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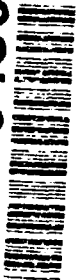
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OMB No. 0704-0188

ated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

| | | | |
|---|--|---|--|
| 1. REPORT DATE June 1992 | | 3. REPORT TYPE AND DATES COVERED Final Report (07-91 to 07-92) | |
| 4. TITLE AND SUBTITLE A Study to Identify the Characteristics of the Beneficiaries Residing within the Catchment Area of Keller AMC | | 5. FUNDING NUMBERS | |
| 6. AUTHOR(S) CPT Randolph G. Howard, Jr., MS | | 8. PERFORMING ORGANIZATION REPORT NUMBER 26A-92 | |
| 7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Keller Army Community Hospital West Point, NY 10996-1197 | | 10. SPONSORING/MONITORING AGENCY REPORT NUMBER | |
| 9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army-Baylor University Graduate Program in Health Care Administration Academy of Health Sciences, U.S. Army (HSHA-MH) Fort Sam Houston, TX 78234-6100 | | 11. SUPPLEMENTARY NOTES | |
| 12a. DISTRIBUTION/AVAILABILITY STATEMENT DISTRIBUTION STATEMENT A Approved for public release Distribution Unlimited | | 12b. DISTRIBUTION CODE | |

ABSTRACT (Maximum 200 words)

93-04904



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|---|--|----------------------------------|----------------------------|
| 14. SUBJECT TERMS 98 3 8 047 | | | 15. NUMBER OF PAGES 116 |
| 17. SECURITY CLASSIFICATION OF REPORT N/A | | | 16. PRICE CODE |
| 18. SECURITY CLASSIFICATION OF THIS PAGE N/A | 19. SECURITY CLASSIFICATION OF ABSTRACT N/A | 20. LIMITATION OF ABSTRACT UL | |

A STUDY TO IDENTIFY THE CHARACTERISTICS
OF THE BENEFICIARIES RESIDING WITHIN THE
CATCHMENT AREA OF KELLER ARMY COMMUNITY HOSPITAL

A Graduate Management Project
Submitted to the Faculty of
Baylor University
In Partial Fulfillment of the
Requirements for the Degree
of
Master of Health Administration
by
Captain Randolph G. Howard, Jr.

12 June 1992

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| Dist | Avail and/or Special |
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ACKNOWLEDGEMENTS

I wish to gratefully acknowledge the many people who assisted me in preparing this paper.

Dr. Kenneth D. Finstuen and Major Ed Jackson, Jr. provided invaluable assistance and guidance. Their sincere support was instrumental in the development of this project.

I am especially thankful to Colonel Earl B. Mally, Jr. for his constant mentorship and support. This project would not have succeeded without his assistance.

The Directorate of Information Management staff provided superb assistance. Their information management support was greatly appreciated.

Lastly, I owe my greatest thanks to my wife Susan. Her encouragement, support, and understanding made the past two years possible.

Abstract

Gateway to Care is the U.S. Army's Coordinated Care Program. Gateway to Care gives the hospital commander the authority to coordinate health care resources to meet the needs of all the beneficiaries in his catchment area, in the most efficient and effective way (Mendez, 1992b). The hospital commander is responsible for managing both the Operations and Maintenance, Army (OMA) and the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) budgets. CHAMPUS has been experiencing rapid increases in costs (Badgett, 1990). Consequently one of the primary objectives of Gateway to Care is to slow the growth of CHAMPUS costs (Noyes, 1991).

Keller Army Community Hospital (KACH) has been directed to implement the Gateway to Care concept. In order to more accurately implement this concept, the characteristics of the beneficiary population must be determined. The analysis of the KACH beneficiary population has been accomplished by accessing various information systems and by using a beneficiary questionnaire. The results of this analysis are being used by the KACH leadership as they continue to implement Gateway to Care.

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Introduction

Some of the most hotly debated issues confronting all Americans revolve around health care. Articles concerning health care costs, access, and quality frequently are found in the pages of newspapers, journals, and other periodicals. These issues are pervasive throughout the military and civilian health care systems.

The Office of National Health Statistics (cited in Mendez, 1992b) states that health care related expenses comprised over 12% of the United States Gross National Product (GNP) in 1990. According to Braendel (1990), increases in health care costs have significantly outpaced the rate of inflation over the last several years. Fuchs (1990) warns that if health care expenditures account for much more of the GNP, many sectors of the United States' economy could suffer. Additionally, the rising costs of health care are making it difficult for individuals to obtain health insurance either privately or through their employer (Weil, 1992).

Indeed, over thirty million Americans have no health insurance, and many more are woefully underinsured (Mendez, 1992b). Almost a third of the

uninsured are children (Weil, 1992). Unfortunately, the uninsured and underinsured people do not have adequate access to proper health care services. Normally, they are not allowed to enter hospitals for health care services unless they are critically ill. Instead of having access to primary care, which can prevent the escalation of many injuries and illness into medical emergencies, this country's uninsured and underinsured many times must wait for their illness or injuries to become life threatening before they can be treated (Hagland, 1992).

Quality is an important issue in all industries. The health care industry is not any different. The health care industry is being challenged to adopt a Continuous Quality Improvement (CQI) (or Total Quality Management [TQM]) stance (Lynn, 1991). The Joint Commission on Accreditation of Healthcare Organizations (JCAHO), which is the accrediting agency for health care organizations, is now looking for the presence of CQI procedures in health care organizations (JCAHO, 1992).

The quality of care given by all health care organizations does have an impact on the cost of and access to care. High quality care can improve the

efficiency and productivity of the health care organization (Gillem, 1988). If the efficiency and productivity of the organization increase, perhaps the costs of providing health care will not increase as rapidly as in previous years, and the accessibility to health care will increase for some people.

Military Health Service System

The Military Health Service System (MHSS) is comprised of two components: the direct health care system and the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) (Badgett, 1991). The 9.2 million eligible beneficiaries of the MHSS include active duty service members, their family members, retirees and their family members, and family members of deceased active duty or deceased retiree personnel (Badgett, 1990). All the aforementioned beneficiaries are authorized to use the direct health care system. All beneficiaries, except for active duty service members, and beneficiaries over the age of 65 years, may use CHAMPUS (Department of Defense [DOD], 1991).

CHAMPUS is a health care service option that allows eligible beneficiaries to receive health care from civilian providers (Badgett, 1990). CHAMPUS eligible beneficiaries must pay 100% of the charges,

for outpatient care, until they reach their respective deductible limits (DOD, 1991). After the deductible is reached, beneficiaries pay 20 to 25% of the charges (DOD). CHAMPUS pays the balance of the allowable charges.

CHAMPUS eligible beneficiaries, who live in the catchment area of a military medical treatment facility (MMTF), must seek prior approval from the local MMTF when they seek inpatient care (DOD, 1991). A MMTF's catchment area is the geographical area within a forty mile radius around the MMTF. Beneficiaries, who receive inpatient care in a civilian health care facility, pay a small daily charge (DOD). For outpatient care, these beneficiaries do not need to obtain prior approval, except for 14 categories of outpatient care. Patients are responsible for the charges which exceed the CHAMPUS allowable charges. Once beneficiaries reach the age of 65, they are no longer eligible for CHAMPUS (Badgett, 1990).

Conditions Which Prompted the Study

As mentioned previously, U.S. health care costs have been skyrocketing over the past several years. America's health care costs increased 15% in 1991 (Mendez, 1992b). Increases in health care costs are

found in both the military and civilian health care delivery systems. Badgett (1990) reports that in 1981 the CHAMPUS portion of the MHSS budget was approximately \$852 million dollars. Current figures show that the DOD is spending nearly \$3.0 billion on CHAMPUS (K. Zimmerman, personal communications, February 3, 1992). These current costs represent a 350% increase in costs over the past decade.

Several DOD initiatives are currently being conducted and evaluated in an attempt to determine effective ways of controlling CHAMPUS costs (Gisin & Sewell, 1989). Some of these programs include the CHAMPUS Reform Initiative (CRI), Primary Care for the Uniformed Services (PRIMUS), and Catchment Area Management (CAM) (Gisin & Sewell). A more recent and perhaps comprehensive program is the Gateway to Care program which is being established at 11 U.S. Army installations (D. A. Braendel, personal communication, February 5, 1991). The U.S. Army installations offering Gateway to Care include Fort Benning, Fort Bliss, Fort Drum, Fort Campbell, Fort Bragg, Fort Gordon, Fort Hood, Fort Leavenworth, Fort Leonard Wood, Fort Riley, and the U.S. Military Academy (McIntire,

1992). All of these programs are considered managed care programs (Fant & Pool, 1990).

Kongstvedt (1989) states "The term managed health care is now used to refer to any system that manages the delivery of health care in such a way that the cost is controlled" (p. xiii). The military's managed care programs not only seek to contain costs, but also to improve access to care and provide quality health care services to DOD beneficiaries (Leahy & Mouritsen, 1990).

Keller Army Community Hospital (KACH) is located at the United States Military Academy, West Point, New York. KACH is 65 bed facility which provides a comprehensive range of health care services.

West Point's catchment area includes portions of Connecticut (CT), New Jersey (NJ), New York (NY), and Pennsylvania (PA). Fort Monmouth's catchment area overlaps the southern portion of West Point's catchment area (see Appendix A). DOD beneficiaries living in the overlap area can use either KACH or Paterson Army Community Hospital (PACH), which is located at Fort Monmouth.

The Defense Medical Information System (DMIS) (Defense Medical Systems Support Center [DMSSC], 1991)

provides information on the size of all DOD catchment areas. Table 1 lists numbers and types of beneficiaries living in West Point's catchment area according to DMIS.

Table 1

Eligible Beneficiaries Living in West Point's Catchment Area

| | |
|----------------------------|--------|
| Active Duty: | 6873 |
| Dependents of Active Duty: | 8990 |
| Retirees: | 8173 |
| Dependents of Retirees: | 6506 |
| Survivors: | 1622 |
| Total: | 321648 |

DMIS obtains these numbers from the Defense Enrollment Eligibility Reporting System (DEERS). All military personnel and retirees are responsible for updating their personal DEERS file on a routine basis. Hence, the DEERS information accuracy is mainly determined by the conscientiousness of the service members and retirees.

KACH is one of the U.S. Army's Gateway to Care sites. The Gateway to Care program at KACH was initiated on November 1, 1991. KACH's program consists of three enrollment phases into Gateway to Care: 1. enrollment of active duty families, 2. enrollment of

retirees and retiree family members under the age of 65, and 3. enrollment of retirees and retiree family members 65 years old and older. The enrollment process for active duty families has been proceeding since January 2, 1992. KACH is preparing to enroll retirees and retiree family members under the age of 65 in September 1992. The enrollment of retirees and their family members, who are 65 years old and older, will begin after phase 2 is completed.

