs among military retirees residing on the Monterey Peninsula and within the catchment area of Silas B. Hays Army Community Hospital. Military retirees are expected to be the primary users of military health care services on the Monterey Peninsula after Fort Ord closes sometime in 1994. This thesis identifies their perceived health care needs and determines how they vary demographically. By identifying their perceived health care needs, DoD officials can determine what military medical resources may need to remain in the area to meet those needs; if Silas B. Hays Army Community Hospital, also located on Fort Ord, should close.

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DEDICATION

This thesis is dedicated to

my Grandmother, Eula

for all her love, support and faith

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This author wishes to acknowledge the assistance provided by some goods friends and shipmates:

I. INTRODUCTION

Repercussions from the easing of Soviet relations in Europe and the growing national deficit have placed considerable pressure on the Department of Defense (DoD) to trim its personnel, missions and weaponry. One result of this changing defense environment is the reality that extensive base closing will be a fact of life in the coming years [Ref 1]. Secretary of Defense Dick Cheney said closing bases has become an economic necessity for the military. As defense spending decreases and the military shrinks, "it is essential that we reduce the number of installations if we're to get the greatest value from a declining defense budget" [Ref 2]. The base closure plan will affect 145 military installations. Of these, 86 will be fully closed, five partially closed, and 54 will see either a decrease or an increase in units and activities [Ref 3]. Described as one of the largest military reduction programs ever undertaken, projected savings from this evolution would total $693.6 million a year in operating costs and $5.6 billion over 20 years.

In 1991, the President and Congress called for the closing of seven major army posts (Fort McClennan, Fort Benjamin Harrison, Fort Devens, Fort Dix, Fort Chafee, Fort Smith,

Sacramento Army Depot and Fort Ord) and the realignment or reduction of forces at ten other installations.

The process of deciding which base(s) to close was not an easy one. For many years the main criterion for deciding whether to close a military base was politically motivated [Ref 4]. Defense secretaries would try to close bases in the districts of troublesome congressmen. Powerful congressmen would keep open obsolete bases dear to their constituents. As a result, no military base has been closed for 11 years. However, this process was not the basis for the 12 April 1991, list of proposed military installation closures and realignments.

To provide more definitive procedures in the base closure process, Congress passed the Defense Base Closure and Realignment Act of 1990 (P.L. 101-510). This Act required that all installations be equally considered for possible closure or realignment. It also established new procedures for closing or realigning military installations inside the United States, formed an independent Defense Base Closure and Realignment Commission, and established procedures for the Congress, the President, DoD, Government Office of Accounting (GAO), and the Commission to follow, through 1995, when closing or realigning bases.

The act specifically required the Secretary of Defense to propose selection criteria for DoD to use in recommending military installations within the United States for closure or

realignment.   The proposed criteria were to be used to evaluate bases for closure.   In addition, the criteria were required to be published in the Federal Register to provide a period of public comment for at least 30 days.   After receiving and considering public comments, the DoD published the criteria for selecting bases for closure or realignment (see Table I).

**TABLE I.   DoD CRITERIA FOR SELECTING BASES FOR
CLOSURE OR REALIGNMENT**

CATEGORY	CRITERIA
Military value	1. The current and future mission requirements and the impact on operational readiness of DOD's total force.
	2. The availability and condition of land, facilities, and associated airspace at both the existing and potential receiving locations.
	3. The availability to accommodate contingency, mobilization, and future total force requirements at both the existing and potential receiving locations.
	4. The cost and manpower implications.
Return on investment	5. The extent and timing of potential costs and savings, including the number of years, beginning with the date of completion of the closure or realignment, for the savings to exceed the costs.
Impacts	6. The economic impact on communities.
	7. The ability of both the existing and potential receiving communities' infrastructure to support forces, missions and personnel.
	8. The environmental impact.

DoD guidance provided to the Services directed that they give priority to the four criteria that addressed the military value of installations. Based on Table I criteria, Fort Ord, located outside Monterey, California was on the 12 April 1991 list of bases proposed for closure or realignment. The closing of Fort Ord has been expected because of the Force Realignment Plan announced in 1990. According to this plan, the 199th Brigade at Fort Lewis, Washington will relocate to Fort Polk, Louisiana to support the light infantry training operations. This will allow space for the 7th Infantry Division "Light" at Fort Ord to relocate to Fort Lewis [Ref 5].

The closing of Fort Ord will be a severe economic blow to Monterey County. The loss of military and civilian salaries, contracts for services, and minor construction contracts would reduce the direct flow of dollars to the local economy by $809 million per year. Another $77 million dollars in planned construction will be abandoned. Almost $9 million per year in federal and $1.44 million in state assistance to schools would be lost [Ref 6].

The economic effect of Fort Ord's closure on the Monterey Peninsula and surrounding areas was a major factor under consideration in the base closure process. However, the effect of closing Silas B. Hays Army Community Hospital, located on Fort Ord, did not appear to be a factor under consideration.

The potential loss of Silas B. Hays Army Community Hospital and its impact on military retirees and their dependents have not been examined. Additionally, the future health care needs, medical services required and the cost of providing medical services for this population have not been examined. Since this information is not known, the loss of medical and pharmaceutical services from the hospital could be financially devastating for military retirees.

Silas B. Hays Army Community Hospital is the largest medical facility on the Monterey Peninsula. Built in 1972, the hospital has the capacity to house 440 beds and includes 32 specialty clinics and full patient facilities. However, in practice, the hospital utilizes approximately 128 beds and includes 32 specialty clinics and full patient facilities. The primary mission of the hospital is to provide personalized care to active duty personnel, their dependents and retired personnel. Table II provides a breakdown of Silas B. Hays Army Community Hospital patrons as of 31 December 1990 [Ref 7]:

TABLE II.
SILAS B. HAYS ARMY COMMUNITY HOSPITAL 1990 PATRON LIST

NAME	MILITARY/CIVILIAN
Fort Ord	14,994/22,217
Presidio of Monterey	3,723/ 1,913
Naval Postgraduate School	2,173/957
Fort Hunter Liggett	392/624
Active duty family members	0/30,837
Retired personnel	0/19,491
Retired personnel family members	0/29,236
TOTAL	21,282/105,275

In 1990, active duty members comprised approximately 17 percent of the patrons treated at the hospital. However, if family members are added to this population, their combined total is approximately 41 percent of the patrons treated at the hospital.

The second largest group, the retired personnel and their family members, comprised approximately 39 percent of the patrons treated at the hospital in 1990.

The remaining group of personnel treated at the hospital were DoD civilians. They comprised the remaining 20 percent of the patrons treated at the hospital in 1990.

Based on Table II, military retirees and their dependents comprised a significant segment of the hospitals' patrons list in 1990. By the time Fort Ord closes in 1994, this population is expected to have increased. As a result of the increase,

military retirees and their dependents are expected to be the major users of future military health care services on the Monterey Peninsula. Therefore, it would be prudent for government officials to identify the health care needs of this population and determine an appropriate level of medical services and medical resources needed to meet their health care needs if Silas B. Hays Army Community Hospital is closed.

A. OBJECTIVES

The objectives of this research are:

1. To identify the perceived health care needs among military retirees residing on the Monterey Peninsula.

2. If cost data can be obtained, to project the prospective costs of meeting those health care needs.

B. THE RESEARCH QUESTION

This thesis will address two primary questions:

1. What are the perceived health care needs of military retirees in Silas B. Hays Army Community Hospital catchment area and how do they vary demographically?

2. Can those perceived health care needs be satisfied by military medical facilities remaining in the area after Fort Ord closes?

C. SCOPE, LIMITATIONS AND ASSUMPTIONS

The basic area of impact for Silas B. Hays Army Community Hospital is limited to Monterey County and the medical service

responsibility (catchment) area of the hospital. The impacted military installations in the county include Naval Postgraduate School and its tenant commands and the Presidio of Monterey.

Presently, the Naval Postgraduate School and its tenant commands as well as the Presidio of Monterey are expected to remain in the area. Active duty personnel and their families attached to those commands will require some type of medical services. However, military retirees and their dependents are projected to be the major users of future military health care services. Therefore, this study is limited to identifying only their health care needs.

Due to systemic limitations of obtaining mailing addresses on all military retirees from the Defense Enrollment Eligibility Reporting System (DEERS) and Fort Benjamin Harrison as well as the fiscal cost of survey mailings, this study was limited to military retirees residing on the Monterey Peninsula.

Finally, this research presumes that military officials in Washington are still concerned about providing health care benefits to military retirees; thus, this study may be used as an initial assessment in determining what future medical facilities and resources may be required in the community after Fort Ord closes in 1994.

D. LITERATURE REVIEW AND METHODOLOGY

Two basic research methodologies were used: Literature review and a health care survey. The literature review was conducted using the MEDLINE reference and cross-reference search for relevant studies on health care status, national health priorities and unmet health care needs.

A survey was constructed to identify the perceived health care needs of military retirees residing on the Monterey Peninsula and within Silas B. Hays Army Community Hospital catchment area.

Based on data obtained from the hospital in 1992, the retired military population consisted of 7,400 households. Of this total, 704 households or almost ten percent of the population were randomly selected to participate in this research.

II. LITERATURE REVIEW

In the past 20 years health services have changed dramatically. The 1960s saw the emergence of community medicine as a discipline. The 1970s produced the family-medicine and primary-care movements. Although community medicine and primary care have been beneficial developments for American health care, these approaches alone no longer adequately address the health care challenges of the 1990s.

Providing health care for the independent-living elderly person is a high priority for family physicians because of the demographic transitions taking place. Achieving this goal is sometimes subverted by lack of accurate and practical information about the needs of elderly noninstitutionalized patients and the barriers to receiving adequate care. Because the generic problems of elderly persons in community settings have not been studied, identifying their health care needs and providing general health care services poses a challenge. Family physicians must be able to continue the innovations necessary to fulfill the public's expectation that the specialty provides a better form of primary care. A new innovation to primary care, the Community-Oriented Primary Care (COPC) Model may be the vehicle by which family practice

can effectively respond to the health issues most relevant to a particular community.

COPC is a model of health care that combines primary care with community medicine that can be applied to elderly populations. Under COPC, primary care and family physicians survey and analyze community health problems in order to identify groups whose special needs warrant targeted or alternative services. COPC has been widely discussed in the primary care literature and has been examined as a model appropriate and feasible for practicing family physicians [Ref 8-10].

While the phrase is new to the United States health care vocabulary, it was originally coined by Sidney Kark, who has worked in South Africa and Israel over the past 30 years [Ref 11]. He characterizes COPC as the complementary use of epidemiologic and primary care skills to systematically address the health care needs of a defined population.

In its most general form, COPC is the provision of primary care services to a defined community, coupled with systematic efforts to identify and address the major health problems of that community through effective modifications in both the primary care services and other appropriate community health programs. This includes an appraisal of community health needs, planning of services, and evaluation of the effects of care as well as provision of clinical services. The COPC model has three components, a primary care program, a defined

community, and a process by which the major health problems of the community are addressed. The general structure of the model is summarized in Table III [Ref 12].

**TABLE III.   CONCEPTUAL MODEL OF COMMUNITY-ORIENTED PRIMARY
CARE**

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Services

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⇐

Information
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PRIMARY CARE	COPC PROCESS	DENOMINATOR POPULATION
• Composition of practitioners	• Defining and characterizing the community	• Type of community
• Organization of the practice	• Identifying community health problems	• Organization
• Mechanism of financing	• Modifying health programs	• Mechanism of participation
	• Monitoring impact of program modifications	

A.   COMPONENTS OF THE MODEL

1. Primary Care Program

Primary care can be defined as an array of personal health services that are accessible and acceptable to the patient, comprehensive in scope, coordinated and continuous over time, and for which the practitioner is accountable for the quality and potential effects of the services. The primary care component of the model is concerned with total services provided, but does not limit the composition of the practitioners, nor the manner by which costs or providing primary care services are met.

2. The Community

The second structural element of COPC is a defined community for whose health and health care the practice has assumed responsibility. Such a community may take a variety of forms ranging from traditional communities to combinations that come together for a common purpose such as the work place, the church or schools, to aggregates of individuals who are enrolled in a common health plan.

3. The COPC Process

The third component of the model details how the major health problems of the community are identified and systematically addressed. This process consists of four functions and includes (1) defining and characterizing the community, (2) identifying community health problems, (3) modifying the health care program, and (4) monitoring the effectiveness of program modifications.

a. Defining and Characterizing the Community

The COPC process begins with defining and characterizing the community for which the practice has accepted responsibility. The information gathered in this step forms the basis for subsequent activities. Information gathered in this stage consists of who and where the individuals and households are who make up the population, how they live and behave in ways that influence their health, where and when

they seek care for ailments, and how they perceive and finance their care.

b. Identifying Community Health Problems

The second function in the COPC process consists of identifying the major health problems of the community, characterizing their determinants and correlates, and setting priorities among them.

c. Modifying the Health Care Program

After identifying and isolating a priority health problem, efforts should be made to modify the health care program to better address the problem. For many health problems, modification of the primary care program alone would be inadequate, and the practitioner would therefore advocate appropriate modification in other community/public health programs that exist in the community. There are very few situations in which all components are under a single governing structure, and therefore this function will require a great deal of cooperation among multiple programs.

d. Monitoring the Impact of Program Modification

In order to determine the extent to which the original problem has been resolved, the effectiveness of the modifications must be monitored and evaluated. In the design of the evaluation, it is critical to use a population that is consistent with the definition of the community or with the

stated objective of the program modification, if it was focused on a subset of the community.

In addition to the four functions of the COPC model, there are several stages which comprise each function of the model. Table IV summarizes the staging activities of the COPC model:

TABLE IV. CRITERIA FOR STAGING THE ACTIVITIES NECESSARY TO DEVELOP A COMMUNITY-ORIENTED APPROACH TO PRIMARY CARE

	Defining and characterizing the community	Identifying community health problems	Modifying the health care program	Monitoring the effectiveness program modifications
Stage 0	No effort to define or characterize the community	No effort to understand the health status or health needs of the community	No program modifications made in response to community health needs	No effort to determine the impact of modifications in the health care program
Stage I	Community is characterized from the subjective impressions of the practitioners and/or consumer representatives	Health problems identified through general consensus of the providers and/or consumer groups	Modifications are made more in response to a national or organizationwide initiative	Estimates of program effectiveness are based on subjective impressions of the practitioners and/or consumer groups
Stage II	Community is characterized by extrapolation from secondary data-- census or large area epidemiologic data	Health problems identified by extrapolation from systematic review of secondary data	Modifications are consistent with the particular guidelines of the funding source or agency	Program effectiveness is estimated by extrapolation from secondary data
Stage III	Individuals within the community can be enumerated and characterized through the use of a database specific to the community	Health problems examined through the use of data sets specific to the community	Modifications in the health care program are tailored to unique needs of the community	Program effectiveness is determined by systematic examination of a community - specific data set
Stage IV	Systematic efforts assure a current and complete enumeration of all individuals in the community, including pertinent demographic and socioeconomic data	Formal mechanisms used to identify and set priorities among a broad range of potential health problems in the community	Modifications in program involve both primary care and community/ public health components and are targeted to specific high risk individuals within the community	Program effectiveness is determined by techniques that are specific to the program objectives and account for differential impact among risk groups

B. THE COPC PROCESS APPLIED TO MILITARY RETIREES

Although the COPC model has been used successfully in a variety of private studies, no study has been done using this

model to identify the health care needs of military retirees. Therefore, no one really knows if this model will be useful in this particular setting. However, based on past successes, it will be used as the foundation for identifying the health care needs of military retirees residing on the Monterey Peninsula and within the catchment area of Silas B. Hays Army Community Hospital. The COPC Model along with a health care survey will be used to identify the perceived health care needs of military retirees residing on the Monterey Peninsula.