Gateway to Care presents many new challenges to KACH. One of which is to perform an analysis on the active duty and retiree households. KACH knows how many beneficiaries live in the catchment area. KACH does not know, however, who these people are, where they live, what their perceived health needs are, and what their health care utilization patterns are. KACH needs to have this information for several reasons. Names and addresses of the beneficiaries are necessary in order to know who the potential enrollees are, and where to mail the Gateway to Care enrollment forms, for those beneficiaries KACH would target for enrollment. The beneficiaries' perceived health care needs must be identified in order that the appropriate health care resources can be made available. The health care

utilization patterns of the beneficiaries must be discovered for two reasons. First, KACH wants to identify any large portions of the population that are routinely using civilian providers for outpatient care. Outpatient health care was targeted because CHAMPUS eligible beneficiaries do not need to obtain a nonavailability statement when using CHAMPUS to finance most outpatient procedures. KACH would want to know why these beneficiaries are not using a MMTF. KACH would also encourage these individuals to use a MMTF instead of a civilian provider. Secondly, KACH is interested in discovering the methods used for financing the civilian care. If certain beneficiaries are frequently using CHAMPUS to finance this civilian care, then KACH would certainly attempt to enroll those beneficiaries in Gateway to Care.

My paper will address the issues listed above. The information gathered by my paper will allow KACH to more accurately execute the three enrollment phases.

Statement of the Management Problem

KACH needs to conduct a beneficiary analysis on active duty and retiree households in order to more fully implement Gateway to Care. KACH wants to discover who the beneficiaries are, where they live,

what their health needs are, and their outpatient health care utilization patterns.

Review of the Literature

Performing a beneficiary analysis can be accomplished in a few different ways. The researcher can simply query existing information management systems for the pertinent information. The researcher can also design and implement questionnaires (surveys) in order to analyze a population (Foster, 1988). A combination of both techniques can also be used (Foster). The following literature review demonstrates how researchers have used questionnaires and databases to study various populations.

In 1989, Leahy and Mouritsen (1990) used databases to analyze beneficiaries using PRIMUS clinics. They performed a study to compare the PRIMUS and CHAMPUS workload. In this study the authors studied workload data for adverse reactions, cardiology, dermatology, infectious disease, pulmonary/respiratory, gynecology, ophthalmology, and ear, nose, and throat (Leahy & Mouritsen). In order to conduct this study the authors had to study the utilization patterns of specific beneficiaries, who lived in catchment areas where PRIMUS clinics were located.

Leahy and Mouritsen (1990) obtained this data primarily from databases which were maintained by various agencies. For example, much of their data was obtained from the Office of Civilian Health and Medical Program of the Uniformed Services (OCHAMPUS) and the National Association of Ambulatory Care Centers. The authors were able to show that PRIMUS improved access to health care. Leahy and Mouritsen also discovered, however, that PRIMUS did not reduce the health care related costs.

In another beneficiary study, Herschberger (1990) attempted to determine if Evans Army Community Hospital (EACH) could contain CHAMPUS inpatient mental health care costs through managed care techniques. To do this it was important to analyze the case-mix and volume of the CHAMPUS inpatient mental health workload in the catchment area. Herschberger obtained this information from the CHAMPUS Inpatient Care by Diagnosis Code Report. He then used this information to determine if inpatient mental health cases could be handled less expensively through an EACH managed care program. Herschberger determined that 2.4 million dollars could be saved in mental health costs through the use of managed care techniques.

In the next two articles, the researchers used surveys to gather information on certain populations. The researchers showed the usefulness of using surveys for this purpose.

In 1987, Parker, Rescorla, Finklestein, Barnes, Holmes, and Stolley (1991) conducted a health survey of homeless families living in Philadelphia shelters. After reviewing the literature on the health status of homeless families, Parker et al. discovered that little information existed on the subject. According to the researchers, "We therefore designed a survey of homeless families residing in shelters in Philadelphia to obtain descriptive information that would be helpful in health planning and in identifying specific problems and unmet health needs" (p. 521).

The researchers visited 13 shelters to administer an oral questionnaire. The questionnaire was comprised of four major sections, which were parental health, demographics, health history of the children, and access to medical care (Parker et al., 1991). The researchers attempted to administer the questionnaire to a random sample of 183 families. One hundred forty-three families agreed to participate in the study. The response rate, therefore, was 80%. In addition to the

oral questionnaire, developmental and psychological tests were administered to the families.

The results of this study showed that many homeless families resided in the shelters for very long periods of time. Families, who resided in shelters, seem to have serious medical, developmental, and psychological afflictions. The authors conclude that special public programs, such as health screening and education, are needed in order to correct these afflictions.

Gelberg, Linn, and Allison-Oakes (1990) also performed a study on the homeless. The purpose of the authors' research was to determine if differences in health status existed between older and younger homeless adults. For the purposes of this study, an older person was 50 years old and older, and a younger person was 18 to 49 years old (Gelberg et al.).

The authors conducted their survey in Los Angeles County. They searched for homeless individuals in such areas as shelters, shopping malls, parks, and soup kitchens. In order to encourage participation in the study, potential respondents were offered two dollars for submitting to an interview and physical examination, and another two dollars for allowing a

blood sample to be drawn (Gelberg et al., 1990). The interview consisted of various demographic, social health, mental health, and physical health questions. The physical examination consisted of blood pressure observations, examinations of the eyes, ears, and skin, and height and weight measurement.

Gelberg et al. (1990) performed appropriate descriptive statistics, such as means and standard deviations, and inferential statistics, such as chi-square and Student's *t*-test. The results of these tests showed that older homeless people are more likely than younger homeless people to be socially isolated and have chronic diseases, functional disabilities, and a myriad of other ailments. The authors conclude that geriatricians should enlighten the other primary care providers to the special health needs of older homeless adults, so that these types of geriatric persons can be treated in a more comprehensive way.

In the previous articles, the authors used either a questionnaire or a database to gather information. In the following two articles, the authors use databases and questionnaires to perform a beneficiary analysis.

In 1987, Foster (1989) used databases and a questionnaire to discover pertinent information on a

specific beneficiary segment of Martin Army Community Hospital (MACH) catchment area. In 1987, the commander of MACH wanted to attempt to control his catchment area's CHAMPUS costs by establishing preferred provider networks for certain services in specific locations (Foster, 1989). Foster determined that three pieces of information would be needed to successfully establish these networks. First, he had to determine the number of active duty family members, U.S. Army retirees, and family members of retirees that resided in MACH's catchment area. Second, he wanted to determine where these beneficiaries were receiving health care. Third, he wanted to discover how beneficiaries were paying for care received outside of MACH.

Foster (1989) used both the automated databases and questionnaires in his attempt to define the beneficiary population for the MACH catchment area. In order to identify the beneficiaries that lived in MACH's catchment area, he used an automated personnel system called the Standard Installation/Division Personnel System (SIDPERS) and a database from Fort Benjamin Harrison. SIDPERS was used to identify active duty soldiers who had at least one dependent. A database used for mailing W-2 forms to retirees, which

was located at Fort Benjamin Harrison, was used to determine which retirees resided in MACH's catchment area.

Foster (1989) also designed two questionnaires in order to determine where beneficiaries sought medical care and how they paid for the care. One questionnaire was developed for active duty family members, and the other was developed for retirees and their family members. Questionnaires were then mailed to active duty members and retirees. The active duty soldiers gave the questionnaires to their dependents, who answered and returned the questionnaires. The retirees and their family members also answered and returned the questionnaires. The response rate for the active duty questionnaires was 30%. The response rate for the retiree questionnaires was 51%.

Foster (1989) then analyzed the returned questionnaires. He was able to gather useful demographic data on the population. He discovered that approximately 95% of the active duty soldiers, who have at least one family member living in MACH's catchment area, live less than 10 miles from post. There were approximately 3.65 family members per active duty family. The average age of the retirees was 59 years.

There were approximately 1.7 family members per retiree family. Unfortunately Foster's study also had several weaknesses, which limited the value of some of his other findings. Although these weaknesses existed, the leadership at MACH was still able to use Foster's analysis in planning for the of the CHAMPUS project.

This next study was conducted at Ireland Army Community Hospital (IACH). In 1987 the leadership at IACH perceived that retired personnel in their catchment area were dissatisfied with the access to outpatient clinics (Morrill, 1987). This perception was thought to have arisen when IACH restricted access for retirees to outpatient services during an Army wide shortage of physicians in the mid 1970s. The leadership now believed their current hospital staff had the capability to increase the amount of outpatient services provided to retirees. IACH wanted to implement a marketing program to recapture part of the retiree population, which was seeking care from civilian providers.

Morrill (1987) performed the first step of the marketing effort, which was marketing research. First, Morrill began searching for a database of retirees who lived in IACH's catchment area. She received such a

database from the Fort Knox Retiree Services Office (RSO). Next, Morrill developed a phase I questionnaire, to determine how often retirees used outpatient clinics and which clinics they used. Third, she distributed the survey to a random sample of retirees. Forty-four percent of the surveys were returned. She then proceeded to analyze the completed surveys. Morrill's analysis of the completed surveys revealed that 80% of the those who returned surveys used IACH for medical care.

Morrill also developed a phase II survey, which would measure the respondents' perception of access and quality of care at IACH. The population targeted consisted of retirees who primarily used civilian providers for health care. Her analysis indicated that the majority of the respondents were satisfied with most aspects of the care received. The major dissatisfaction associated with the care received at IACH, as perceived by the respondents, was the difficult process encountered when attempting to get a timely appointment at the hospital.

Morrill (1987) determine that the majority of the retiree population was utilizing IACH for their health care needs, and was very satisfied with the care

received, if they could get an appointment. Morrill, therefore, concluded that IACH should not attempt to recapture more of the retiree population, since a high percentage of the respondents were using IACH.

Having shown that databases and questionnaires are appropriate tools for the collection of information of this nature, it became apparent that I needed a strategy for the application of these tools. For this strategy I turn to Kotler and Clarke (1987), who are health care marketing educators. The type of strategy I adopt from them is a marketing research strategy. According to Kotler and Clarke, "The marketing research process consists of five steps: developing the research objectives and problem definition; exploratory research; formal survey and/or experimental research; fieldwork; and data analysis and report presentation" (p. 184). My paper will follow this marketing research process. The first step of this process is covered in the statement of the management problem and the purpose of the study. The exploratory research consists of the review of the literature, study design, and development of the questionnaire. The formal survey step is the mailing the questionnaires to the beneficiaries. The fourth step is the data collection phase. The fifth,

and perhaps most important step, is comprised of the statistical analysis, results, discussion, and conclusions and recommendations sections of this paper.

Purpose of the Study

The purpose of this study is to perform an analysis of the active duty and retiree households residing in the KACH catchment area. The analysis will address the following questions:

1. Who are the eligible beneficiaries?
2. Where do they live?
3. What are their health needs?
4. From where are they getting their outpatient health care now?
5. How are they paying for their health care?

This information is needed so that KACH can improve and further refine the implementation of its managed care program.

Limitations of the Study

Some of the zip codes used to mail the retirees' questionnaires, and recorded on certain retirees' questionnaires, were in locations outside the KACH catchment area. This could be due to several factors. Many retirees have more than one address. They might live in two or more locations during the year. For

example some retirees live in the northern part of the U.S. during the warm months, and then move to the southern part of the U.S for winter. Retirees, who adopt this practice, are nicknamed "snowbirds". Therefore, these snowbirds might use KACH's facilities at various times of the year.

Additionally, some of the zip codes are for locations that are just outside KACH's catchment area, as defined by OCHAMPUS (1992). Retirees living outside KACH's catchment area are authorized to use KACH's services on a space available basis. Although these individuals might not be located in KACH's specified catchment area, their health needs and utilization patterns are very important to KACH. KACH must be able to identify the resources necessary to provide efficient and effective health care to these people. Another reason that KACH is interested in this particular population is due to KACH's budget. Under Gateway to Care, KACH's budget will become capitated. KACH's budget will be based on the number of beneficiaries living in the catchment area. The capitated budget may not support the costs of providing care to this group.

Individuals residing outside KACH's catchment area can use CHAMPUS. Their CHAMPUS utilization patterns are important to KACH, and the DOD, since frequent use of CHAMPUS will increase CHAMPUS. If we detect frequent use of civilian providers by beneficiaries, who live in the same proximity to each other, then the establishment of a preferred provider network might be warranted.

An accurate listing of the survivors in the KACH was not available. Additionally, enrollment of the survivors is not yet scheduled in the Gateway to Care plan. Therefore, the survivors were not surveyed. Some survivors, however, did receive questionnaires. Their completed questionnaires were also analyzed.

The 4400 cadets stationed at West Point were not surveyed. KACH knows what their health needs are from years of experience of meeting these needs. Additionally, the cadets' point of entry to the MHSS for their health care needs will invariably be through KACH directly, or one of KACH's satellite clinics. Therefore, the issues of where they get their care and how they finance it are not relevant to the management problem.

Methods and Procedures

Subjects

Two major tasks were conducted virtually simultaneously during the initial stages of this research project. An accurate listing of the beneficiaries living in West Point's catchment area, was needed. Additionally, the research instrument (questionnaire) had to be developed.

Study Design

Database of Beneficiaries

The types of databases needed for this study were ones that would provide names, ranks, and current mailing addresses of the beneficiaries within West Point's catchment area. After some initial investigation, I determined that several different sources would have to be used in obtaining the databases. The database for active duty personnel assigned to West Point or Stewart Army Subpost (STAS) could be obtained from the Directorate of Engineering and Housing (DEH). STAS, which is a subpost for West Point, is a military community located 17 miles north of West Point. The units located on STAS include the Readiness Group (RG) - Stewart, 146th Emergency Ordinance Disposal (EOD), Headquarters and Headquarters

Company (HHC), 854th Engineer Battalion, 320th Evacuation Hospital, 336th Medical Detachment, 4th Marine Air Wing, 105th Air National Guard, 3516th U.S. Air Force Recruiting Battalion, and the 42nd Infantry Division Material Management Center. STAS also provides additional housing for West Point and STAS military families.

Active duty personnel living at West Point or STAS and all U.S. Army personnel working at West Point or STAS must inprocess at DEH's Housing Division. When a service member inprocesses, he or she is either assigned government quarters or is given a statement of nonavailability of government quarters, which gives the service member permission to draw basic allowance for quarters (BAQ). The service member can then lease or buy quarters in the surrounding civilian communities. The Housing Division maintains a current database on all service members inprocessing through the Housing Division office. In September, 1991, a printed copy of this database was obtained from the Housing Division.

Not all service members living in West Point's catchment area, however, must inprocess through the Housing Division. The service members of the 105th Air National Guard, the Marine Airlift Group (MAG), and the

3516th Recruiting Squadron do not have to inprocess through the Housing Division. These airmen and marines can receive the authorization to receive BAQ from their respective units. Therefore, the Housing Division's database did not contain information on these airmen and marines.

Individual requests for the ranks, names, and addresses of the personnel in these separate units were sent to each unit's commander. All units provided a complete personnel listing in a timely manner.

The next step was to input the data from these active duty personnel listings into a database. This was accomplished by manually inputting the data into the database software package dBASE III PLUS (Ashton-Tate, 1986). This database was used for this graduate management project and eventually for the enrollment of active duty families in West Point's Gateway to Care program. The distribution of active duty households by zip code was also created (see Appendix B). The total number of active duty households on the database was 2176.

Collecting similar information on the retirees, residing within West Point's catchment area, proved to be a more difficult task. The agency, which had a

database on U.S. Army Retirees, is the U.S. Army Retired Pay Operations located at Fort Benjamin Harrison, Indiana (Foster, 1988). This agency possesses a database which lists mailing addresses for the retirees' W-2 Form.

Retired Pay Operations sends a copy of this database to Retirement Services Officers located at various U.S. Army installations (Foster). The database received at an installation contains information on those retirees using the services of the installation. At West Point, the database is actually sent to the Directorate of Information Management (DOIM), which converts the database into a report called the "Retired Army Personnel Roster By Zip Code". The Directorate of Information Management sends this report to the Retirement Services Officer.

In September 1991, a copy of the "Retired Army Personnel Roster By Zip Code" was obtained from the West Point Retirement Services Officer. Additional retiree listings were also needed, since this report did not include all the other services' retirees residing in the West Point catchment area. Consequently, requests for the other services' retiree listings were sent to the appropriate authorities of

the U.S. Air Force, U.S. Navy, U.S. Marine Corps, and U.S. Coast Guard in October 1991. Unfortunately, the only services that responded were the U.S. Coast Guard and the U.S. Air Force.

At approximately the same time the personnel requests were sent to the other services, I discovered that the DOIM had retiree listings of the other services. A file transfer request was then sent to the DOIM. The information requested was the names, social security number, and mailing addresses of all retirees residing in the West Point catchment area. DOIM transferred the information onto computer disks. The information on the disks was then loaded onto the database. The total number of retiree households listed on the database was 4933. This number is considerably smaller than the 8173 retiree households reported by DMIS. The possible reasons for this discrepancy are discussed in the discussion section of this paper. A listing, which shows the distribution of retiree households by zip code, was also created (see Appendix C).

Development of the Questionnaire

According to Okolo (1990), "When creating a form for data collection, there are a number of errors that

are to be avoided. Each error is based on the tendency to think of these forms from the researcher's perspective rather than from that of the person filling out the survey" (p. 103). Throughout the entire process of developing the questionnaire, I envisioned how a potential subject (respondent) would respond. I attempted to develop a questionnaire that would motivate the subject to completely and accurately answer the questionnaire.

An uninterested respondent is probably more likely to either discard the questionnaire, or answer it inaccurately. A low response rate or inaccurately completed questionnaires can obviously have a detrimental impact on the results.

Okolo (1990) offers some simple but good advice for the development of a questionnaire. He believes the questionnaire should be simple, interesting and unambiguous. Okolo also suggests that the questions be positive and non-threatening. The questionnaire for this research project was developed by using Okolo's advice.

Before developing the questionnaire, it was necessary to determine what information needed to be collected. As mentioned previously, the purpose of

this project was to perform an analysis of the beneficiary population residing in the West Point catchment area. I now have the names and addresses of the beneficiaries. I still need to determine what their perceived health needs are, where they receive their outpatient health care, and how they finance their civilian health care.

After several discussions with Colonel Earl B. Mally, Jr., Deputy Commander for Administration, KACH, I determined exactly what information needed to be collected. I wanted to obtain the zip code location of respondents, employment status, military status, family size, perceived health care needs, location of outpatient health care received in the last year, and how civilian outpatient care was financed. Colonel Mally and I believed this information would adequately answer the questions listed in the purpose of the study.

I then began to create the questions. The questionnaire endured five revisions before being completed. Each version of the questionnaire was administered to various people throughout KACH. The people completing the questionnaire were asked to comment on the clarity of and ease of answering the

questionnaire. Respondents included active duty personnel, retirees, and dependents.

Reliability and validity are important concepts to consider when developing a questionnaire. Reliability indicates if the measuring instrument (questionnaire) is measuring accurately (Okolo, 1990). For example, if a bathroom scale gave widely varying measurements for the same person using the scale, the scale would not be reliable. Validity is a concept which indicates the measuring instrument is measuring the right thing (Okolo). A stethoscope, for instance, should not be used to measure weight.

Reliability and validity of the instrument were demonstrated when the final draft was administered to various individuals in the hospital (K. Finstuen, personal communication, October 29, 1991). Reliability was demonstrated, as these respondents understood all items on the questionnaire and answered them in a similar manner. Additionally, Colonel Mally and Dr. Kenneth D. Finstuen, Associate Professor of Health Care Administration, Baylor University, agreed that the questions asked were valid ones.

Another consideration to address when administering a questionnaire is the protection of the

ethical rights of the respondents. In order to protect the ethical rights of the respondents, the researcher must tell the respondents that participation in the research is completely voluntary (Okolo, 1990).

Researchers obviously should not coerce respondents into participating in the study. Additionally, the researcher must assure all respondents that their responses will be kept confidential. The questionnaire used for this research contained an ethical statement. The statement explained to the respondent that participation in the research was voluntary and all information would be kept confidential.

After consulting with Colonel Mally and Dr. Finstuen, the final version of the questionnaire was prepared. After the survey was completed, it was sent to the installation printing plant for reproduction. Printed on the reverse side of the survey was the mailing address of KACH, and the frank. The frank indicated to the respondents that returning the questionnaire would be free of charge. After completing the questionnaire, the respondent only needed to fold and tape the questionnaire, and drop it in a mail box. Attached to the survey was a letter signed by the hospital commander which explained the

purpose of the questionnaire, and also requested that the questionnaire be completed and returned. The questionnaire and letter were sent to the installation printing plant for reproduction on October 31, 1991 (see Appendix D). Printing of the documents was completed on November 18, 1991.