By applying the COPC model to this research, only two of the four functional elements are addressed, defining and characterizing the community and identifying community health problems. This is because the results of this research can be used to guide the changes of the final two elements of the COPC process. By defining and characterizing the population and identifying their health care problems, any adjustments made in the array of health care services can later be evaluated to determine how well it has addressed the problem(s).

1. Defining and Characterizing the Community

The first step in the COPC process is defining and characterizing the community. The information gathered in this step forms the basis for the subsequent activities. This step requires that individuals within the community be

enumerated and characterized through the use of a database specific to the community.

The community in this research consisted of all retired military personnel residing on the Monterey Peninsula and within the catchment area of Silas B. Hays Army Community Hospital.

The database used in this research was obtained from Silas B. Hays Army Community Hospital. The database consisted of 7,400 retired households who obtained medical treatment from the hospital within the past three years. Of this total, 704, almost ten percent of the population were randomly selected to participate in the survey and within each household only one family member was asked to respond.

The above steps are consistent with Stage III of the COPC process.

2. Identifying Community Health Problems

The second function of the COPC process consists of identifying the major health problems of the community and setting priorities among them.

To determine health care priorities among military retirees, a health care survey was conducted. Based on survey results, the health care needs of this population are analyzed demographically.

The above actions are consistent with Stage III of the COPC process.

3. Modifying the Health Care Program

The results of this study will assess high-priority health problems among military retirees. The survey results will be used to identify the perceived health care needs among military retirees. Based on this information, government officials may then determine who and how these services will be provided (civilian vs military or a combination).

The ideal situation in the health care program modification is to tailor services appropriately to the targeted population.

4. Monitoring the Impact of Program Modification

Based on the results of this study, future changes to the current health care system can be monitored to determine the extent to which they have addressed and resolved the original problem(s).

Applying the COPC model and a health care survey to the military retirees population residing on the Monterey Peninsula, established a means of identification, assessment and determination of health care needs, as well as health care priorities among the targeted population.

III. SURVEY METHODOLOGY

There are no studies and/or surveys available which have been conducted on identifying the health care needs of military retirees specifically. However, there have been past studies and/or surveys conducted on the civilian elderly. Consequently, a survey would have to be constructed specifically for military retirees residing on the Monterey Peninsula and within the catchment area of Silas B. Hays Army Community Hospital.

The survey was constructed based on past, reliable surveys and related data. Current literature indicated that the global and functional dimensions of health care status should be included as part of the survey. The global dimension of health status allows for self-perception of general well-being. The functional dimension assesses whether or not the individual is functionally capable of performing routine activities.

In a study conducted by Wolinsky, et al., [Ref 13], their recommendation for future studies is to at least include the perceived health status and the Activities of Daily Living (ADL) measures in order to tap both the global and functional dimensions of health status. These measures were recommended for two reasons. First, both are relatively brief,

straightforward, and highly reliable and valid measures. Second, the perceived health status questions have the highest factor loading on the global dimension, and the ADL measure has the highest factor loading on the functional dimensions of health status. Thus, the use of the perceived health status question and the ADL should ensure that both dimensions of elderly adults' health status have been tapped.

In another study conducted by Wolinsky and Johnson, [Ref 14], they make reference to the behavioral model of health services utilization. This model is the most widely used model for studying health services utilization. Basically, the behavioral model views the use of health services as a function of predisposing, enabling, and need characteristics of the individual.

The predisposing component is an abstraction from the proposition that some individuals have a greater propensity for using health services than do others. These propensities can be predicted from individual characteristics prior to an illness episode. The three dimensions of the predisposing characteristics include demographics, social structure, and health beliefs. Demographics are routinely measured by age, sex, marital status, and family size, which are all indicators of the individual's relative life cycle position. Social structure is routinely measured by employment, education, and ethnicity, which are all indicators of the individual's location in the social structure and reflect the behavioral

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patterns (i.e., life styles) to which people in such positions become socialized. Health beliefs, when measured, are typically assessed by questions about attitudes toward medical care, physicians, and disease, as well as worries about one's health. These three dimensions of the predisposing component represent the sociocultural element of the behavioral model.

In this research, demographics and social structure were the only two dimensions of the predisposing characteristics, that were assessed. The third dimension, health care belief, was not assessed because it was not an objective of this research.

The enabling component is abstracted from the proposition that although the individual may be predisposed to use health services, he or she nonetheless has some means for obtaining them. The enabling component, then, contains those factors which make health services available to the individual for consumption. This component is subdivided into two dimensions. The first consists of family resources, routinely measured by income, the presence of health insurance, and having a regular source of health care. These measures tap the individual's ability to provide for him or herself. The second dimension, consisting of community resources, is routinely measured by physician- and hospital-bed-to-population ratios, as well as geographic location and population density indices. These two dimensions of the

enabling characteristics represent the economic component of the behavioral model.

In this research, we assessed only the first dimension, familial resources. The second dimension, community resources was not assessed because again, this was not an objective of this research.

Although the predisposing and enabling components are necessary conditions for the use of health services, they are not sufficient ones. To use health services the individual must have or perceive some illness (or its possibility). This need is specified as the most immediate cause of health services use. Needs has two dimensions. The first represents the amount of illness that the individual perceives exists, and is routinely measured by a self-reported, global measure of health status. In contrast, the second dimension represents professionally evaluated need. Measures of activity limitations, especially those involving the basic activities of daily living, are routinely used as proxies of physicians' assessment of such limitations. These have been shown to yield more objective assessments of need than perceived health, which yields a more global and subjective evaluation. These indicators of need tap the individual's recognition that a health problem either exists or is in the making. Both of the needs dimensions were assessed through the use of the health care survey in this research.

Based on the above information, the survey was designed and constructed into several different sections. The first section was constructed to identify demographic data on the population. The second section was constructed to obtain general information on the health status and ADLs of the population. The third section was constructed to obtain information on what type(s) of medical specialty services were used during medical visits as well as to determining what medical services respondents would like to see remain available in the area should Silas B. Hays Army Community Hospital close. The final section of the survey was constructed to obtain information on where this population obtains, as well as how it pays for, its medical services.

To determine how well the questions were worded and the survey was constructed, a pretest was conducted at various clinics located within Silas B. Hays Army Community Hospital. Based on pretest results and other recommendations, changes were made to the survey. The survey used in this study consisted of 40 open - and close - ended questions. (See Appendix A).

The survey was conducted in three phases. The first phase consisted of mailing the surveys to approximately 704 households. Approximately 30 days later, the second phase consisted of mailing second surveys to households who had not yet responded. Finally, approximately 30 days after the

second mailing, reminder notices were sent to those individuals who still had not yet returned a survey.

Out of a total of 704 surveys mailed, 531 surveys were returned, for a return response rate of 75 percent.

The data and information were collected and analyzed using the W. R. Church Mainframe Computer System at the Naval Postgraduate School. The program used to do the analysis was the SPSS Statistical Package. This particular package was selected because it provides a wide variety of analytical tools for data analysis.

IV. SURVEY ANALYSIS

Data, statistics, and other information on health, health status, and utilization of health services are available from a number of sources. Local, state, and federal public health agencies play a major role in collecting data such as vital statistics on births and deaths [Ref 15].

In this research, the health care survey identified the population characteristics according to three major dimensions:

- Predisposing characteristics, such as age, race, and sex
- Enabling characteristics, such as income and health
- Needs characteristics, such as symptoms and disabilities

Due to the design of the survey, certain statistical data (i.e. means, standard deviations) could not be performed on the data. Therefore, frequency counts were done on all the variables.

A. PREDISPOSING CHARACTERISTICS

As mentioned before, predisposing characteristics may have some impact on why some individuals use more health services than others. The following results describe the predisposing characteristics of military retirees:

1. Demographics

AGE

```
40-44  I**** 16
       I
45-54  I**************** 68
       I
55-64  I****************************************** 155
       I
65-74  I***************************************************** 197
       I
75-84  I******************* 78
       I
> 84   I*** 11
       I
       +--------+---------+---------+---------+---------+
       0        40        80        120       160       200
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Frequency
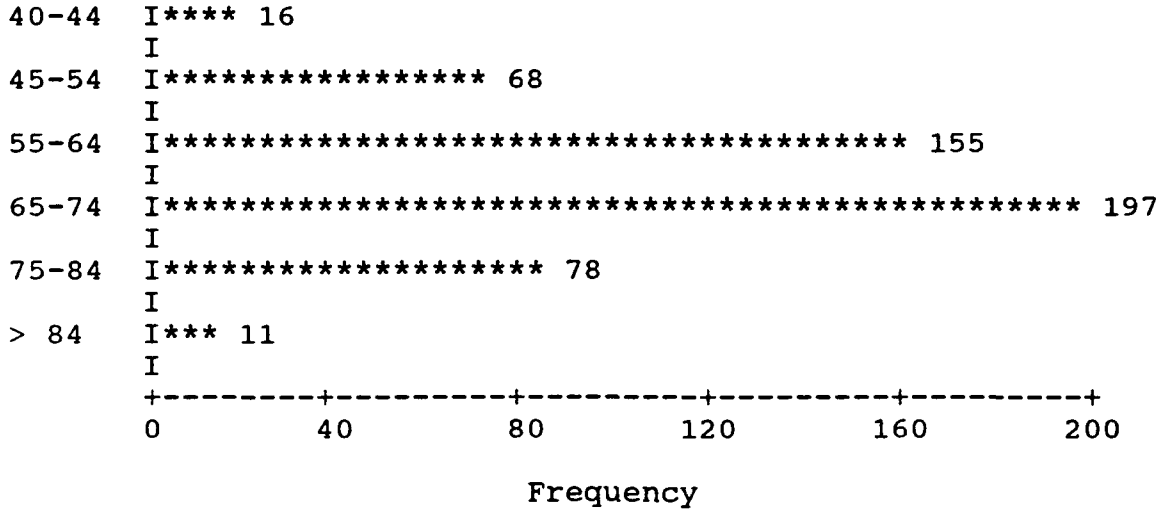
Based on survey results, the majority of military retirees (66%) fall between the ages of 55 and 74. There is not much difference between the second and third largest groups. The second largest group (17%) ranges from 75 years and up. The third largest group (16%) ranges between the ages of 40 and 54. The remaining one percent of the population did not identify their age on the survey.

Since the turn of the century, more than a quarter century has been added to life expectancy at birth. Therefore, an unprecedented number of individuals are entering the 9th and 10th decades of life. This group has often been referred to as the "oldest old", and defined as those aged 85 years and above, is now and will likely continue to be the fastest-

growing age group in the United States and other developed nations [Ref 16]. The middle Census Bureau projection, the most frequently cited projection, predicts that by the year 2020, the average life expectancy will be 82.0 years for women and 74.2 years for men, and by the year 2040, the average life expectancy will rise to 83.1 years for women and 75.0 years for men [Ref 16]. Since the "oldest old" population is projected to increase, our population has some aging to do. As this population ages, their demand for health services are likely to increase. As individuals enter the last decades of life, their needs for long-term care and the resultant costs increase exponentially. However, there are many limitations on accurately projecting future health care costs for elderly persons. These projections must consider the projected number of individuals within specific age groups, the percentage of the population which is affected with disease and disability within specific age groups and the cost of providing health care at the different age groups.

```
SEX

        I
Female  I****************** 140
        I
Male    I****************************************** 368
        I
        +---------+---------+---------+---------+---------+
        0        80        160       240       320       400
```

Frequency

30
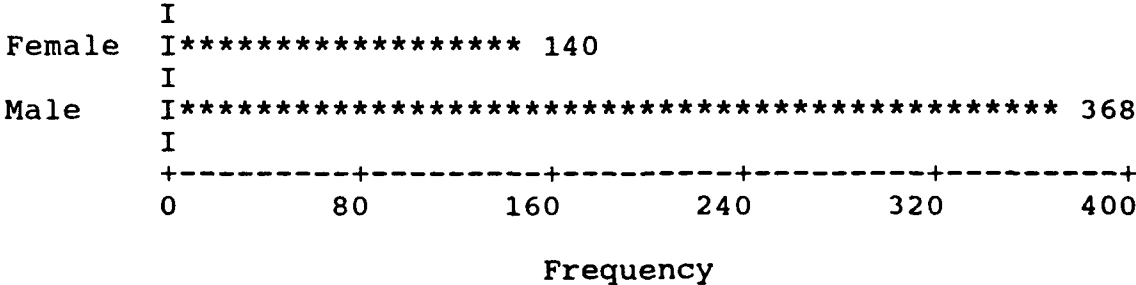
Our research indicates that the majority of our population is comprised of males. We do not believe this is an accurate reflection of the targeted population. Since only one person per household was asked to complete the survey, we believe the heads of households completed the survey which may account for the large number of males in the research.

Research indicates that females usually utilize more health services than males and furthermore, more women than men are in the geriatric population.

MARITAL STATUS

```
          I
Divorced  I*** 29
          I
Separated I* 6
          I
Single    I* 8
          I
Married   I**************************************** 404
          I
Widow     I******** 81
          I
          +---------+---------+---------+---------+---------+
          0        100       200       300       400       500
```

Frequency
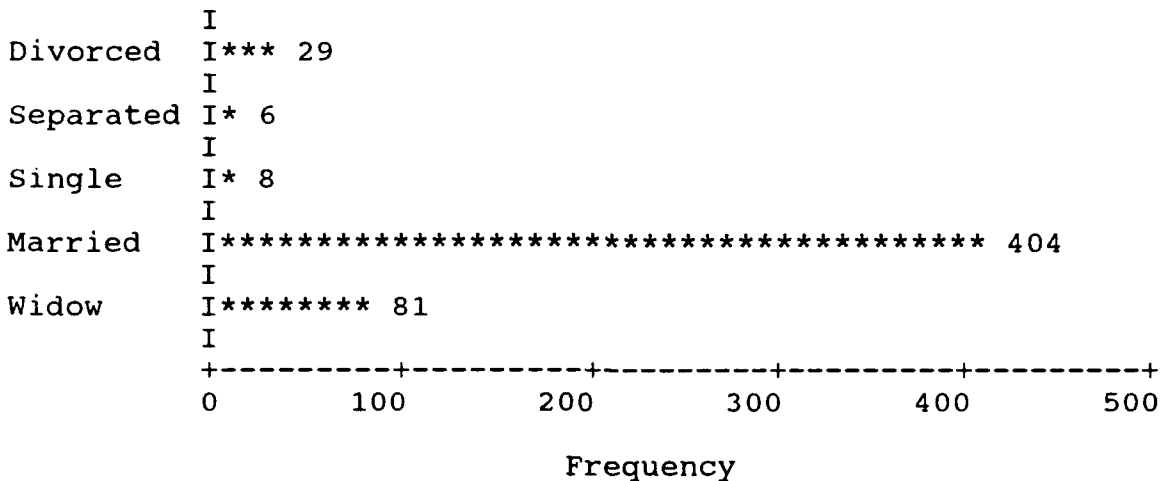
The data show that the majority of our population (76.1%) are married; 15.3% are widowed; and 8.7% are either divorced, separated or single. Current literature indicates that a substantial difference exists between marital groups in their mortality rates, illness experience and use of health services [Ref 17]. Research indicates that married people tend to utilize less health services than single persons.

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Furthermore, studies typically report that widowed persons go to the doctor and hospital more often than married people [Ref 18]. Two explanations of this relationship have been suggested. The first is that the bereavement process results in an immediate decline in perceived health status, which is followed by an increase in the use of health services. This effect is thought to dissipate, leaving behind only modest effects of an enduring nature. The second explanation focuses on the termination of the integrative functions of the conjugal relationship, which are essential for the maintenance of physical and emotional health. It suggests that bereaved individuals may compensate for their losses by increasing their reliance on existing integrative links, such as going to see the doctor. This process is also viewed as a temporary response, with the use of health services returning to prebereavement levels after successful social reintegration has occurred.

Another factor which may play a role in the utilization of medical services is whether the elderly person(s) lives alone or is widowed. Those elderly persons living in extended families tend to use fewer health services because of the increased social support available to them.

The following data identify information on the number in households as well as household composition.

NUMBER IN HOUSEHOLD