The next task was to choose a random sample. Selecting a random sample ensures that all persons, objects, or events of a population have an equal chance of being in that sample. A random sample is considered to be representative of the population, therefore statements or inferences about the population can be made (K. Finstuen, personal communication, July 13, 1990). After discussing the purpose of this research process with Dr. Finstuen, we agreed on a sample size of 20% of the households, or 1422 households.

The sample was also stratified between active duty and retirees. Twenty percent of the active duty households represents 436 households. Twenty percent of the retiree households represents 986 households.

The active duty and retiree lists were each placed in social security number sequence from lowest number to highest. Every fifth name from each list was then selected until the desired sample size was reached.

Address labels for the sample were produced and placed on envelopes, which contained the commander's letter and the questionnaire. The envelopes were specifically addressed to the military sponsor, who is the active duty service member or the retiree. The questionnaires were delivered to the U.S. Post Office on December 6, 1991.

Data Collection

January 31, 1992 was established as the cut off date for receipt of the completed questionnaires. Five hundred forty-five questionnaires were received by this date. Nineteen questionnaires were not usable. The total return rate was 38%. The return rate for the active duty population was 43% (188) (see Appendix E). The return rate for the retiree population was 32% (315) (see Appendix F). Thirty-three questionnaires were returned by survivors (see Appendix G). None of the questionnaires were mailed directly to survivors since a survivor listing was not available. Survivors, however, do exist in the population, and there was a chance that they would receive a questionnaire.

The data from the received questionnaires were entered in the statistical software package APL (STSC, 1990). Before the data was entered, it was coded into

binary data. A value of one indicated the presence of a property. A value of zero indicated the absence of a property. For example, if a respondent placed a check next to any of the health care services listed in question five of the questionnaire, indicating that the respondent will need that particular health care service in the next two years, the check was coded into a one. Conversely any health care services left blank were coded zero. The questions concerning zip codes and number of family members were not coded into binary data. The responses to those two questions were entered into the statistical package the same way they appeared on the questionnaire.

Question 6a of the questionnaire asked the respondents to name the MMTF used, if they visited a MMTF in the last year. Question 6b asked the respondents to name the civilian health care facility used, if they visited a civilian provider in the last year. Over 80% of the respondents did not answer these questions. A possible reason for the poor response to questions 6a and 6b could be faulty design of those questions. Perhaps the respondents did not understand the questions or were not motivated to answer the questions. Since the response rate for those questions

were so low, it was not practical to perform statistics on these questions.

The intent of question 6a was to determine if the beneficiaries were receiving care from other DOD facilities. If a significant portion of the beneficiaries were using another DOD facility, KACH would have investigated the reasons why these other facilities were being used. Perhaps an intraservice or interservice agreement would have been indicated.

The intent of question 6b was to determine if a significant portion of the beneficiaries were using a specific civilian provider. If a significant amount of beneficiaries were using certain civilian providers, KACH would have considered establishing a preferred provider agreement with these providers, in order that lower rates for care could be obtained. The questionnaires can still provide valuable data to help determine if a preferred provider network should be established. If a significant number of respondents from the same communities are using civilian providers, then the establishment of preferred provider networks in these areas might be indicated.

Statistical Analysis

Descriptive statistics were performed on the returned questionnaires. The primary item of interest was the mean for each variable. The mean allows the researcher to discuss the results in terms of averages or percentages, which are easily understood by most people.

Results

Active Duty Households

Eighty-eight percent of the active duty households are located on West Point or Stewart Army Subpost. Several households are in towns that are located very close to West Point. For example, 126 households are located in the nearby communities of New Windsor, Cornwall, and Highland Falls.

Grouping the active duty households into three digit zip code regions provides a clearer view of the distribution of this population. I grouped the listing into the appropriate regions (see Appendix H). I obtained the three digit zip code maps from the National Five Digit Zip Code & Post Office Directory (National Information Data Center, 1991).

Ninety-nine percent of the active duty households are located in the three-digit zip code areas 109 and

125. Zip code areas 109 and 125 include cities located within 20 miles of West Point. In distant cities of the KACH catchment area, such as Fairfield and the boroughs of New York City, there are usually only one or two households.

The means for the active duty households were then computed (see Appendix I). There are 3.6 family members per household. All respondents are employed. I expected all respondents to be employed since they are active duty service members. The types of outpatient health care services that most households perceive they would most likely need in the next two years included skin (49%), eye (73%), foot (25%), allergy (26%), bones/joints (34%), gynecological (83%), physical therapy (23%), ears, nose, and throat (53%), adolescent (25%), and pediatric care (57%).

Eighty-five percent of the respondents used a MMTF for their outpatient health care needs in the last year. Nearly 40% of the households, however, used a civilian provider. Approximately 77% of those people using civilian providers used CHAMPUS to help finance the care. Eighteen percent of the respondents used other health insurance to finance the care. Forty-eight percent of the respondents used personal finances

to finance the health care received. The total of all means or percentages for the method of financing civilian outpatient care will be greater than 1 because beneficiaries can use more than one method to finance the care.

The means for the zip code areas 109 and 125, which accounted for 97% of the returned questionnaires, were also computed (see Appendixes J and K). The results for zip code areas 109 and 125 were very similar to each other as well as the results listed in Appendix I.

Retiree Households

According to the retiree listing, there are several distant cities in which large numbers of retirees live. For the purpose of this paper, a distant city is more than 30 miles from West Point. Approximately 330 households are located in three boroughs of New York City, which are Yonkers, the Bronx, and Manhattan. These boroughs are 40 miles from West Point. Over 100 retiree households are located in Mount Vernon, which is 34 miles from West Point. White Plains, which is almost 30 miles from West Point, possesses approximately 114 retiree households. Nearly 100 retiree households are located

in New Rochelle, which is also 34 miles from West Point.

In February, another retiree listing was identified. The Defense Medical Data Center (DMDC) located in Monterey, CA possessed a listing of approximately 7864 retiree households located in West Point's catchment area (personal communication, M. Halvorson, February 18, 1992). A copy of this listing was obtained in March (see Appendix L). This number is much closer to the 8173 reported by DMIS, but much larger than the RSO number of 4933. These discrepancies are further discussed in the discussion section of this paper.

The distribution of the retiree households on the DMDC listing is similar to the distribution on the RSO listing. The DMDC listing showed high concentrations of retiree households in distant cities, such as Manhattan, Bronx, Mount Vernon, White Plains, Yonkers, and New Rochelle. The DMDC listing also showed high concentrations of retiree households in Fairfield, CT, Danbury, CT, Norwalk, CT, Stamford, CT, Paterson, NJ, and Hackensack, NJ, which are all more than 30 miles from West Point.

Grouping the retiree households into three digit zip code regions provides a clearer view of the distribution of this large and diffuse population. I grouped the RSO listings and the DMDC listing into the appropriate regions. Table 2 lists these groupings.

Table 2

Retiree Household Distribution by Three Digit Zip Code

| <u>State</u> | <u>Three Digit Zip Code</u> | <u>RSO Listing</u> | <u>DMDC Listing</u> |
|--------------|-----------------------------|--------------------|---------------------|
| CT | 064 | 19 | 218 |
| CT | 065 | 3 | 0 |
| CT | 066 | 5 | 14 |
| CT | 067 | 16 | 104 |
| CT | 068 | 31 | 710 |
| CT | 069 | 4 | 154 |
| NJ | 070 | 12 | 160 |
| NJ | 074 | 45 | 665 |
| NJ | 075 | 0 | 140 |
| NJ | 076 | 57 | 663 |
| NJ | 078 | 4 | 0 |
| NJ | 079 | 2 | 0 |
| NJ | 085 | 4 | 0 |
| NY | 100 | 137 | 329 |
| NY | 104 | 10 | 863 |
| NY | 105 | 946 | 905 |
| NY | 106 | 119 | 101 |
| NY | 107 | 359 | 301 |
| NY | 108 | 119 | 124 |
| NY | 109 | 934 | 923 |
| NY | 110 | 112 | 0 |
| NY | 112 | 2 | 0 |
| NY | 113 | 14 | 0 |
| NY | 115 | 37 | 37 |
| NY | 117 | 23 | 10 |
| NY | 118 | 4 | 0 |
| NY | 119 | 5 | 0 |
| NY | 120 | 87 | 0 |
| NY | 121 | 63 | 0 |
| NY | 122 | 6 | 0 |
| NY | 123 | 1 | 0 |

| | | | |
|----|-----|------|------|
| NY | 124 | 308 | 166 |
| NY | 125 | 1060 | 1004 |
| NY | 126 | 149 | 168 |
| NY | 127 | 174 | 105 |
| NY | 128 | 7 | 0 |
| NY | 134 | 3 | 0 |
| NY | 137 | 5 | 0 |
| PA | 183 | 0 | 4 |

Note. RSO = Retirement Services Officer
DMDC = Defense Medical Data Center

The locations of the three digit zip code areas are illustrated on the Three Digit Zip Code Maps of CT, NJ, NY, and PA (see Appendix H). Using these maps allows KACH to see what regions of the catchment area have high concentrations of retiree households. According to the RSO listing, there are approximately:

1. 1863 retiree households in the regions north, northeast, and northwest of West Point (Zip Codes 120-128),
2. 1143 retiree households in the regions east of West Point (Zip Codes 105, 106, 064-069),
3. 822 retiree households south and southeast of West Point (Zip Codes 100-104, 107-128), and
4. 124 retiree households southwest of West Point (Zip Codes 070, 074-076, 078, 079, 085).

Approximately 934 retiree households are located in West Point's Zip Code area (109). The numbers listed above do not add up to 4933, which is the number of retiree households on the retiree database. The 47 zip codes omitted were those

located in areas far outside West Point's catchment area, such as Florida and North Carolina. Only one or two households were located in each of these zip codes.

According to the DMDC listing there are approximately: 1. 1443 retiree households north, northwest, and northeast of West Point (Zip Codes 120-128), 2. 2206 retiree households east of West Point (Zip Codes 105, 106, 064-069), 3. 1664 retiree households south and southeast of West Point (Zip Codes 100-104, 107-128), and 4. 1628 retiree households southwest of West Point (Zip Codes 070, 074-076, 078). Approximately 923 retiree households are located in West Point's Zip Code area (109). Only four retiree households are located in Pennsylvania (PA).

The majority of the retiree households appear to be located on the eastern portion of West Point's catchment area. There are not many retiree households located on the western and northwestern sections of West Point's catchment area. Therefore, KACH probably will not need to direct its Gateway to Care efforts towards these areas.

The means for the retiree households have been computed (see Appendix M). Twenty-eight percent of the retiree respondents are employed. The average retiree

household is comprised of 2 people. The types of outpatient health care services they perceive they will most likely need in the next two years include skin (36%), eye (65%), foot (29%), heart (48%), blood (31%), bones/joints (36%), gynecological (29%), ears, nose, and throat (39%), gastrointestinal (24%), and urinary tract (35%) care.

Approximately half of the retiree respondents used a military medical treatment facility for their health care needs in the last year. Several retiree respondents (72%) visited a civilian provider for their health care needs in the last year. It appears that the most frequent method of financing the civilian health care was with other health insurance (73%). A significant portion of the retiree respondents also used MEDICARE/MEDICAID (60%) and personal finances (61%). Only 17% of the retiree respondents used CHAMPUS to help finance the care.

I also computed means on six of the three digit zip codes (see Appendixes N-T). There were only a few completed questionnaires received from some of the other three digit zip code areas, so I did not compute means on them (see Appendix F). The means on the three digit zip code area were very similar to each other,

and very similar to the means computed in Appendix M. Therefore, there is no need to discuss each three digit zip code individually. Interestingly, however, zip code areas 109 and 125 had the highest CHAMPUS usage (28% and 25% respectively). These areas are also the closest to West Point.

Survivor Households

The means for the survivors were also computed (see Appendix T). The survivors' statistics were very similar to the retirees' statistics. Twenty-seven percent of the respondents are employed. There is approximately one person per survivor household. The types of health care services they believe they will most likely need in the next two years include skin (24%), eye (58%), foot (24%), heart (30%), allergy 21%), bones/joints (24%), gynecological (33%), ears, nose, and throat (36%), and gastrointestinal care (27%).

Almost half of the respondents used a military medical treatment facility in the last year. A significant portion of the respondents (61%) used a civilian provider in the last year. Only 5% used CHAMPUS to finance the civilian care. Health insurance was the most common means for paying for the civilian

health care (70%). Approximately 70% of the survivors, however, did use MEDICARE/MEDICAID. Fifty percent of the respondents used personal finances.

Discussion

The stated purpose of this project is to discover who the beneficiaries are, where they live, what their health needs are, where they receive their outpatient health care, and how they finance their civilian outpatient health care.

The majority of all active duty households (99%) are located near West Point or Stewart Army Subpost. The types of health care services these households perceive they need have been identified (see Appendix I). Given its current mission template and available resources, KACH can certainly meet the perceived health needs of this population. There is a high tendency for active duty households to use military medical treatment facilities for their health care (85%). Those who did use civilian providers (40%) used primarily CHAMPUS and personal finances to pay for the care. The percentage of active duty households using CHAMPUS (77%) is very high. KACH should be able to reduce the number of active duty households using civilian providers, and hence CHAMPUS, through Gateway

to Care. Hopefully KACH will be able to enroll 90-100% of the active duty households. If high enrollment of active duty households occurs, then fewer households should be using civilian providers for their outpatient care. Therefore, the percentage of active duty households using CHAMPUS for outpatient care should decrease.

The retiree households, however, are more diffuse. There are many retiree households located in areas that are a significant distance from West Point (1417 per RSO listing/4601 per DMDC listing). These households are located in cities such as Manhattan, Bronx, Yonkers, New Rochelle, Long Island, and the areas in western Connecticut and northeastern New Jersey. KACH probably cannot efficiently and effectively provide direct outpatient care to the retiree households in these areas because of the their distance from West Point.

Over 70% of the retiree respondents used a civilian provider in the last year. Only 12%, however, used CHAMPUS as a financing mechanism for this care. A significant portion of the retiree respondents using civilian providers financed the care through either

MEDICARE/MEDICAID (60%), other health insurance (73%), and personal finances (61%).

The retirees and the U.S. Government would probably benefit if these retirees received their care at KACH, or through a preferred provider network, established by KACH. Although CHAMPUS was not frequently used to finance the civilian care, MEDICARE/MEDICAID, which is financed by the government, was often used. If KACH coordinates the retiree households' health care, then the costs associated with this health care should decrease for the retiree households and the U.S. Government.

A significant amount of the retirees are also using their personal resources to finance this care. Perhaps the high use of MEDICARE/MEDICAID and personal finances, combined with the low employment rate is indicative of the age of the retirees. Retirees become eligible for MEDICARE and ineligible for CHAMPUS at the age of 65. Therefore, the majority of the retirees in West Point's catchment are probably aged 65 years old or older.

The KACH leadership expected the highly populated, outlying areas to have high CHAMPUS usage for outpatient care. According to the results, however,

the retiree households in the immediate vicinity of West Point are some of the most routine users of CHAMPUS (see Appendixes N through S). Perhaps KACH should take a closer look at the CHAMPUS utilization patterns of the retiree households located in zip code areas 109 and 125. Their CHAMPUS usage rates were 28% and 25% respectively. KACH will probably want to immediately enroll these CHAMPUS users in Gateway to Care when phase II begins. Retirees living in zip code areas 109 and 125 should receive the majority of their health care at KACH, since the retirees are so close to KACH, and since KACH has the necessary resources and mission template to meet the retirees' health needs.

A new medical information system, the CHAMPUS Utilization Management System (CHUMS), could assist in identifying routine users of CHAMPUS. CHUMS possesses information on CHAMPUS users. This information includes name, address, social security number, and name of civilian providers used. KACH received CHUMS in April, 1992.

Although there did not appear to be many CHAMPUS users in the distant cities, KACH should further study the necessity and feasibility of establishing various preferred provider networks in distant areas. CHUMS

can be used for this purpose. If many CHAMPUS users exist in distant locations, KACH will want to enroll them in Gateway to Care. Even if significant numbers of CHAMPUS users are not identified, KACH may still be directed by higher authority to enroll these beneficiaries into Gateway to Care. Dr. Mendez (1992a), however, has directed that beneficiary travel time to routine primary (outpatient) care services, for Gateway to Care enrollees, should not exceed 30 minutes. It certainly takes more than 30 minutes to drive from any of the cities that are more than 30 miles from West Point, such as the cities in NJ and CT. It also takes longer than 30 minutes to drive to West Point from the zip code areas 100-104, 107, 108, 110-119, and parts of zip code areas 124, and 126. As mentioned previously, it may be necessary to establish preferred providers for retiree households in these distant cities.

If preferred provider networks are necessary, then the possibility exists for other governmental facilities and civilian provider networks to manage the outpatient care for the retirees who live more than 30 minutes traveling time from West Point. Facilities that might be able to manage these retirees' outpatient

health care include Veterans' Administration (VA) Hospitals and United States Treatment Facilities (USTF). VA Hospitals are located in the Bronx, Manhattan, and Brooklyn. A USTF is located on Staten Island, NY. VA-DOD Sharing Agreements could be established with the VA Hospitals for outpatient care. KACH would reimburse participating VA facilities for care provided to these groups of retiree households. The USTF, Bayley-Seton Hospital, provides care for DOD beneficiaries. KACH could arrange for certain retiree households to receive their outpatient health care from Bayley-Seton. KACH would reimburse the USTF for providing care to these retiree households.

Assuming KACH enrolls the retiree households in these distant locations, a possible strategy would consist of the following arrangements. The retiree households located in NJ (124 households per RSO listing/1628 households per DMDC listing) will be advised to have their outpatient health care managed by any of the three VA Hospitals located in NY City. The travel time to the VA Hospitals from these NJ locations is less than thirty minutes. The travel time to West Point from these NJ locations, however, is over 30 minutes. It might also be practical for some of these

households to use PACH, Fort Monmouth for their outpatient care. Some of the retiree households in the southern portion of West Point's catchment area might be within a 30 minute drive to PACH. The number of retiree households in this catchment area overlap is 16 according to the RSO listing, and 412 according to the DMDC listing.

The retiree households located in Yonkers, south of Yonkers, and on Long Island could be advised to have their outpatient health care managed by any of the three VA Hospitals or Bayley-Seton. This area includes zip code areas 100-104, 107-108, and 110-119. According to the RSO listing 822 households are in these areas. The DMDC listing lists 3281 households in the same areas.

There are no VA Hospitals, MMTFs, or USTFs located within a 30 minute travel to the cities in CT. The KACH leadership will need to negotiate with some of the civilian provider networks in CT. KACH would want these networks to provide outpatient care for the beneficiaries in CT. According to the RSO listing, there are 78 retiree households in CT. The DMDC lists 1200 retiree households in CT.

The retiree households located in zip code areas 124-126 are north of West Point. The retiree households in these areas number 1863 according to the RSO, and 1443 according to DMDC. Traveling from many of these cities to West Point takes longer than 30 minutes. These retiree households, however, could have their primary health care managed by the Stewart Armed Forces Health Clinic (SAFHC). The SAFHC is located on STAS, which is 17 miles north of West Point. Traveling to SAFHC from these communities would take 30 minutes or less. The SAFHC could effectively and efficiently manage the primary health care of this population, given its current mission template and resources available.

Retiree households will only use these external providers for outpatient care. KACH will continue to provide inpatient care, since it has inpatient capabilities. KACH would primarily be interested in having the routine CHAMPUS users use the external providers.

The perceived health needs of the retiree households has also been identified (see Appendix M). KACH can meet these health care needs.

Since the survivors' results for their health needs, location of outpatient health care received, and methods of financing civilian health care mirrored the retiree results, the same comments would be applicable. Once again KACH should be able to meet the survivors' health needs. The survivors would also benefit from enrolling in Gateway to Care. Enrollment of survivors, however, is not yet scheduled.

As mentioned previously, differences in the retiree listings exist. The number of retirees listed by the RSO is significantly lower than the number listed by the DMDC. The RSO listing is based on W-2 form addresses of retirees. The W-2 form address is not always the same as the actual residence address of the retirees. The DMDC listing, like DMIS, is based on DEERS information. Retirees might not always update their DEERS records when they move to a new location. These discrepancies indicate that listings of DOD beneficiaries are not completely accurate. Nine million DOD beneficiaries, however, are not very easy to track. I am sharing the DMDC information with West Point's RSO. Hopefully the RSO will be able to sort out the discrepancies and eventually produce a more accurate listing of the retirees.

Conclusion and Recommendations

Conclusion

Keller Army Community Hospital's active duty and retiree households have been identified. Databases have been created on these households. The database for active duty households is being used for the enrollment of active duty families.