```
          I
1         I************ 99
          I
2         I********************************* 276
          I
3         I******** 65
          I
4         I****34
          I
5         I**16
          I
6         I*8
          I
7         I 2
          I
9         I 1
          I
          +---------+---------+---------+---------+---------+
          0        80       160       240       320       400
                              Frequency
```

HOUSEHOLD MEMBERS

```
Family
Members  I**************************************************** 390
         I
Friends  I* 4
         I
Renters  I 3
         I
         +---------+---------+---------+---------+---------+
         0        80       160       240       320       400
                              Frequency
```
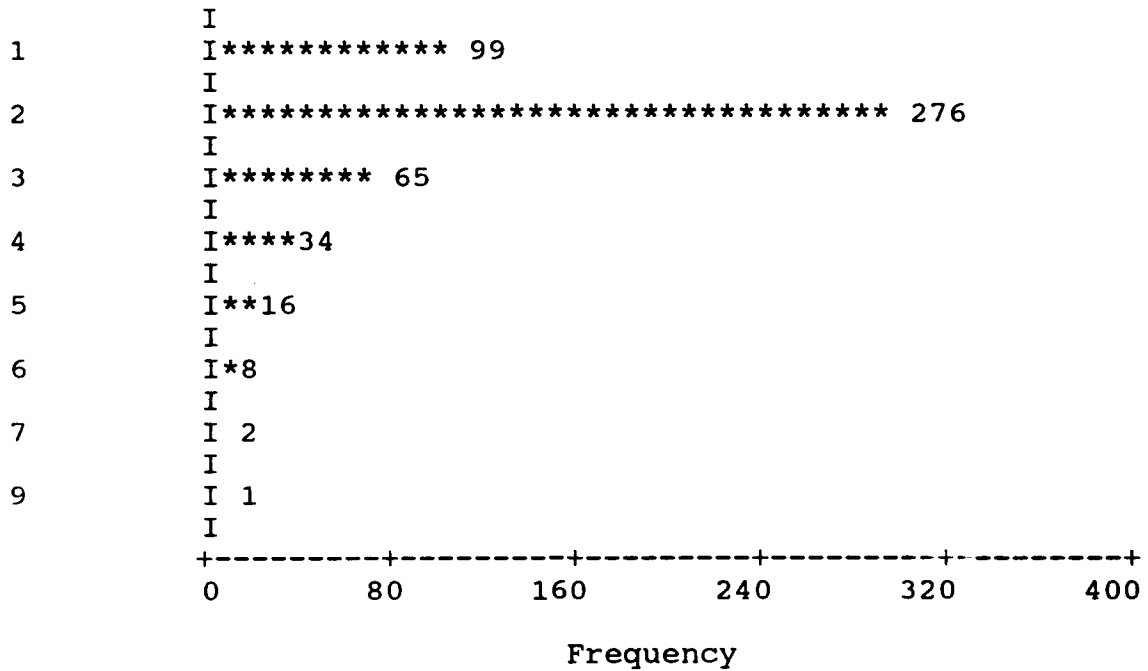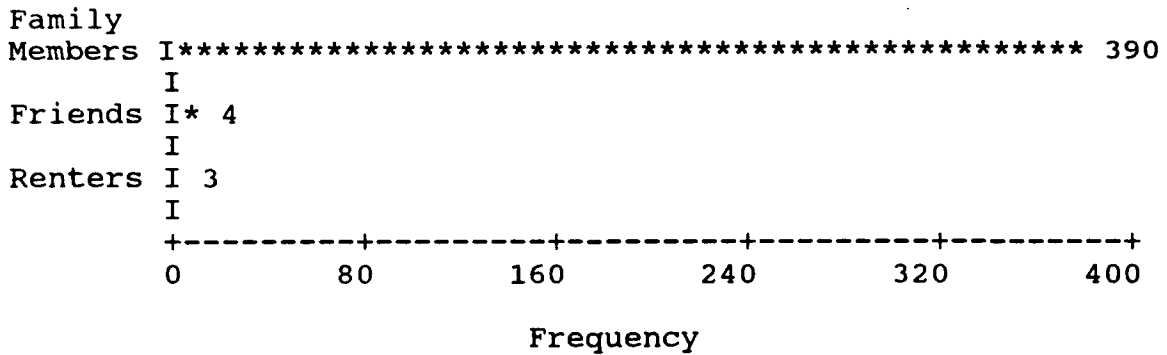
The majority of the households are comprised of one to three individuals, with family families being the largest composition of household members.

2. Social Structure

This dimension is routinely measured by employment, education, and ethnicity, which are all indicators of the individual's location in the social structure and reflect the behavioral patterns to which people in such positions become socialized. The following are characteristics of the social structure which describe the employment status, educational achievement, and ethnic composition of military retirees.

DO YOU WORK FOR PAY   by   AGE

Count
Row Pct
Col Pct
Tot Pct

	40-44	45-54	55-64	65-74	75-84	>84	Row Total
YES	13	50	86	23	3		175
	7.4	28.6	49.1	13.1	1.7		33.8
	86.7	73.5	55.8	11.8	4.0		
	2.5	9.7	16.6	4.4	.6		
NO	2	18	68	172	72	11	343
	.6	5.2	19.8	50.1	21.0	3.2	66.2
	13.3	26.5	44.2	88.2	98.0	100.0	
	.4	3.5	13.1	33.2	13.9	2.1	
Column	15	68	154	195	75	11	518
Total	2.9	13.1	29.7	37.6	14.5	2.1	100.0

This question was asked to find out what percentage (if any) of the retired population works outside the home for pay. The data indicate that almost 34% of the population is employed. The age category for employment ranges between 45

and 64. This range is comparable with the general public work force.

The following data provide an ethnic breakdown of the composition of the sample. Of those respondents who answered this question, Blacks had the highest employment rate (56.7%); followed by Korean and Japanese with 37.5% and 35.0%; and Filipino and Whites both with 29.0%.

```
DO YOU WORK FOR PAY       by     ETHNIC


Count
     Black     Filipino    Hispanic   Japanese    Korean     Other       White
     I         I           I          I           I          I           I        I
YES  I   38  I     9    I     7     I     7     I    3    I     9     I 102
     I       I          I          I           I          I           I
     +-------+----------+----------+-----------+--------+---------+-----+
NO   I   29  I    22    I    22     I    13     I    5    I     3     I 248 I
     I       I          I          I           I          I           I
     +-------+----------+----------+-----------+--------+---------+-----+
Column    67        31         29          20         8          12        350
Total   13.0       6.0        5.6         3.9       1.5         2.3       67.7
                                                                          100.0
```

The majority of military retirees (41%) have attended some college with 27% having achieved advanced degrees. The following data describe the educational achievement of military retirees:

EDUCATION

```
                    I
0-6 Grade           I* 4
                    I
7-9 Grade           I** 22
                    I
10-12 Grade         I****** 54
                    I
H.S. Graduate       I********* 90
                    I
Some College        I****************** 213
                    I
College Graduate    I********* 73
                    I
Post Graduate       I******** 67
                    I
                    +-------+-------+-------+-------+-------+
                    0      80     160     240     320     400
```

Frequency
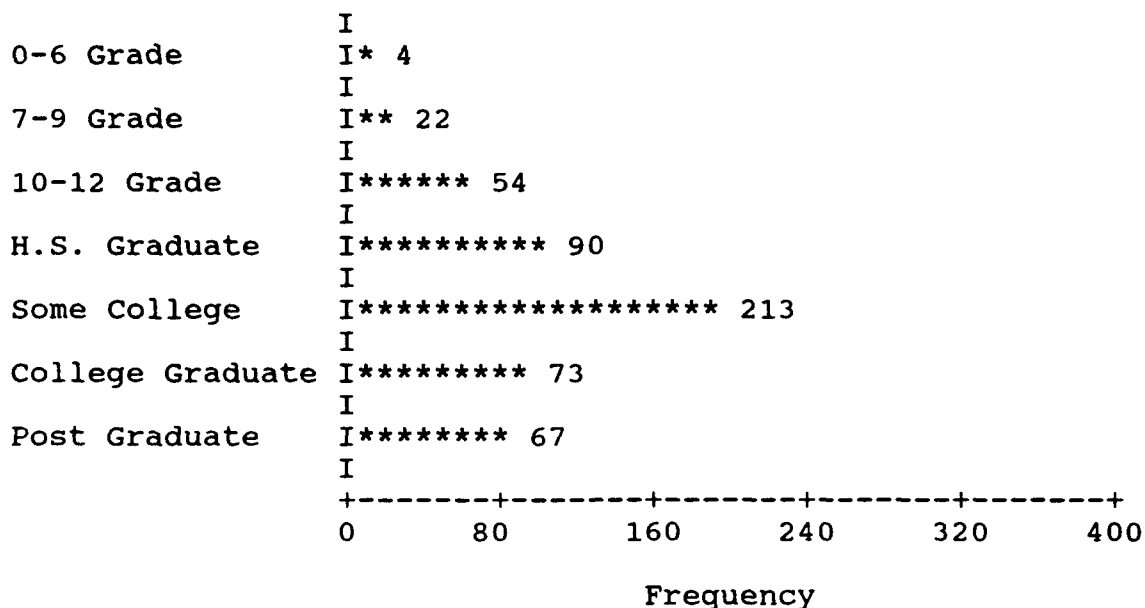
Based on national statistics, our population is very close
to reflecting national averages of the total population in the
United States except for Whites. Based on 1989 statistics
from the Department of Commerce, the national ethnic breakdown
is as follows: Blacks - 12.4%; Whites - 84.1%; and a
combination of other races totalled 3.5% [Ref 19]. In our
population, Whites reflected 67.0% of the retired population.
If this figure is compared to the national ethnic breakdown,
Whites fall below national statistics. This appears to
indicate that non-white persons comprise more of the retired
population than do Whites. The following data describe the
ethnic breakdown of military retirees:

ETHNIC

Value	Frequency	Percent
Black	68	12.8
Filipino	31	5.8
Hispanic	29	5.5
Japanese	20	3.8
Korean	8	1.5
Other	12	2.3
White	356	67.0
Missing	7	1.3
	---	-----
Total	531	100.0

The following is a breakdown of retirees' branch of service.

SERVICE RETIRED FROM

Value	Frequency	Percent
Army	368	69.3
AIR Force	59	11.1
Navy/Marine Corps	95	17.9
Other	4	.8
Missing	5	.9
Total	----	-----
	531	100.0

3. Health Beliefs

Health beliefs, the third dimension of predisposing characteristic, is concerned with attitudes towards medical care, physicians, or disease. This dimension was not assessed because it was not an objective of the research.

B. ENABLING CHARACTERISTICS

The enabling component contains those factors which make health services available to the individual for consumption. This component is subdivided into two dimensions. The first consists of family resources, routinely measured by income, the presence of health insurance, and having a regular source of health care. These measures tap the individual's ability to provide for him or herself. The second consists of community resources. This measures the physician -and-hospital-bed-to-population ratios.

1. Family Resources

Under family resources, income will be the only factor measured in this section. The information on health insurance and regular source of health care are addressed in another section of the research.

INCOME

```
           I
<$10,000   I**** 28
           I
10-20,000  I*************** 111
           I
21-30,000  I*********************** 126
           I
31-40,000  I************* 95
           I
41-50,000  I**********70
           I
>  50,000  I********** 75
           I
           +------+------+-------+---------+------+
           0     40     80     120       160    200
```

Frequency
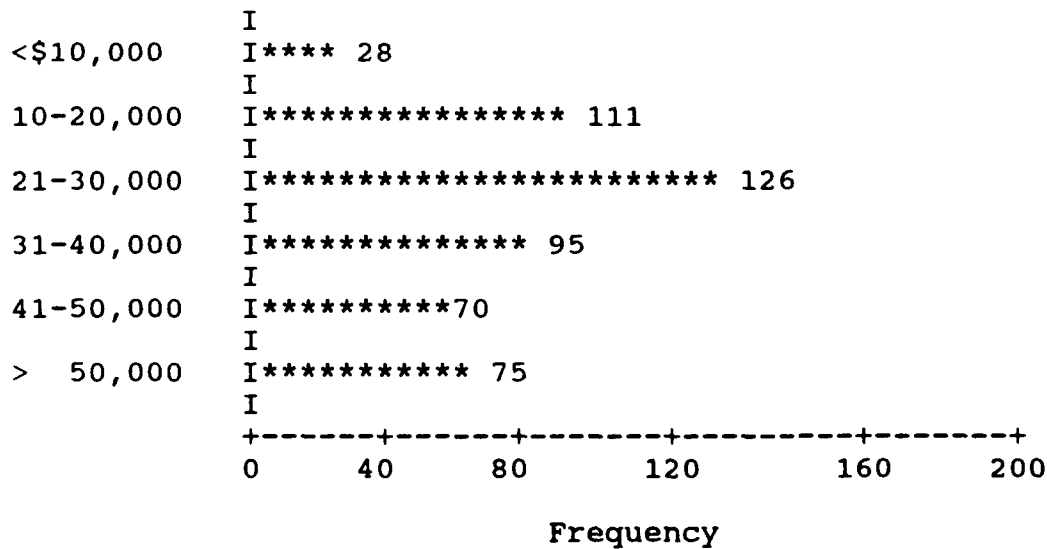
The majority of retirees (25%) have an income that ranges between $21-30K. The second largest income level (22%) is in the range of $10-20K. The third largest income level (19%) is in the range of $31-40K.

Almost 28% of military retirees had income which ranged from less than $10K and between $10-20K. We were interested in obtaining information on how many members resided in those households and how they compared to national poverty statistics. Table V identifies the household composition of those income levels.

TABLE V. NUMBER OF PERSONS IN HOUSEHOLDS WITH INCOME LESS THAN $10K AND BETWEEN $10-20K

Income	Number in Household	Frequency	Percent
$<10,000	1	21	75.0
	2	1	3.6
	3	1	3.6
	4	3	10.7
Missing		2	7.1
		--	-----
Total		28	100.0
$<20,000	1	44	39.6
	2	49	44.1
	3	8	7.2
	4	2	1.8
	5	1	.9
Missing		7	6.3
		---	-----
Total		111	100.0

Based on 1989 weighted average poverty threshold statistics, households with one person had an income of $6,311; 2 persons -$8,076; 3 persons - $9,885; 4 persons - $12,675; 5 persons - 14,990 [Ref 19]. In the less than $10,000 category, three households with four persons in the household are below the national poverty level.

2. Community Resources

Community resources were not determined because it was not an objective of this research.

C. NEEDS CHARACTERISTICS

The final dimension of classifying population characteristics is needs characteristics. This dimension is concerned with the "functional status", which measures how well persons perform tasks associated with ADLs. Determining how well a person can perform certain activities may be important in determining if significant impairment or need exist.

The data described in the following tables are based on the number of respondents who answered the questions relating to ADLs. Table VI lists the ADLs and the percentage of retirees who require assistance with each ADL. TABLE VII lists the number of retirees who require assistance with one or more ADL's. Table VIII identifies those retirees over the age of 65 and the ADL's in which they require assistance.

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**TABLE VI.   ACTIVITIES OF DAILY LIVING (ADL) ASSISTANCE
REQUIRED**

Activities of Daily Living (ADL)	Frequency	Percent
Bathe	15	2.8
Toilet	7	1.3
Dressing	11	2.1
Meals	32	6.0
Feeding	3	.6
Shopping	32	6.0
Money	25	4.7
Housework	54	10.2
Telephone	14	2.6

TABLE VII. ASSISTANCE REQUIRED WITH MULTIPLE ADL's