The locations of these populations have been successfully determined (see Table 2, and Appendixes B, C, H, and L). Nearly all of the active duty households (99%) are located in the immediate vicinity of West Point or STAS. The retiree households are more diffuse. According to the RSO listing, 3516 households are located close to West Point. According to the DMDC listing, 3267 retiree households are located close to West Point. Many retiree households, however, are not located close to West Point. According to the RSO listing 1417 households are more than 30 miles from West Point. According to the DMDC listing, 4601 retiree households are more than 30 miles from West Point.

The perceived health care needs of the population have also been identified (see Appendixes I-K and M-S).

The perceived health needs of the active duty and retiree households can be met by KACH.

This paper also indicates where the beneficiaries receive their outpatient health care, and for care received from civilian providers, how they financed the health care (see Appendixes I-K and M-S). The active duty households primarily used a MMTF for their outpatient health care needs (86%). A fairly high percentage of the active duty households (40%) did receive care from civilian providers and consequently finance that care through CHAMPUS. A significant amount of retirees (72%) used civilian providers for their health care needs. Only a small fraction of the retiree households (17%), however, used CHAMPUS as the financing mechanism. This was probably due to age. The retiree households, who use CHAMPUS more routinely, live very close to West Point.

Recommendations

Keller Army Community Hospital should constantly ensure that its services are commensurate with the health care needs of the beneficiary population (see Appendixes I-K and M-S). This can be done through periodic health needs assessments.

KACH should also continue to aggressively enroll the entire active duty household population in Gateway to Care. KACH is capable of providing comprehensive health care to the entire active duty population. KACH will be able to more effectively contain CHAMPUS costs as more active duty households enroll in Gateway to Care.

The leadership of KACH should enter into negotiations with the VA Hospitals in the Bronx, Yonkers, and Manhattan, Bayley-Seton Hospital, and civilian provider networks in CT in the near future. The purpose of the negotiations is to have these facilities provide outpatient care to the certain retiree households located in the NJ, CT, and zip code areas 100-104, 107, 108, 110-119 in the methods prescribed in the discussion section of this paper. After the arrangements with the provider networks, VA Hospitals, and USTF have been completed, KACH should first attempt to enroll into Gateway to Care, that segment of the retiree population that uses CHAMPUS on a regular basis. The KACH leadership can use CHUMS to identify these CHAMPUS users.

Additional research should be performed on the distant cities and towns which have high concentrations

of retiree households. This would help determine if the need exists for enrolling more of these beneficiaries in Gateway to Care and for establishing more provider networks in these areas.

The leadership at KACH should also perform more research on the retirees residing in zip code areas 109 and 125 in an effort to immediately enroll the frequent CHAMPUS users into Gateway to Care. Very few beneficiaries, who live in zip code areas 109 and 125, should be using CHAMPUS, since they are so close to KACH. CHUMS can, once again, help identify the CHAMPUS users. KACH certainly has the capability to manage the health care needs of those retirees who use CHAMPUS.

Finally, the KACH leadership will want to investigate the possibility of deleting some cities from its catchment area. The cities on Long Island are extremely far from West Point, in terms of travel time. The travel time from these locations on Long Island to West Point is approximately two hours.

The beneficiary analysis of the active duty and retiree households has been accomplished. Armed with this information, the KACH leadership can better focus its Gateway to Care strategy. Since this paper indicates that the more frequent users of CHAMPUS are

located in zip code area 109 and 125, KACH should direct its initial Gateway to Care efforts to these areas. The leadership, however, should also be prepared to manage the health care needs of the beneficiaries living in distant cities.

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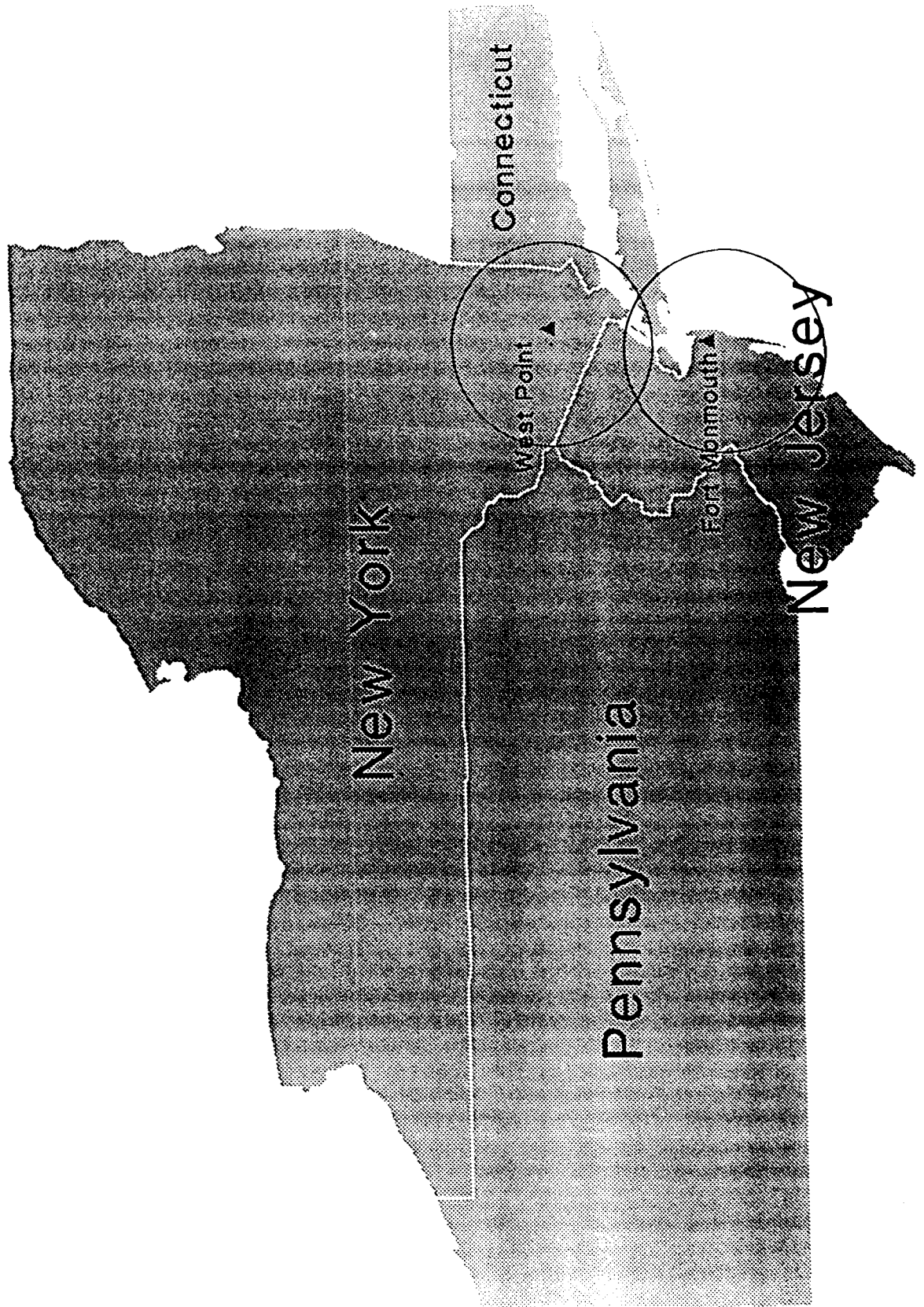
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Appendix A

West Point and Fort Monmouth Catchment Areas



Appendix B

Distribution of Active Duty Households

| ZIP CODE | Number of Households | CITY |
|----------|----------------------|-----------------|
| 06430 | 1 | Fairfield |
| 06482 | 1 | Sandy Hook |
| 06488 | 1 | Southbury |
| 07011 | 1 | Clifton |
| 07026 | 1 | Garfield |
| 07430 | 1 | Mahwah |
| 07435 | 1 | Newfoundland |
| 07465 | 1 | Wanaqua |
| 07675 | 1 | Old Tappan |
| 10032 | 1 | New York |
| 10466 | 1 | Bronx |
| 10509 | 1 | Brewster |
| 10512 | 1 | Carmel |
| 10524 | 1 | Garrison |
| 10541 | 1 | Mahopac |
| 10566 | 1 | Peekskill |
| 10588 | 1 | Shrub Oak |
| 10591 | 1 | Tarrytown |
| 10901 | 1 | Suffern |
| 10915 | 2 | Bullville |
| 10918 | 1 | Chester |
| 10919 | 1 | Circleville |
| 10920 | 1 | Congers |
| 10922 | 2 | Ft. Montgomery |
| 10923 | 1 | Garneville |
| 10924 | 2 | Goshen |
| 10926 | 2 | Harriman |
| 10928 | 30 | Highland Falls |
| 10930 | 1 | Highland Mills |
| 10940 | 4 | Middletown |
| 10950 | 4 | Monroe |
| 10953 | 3 | Mountain Vill |
| 10958 | 2 | New Hampton |
| 10965 | 1 | Pearl River |
| 10970 | 1 | Pomona |
| 10977 | 2 | Spring Valley |
| 10990 | 1 | Warwick |
| 10992 | 5 | Washingtonville |
| 10993 | 2 | W. Haverstraw |
| 10994 | 1 | W. Nyack |
| 10996 | 992 | West Point |
| 12401 | 5 | Kingston |
| 12428 | 3 | Ellenville |

| | | |
|--------|------|------------------|
| 12446 | 1 | Kerhonkson |
| 12466 | 1 | Port Ervan |
| 12508 | 5 | Beacon |
| 12512 | 1 | Chelsea |
| 12515 | 1 | Clintondale |
| 12518 | 15 | Cornwall |
| 12520 | 10 | Cornwall on Hdsn |
| 12524 | 2 | Fishkill |
| 12525 | 1 | Gardiner |
| 12527 | 1 | Glenham |
| 12533 | 1 | Hopewell |
| 12538 | 1 | Hyde Park |
| 12540 | 1 | Lagranville |
| 12542 | 1 | Marlboro |
| 12543 | 3 | Maybrook |
| 12548 | 1 | Modena |
| 12549 | 8 | Montgomery |
| 12550 | 55 | New Windsor |
| 12551 | 1 | Newburgh |
| 12553 | 923 | Newburgh |
| 12561 | 4 | New Paltz |
| 12564 | 1 | Pawling |
| 12566 | 3 | Pine Bush |
| 12568 | 3 | Plattekill |
| 12569 | 1 | Pleasantville |
| 12577 | 3 | Salisbury Mills |
| 12581 | 1 | Standfordville |
| 12584 | 2 | Vailsgate |
| 12586 | 8 | Walden |
| 12589 | 4 | Wallkill |
| 12590 | 7 | Wappinger Fls |
| 12594 | 1 | Wingdale |
| 12601 | 7 | Poughkeepsee |
| 12603 | 4 | Arlington |
| 12721 | 4 | Bloomington |
| 12771 | 1 | Port Jervis |
| 12790 | 1 | Wurtsboro |
| Total: | 2176 | |