```
ADL's

No assistance  I******************************** 442
               I
1.00           I**** 38
               I
2.00           I*    13
               I
3.00           I*     7
               I
4.00           I*     8
               I
5.00           I      3
               I
6.00           I      1
               I
7.00           I      1
               I
8.00           I      2
               I
9.00           I      2
               I
               +--------+--------+-------+--------+--------+
               0       100      200     300      400      500

                            Frequency
```

TABLE VIII. RETIREES OVER AGE 65 WHO REQUIRE ASSISTANCE WITH ADL'S

ADL
Assistance

Value	Frequency	Percent
No assistance required	359	67.6
Bathe	37	7.0
Toilet	11	2.1
Meals	7	1.3
Dressing	7	1.3
Feeding	3	.6
Shopping	1	.2
Housework	1	.2
Money	2	.4
Telephone	2	.4
Missing	101	19.0
Total	531	100.0

The retired military population age 65 and older are less dependent in the ADL categories when compared to those physically functioning civilian noninstitutionalized persons aged 65 and older. The national estimates for the number and percentage of those 65 years and older who were dependent in the following activities are: Shopping - 1.93 million (7.3%); housework - 1.1 million (4.4%); preparing meals - 1.0 million (3.8%); bathing - 1.55 million (6.3%); dressing - 1.1 million (4.3%); daily incontinence - 1.68 million (6.3%) [Ref 20]. Our population is below their civilian counterparts in every ADL except for bathing. This may mean that our population is healthier and requires less assistance than other noninstitutionalized persons.

D. GENERAL HEALTH STATUS

Subjective health rating is the individual's perception and evaluation of his or her overall physical health. Frequently, it is measured with a single-item measure reported on a scale from poor to excellent. According to Liang [Ref 21], such evaluations often are made in reference to the perceived health status of others and/or one's previous health conditions. These measures often have been substituted for more "objective" indicators of health in that significant correlations exist between subjective ratings of health and measures such as physician's rating, disability days, and self-reported illness.

There have been some concerns about the conceptual meaning of self-rated health and its correspondence to more objectively derived health. One study suggests that such self-assessments constitute an analytically distinct aspect of health pertinent to subjective components of aging. Finally, it is further concluded that an individual's self-rated health represents a summary statement concerning the ways in which various aspects of health, subjective as well as objective, are combined within cne's perceptual framework.

Although the validity of the self-reported health status is somewhat controversial, we asked military retirees to rate their overall health status. The following data describe those results and other related general health information:

HEALTH STATUS   by   AGE

```
Count
Row Pct
Col Pct                                                                    Row
Tot Pct                                                                   Total
            I 40-44  I 45-54  I 55-64  I 65-74  I 75-84  I   >84 I
            I        I        I        I        I        I        I
Excellent   I      4 I 12     I     22 I     15 I      6 I    1 I       60
            I    6.7 I   20.0 I   36.7 I   25.0 I   10.0 I  1.7 I       11.6
            I   25.0 I   18.5 I   14.2 I    7.7 I    7.9 I 10.0 I
            I     .8 I    2.3 I    4.2 I    2.9 I    1.2 I   .2 I
            +--------+--------+--------+--------+--------+------+
Good        I     10 I     32 I     7. I     80 I     31 I    3 I      226
            I    4.4 I   14.2 I   31.0 I   35.4 I   13.7 I  1.3 I       43.6
            I   62.5 I   49.2 I   45.2 I   40.8 I   40.8 I 30.0 I
            I    1.9 I    6.2 I   13.5 I   15.4 I    6.0 I   .6 I
            +--------+--------+--------+--------+--------+------+
Fair        I      2 I     18 I     52 I     75 I     32 I    4 I      183
            I    1.1 I    9.8 I   28.4 I   41.0 I   17.5 I  2.2 I       35.3
            I   12.5 I   27.7 I   44.5 I   38.3 I   42.1 I 40.0 I
            I     .4 I    3.5 I   10.0 I   14.5 I    6.2 I   .8 I
            +--------+--------+--------+--------+--------+------+
Poor        I        I      3 I     11 I     26 I      7 I    2 I       49
            I        I    6.1 I   22.4 I   53.1 I   14.3 I  4.1 I        9.6
            I        I    4.6 I    7.1 I   13.3 I    9.2 I 20.0 I
            I        I     .6 I    2.1 I    5.0 I    1.4 I   .4 I
            +--------+--------+--------+--------+--------+------+
   Column        16       65      155      196       76       10        518
   Total        3.1     12.5     29.9     37.8     14.7      1.9      100.0
```

Approximately 55.2% of the retirees rate their overall
health status between excellent and good. The remaining
retirees (44.8%) fall between fair and poor health.

The next two charts are the comparisons of self-reported
by diagnosed high blood pressure and cholesterol.

SELF-REPORTED   by   DIAGNOSED HIGH BLOOD PRESSURE

DIAGNOSED

Count	HBP	NORMAL BLOOD PRESSURE	NO INDICATION	Row Total
SELF REPORTED HBP YES	190	30	9	229 / 45.6
NO	46	194	12	252 / 50.2
DON'T KNOW	6	12	3	21 / 4.2
Column Total	242 / 48.2	236 / 47.0	24 / 4.8	502 / 100.0

SELF-REPORTED   by   DIAGNOSED CHOLESTEROL

DIAGNOSED

Count	HIGH	NORMAL	NO INDICATION	Row Total
SELF-REPORTED CHOLESTEROL YES	170	10	19	199 / 39.7
NO	70	144	30	244 / 48.7
DON'T KNOW	28	19	11	58 / 11.6
Column Total	268 / 53.5	173 / 34.5	60 / 12.0	501 / 100.0

As a result of the above analysis, we decided to identify those individuals who indicated that they had high blood pressure and/or cholesterol when they did not and vice versa. The following data identify those individuals by sex and age:

```
SEX                      MISREPRESENTED HBP

      Count   I       NO                 YES
              I                                         Row
              I               I                    I    Total
              +-------------------+----------------+
              I               I                    I
Female        I      120      I       20           I    140
              I               I                    I    27.6
              +-------------------+----------------+
              I               I                    I
Male          I      293      I       75           I    368
              I               I                    I    72.4
              +-------------------+----------------+
Column               413              95                508
Total                81.3             18.7               100.0
```

Chi-Square	Value	DF	Significance
Pearson	2.47783	1	.11546
Continuity Correction	2.09318	1	.14795
Likelihood Ratio	2.58776	1	.10769
Mantel-Haenszel	2.47296	1	.11582

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```
AGE                          MISREPRESENTED

        Count  I
               I
               I        NO              YES         Row
               I                                    Total
               +--------------+-----------------+
40-44          I     14       I      2          I   16
               I              I                 I   3.0
               +--------------+-----------------+
45-54          I     55       +      13         +   68
               I              I                 I   13.0
               +--------------+-----------------+
55-64          I     125      I      30         I   155
               I              I                 I   29.5
               +--------------+-----------------+
65-74          I     162      I      35         +   197
               I              I                 I   37.5
               +--------------+-----------------+
75-84          I     64       I      14         I   78
               I              I                 I   14.9
               +--------------+-----------------+
> 85           I     9        I      2          I   11
               I              I                 I   2.1
               +--------------+-----------------+
Column               429              96            525
Total                81.7             18.3          100.0
```

Chi-Square	Value	DF	Significance
Pearson Continuity	.55006	5	.99018
Likelihood Ratio	.58350	5	.98875
Mantel-Haenszel	.00101	1	.97465

By both measurements, there appears to be no significant difference in the age and sex categories.

After the rating of their overall health status, we asked about any prescription medicine taken. The following is a summary of that information:

DO YOU TAKE PRESCRIPTION MEDICINE?

```
     I
YES  I********************************************** 395
     I
NO   I*************** 126
     I
     +---------+---------+---------+---------+---------+
     0        80       160       240       320       400
```

                              Frequency
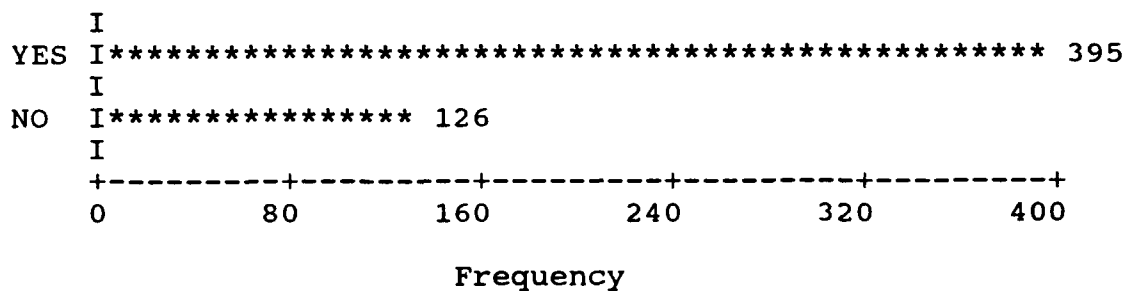
Of those who responded to this question, 76% of the
population indicated that they do take prescription
medication. The following data identify the health status of
those persons who take prescription medicine.

PRESCRIPTION MEDICINE TAKEN   by   HEALTH STATUS

```
          Count  I
          Row Pct I
                   Excellent   Good      Fair      Poor
          Col Pct I                                           Row
          Tot Pct                                             Total
                  I          I          I          I          I
                  +--------+--------+--------+--------+
                  I    25  I   161  I   161  I    43  I 390
   YES            I   6.4  I  41.3  I  41.3  I  11.0  I 75.6
   75.6
                  I  41.0  I  71.2  I  89.4  I  87.8  I
                  I   4.8  I  31.2  I  31.2  I   8.3  I
                  +--------+--------+--------+--------+
                  I    36  I    65  I    19  I     6  I 126
   NO             I  28.6  I  51.6  I  15.1  I   4.8  I 24.4
                  I  59.0  I  28.8  I  10.6  I  12.2  I
                  I   7.0  I  12.6  I   3.7  I   1.2  I
                  +--------+--------+--------+--------+
          Column       61       226      180       49       516
          Total      11.8      43.8     34.9      9.5     100.0
```

Chi-Square	Value	DF	Significance
Pearson	64.55050	3	.0000
Likelihood Ratio	62.07805	3	.0000
Mantel-Haenszel	52.59581	1	.0000

As expected, the percentage of retirees who take prescription medicine does increase as the health status decreases.

The next data identify those retirees by age who consume at least 2 drinks per day of alcohol and those who smoke cigarettes.

ALCOHOL CONSUMPTION LEVEL

ALCOHOL Count	40-44	45-54	55-64	65-74	75-84	>84	Row Total
YES	1	9	22	34	13		79 15.3
NO	15	56	131	159	65	11	437 84.7
Column Total	16 3.1	64 12.6	153 29.7	193 37.4	78 15.1	11 2.1	516 100.0

The crosstabs comparison of alcohol consumption and age indicates that the majority of the population does not consume at least two alcoholic drinks per day.

DO YOU SMOKE BY AGE?

SMOKE Count	40-44	45-54	55-64	65-74	75-84	>84	Row Total
YES	5	13	34	26	6	1	85 16.9
NO	10	53	115	160	70	10	418 83.1
Column Total	15 3.0	66 13.1	149 29.6	186 37.0	76 15.1	11 2.2	501 100.0

According to national statistics on smoking in 1987, 30.9% of the population age 45-64 smoke and 15.2% of the population age 65 and over smoke [Ref 19]. If military retirees in the same age categories are compared, their figures are 55.3% and

39% respectively. It appears that smoking among military retirees exceeds the national average.

Cigarette smoking is a major risk factor for lung cancer, COPD, and heart disease. The spouses of these smokers are also at risk for lung cancer due to passive smoke. Therefore, we could expect these people to be sicker and to use more health services than nonsmokers. It is unknown at this time if lung cancer is prevalent among this population or even how it compares to the national average.

In addition, we asked retirees if they ever smoked and how long ago did they quit. The following data describe the results of those questions.

HAVE YOU EVER SMOKED?

```
      I
YES   I***************************************** 339
      I
NO    I****************** 150
      I
      +---------+---------+---------+---------+---------+
      0        80       160       240       320       400
                          Frequency
```
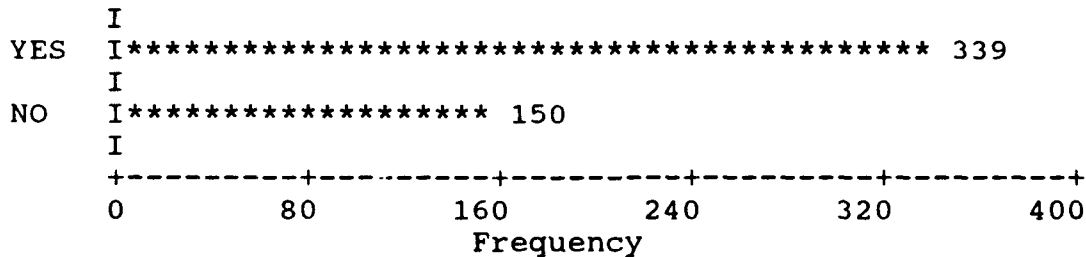
Of the retirees who responded to this question, 69.3% have smoked at some time in their life.

The following data identify the number of years which retirees quit smoking. The mean years for quit smoking was 17.73. After quitting, the health risks for smokers may reach the level of a non-smoker (for heart disease) in 20 years.

For those patients with cancer and COPD, we do not know if they ever reach the level of a non-smoker.

NUMBER OF YEARS QUIT SMOKING

Value Label	Value	Frequency	Valid Percent	
	1	10	1.9	
	2	11	2.1	
	3	5	.9	
	4	12	2.3	
	5	7	1.3	
	6	11	2.1	
	7	6	1.1	
	8	7	1.3	
	9	3	.6	
	10	26	4.9	
	11	3	.6	
	12	11	2.1	
	13	1	.2	
	14	7	1.3	
	15	17	3.2	
	16	3	.6	
	17	4	.8	
	18	8	1.5	
	19	1	.2	
	20	29	5.5	
	21	3	.6	
	22	5	.9	
	23	4	.8	
	24	6	1.1	
	25	15	2.8	
	26	4	.8	
	27	4	.8	
	28	4	.8	
	29	2	.4	
	30	19	3.6	
	31	2	.4	
	32	1	.2	
	33	1	.2	
	34	2	.4	
	35	7	1.3	
	36	2	.4	
	40	11	2.1	
	41	1	.2	
	42	1	.2	
	45	1	.2	
	47	1	.2	
	49	2	.4	
	50	1	.2	
		250	47.1	Missing
Total		531	100.0	

54

In addition, we wanted to check the health status of those individuals who take prescription medicine, smoke and consume two drinks per day of alcohol. The following data identify their health status:

HEALTH STATUS   of   ABUSERS

Count	NO	YES	Row Total
Excellent	61		61
			11.7
Good	218	10	228
			43.7
Fair	179	5	184
			35.2
Poor	48	1	49
			9.4
Column	506	16	522
Total	96.9	3.1	100.0

Chi-Square	Value	DF	Significance
Pearson	3.51552	3	.31875
Likelihood Ratio	5.25567	3	.15400
Mantel-Haenszel	.00494	1	.94396

Based on the above, there is no statistical significance between abusers and general health status.

Another popular measure of physical health is the number of sick days or bed disability days and/or restricted activity days during a specific period of time. The following data

identify those measures of the past year for military retirees.

PAST SICK DAYS by HEALTH STATUS

Count I					
Row Pct I	EXCELLENT	GOOD	FAIR	POOR	
Col Pct I					Row
Tot Pct I	1	2	3	4	Total
0-7	I 52	I 160	I 71	I 5	I 288
	I 18.1	I 55.6	I 24.7	I 1.7	I 58.1
	I 89.7	I 73.1	I 40.8	I 11.1	I
	I 10.5	I 32.3	I 14.3	I 1.0	I
7-14	I 3	I 36	I 52	I 7	I 98
	I 3.1	I 36.7	I 53.1	I 7.1	I 19.8
	I 5.2	I 16.4	I 29.9	I 15.6	I
	I .6	I 7.3	I 10.5	I 1.4	I
15-21	I 1	I 14	I 19	I 4	I 38
	I 2.6	I 36.8	I 50.0	I 10.5	I 7.7
	I 1.7	I 6.4	I 10.9	I 8.9	I
	I .2	I 2.8	I 3.8	I .8	I
21-30	I 2	I 4	I 11	I 5	I 22
	I 9.1	I 18.2	I 50.0	I 22.7	I 4.4
	I 3.4	I 1.8	I 6.3	I 11.1	I
	I .4	I .8	I 2.2	I 1.0	I
>30	I	I 5	I 21	I 24	I 50
	I	I 10.0	I 42.0	I 48.0	I 10.1
	I	I 2.3	I 12.1	I 53.3	I
	I	I 1.0	I 4.2	I 4.8	I
Column	58	219	174	45	496
Total	11.7	44.2	35.1	9.1	100.0

Chi-Square	Value	DF	Significance
Pearson	179.64649	12	.0000
Likelihood Ratio	158.61555	12	.0000
Mantel-Haenszel	124.39712	1	.0000

The above past sick days data coincide with the indicated level of health status. For those individuals who have had more than 15 days of sickness, their rating of their overall health status decreases as the number of sick days increases.

The following data indicate the past year bed days for retirees. The majority of the population (79.3%) falls within the one week category. This is comparable with the national statistic of 6.3 days [Ref 19].

PAST DAYS IN BED SICK

```
       I
 0-7   I*********************************************** 387
       I
 7-14  I******* 56
       I
14-21  I** 18
       I
21-30  I* 11
       I
> 30   I** 16
       I
       +---------+---------+---------+---------+---------+
       0        80       160       240       320       400
```

Frequency
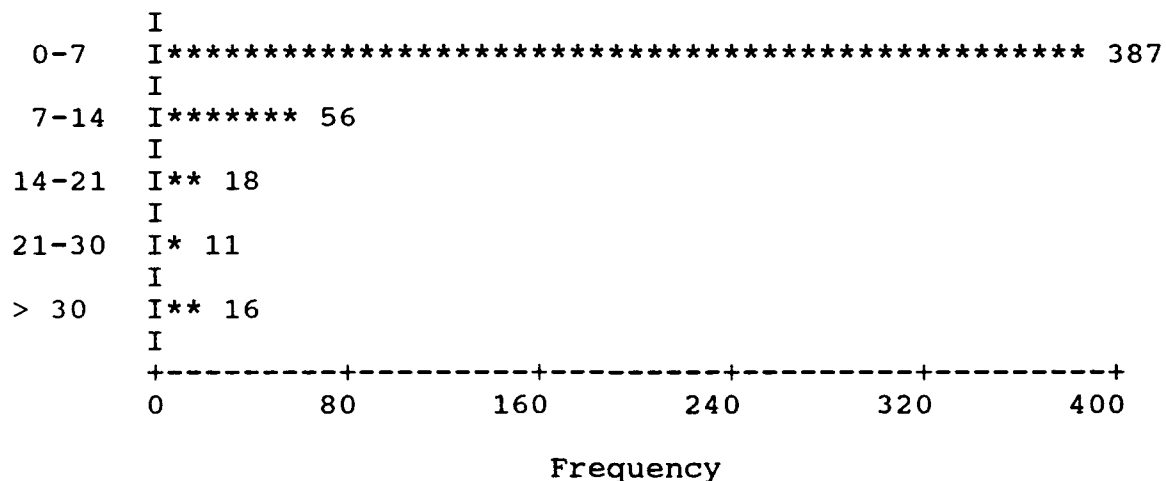
Before individuals use health services there must be some perceived need that serves as the basis and direct stimulus for the use of health services. Traditionally, this need is measured by self-reports of symptoms, functional limitation or perceived health levels.

We asked the retirees a series of questions on doctor and/or clinic visits and hospital admittance within the past year to help identify their perceived health status. The

following information indicates their utilization of those services.

DR/CLINIC VISITS by HEALTH STATUS

```
        Count  I
        Row Pct IEXCELLENT  GOOD      FAIR      POOR
        Col Pct I                                        Row
        Tot Pct I      1  I      2  I      3  I      4  I Total
                +--------+--------+--------+--------+
                I     59 I    223 I    180 I     49 I   511
        YES     I   11.5 I   43.6 I   35.2 I    9.6 I  98.6
                I   96.7 I   98.7 I   98.9 I  100.0 I
                I   11.4 I   43.1 I   34.7 I    9.5 I
                +--------+--------+--------+--------+
                I      2 I      3 I      2 I        I     7
        NO      I   28.6 I   42.9 I   28.6 I        I   1.4
                I    3.3 I    1.3 I    1.1 I        I
                I     .4 I     .6 I     .4 I        I
                +--------+--------+--------+--------+
        Column        61      226      182       49     518
        Total       11.8     43.6     35.1      9.5   100.0
```

Based on survey responses, 98.6% of the population saw a doctor or had a clinic visit within the past year. The largest group who visited a doctor (78.8%) were in the good to fair health status categories.

The following data show a breakdown of the number of visits to a doctor or clinic. Cf those persons who responded to this question 56% had made between one and six visits to a doctor or clinic. This is comparable to the national average of 5.4 days of physician contact per year per person.

NUMBER OF TIMES VISIT DR/CLINIC

```
       I
1-3    I******************************** 118
       I
4-6    I******************************************** 155
       I
7-9    I*************** 65
       I
> 10   I******************************************* 150
       I
       +---------+----------+---------+---------+---------+
       0        40         80        120       160       200
```

Frequency
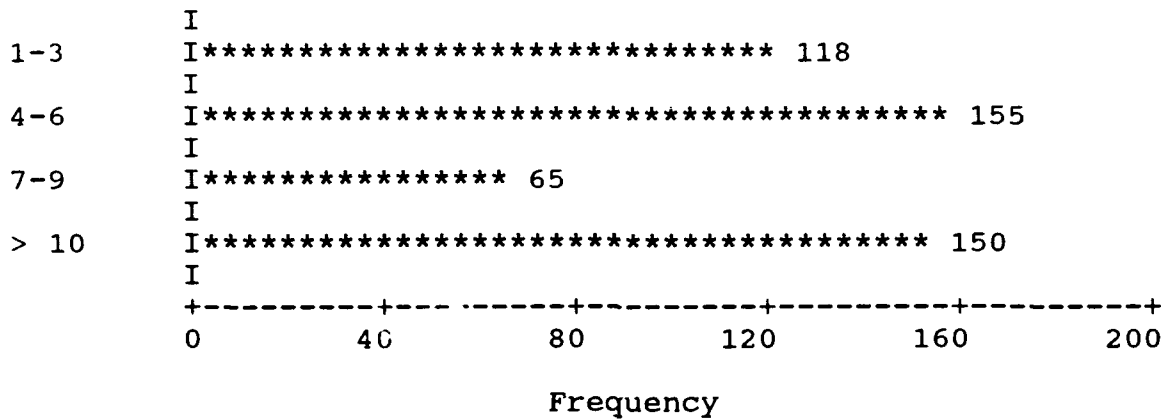
The following data describe the status of hospital admittance and hospital days for the population. Of those retirees who answered this question, approximately 40% indicated that they had been admitted to a hospital. Of that percentage, 38.5% and 40.1% respectively are in the good to fair health status category. The remaining 60% indicated that they had not been admitted to a hospital.

In the hospital days category, approximately 63% had a stay between one and seven days. This is comparable with the national average of 6.3 days. Of those who had a hospital stay between one and seven days, 50.6% were in good health and 34.7% were in fair health.

HOSPITAL ADMITTANCE   by   HEALTH STATUS

```
        Count  I
        Row Pct IEXCELLENT     GOOD       FAIR       POOR
        Col Pct I                                               Row
        Tot Pct I     1  I      2  I      3  I      4  I Total
                +--------+--------+--------+--------+
                I     10 I     76 I     79 I     32 I    197
  YES           I    5.1 I   38.3 I   40.3 I   16.3 I   39.6
                I   16.4 I   34.2 I   46.7 I   69.6 I
                I    2.0 I   15.2 I   16.0 I    6.5 I
                +--------+--------+--------+--------+
                I     51 I    143 I     90 I     14 I    298
  NO            I   17.1 I   48.0 I   30.2 I    4.7 I   60.2
                I   83.6 I   65.3 I   53.3 I   30.4 I
                I   10.3 I   28.9 I   18.2 I    2.8 I
                +--------+--------+--------+--------+
        Column        61      219      169       46      495
        Total       12.3     44.2     34.1      9.3    100.0
```

Chi-Square	Value	DF	Significance
Pearson	38.37278	6	.0000
Likelihood Ratio	40.07660	6	.0000
Mantel-Haenszel	15.67818	1	.0000

60

HOSPITAL DAYS by HEALTH STATUS

```
        Count  I
        Row Pct I  EXCELLENT   GOOD       FAIR       POOR
        Col Pct I                                              Row
        Tot Pct I     1   I      2   I      3   I      4   I  Total
                +--------+--------+--------+--------+
                I    12  I    73  I    50  I     9  I   144
        1-7     I   8.3  I  50.7  I  34.7  I   6.3  I  62.9
                I  85.7  I  81.1  I  58.1  I  23.1  I
                I   5.2  I  31.9  I  21.8  I   3.9  I
                +--------+--------+--------+--------+
                I     1  I    12  I    19  I    12  I    44
        8-14    I   2.3  I  27.3  I  43.2  I  27.3  I  19.2
                I   7.1  I  13.3  I  22.1  I  30.8  I
                I    .4  I   5.2  I   8.3  I   5.2  I
                +--------+--------+--------+--------+
                I        I     2  I     8  I     7  I    17
        15-21   I        I  11.8  I  47.1  I  41.2  I   7.4
                I        I   2.2  I   9.3  I  17.9  I
                I        I    .9  I   3.5  I   3.1  I
                +--------+--------+--------+--------+
                I        I     1  I     4  I     2  I     7
        22-30   I        I  14.3  I  57.1  I  28.6  I   3.1
                I        I   1.1  I   4.7  I   5.1  I
                I        I    .4  I   1.7  I    .9  I
                +--------+--------+--------+--------+
                I     1  I     2  I     5  I     9  I    17
        >30     I   5.9  I  11.8  I  29.4  I  52.9  I   7.4
                I   7.1  I   2.2  I   5.8  I  23.1  I
                I    .4  I    .9  I   2.2  I   3.9  I
                +--------+--------+--------+--------+
        Column       14       90       86       39      229
        Total       6.1     39.3     37.6     17.0    100.0
```

Chi-Square	Value	DF	Significance
Pearson	51.62115	12	.0000
Likelihood Ratio	52.19137	12	.0000
Mantel-Haenszel	34.89667	1	.0000

E. PHYSICIAN VISITS

The following information summarizes physician visits based on demographics and the services sought during those visits.

REGULAR PHYSICIAN VISITS by HEALTH STATUS

```
        Count  I
        Row Pct IEXCELLENT   GOOD      FAIR      POOR
        Col Pct I                                           Row
        Tot Pct I     1 I      2 I      3 I      4 I Total
                +--------+--------+--------+--------+
                I    25 I    142 I    143 I     40 I   350
        YES     I   7.1 I   40.6 I   40.9 I   11.4 I  72.3
                I  44.6 I   66.0 I   83.6 I   95.2 I
                I   5.2 I   29.3 I   29.5 I    8.3 I
                +--------+--------+--------+--------+
                I    31 I     73 I     28 I      2 I   134
        NO      I  23.1 I   54.5 I   20.9 I    1.5 I  27.7
                I  55.4 I   34.0 I   16.4 I    4.8 I
                I   6.4 I   15.1 I    5.8 I     .4 I
                +--------+--------+--------+--------+
        Column      56      215      171       42      484
        Total     11.6     44.4     35.3      8.7    100.0
```

Chi-Square	Value	DF	Significance
Pearson	47.58854	3	.0000
Likelihood Ratio	50.02965	3	.0000
Mantel-Haenszel	46.57372	1	.0000

There is statistical significance between regular physician visits and general health status.

NUMBER OF PEOPLE IN HOUSEHOLD WHO VISITED PHYSICIAN

```
    I
  1 I********************************************** 195
    I
  2 I********************************** 153
    I
  3 I* 3
    I
  4 I 1
    I
    +---------+---------+---------+---------+---------+
    0        40        80       120       160       200

                         Frequency
```
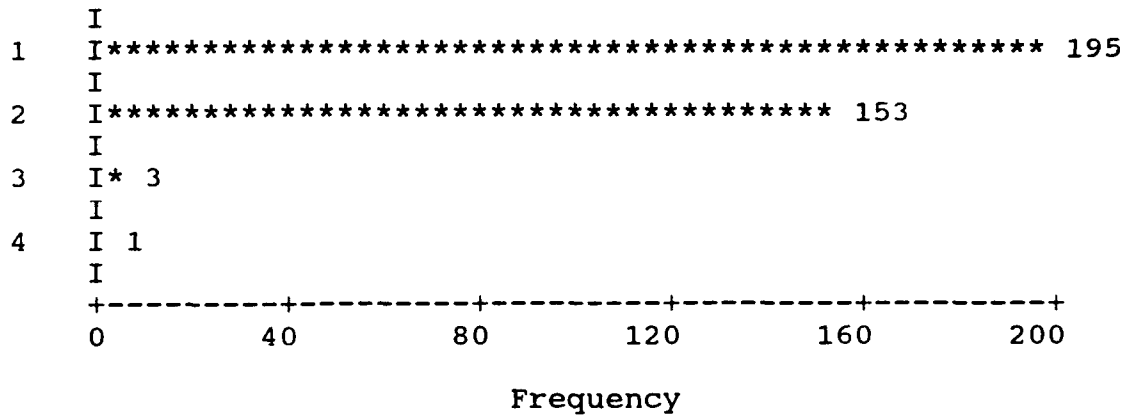
The above data indicate that 55.4% of retired households had one person and 43.5% had two persons who visited a physician.

PHYSICIAN VISITS   by   SEX

```
              Count  I
                     I  YES       NO
                     I                       Row
                     I    1  I      2  I  Total
        SEX          +--------+--------+
                     I    90  I     40  I    130
        FEMALE       I        I        I   27.4
                     +--------+--------+
                     I   252  I     92  I    344
        MALE         I        I        I   72.6
                     +--------+--------+
             Column       342       132       474
             Total       72.2      27.8     100.0
```

Chi-Square	Value	DF	Significance
Pearson	.76071	1	.38311
Continuity Correction	.57358	1	.44884
Likelihood Ratio	.75129	1	.38607
Mantel-Haenszel	.75911	1	.38361

63

The above data indicate that among those who visited a physician, women had fewer visits than men.