Appendix C

Distribution of Retiree Households

| ZIP CODE | | Number of Households | CITY |
|----------|---|----------------------|------------------|
| 01027 | * | 1 | Easthampton |
| 01244 | * | 1 | Mill River |
| 01876 | * | 1 | Tewksbury |
| 01930 | * | 1 | Gloucester |
| 02632 | * | 1 | Anterville |
| 02917 | * | 1 | Esmond |
| 03755 | * | 1 | Hanover |
| 03772 | * | 1 | Mount Sunapee |
| 03833 | * | 1 | Exeter |
| 03854 | * | 1 | New Castle |
| 05062 | * | 1 | Reading |
| 05257 | * | 1 | North Bennington |
| 05733 | * | 1 | Brandon |
| 06001 | * | 1 | Avon |
| 06018 | * | 1 | Candan |
| 06058 | * | 1 | Norfolk |
| 06111 | * | 1 | Newington |
| 06378 | * | 1 | Sonington |
| 06401 | * | 2 | Pleasantville |
| 06410 | * | 1 | Cheshire |
| 06460 | * | 2 | Milford |
| 06470 | * | 3 | Newton |
| 06473 | * | 1 | North Haven |
| 06483 | * | 1 | Seymour |
| 06488 | * | 7 | Southbury |
| 06497 | * | 2 | Stratford |
| 06514 | * | 1 | Hamdon |
| 06516 | * | 1 | West Haven |
| 06517 | * | 1 | Hamden |
| 06601 | * | 1 | Bridgeport |
| 06604 | * | 1 | Bridgeport |
| 06605 | * | 1 | Bridgeport |
| 06606 | * | 1 | Bridgeport |
| 06611 | * | 1 | Trumbull |
| 06702 | * | 1 | Waterbury |
| 06704 | * | 1 | Waterbury |
| 06708 | * | 1 | Waterbury |
| 06716 | * | 1 | Wolcott |
| 06757 | | 1 | Kent |
| 06776 | | 7 | New Milford |
| 06777 | | 1 | New Prstn |
| 06784 | | 1 | Sherman |

| | | | |
|-------|---|---|----------------|
| 06787 | * | 1 | Thomaston |
| 06795 | * | 1 | Watertown |
| 06801 | | 1 | Bethel |
| 06804 | | 1 | Brookfield |
| 06810 | | 4 | New Fairfield |
| 06811 | | 2 | Danbury |
| 06820 | | 2 | Darien |
| 06830 | | 4 | Greenwich |
| 06850 | | 1 | Norwalk |
| 06853 | | 1 | Norwalk |
| 06954 | | 1 | Norwalk |
| 06870 | | 2 | Old Greenwich |
| 06877 | | 8 | Ridgefield |
| 06880 | | 2 | West Port |
| 06883 | | 1 | Weston |
| 06896 | | 1 | West Redding |
| 06897 | | 2 | Wilton |
| 06902 | | 2 | Stamford |
| 06903 | | 1 | Stamford |
| 06905 | | 1 | Stamford |
| 07005 | * | 1 | Boonton |
| 07006 | * | 2 | Caldwell |
| 07012 | | 2 | Clifton |
| 07024 | | 2 | Fort Lee |
| 07047 | | 1 | North Bergen |
| 07072 | | 2 | Caulstadt |
| 07090 | * | 1 | Westfield |
| 07093 | * | 1 | West New York |
| 07306 | * | 2 | Jersey City |
| 07407 | | 3 | Elmwood Park |
| 07410 | | 3 | Fair Lawn |
| 07421 | | 1 | Hewitt |
| 07422 | | 2 | Highland Lakes |
| 07430 | | 2 | Mahwah |
| 07432 | | 2 | Midland Park |
| 07436 | | 1 | Oakland |
| 07442 | | 1 | Popton Lakes |
| 07446 | | 2 | Ramsey |
| 07450 | | 4 | Ridgewood |
| 07452 | | 9 | Glen Rock |
| 07456 | | 1 | Ringwood |
| 07458 | | 2 | Saddle River |
| 07462 | | 2 | Vernon |
| 07463 | | 2 | Waldwick |
| 07470 | | 3 | Wayne |
| 07481 | | 3 | Wyckoff |
| 07506 | | 1 | Hawthorne |
| 07603 | | 1 | Bogota |

| | | |
|-------------|-----|------------------|
| 07607 | 1 | Maywood |
| 07621 | 1 | Bergenfield |
| 07624 | 2 | Closter |
| 07626 | 2 | Cresskill |
| 07627 | 1 | Demarest |
| 07628 | 5 | Dumont |
| 07630 | 7 | Emerson |
| 07631 | 1 | Englewood |
| 07632 | 1 | Englewood Cliffs |
| 07641 | 1 | Hawthorne |
| 07642 | 2 | Hillsdale |
| 07644 | 2 | Lodi |
| 07646 | 1 | New Milford |
| 07649 | 3 | Oradell |
| 07652 | 5 | Palamos |
| 07661 | 2 | River Edge |
| 07662 | 1 | Saddle Brook |
| 07666 | 4 | Teaneck |
| 07670 | 2 | Tenafly |
| 07675 | 12 | Old Tappan |
| 07828 | 1 | Montague |
| 07869 | 1 | Dover |
| 07871 | 2 | Sparta |
| 07901 | 1 | Summit |
| 07960 | 1 | Momstown |
| 08088 | 1 | Vincentown |
| 08505 | 1 | Bordeotown |
| 08772 | 1 | Beachwood |
| 08773 | 1 | Lakehurst |
| 10019-10024 | 137 | New York |
| 10458-10471 | 10 | Bronx |
| 10501 | 1 | Amawalk |
| 10502 | 10 | Ardsley |
| 10504 | 9 | Armonk |
| 10506 | 6 | Bedford |
| 10507 | 5 | Bedford Hills |
| 10509 | 29 | Brewster |
| 10510 | 19 | Briarcliff Mnr |
| 10511 | 3 | Buchannan |
| 10512 | 29 | Carmel |
| 10514 | 13 | Chappaqua |
| 10516 | 5 | Cold Spring |
| 10518 | 2 | Cross River |
| 10519 | 3 | Croton Falls |
| 10520 | 20 | Croton Hdsn |
| 10522 | 20 | Dobbs Ferry |
| 10523 | 8 | Elmsford |
| 10524 | 11 | Garrison |

| | | |
|-------|----|-----------------|
| 10526 | 2 | Goldens Brg |
| 10527 | 1 | Granite Spgs |
| 10528 | 13 | Harrison |
| 10530 | 28 | Hartsdale |
| 10532 | 6 | Hawthorne |
| 10533 | 12 | Irvington |
| 10535 | 2 | Jefferson Vly |
| 10536 | 20 | Katonah |
| 10537 | 1 | Lake Peekskill |
| 10538 | 31 | Larchmont |
| 10540 | 3 | Lincolndale |
| 10541 | 33 | Mahopac |
| 10542 | 1 | Mahopac Falls |
| 10543 | 27 | Mamaroneck |
| 10546 | 1 | Millwood |
| 10547 | 7 | Mohegan Lake |
| 10548 | 12 | Montrose |
| 10549 | 23 | Mount Kisco |
| 10550 | 49 | Mount Vernon |
| 10551 | 7 | Mount Vernon |
| 10552 | 26 | Mount Vernon |
| 10553 | 17 | Mount Vernon |
| 10560 | 2 | North Salem |
| 10562 | 45 | Ossining |
| 10566 | 72 | Peekskill |
| 10570 | 8 | Pleasantville |
| 10573 | 43 | Port Chester |
| 10576 | 6 | Pound Ridge |
| 10578 | 5 | Purdys |
| 10579 | 10 | Putnum Vly |
| 10580 | 31 | Rye |
| 10583 | 80 | Scarsdale |
| 10587 | 2 | Shenorock |
| 10588 | 8 | Shurboak |
| 10589 | 21 | Somers |
| 10590 | 5 | South Salem |
| 10591 | 42 | North Tarrytown |
| 10594 | 7 | Thornwood |
| 10595 | 11 | Valhalla |
| 10596 | 3 | Venplanck |
| 10597 | 1 | Wacabuc |
| 10598 | 28 | Yorktown Hts |
| 10601 | 14 | White Plains |
| 10603 | 26 | N. White Plains |
| 10604 | 12 | White Plains |
| 10605 | 36 | White Plains |
| 10606 | 15 | White Plains |
| 10607 | 15 | White Plains |

| | | |
|-------|-----|----------------|
| 10650 | 1 | White Plains |
| 10701 | 65 | Yonkers |
| 10702 | 2 | Yonkers |
| 10703 | 18 | Yonkers |
| 10704 | 47 | Yonkers |
| 10705 | 56 | Yonkers |
| 10706 | 25 | Hastings Hdsn |
| 10707 | 26 | Tuckahoe |
| 10708 | 60 | Bronxville |
| 10709 | 21 | Eastchester |
| 10710 | 39 | Yonkers |
| 10801 | 45 | New Rochelle |
| 10802 | 2 | New Rochelle |
| 10803 | 22 | Pelham |
| 10804 | 28 | New Rochelle |
| 10805 | 22 | New Rochelle |
| 10901 | 32 | Suffern |
| 10912 | 1 | Belwale |
| 10913 | 15 | Blauvelt |
| 10914 | 1 | Bloomingrove |
| 10916 | 3 | Campbell Hall |
| 10917 | 4 | Central Uly |
| 10918 | 8 | Chester |
| 10919 | 1 | Circleville |
| 10920 | 10 | Congers |
| 10921 | 5 | Florida |
| 10922 | 24 | Ft. Montgomery |
| 10923 | 8 | Garnerville |
| 10924 | 27 | Goshen |
| 10925 | 15 | Greenwood Lk |
| 10926 | 4 | Harriman |
| 10927 | 3 | Haverstraw |
| 10928 | 215 | Highland Falls |
| 10930 | 13 | Highland Mills |
| 10931 | 4 | Hillburn |
| 10932 | 1 | Howells |
| 10933 | 1 | Johnson |
| 10940 | 93 | Middletown |
| 10950 | 28 | Monroe |
| 10952 | 16 | Monsey |
| 10953 | 1 | Mountainville |
| 10954 | 25 | Bardonia |
| 10956 | 41 | New City |
| 10958 | 4 | New Hampton |
| 10959 | 1 | New Milford |
| 10960 | 28 | Nyack |
| 10962 | 9 | Orangeburg |
| 10963 | 9 | Otisville |