PHYSICIAN VISITS   by   AGE

```
          Count  I
                 I    YES        NO
                 I                        Row
                 I          I          I Total
  AGE            +---------+---------+
                 I     8   I     7   I     15
  40-44          I         I         I     3.1
                 +---------+---------+
                 I    35   I    31   I     66
  45-54          I         I         I    13.6
                 +---------+---------+
                 I   103   I    43   I    146
  55-64          I         I         I    30.0
                 +---------+---------+
                 I   141   I    39   I    180
  65-74          I         I         I    37.0
                 +---------+---------+
                 I    58   I    11   I     69
  75-84          I         I         I    14.2
                 +---------+---------+
                 I     8   I     2   I     10
  >84            I         I         I     2.1
                 +---------+---------+
        Column         353       133       486
        Total         72.6      27.4     100.0
```

Chi-Square	Value	DF	Significance
Pearson	23.63600	5	.00026
Likelihood Ratio	22.75306	5	.00038
Mantel-Haenszel	20.45492	1	.00001

As expected, the above data indicate that as one ages, his/her physician visits increase. The majority of physician visits, 21.2% and 29.0% respectively, were in the 55-64 and 65-74 categories.

PHYSICIAN VISITS   by   INCOME

```
          Count   I
                  I     YES         NO
                  I                        Row
                  I     1   I      2   I   Total
INCOME            +--------+--------+
                  I    14  I      7  I      21
   < $10,000      I        I        I      4.5
                  +--------+--------+
                  I    77  I     25  I     102
10,000-20,000     I        I        I     21.8
                  +--------+--------+
                  I    88  I     29  I     117
21,000-30,000     I        I        I     25.1
                  +--------+--------+
                  I    72  I     20  I      92
31,000-40,000     I        I        I     19.7
                  +--------+--------+
                  I    42  I     23  I      65
41,000-50,000     I        I        I     13.9
                  +--------+--------+
                  I    49  I     21  I      70
   > 50,000       I        I        I     15.0
                  +--------+--------+
        Column         342        125       467
        Total          73.2       26.8     100.0
```

Chi-Square	Value	DF	Significance
Pearson	4.98346	5	.41790
Likelihood Ratio	4.87571	5	.43124
Mantel-Haenszel	.85696	1	.35459

Based on the above data, physician visits increased as income increased up to the $21-30K income level. At the $31-40K income level, physician visits decreased. At the $41-50K and greater than $50K, they started to pick up again.

PHYSICIAN VISITS   by   ETHNIC

```
            Count  I
                   I    YES        NO
                   I                        Row
                   I     1  I      2  I    Total
                   +--------+--------+
                   I    43  I     14  I     57
  Black            I        I        I     11.8
                   +--------+--------+
                   I    18  I     12  I     30
  Filipino         I        I        I     6.2
                   +--------+--------+
                   I    21  I      7  I     28
  Hispanic         I        I        I     5.8
                   +--------+--------+
                   I    10  I      9  I     19
  Japanese         I        I        I     3.9
                   +--------+--------+
                   I     3  I      3  I      6
  Korean           I        I        I     1.2
                   +--------+--------+
                   I     8  I      4  I     12
  Other            I        I        I     2.5
                   +--------+--------+
                   I   250  I     83  I    333
  White            I        I        I     68.7
                   +--------+--------+
         Column       353       132       485
         Total        72.8      27.2     100.0
```

Chi-Square	Value	DF	Significance
Pearson	9.32400	6	.15616
Likelihood Ratio	8.56975	6	.19926
Mantel-Haenszel	1.03055	1	.31003

The ethnicity breakdown of retirees indicate that Whites and Black had the most physician visits with 68.5% and 11.8% respectively.

We have summarized the data regarding physician visits based on a variety of demographic information. Table IX

identifies some of the illnesses that caused physician visits. Although there were many illnesses that caused the visits, the most frequently cited ones are listed in the table. High blood pressure appear to have caused the most visits among retirees.

TABLE IX. ILLNESSES THAT CAUSED PHYSICIAN VISITS

	Frequency	Percent
ARTHRITIS	137	38.5
DIABETES	88	24.7
COPD (LUNG PROBLEM)	41	11.5
HEART DISEASE	100	28.1
HIGH BLOOD PRESSURE	207	58.1
STROKE	33	9.3
OTHER	217	40.9

F. MEDICAL SERVICES REQUESTED

The following is a summary of the medical services that retirees requested to be readily available if Silas B. Hays Army Community Hospital closes. The percentages are based on the number of respondents who answered the question. The most requested services were pharmacy, laboratory, general outpatient clinic, and internal medicine.

TABLE X. MEDICAL SPECIALTIES REQUESTED

	Frequency	Percent
Audiology	235	44.3
Dermatology	311	58.6
Ear, Nose, Throat	370	69.7
Family Practice	336	63.3
OutPatient Clinic	426	80.2
General Surgery	343	64.6
Gynecology/Obstetric	237	44.6
Internal Medicine	413	77.8
Laboratory	455	85.7
Neurology	222	41.8
Ophthalmology	300	56.5
Orthopedic	256	48.2
Pharmacy	485	91.3
Physical Therapy	221	41.6
Podiatry	195	36.7
Psychology/Mental Health	135	25.4
Radiology	347	65.3
Urology	322	60.6

G. HEALTH CARE SOURCES

One of the reasons for doing this research was to determine where the retired military population received the majority of its health care services. If this can be determined, DoD can then decide if it may need to increase its medical resources at other military medical facilities should Silas B. Hays Army Community Hospital close.

The following data summarize the health care sources:

ARE YOU TREATED AT ALL AT A MILITARY HEALTH CARE FACILITY

```
      I
YES   I***************************************** 467
      I
NO    I***** 52
      I
      +---------+---------+---------+---------+---------+
      0        100       200       300       400       500
```

Frequency
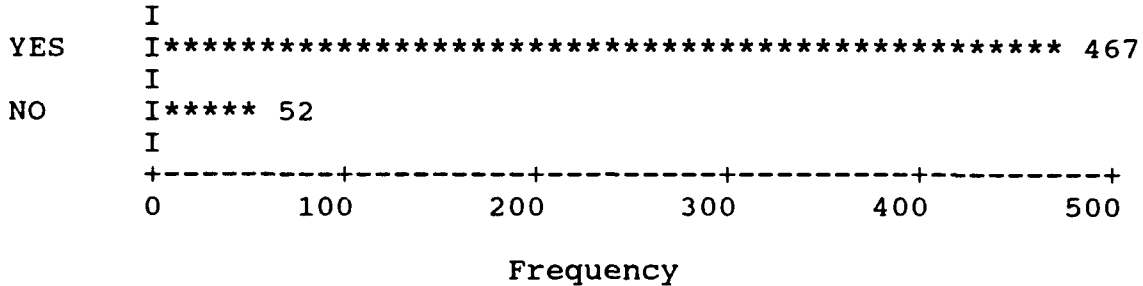
The majority of retirees (90%) are treated at a military facility. The following data describe where the retirees received their general inpatient, outpatient, and pharmaceutical care.

WHERE DO YOU OBTAIN YOUR PRIMARY SOURCE OF INPATIENT CARE?

INCARE   by   INCOME

Count

	>$10K	$10-20K	$21-30	$31-40	$41-50	$>50	I	Row
Military Facility	I 22	I 101	I 106	I 70	I 54	I 53	I	405 83.2
Civilian Facility	I 4	I 6	I 16	I 22	I 13	I 21	I	82 16.8
Column Total	26 5.3	107 22.0	122 25.1	92 18	67 13.8	74 15.0		487 100.0

Chi-Square	Value	DF	Significance
Pearson	21.90698	5	.00055
Likelihood Ratio	23.40309	5	.00028
Mantel-Haenszel	16.03966	1	.00006

Of the military retirees who answered this question, 83.2%
indicated they obtained their inpatient care from a military
facility. Of those retirees who obtained their inpatient care
from a military facility, 51% have incomes which range between
$10,000 - $30,000. Again, as the income of retirees increase,
their usage of military health care facilities decreases.
This information is not surprising because the more income one
has, it is possible that the more he/she may be willing to
spend more on private health care services.

WHERE DO YOU OBTAIN YOUR PRIMARY SOURCE OF OUTPATIENT CARE?

```
OUTCARE                       by          INCOME


Count
            >$10K   $10-20K   $21-30   $31-40   $41-50   $>50   I  Row
            I       I         I        I        I        I      I
Military    I 24    I   99    I   113  I  72    I   57   I 55   I  420
Facility    I       I         I        I        I        I      I  84.3
            +-------+---------+--------+-------+--------+-----+
            I       I         I        I        I        I      I
Civilian    I  3    I    9    I    12  I  22    I   12   I 20   I  78
Facility    I       I         I        I        I        I      I  15.7
            +-------+---------+--------+-------+--------+-----+
Column        27       108       125     94        69      75      498
Total         5.4      21.7      25.1    18.9      13.9    15.1    100.0
```

Chi-Square	Value	DF	Significance
Pearson	19.58966	5	.00149
Likelihood Ratio	19.41047	5	.00161
Mantel-Haenszel	13.95643	1	.00019

Of those retirees who answered the question on where they
obtain their primary source of outpatient care, approximately

84.3% obtained it from a military facility. Of this percentage, approximately 50.5% have incomes that range between $10,000 - $30,000. It appears that as their income increases their usage of military facilities decreases. Again, this may indicate that this group is willing to spend more of their income on private health services.

WHERE DO YOU OBTAIN YOUR PRIMARY SOURCE OF PHARMACY CARE?

PHARMACY   by   INCOME

Count	>$10K	$10-20K	$21-30	$31-40	$41-50	$>50	Row
Military Facility	27	102	117	83	61	61	451 90.9
Civilian Facility		5	7	11	8	14	45 9.1
Column Total	27 5.4	107 21.6	124 25.0	94 19.0	69 13.9	75 15.1	496 100.0

Chi-Square	Value	DF	Significance
Pearson	16.65864	5	.00520
Likelihood Ratio	17.97498	5	.00298
Mantel-Haenszel	15.40748	1	.00009

Of those retirees who answered this question, 91% obtained
their pharmaceutical needs from a military facility. Of that
percentage, 49% have incomes which range between $10,000 -
$30,000. The use of civilian facilities increases as income
increases. The inpatient, outpatient, and pharmaceutical
needs are mainly obtained from a military facility. The
utilization percents are comparable with the medical services
most requested should Silas B. Hays close.

WOULD YOU MOVE IF FORT ORD CLOSES?

MOVE   by   INCOME

Count
          >$10K $10-20K $21-30 $31-40 $41-50 $>50   I   Row
          I   I   I   I   I   I   I
YES   I   I   4   I   3   I   6   I   3   I 4   I   20
          I   I   I   I   I   I   I   4.1
          +--------+----------+---------+--------+----------+-----+
          I   I   I   I   I   I   I
NO   I 28   I   104   I 120   I   86   I   65   I 69   I   472
          I   I   I   I   I   I   I   95.5
          +--------+----------+---------+--------+----------+-----+
Column   28   108   123   92   68   73   492
Total   5.7   22.0   25.0   18.7   13.8   14.8   100.0

Chi-Square	Value	DF	Significance
Pearson	16.65864	5	.00520
Likelihood Ratio	17.97498	5	.00298
Mantel-Haenszel	15.40748	1	.00009

The objective for asking this question was to determine
how many retirees are planning to move when Fort Ord closes in
1994. Of those who responded to the question, 96% indicated
that they would not move. Based on write-in responses, some
retirees indicated that they could not afford to relocate.

Of those respondents who answered that they would move,
65% have incomes greater than $30,000.

WOULD YOU MOVE IF HAYS CLOSE BY INCOME

HAYS CLOSE   by   INCOME

```
Count
          >$10K   $10-20K   $21-30   $31-40   $41-50   $>50  I  Row
          I       I         I        I        I        I     I
YES       I  2    I   11    I   13   I   16   I   13   I  9  I    64
          I       I         I        I        I        I     I  13.4
          +------+---------+--------+-------+--------+-----+
          I       I         I        I        I        I     I
NO        I 24    I   92    I  107   I   74   I   54   I 62  I   413
          I       I         I        I        I        I     I  86.6
          +------+---------+--------+-------+--------+-----+
Column      26      103       120      90       67      731    477
Total      5.5      21.6      25.2     18.9     14.0    14.9   100.0
```

Of those respondents who answered this question, 86.6%
indicated that they would not move if Silas B. Hays closes.
Again, write-in responses indicated that some retirees could
not afford to move.

Of those respondents who answered yes to this question,
80% have incomes which range between $21,000 -$50,000. On the
other hand, 20% have incomes of less than $10K and between
$10-20K.

The follow data describe the health status by age of those individuals in the $10K category:

HEALTH STATUS   by   AGE

Count	EXCELLENT	GOOD	FAIR	POOR	Row Total
40-44	1		1		2 7.1
45-54	1	2	1		4 14.3
55-64		1	5	1	7 25.5
65-74			8	2	10 35.7
75-84		2	1	2	5 17.9
Column Total	2 7.1	5 17.9	16 57.1	5 17.9	

The above data indicate that 57.1% of those retirees are in fair health. The remaining retirees are in the good and poor health categories both with 17.9%.

The following data describe the health status of those retirees in the $10-20K income category:

HEALTH STATUS   by   AGE

Count	EXCELLENT	GOOD	FAIR	POOR	Row Total
40-44	2	2	1		5 4.5
45-54	2	1			3 4.7
55-64	3	13	11	1	28 25.5
65-74	1	18	34	6	59 53.6
75-84		4	6	2	12 10.9
> 84		2		1	3 2.7
Column Total	8 7.3	40 36.4	52 57.1	10 9.1	

The above data indicate that the majority (57.1%) are in fair health followed by 36.4% who are in good health.

IF HAYS CLOSES WHERE WOULD YOU OBTAIN YOUR MEDICAL SERVICES
by INCOME

HAYS CLOSE   by   INCOME

Count

	>$10K	$10-20K	$21-30	$31-40	$41-50	$>50	I	Row
Private Physician	6	24	26	35	28	36		155 / 31.4
Civilian Hospital	3	17	23	18	15	20		96 / 19.4
Nearest Military Facility	16	65	66	37	23	1?		225 / 45.5
Other Hospital	3	3	7	4	1			18 / 3.6
Column Total	28	109	122	94	67	74		494
	5.7	22.1	24.7	19.0	13.6	15.0		100.0

Chi-Square	Value	DF	Significance
Pearson	49.37104	15	.00002
Likelihood Ratio	51.59738	15	.00001
Mantel-Haenszel	38.28965	1	.00000

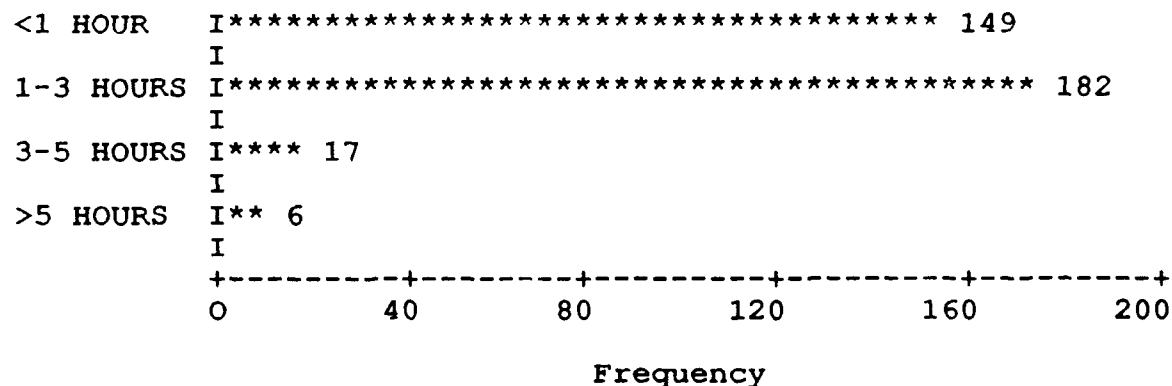Of those respondents who answered this question, the usage of private physician services increased as income increased. The usage of private physician services averaged 31.4% of all retirees who responded to this question.

On the other hand, the usage of civilian hospital services also increased as income increased. The usage of civilian hospital services averaged 19.4% of all retirees who responded to this question.

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Finally, the usage of the nearest military health facility decreased as income increased. This appears to indicate that retirees are willing to pay more for health care in proportion to their income.

The majority of the population indicated that they are willing to drive up to three hours to obtain health care from a military facility. The following data indicate the drive time for retirees. Of those respondents who answered this question, 93.5% are willing to drive up to three hours to obtain health care services from a military facility. Also, additional data are provided on the breakdown of the willingness to drive by health status.

DRIVE TIME TO MILITARY FACILITY

```
<1 HOUR    I********************************* 149
           I
1-3 HOURS  I*************************************** 182
           I
3-5 HOURS  I**** 17
           I
>5 HOURS   I** 6
           I
           +---------+---------+---------+---------+---------+
           O        40        80       120       160       200
                            Frequency
```

DRIVE TIME TO MILITARY FACILITY by HEALTH STATUS

Count Row Pct Col Pct Tot Pct	EXCELLENT	GOOD	FAIR	POOR	Row Total
<1 HOUR	19 12.9 57.6 5.4	59 40.1 39.9 16.8	55 37.4 40.4 15.7	14 9.5 41.2 4.0	147 41.9
1-3 HOURS	14 7.7 42.4 4.0	79 43.6 53.4 22.5	71 39.2 52.2 20.2	17 9.4 50.0 4.8	181 51.6
3-5 HOURS		7 41.2 4.7 2.0	8 47.1 5.9 2.3	2 11.8 5.9 .6	17 4.8
> 5 HOURS		3 50.0 2.0 .9	2 33.3 1.5 .6	1 16.7 2.9 .3	6 1.7
Column Total	33 9.4	148 42.2	136 38.7	34 9.7	351 100.0

Chi-Square	Value	DF	Significance
Pearson	5.79178	9	.76056
Likelihood Ratio	7.70464	9	.56416
Mantel-Haenszel	1.93611	1	.16409

There appears to be no significant difference in drive time when compared to health status among the retirees.

H. BARRIERS TO RECEIVING MEDICAL CARE

Having a regular or usual source of medical care, and the nature of that source, is regarded as an important predictor of levels of use of health services. It has been stated that in a rational world, health services would be based on needs, prevalence, and impact of health problems on the population, and the knowledge base available for successful intervention. However, millions of Americans seeking medical care are finding this philosophy no longer applies in today's society.

If an individual is seeking to obtain medical care, he/she may run into several barriers which may prohibit him/her from obtaining those services. The retired military population indicated the following may become barriers to medical care if it is sought outside of Silas B. Hays Army Community Hospital. Although the list is not all inclusive, it does list the most prevalent reasons for not seeking medical care:

TABLE XI. BARRIERS TO RECEIVING MEDICAL CARE

	Frequency	Percent
COSTS	400	75.3
CULTURAL BARRIER	14	2.6
DISTANCE	280	52.7
LACK OF KNOWLEDGE	30	5.6
LANGUAGE BARRIER	9	1.7
PAST BAD EXPERIENCE	33	6.2

Retirees indicated that the two major barriers to receiving medical care are costs and distance. The next chart

is a breakdown of those respondents by age who indicated that cost may present a barrier to obtaining medical services.

```
   AGE  I
        I
 40-44  I*** 13
        I
 45-54  I**************54
        I
 55-64  I****************************** 123
        I
 65-74  I************************************ 149
        I
 75-84  I*** 10
        I
   >84  I*** 10
        +----------+----------+----------+----------+----------+
        0          40         80        120        160        200
```
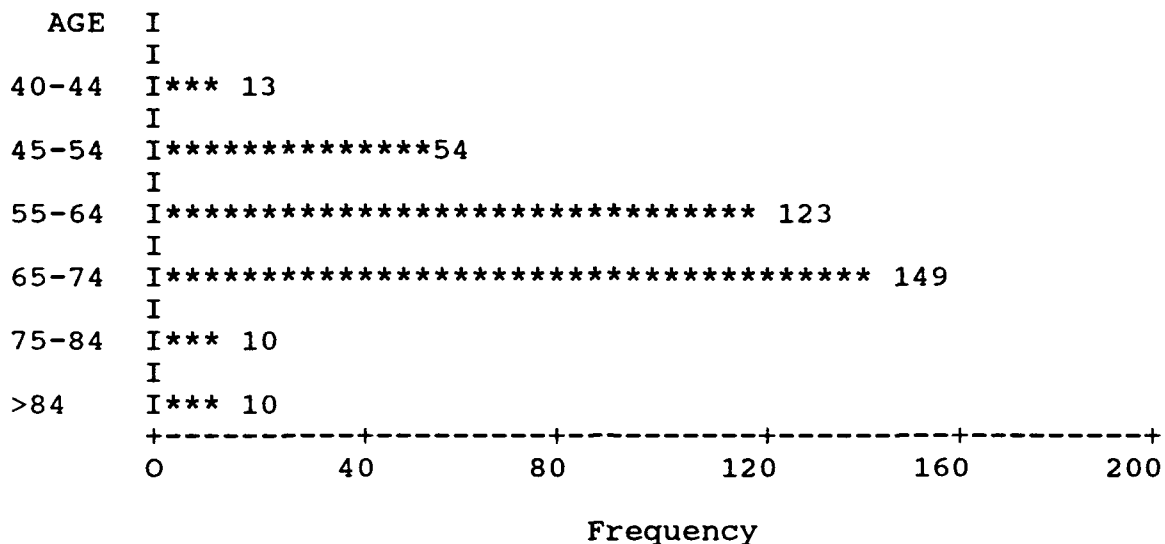
Frequency

The above data indicate that 41.5% and 34.3% respectively are in the 55-64 and 65-74 age categories.

The following is a further breakdown of those persons by income.

Income	Frequency	Percent
< $10K	23	5.7
$10-20K	92	23.0
$21-30K	94	23.5
$31-40K	65	16.2
$41-50K	53	13.2
> $50K	57	14.2
Missing	16	4.0
	---	-----
	400	100.0

The following is a breakdown on whether or not they have private health insurance.

Private Health Insurance	Frequency	Percent
Yes	146	36.5
No	253	63.2
Missing	1	.2
	----	----
	400	100.0

The next chart is a breakdown by age of those respondents who indicated that distance may present a barrier to obtaining medical services. The majority of those persons are in the 65-74 age category.

```
  AGE   I
        I
40-44   I** 6
        I
45-54   I********* 39
        I
55-64   I****************** 79
        I
65-74   I*********************** 103
        I
75-84   I*********** 42
        I
 >84    I** 7
        +---------+---------+---------+---------+---------+
        O        40        80       120       160       200
```
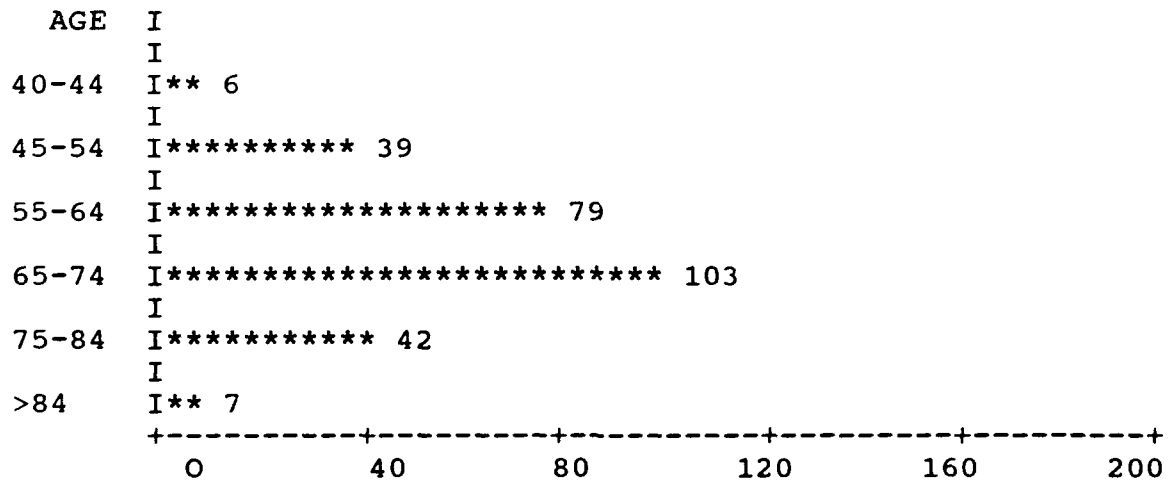
I. METHOD OF PAYMENT FOR OBTAINING MEDICAL CARE

It has become common wisdom in both Canada and the United States that a small minority of the population accounts for a large majority of health care expenditures [Ref 22]. This

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pattern has been found across all age groups, including the youngest and the oldest. These skewed usage patterns have been reported to be consistent through time.

However, that small minority may encounter many difficulties in paying for medical services. The following is a breakdown of the method of payment for medical care for military retirees. The percent does not add up to 100% because retirees had the option of selecting more than one method of payment. Of the various methods for health care payment, Medicare Part A was cited most frequently, followed by Medicare Part B and Out-of-Pocket competing for second place.

TABLE XII. METHOD OF PAYMENT FOR HEALTH CARE SERVICES

	Frequency	Percent
CHAMPUS	223	42.0
MEDICARE PART A	279	52.5
MEDICARE PART B	237	44.6
OUT-OF-POCKET	236	44.4
PRIVATE HEALTH INSURANCE	208	39.2

The Department of Health and Human Services reports the following methods of financing medical care for the general public: Private health insurance - 33%; Out-of-pocket payment - 20% (not including payment of insurance premiums); Medicare - 17%; Medicaid - 11%; other government programs - 14%; and other private sources - 5% [Ref 23]. Military retirees appear to be above the national averages in all categories except one, CHAMPUS. The CHAMPUS category was probably not investigated because it is specific to the military. The usage of CHAMPUS may mean that our population has more income to spend on health services than the general public.

Although CHAMPUS eligibility does not go beyond age 65, 10.9% of retirees over the age of 65 have indicated that they would use this payment method. Of those retirees who are over age 65 and indicated they would use CHAMPUS, 66.7% indicated that they do not have private health insurance. If the hospital closes, the financial impact could be devastating on these persons. Additionally, these persons are likely to become Medicare recipients.

On the other hand, 33.3% indicated that they do have private health insurance. If the hospital closes, the financial impact on these persons may be less of a financial burden.

```
CHAMPUS              by              AGE
Count                                                                    Row
                                                                        Total
     I
     I  40-44 I  45-54 I  55-64 I  65-74 I  75-84 I  >84   I
     I   11   I   58   I  122   I   26   I    4   I        I      221
YES  I   5.0  I  26.2  I  55.2  I  11.8  I   1.8  I        I     42.3
     I  73.3  I  85.3  I  78.7  I  13.2  I   5.2  I        I
     I   2.1  I  11.1  I  23.3  I   5.0  I    .8  I        I
     +--------+--------+--------+--------+--------+-------+
NO   I    4   I   10   I   33   I  171   I   73   I   11   I      302
     I   1.3  I   3.3  I  10.9  I  56.6  I  24.2  I   3.6  I     57.7
     I  26.7  I  14.7  I  21.3  I  86.8  I  94.8  I 100.0 I
     I    .8  I   1.9  I   6.3  I  32.7  I  14.0  I   2.1  I
     +--------+--------+--------+--------+--------+-------+
Column  15      68      155     197      77      11   I      523
Total   2.9    13.0    29.6    37.7    14.7     2.1  I     100.0
```

The age 65 and older category could be financially devastated if the hospital closes and they have no private health insurance or other means available to provide for their medical services. If they do not have private health insurance or other means available to them, these persons may likely become candidates for Medicare. Therefore, we decided to further investigate this segment of the population to determine if they have private health insurance. The following data describe the information for the population over age 65.

```
OVER AGE 65            with            PRIVATE HEALTH INSURANCE

YES    I********************************* 126
       I
NO     I*********************************** 157
       I
       +---------+---------+---------+---------+---------+
       O        40        80        120       160       200
```
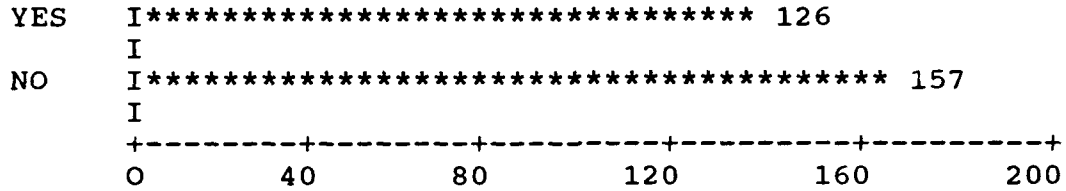
Of those retirees over the age of 65, 44.5% have private

health insurance. The remaining retirees 55.4% are without

private health insurance. If the hospital closes, the impact

on these persons could be financially devastating,

particularly, if they have no other resources available to

them.

The other method of payment for medical services was

private health insurance. The following is a breakdown of

those persons by income who indicated that they would use

private health insurance.

PRIVATE HEALTH INSURANCE (PAYMENT FOR MEDICAL CARE) by INCOME

Count

	$>10K	$10-20K	$21-30K	$31-40K	$41-50K	$>50K	Row Total
YES	4	24	46	42	37	50	203
NO	24	85	79	52	33	25	298
Column Total	28	109	125	94	70	75	501
	5.6	21.8	25.0	18.8	14.0	15.0	100.0

Chi-Square	Value	DF	Significance
Pearson	50.56521	5	.0000
Likelihood Ratio	52.52124	5	.0000
Mantel-Haenszel	49.79055	1	.0000

Based on the above, 40.5% of the population have private health insurance. The health insurance tends to increase as income increases. The availability of private health insurance is probably obtained from their employment. We decided to investigate the work status of those persons in the <$10K and between $10-20K. Of those persons in the two categories only 16.2% work for pay outside the home. The remaining 83.3% have do not work; therefore, they are able to take care of the health needs through other means which are unknown to us.

People's use of health care is influenced by a number of factors, only one of which is illness. Society has an interest in understanding and measuring who needs and use what kinds of health services under what conditions. This understanding is fundamental to identifying inequities and

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problems and to devising social policies to correct the problems.

This study was an attempt to identify some of the perceived health care needs of military retirees. Based on the identification of some of their perceived health care needs; do not appear to be out of the ordinary when compared against some national statistics for the general population.

In obtaining medical services, it appears that retirees do use military facilities for the majority of their inpatient, outpatient, and pharmaceutical needs. All of these services can be obtained from Silas B. Hays. In addition to the hospital, the military has two PRIMUS clinics located in Monterey and Salinas. These clinics are additional primary care, family medical units. The clinics are open to all military beneficiaries of the direct care medical system at no cost. Services provided by both clinics include: treatment for minor illnesses and injuries for adult and pediatric patients; required immunizations (for adults only); laboratory services; routine radiologic services; health and wellness education programs and approved pharmacy needs [Ref 24].

The most requested services of the retirees can be obtained from the two PRIMUS clinics. However, some of those services are only available on a limited basis. If there are serious health care problems, retirees will most likely have to drive to Letterman in San Francisco or Naval Hospital Oakland to obtain services, if they wish to be treated at a

military facility. The use of Letterman will only be available until 1995.

If Silas B. Hays should close, the costs to provide those same medical services will most likely increase if they have to be provided by non-military personnel. If the costs of providing those health care services could be projected, the DoD could determine the cost/benefits associated with closing the hospital.

Although we identified some of the perceived health care needs of the retirees, we were unable to obtain the cost data to project the cost of providing those health care services should Silas B. Hays Hospital close.

V. SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter presents the conclusions and results from the research and data analysis. This chapter begins first by reviewing Chapter I which was an introduction to the base closure process and the potential effects of closing Fort Ord would have on the Monterey Peninsula. It also discussed the lack of consideration given to closing military hospitals in the base closure process. Chapter II discussed the health care issues of the elderly population and the health care concerns that come along with it. Chapter III discussed the methodology used to determine health care priorities among military retirees residing on the Monterey Peninsula. Chapter IV described the population characteristics of military retirees and identified some of their perceived health care needs.

A. CONCLUSIÓN

Although the elderly comprise only one-eighth of the population, they account for more than one third of the total health care expenditures [Ref 15]. Since this population is expected to continue to increase well into the 21st century, identifying their health care needs should become a priority for family physicians.

In particular, if DoD officials can determine the percentage of military retirees treated at military hospitals where a base may be closed, they can determine the potential effects of closing a military hospital on military retirees in the local community. Presently, this factor is not known and is not used as a criterion in the base closure process. If it becomes a criterion, this may "help" to keep a particular base open.

Military retirees will require medical care after Fort Ord closes in 1994; however, it has not yet been determined who, where, how, and the cost to provide for those health care needs. Some military retirees have indicated that they are willing to drive up to three hours to obtain military medical services depending on the situation. For those retirees who indicated that they are willing to drive up to three hours for military health care services; 52% are in excellent to good health and 47.8% are in fair to poor health. If their reported health status is accurate, Letterman Hospital located in San Francisco and Naval Hospital Oakland are medical sources that can be utilized. However, for routine care and pharmacy needs, a drive that far could be out of the question. DoD will have to determine what medical access (full/limited) will be provided to this population by the military health care facilities located on the Monterey Peninsula.

Those retirees over age 65 who indicated that they will use CHAMPUS as a method of payment for health care could be

hurt the most financially should the hospital close. In particular, those retirees over age 65 without any private health insurance may be put in a position to choose between health care and other basic necessities of life. These persons are likely to become future Medicare recipients.

In the ADL categories, we tend to fair well above the noninstitutionalized persons. This may mean at present our population is healthy but no one knows what may happen to change this scenario in the future.

In this research, we discussed barriers to obtaining medical care. The two cited most frequently were cost and distance. If retirees are willing to drive up to three hours, the distance variable may no longer be an important factor for those in excellent to fair to good health. However, the cost factor is another question. It has not been determined how retirees' health care needs will be provided if Hays closes. One factor is almost predictable, if health care must be provided for outside of military facilities, the cost is certain to increase.

In addition to barriers to obtaining health care, we determined the various methods of payment for health care services. Medicare A was used by a majority of the population, followed by Medicare B and out-of-pocket. Private health insurance came in third. As one's income increases, the more likely he/she may be willing to spend more on health care.

This research and data analysis were modeled around the COPC approach to health care. Although this model has never been used to determine health care needs for military retirees, it has proven its usefulness in this research. Using the COPC process, we were able to define and characterize our community and identify some of their health care problems. The results of this research can be used to modify future health care programs and monitor the effectiveness of program modifications. Since it has not been determined who will handle the future health care needs of military retirees, whatever source is selected, the last two stages of the COPC process can be used to determine how well the original problem(s) have been resolved. The COPC model proved that it is an approach that can be used to identify and resolve health care problems in a military community setting.

If the DoD uses this approach to investigate the health care needs of retirees throughout the United States, they may be able to determine the generic health care needs of this population segment. If this type of information is available, DoD can project the cost to provide health services by civilian sources if a military hospital is closed as part of the base closure process. Readily available information like this may be used as a factor in "keeping" a base from being closed.

If Silas B. Hays should close, retirees have requested that several medical specialties remain available. If only one service can be left behind, 91% of military retirees have requested that that service be the pharmacy. The use of this service may help to alleviate some of the expenses related to taking medicine in the later years of life.

This study was the first known attempt to identify the health care priorities among military retirees residing on the Monterey Peninsula. Although this study did not answer questions like who and how the medical services will be provided and paid for, it was the first known attempt to investigate the potential effects of closing Silas B. Hays Hospital on military retirees.

Presently, it is not known if a similar approach (but more indepth) could be used to generalize the effect on the entire retired population. If DoD investigates the potential of this approach, this information could be used on an ongoing basis throughout the military for decision making on issues related to military hospitals.

If Silas B. Hays closes, some military retirees have indicated that they would use either a private physician or civilian hospital. If the hospital closes, the civilian medical facilities in the area could be bombarded with additional patients requesting medical services. Based on the study conducted by Congressman Panetta and McCarden [Ref 6,7],

they indicated that area medical facilities could absorb the patient load should the hospital close.

Closing the hospital would increase CHAMPUS/MEDICARE use and would have significant federal cost impacts on budgetary issues.

One of the objectives for this research was to identify the health care needs of military retirees. Some of those health care needs have been identified and prioritized according to the retirees. Their health care needs appear to be no different from those of their noninstitutionalized counterparts. By identifying those health care needs, we determined through other research that additional patient increases could be handled from the public sector. What this mean for Silas B. Hays is that if the hospital should close, other facilities are available to this population; however, cost to provide those services are unknown at this time.

B. RECOMMENDATIONS

The following are recommendations which should be considered in the future regarding closing military hospitals:

- Identify the health care needs of the population that is serviced by the hospital. By identifying this information, the DoD can determine the impact (if any) and make the necessary adjustment to other military facilities in the area to pick up the additional patients if necessary.

- Determine who and what medical resources will pick up the additional patients when and if the military hospital is

closed. This is vital, if one medical source is denied, personnel should be provided additional health care alternative that will make them no worse off than they were before the health facility closed.

- Determine the costs/benefits associated with closing military hospitals. If this factor can be determined, it can be sued in the base closure process. It can also be used to help determine future budget requirements of the remaining military medical assets in the area.

- Determine if the criterion of closing military hospitals is a worthwhile factor to add to the base closure process. Currently, this criterion is not in the process and its impact could cause undue financial hardship on a segment of the population.

C. AREAS FOR FURTHER STUDY

Potentially productive areas for additional research arising out of this study include a number of topics. However, the following are areas recommended for future study:

1. Determine if the health care needs identified by this research can be met by military health care facilities remaining in the area after Fort Ord closes in 1994.

2. Determine the cost of providing the cheapest medical resources (military/civilian or a combination) needed to meet the perceived health care needs identified by this research.

D. CONTRIBUTIONS OF THE STUDY

This study contributes data and analysis relevant to the issue of identifying perceived health care needs among military retirees. In particular, it identified where this population received its medical and pharmaceutical needs as

well as determined how it may pay for its medical services should Silas B. Hays Army Community Hospital close.

In addition, it verified that the COPC approach to health care can be applied successfully to the retired military community.

APPENDIX

Dear Health Care Recipient,

Fort Ord will be closing sometime in the next few years. We are conducting research to determine if your health care needs can be met when that happens. Please take a few minutes to complete the attached survey. This survey will identify and help determine what medical services are needed after Fort Ord closes. It will also be used to plan for future resources.

Please be honest. This is essential for this research to be of any value in assessing your health care needs and providing future health care services.

When finished, please return the survey as soon as possible using the enclosed
pre-addressed stamped envelope. I will start data analysis on 1 March 1992, so I will need your responses before then.

If you have comments or questions, please write them on the survey.

Thank you again for your time and quick response.

NOTE:

(1) ONLY ONE (1) PERSON IN YOUR
     HOME SHOULD ANSWER THIS SURVEY

(2) COMPLETION AND RETURN OF THIS
     SURVEY INDICATES YOUR CONSENT
     TO PARTICIPATE IN THIS STUDY

                    LT Wanda F. Hereford
                    c/o Superintendent (Code 36)
                    Naval PostGraduate School
                    Monterey, CA   93943-5000

HEALTH CARE SURVEY

Please complete the following survey and return it as soon as possible. Your input is very valuable in assessing future health needs and resource requirements.

DEMOGRAPHICS:

1 Your Age: 40-44
                                       45-54   ___
                                       55-64   ___
                                       65-74   ___
                                       75-84   ___
                                       > 84   ___

2 Your Sex: Female   ___
                                      Male   ___

3 Ethnic Group   Black   ___
   (Select only 1)   Filipino   ___
                                      Hispanic   ___
                                      Japanese   ___
                                      Korean   ___
                                      Other   ___
                                      White   ___

4 Your Present Marital Status
   (Select only 1):
                                      Divorced   ___
                                      Separated ___
                                      Single   ___
                                      Married   ___
                                      Other   ___
                                      Widow   ___

5 Annual Family Income:
                             <$10,000
                              $10-20,000   ___
                              $21-30,000   ___
                              $31-40,000   ___
                              $41-50,000   ___
                              >$50,000   ___

6 Service Sponsor Retired From:
                    Army   ___
                    Air Force   ___
                    Navy/Marine Corps ___
                    Other   ___

7 What is your highest educational level
   achieved:
                    0-6th grade   ___
                    7-9th grade   ___
                    10-12th grade   ___
                    High school graduate ___
                    Some college   ___
                    College graduate   ___
                    Post Graduate   ___

8 Including yourself, the number of people
   residing in your household: ___

   8A If more than yourself, are they:

                    Family members ___
                    Friends   ___
                    Renters   ___

GENERAL HEALTH INFORMATION:

9 In general, how would you rate your present
   state of health?
                    Excellent   ___
                    Good   ___
                    Fair   ___
                    Poor   ___

10 Do you take a prescription medicine?

                    Yes   ___
                    No   ___

11 Do you consume at least 2 drinks per
    day of alcohol?
                    Yes   ___
                    No   ___

12 Do you smoke?   Yes   ___
                                 No   ___

13 Have you ever smoked?   Yes   ___
                                 No   ___

    13A If yes, how long ago did you quit?
         _____ (years)

14 Do you have diagnosed high cholesterol?
                                 Yes   ___
                                 No   ___
                          Don't Know   ___

15 Do you have diagnosed high blood pressure?
                                 Yes   ___
                                 No   ___
                          Don't Know   ___

16 How many days in the past year would you
    say you were sick: 0-7   ___
                                     7-14   ___
                                    14-21   ___
                                    21-30   ___
                                     >30   ___

17 How many days in the past year were you
    in bed most of the day due to illness:
                                      0-7   ___
                                     7-14   ___
                                    14-21   ___
                                    21-30   ___
                                    > 30   ___

18 Do you work for pay outside your home?
                                 Yes   ___
                                 No   ___

    18A If yes, how many days in the past
         year were you unable to work due to
         illness:
                                      0-7   ___
                                     7-14   ___
                                    14-21   ___
                                    21-30   ___
                                     >30   ___

101

ACTIVITIES OF DAILY LIVING:

19   Do you require any assistance in bathing?

                                        Yes   ___
                                        No   ___

20   Do you require any assistance with
     toileting? (Example: Getting to toilet,
     getting on/off stool, cleaning organs of
     excretion)

                                        Yes   ___
                                        No   ___

21   Do you require any assistance in dressing?

                                        Yes   ___
                                        No   ___

22   Do you require any assistance in preparing
     your own meals?

                                        Yes   ___
                                        No   ___

23   Do you require any assistance in feeding
     yourself?

                                        Yes   ___
                                        No   ___

24   Do you require any assistance in shopping
     for groceries or clothes?

                                        Yes   ___
                                        No   ___

25   Do you require any assistance in money
     management (Paying bills, balancing
     checkbook, etc.)?

                                        Yes   ___
                                        No   ___

26   Do you require any assistance in
     performing your housework?

                                        Yes   ___
                                        No   ___

27 Do you require any assistance in using
    the telephone?

                              Yes   ___
                              No   ___

DOCTOR VISITS:

28 Does anyone living in your household
    (including yourself) require regular
    visits to a physician? (Minimum of once
    every three months):

                              Yes   ___
                              No   ___

28A If yes, how many people?

         _____

28B If yes, What are the illnesses:
     (Check all that apply):

                    Arthritis   ___
                    COPD (Lung problems)   ___
                    Diabetes   ___
                    Heart disease   ___
                    High Blood Pressure   ___
                    Stroke   ___
                    Other (List)
                         1. _____

                         2. _____

                         3. _____

MEDICAL SERVICES

29 I would like the following medical specialty services to be available: (Check all that apply)

Audiology	___
Dermatology	___
Ear, Nose, Throat	___
Family Practice	___
General Outpatient Clinic	___
General Surgery	___
Gynecology/Obstetric	___
Internal Medicine	___
Laboratory	___
Neurology	___
Ophthalmology	___
Orthopedic	___
Pharmacy	___
Physical Therapy	___
Podiatry	___
Psychology/Mental Health	___
Radiology	___
Urology	___

30 In the past year, have you or anyone in your household:

Visited a doctor or clinic: Yes ___
                                  No ___

Been admitted to a hospital: Yes ___
                                  No ___

30A If yes, how many times in the past year did you: Visit a doctor or clinic:

                                  1-3 ___
                                  4-6 ___
                                  7-9 ___
                                  >10 ___

How many days were you in the hospital:

                                  1-7 ___
                                  8-14 ___
                                  15-21 ___
                                  21-30 ___
                                  > 30 ___

31 What provider(s) did you use? (Check all that apply):

                    Dermatologist   ___
                    Emergency room   ___
                    Family Practitioner   ___
                    General outpatient   ___
                    General surgery   ___
                    Gynecologist/Obstetrician ___
                    Internist   ___
                    Ophthalmologist   ___
                    Orthopedic   ___
                    Other _____

HEALTH CARE SOURCES:

32 Where do you presently obtain your primary
    source of inpatient care?

                    Military Facility   ___
                    Civilian Facility ___

33 Where do you presently obtain your primary
    source of outpatient care?

                    Military Facility   ___
                    Civilian Facility   ___

34 Where do you presently obtain your primary
    source of pharmacy needs?

                    Military Facility   ___
                    Civilian Facility   ___

35 Are you treated at all at a military facility?
                              Yes ___
                              No   ___

    35A If no, why not?

    Treatment not available   ___
    Better services elsewhere   ___
    Other _____

36 Are you planning to move from this area
    after Fort Ord closes?

                                        Yes ___
                                        No ___

37 If Hays Army Hospital closes also, would
    you then move from this area?

                                        Yes ___
                                        No ___

38 If Hays Army Hospital is no longer an
    option, where would you go to obtain
    medical services?
                Private physician   ___
                Civilian hospital   ___
                Nearest military facility   ___
                Other _____

    38A If you checked nearest military
         facility, how much time are you
         willing to drive to obtain medical
         services?
                            < than 1 hour   ___
                            1-3 hours   ___
                            3-5 hours   ___
                            > 5 hours   ___

39   If Hays Army Hospital closes and you
       need medical services, what barriers
       would you have to obtaining them?

                        Costs   ___
                        Cultural barrier   ___
                        Distance   ___
                        Lack of knowledge   ___
                        Language barrier   ___
                        Past bad experience ___
                        Other _____

40 How are you able to pay for medical care?
    (Check all that apply):
                CHAMPUS   ___
                Medicare Part A   ___
                Medicare Part B   ___
                Out-of-pocket   ___
                Private Health Insurance ___

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