| | | | |
|-------------|---|----|-----------------|
| 10964 | | 2 | Palisades |
| 10965 | | 40 | Pearl River |
| 10968 | | 3 | Piermont |
| 10969 | | 4 | Pine Island |
| 10970 | | 6 | Pomona |
| 10973 | | 7 | State Hill |
| 10974 | | 3 | Sloatsburg |
| 10976 | | 1 | Sparkill |
| 10977 | | 40 | Spring Uly |
| 10980 | | 23 | Stony Point |
| 10981 | | 1 | Sugar Loaf |
| 10982 | | 1 | Tallman |
| 10983 | | 12 | Tappan |
| 10984 | | 2 | Thiehills |
| 10985 | | 2 | Thompson Rdg |
| 10986 | | 2 | Tompkins Cove |
| 10987 | | 5 | Tuxedo Park |
| 10988 | | 3 | Unionville |
| 10989 | | 21 | Vly Cottage |
| 10990 | | 24 | Warwick |
| 10992 | | 23 | Washingtonville |
| 10993 | | 1 | W. Haverstraw |
| 10994 | | 13 | W. Nyack |
| 10996 | | 44 | West Point |
| 10998 | | 1 | Westown |
| 11001 | * | 4 | Floral Park |
| 11004 | * | 14 | Floral Park |
| 11010 | * | 22 | Franklin Square |
| 11020 | * | 9 | Great Neck |
| 11022 | * | 1 | Great Neck |
| 11030 | * | 1 | Manhasset |
| 11040 | * | 60 | New Hyde Park |
| 11050 | * | 1 | Port Washington |
| 11201 | * | 1 | Brooklyn |
| 11209 | * | 2 | Brooklyn |
| 11214 | * | 1 | Brooklyn |
| 11230 | * | 1 | Brooklyn |
| 11354-11385 | * | 14 | Flushing |
| 11425-11426 | * | 2 | Jamaica |
| 11530 | * | 4 | Garden City |
| 11552-11554 | * | 4 | Hempstead |
| 11558 | * | 2 | Island Park |
| 11576 | * | 2 | Roslyn |
| 11577 | * | 1 | Roslyn Heights |
| 11580 | * | 1 | Valley Stream |
| 11590 | * | 2 | Westbury |
| 11710 | * | 1 | Bellmore |
| 11719 | * | 1 | Brookhaven |

| | | | |
|-------|---|----|-----------------|
| 11720 | * | 1 | Centerreach |
| 11727 | * | 1 | Coram |
| 11732 | * | 1 | East Norwich |
| 11735 | * | 2 | Farmingdale |
| 11743 | * | 2 | Huntington |
| 11746 | * | 1 | Huntington Stat |
| 11753 | * | 1 | Jericho |
| 11757 | * | 1 | Lindenhurst |
| 11758 | * | 4 | Massapaqua |
| 11763 | * | 1 | Medford |
| 11780 | * | 1 | Saint James |
| 11783 | * | 1 | Seaford |
| 11787 | * | 1 | Smithtown |
| 11793 | * | 3 | Wantagh |
| 11801 | * | 3 | Hicksville |
| 11803 | * | 1 | Hicksville |
| 11901 | * | 1 | Riverhead |
| 11937 | * | 1 | East Hampton |
| 11947 | * | 1 | Jamesport |
| 11967 | * | 1 | Shirley |
| 11968 | * | 1 | South Hampton |
| 12037 | * | 8 | Chatham |
| 12054 | * | 1 | Delmar |
| 12058 | * | 2 | Earlton |
| 12061 | * | 19 | East Greenbush |
| 12075 | * | 14 | Ghent |
| 12078 | * | 34 | Gloversville |
| 12083 | * | 7 | Greenville |
| 12084 | * | 1 | Guilderland |
| 12087 | * | 1 | Hannacroix |
| 12106 | * | 10 | Kinderhook |
| 12110 | * | 36 | Latham |
| 12125 | * | 3 | New Lebanon |
| 12130 | * | 2 | Niverville |
| 12136 | * | 2 | Old Chatham |
| 12138 | * | 1 | Petersburg |
| 12140 | * | 6 | Yoestenkil |
| 12158 | * | 1 | Selkirk |
| 12165 | * | 1 | Spencertown |
| 12184 | * | 1 | Valatie |
| 12203 | * | 3 | Albany |
| 12204 | * | 2 | Albany |
| 12208 | * | 1 | Albany |
| 12304 | * | 1 | Schenectady |
| 12401 | | 95 | Kingston |
| 12404 | | 10 | Accord |
| 12409 | * | 4 | Bearsville |
| 12411 | | 1 | Bloomington |

| | | | |
|--------|---|----|------------------|
| 12412 | | 1 | Boiceville |
| 12413 | | 10 | Cairo |
| 12414 | | 42 | Catskill |
| 12416 | | 3 | Chichester |
| 12417 | | 1 | Connelly |
| 12418 | | 3 | Cornwallville |
| 12422 | | 1 | Durham |
| 12426 | | 1 | Kingston |
| 12428 | | 10 | Elenville |
| 12431 | * | 4 | Freehold |
| 12432 | | 2 | Glasco |
| 12440 | | 2 | High Falls |
| 12441 | * | 1 | Highmount |
| 12446 | | 8 | Kerhonskson |
| 12449 | | 7 | Lake Katrive |
| 12456 | * | 1 | Mount Marion |
| 12458 | | 3 | Napanoch |
| 12460 | * | 1 | Oakhill |
| 12461 | | 1 | Oliverbridge |
| 12464 | * | 2 | Phoenicia |
| 12465 | * | 2 | Pinehill |
| 12466 | * | 10 | Portewen |
| 12471 | | 2 | Rifton |
| 12472 | | 4 | Rosendale |
| 12474 | * | 8 | Roxbury |
| 12477 | * | 24 | Saugerties |
| 12480 | * | 2 | Shandaken |
| 12481 | * | 2 | Shoken |
| 12483 | | 2 | Spring Glen |
| 12484 | | 8 | Stone Ridge |
| 12486 | | 7 | Tillson |
| 12487 | | 3 | Ulster Park |
| 12489 | | 1 | Wawaising |
| 12491 | * | 3 | West Hurley |
| 12496 | * | 6 | Windham |
| 12498 | | 8 | Woodstock |
| 12501 | | 4 | Amenia |
| 12502 | * | 3 | Ancram |
| 12507 | | 1 | Barrytown |
| 12508 | | 32 | Beacon |
| 12511 | | 2 | Castle Point |
| 12512. | | 1 | Chelsea |
| 12514 | | 2 | Clinton Cors |
| 12515 | | 2 | Clintondale |
| 12516 | | 4 | Copake |
| 12518 | | 73 | Cornwall |
| 12520 | | 79 | Cornwall on Hdsn |
| 12522 | | 8 | Dover Plains |

| | | | |
|-------------|---|-----|---------------|
| 12524 | | 29 | Fishkill |
| 12525 | | 8 | Gardiner |
| 12526 | * | 9 | Germantown |
| 12527 | | 2 | Glinham |
| 12528 | | 14 | Highland |
| 12529 | * | 4 | Hillsdale |
| 12531 | | 1 | Holmes |
| 12533 | | 22 | Hopewell Jct |
| 12534 | * | 45 | Hudson |
| 12538 | | 28 | Hyde Park |
| 12540 | | 5 | Lagrangeville |
| 12542 | | 9 | Marlboro |
| 12543 | | 8 | Maybrook |
| 12545 | | 20 | Millbrook |
| 12546 | | 7 | Millerton |
| 12547 | | 6 | Milton |
| 12548 | | 1 | Modena |
| 12549 | | 22 | Montgomery |
| 12550 | | 326 | New Windsor |
| 12561 | | 37 | New Paltz |
| 12563 | | 9 | Patterson |
| 12564 | | 13 | Pawling |
| 12566 | | 14 | Pine Bush |
| 12567 | * | 6 | Pine Plains |
| 12568 | | 3 | Plattekill |
| 12569 | | 14 | Pleasant Vly |
| 12570 | | 2 | Poughquag |
| 12571 | * | 11 | Red Hook |
| 12572 | | 17 | Rhinebeck |
| 12575 | | 10 | Rock Tavern |
| 12577 | | 5 | Salisbury MLS |
| 12578 | | 1 | Salt Point |
| 12580 | | 8 | Statsburg |
| 12581 | | 5 | Stanfordville |
| 12582 | | 4 | Stormville |
| 12583 | | 4 | Tivoli |
| 12584 | | 7 | Vails Gate |
| 12586 | | 30 | Waldem |
| 12588 | | 1 | Walker Valley |
| 12589 | | 29 | Wallkill |
| 12590 | | 48 | Wappinger Fls |
| 12592 | | 1 | Wassaic |
| 12594 | | 2 | Wingdale |
| 12599-12600 | | 2 | Poughkeepsie |
| 12601 | | 67 | Poughkeepsie |
| 12602 | | 4 | Poughkeepsie |
| 12603 | | 78 | Arlington |
| 12701 | * | 16 | Monticello |

| | | | |
|-------|---|----|------------------|
| 12719 | * | 2 | Barryville |
| 12720 | * | 1 | Bethel |
| 12721 | | 9 | Bloomington |
| 12723 | * | 4 | Callicoon |
| 12725 | * | 1 | Claivill |
| 12726 | * | 1 | Cochecton |
| 12732 | * | 1 | Elared |
| 12733 | | 1 | Fallsburg |
| 12734 | * | 1 | Ferndale |
| 12736 | * | 1 | Fremont Center |
| 12737 | * | 2 | Glen Spey |
| 12738 | | 2 | Glen Wild |
| 12739 | | 3 | Godeffroy |
| 12740 | * | 6 | Grahamsville |
| 12741 | * | 3 | Hankins |
| 12743 | * | 1 | Highland Lake |
| 12745 | * | 1 | Hortonville |
| 12746 | | 8 | Huguenot |
| 12747 | * | 5 | Hurleyville |
| 12748 | * | 2 | Jeffersonville |
| 12750 | * | 2 | Kenoza Lake |
| 12751 | | 2 | Kiamesha Lake |
| 12754 | * | 12 | Liberty |
| 12758 | * | 4 | Livingston Manor |
| 12760 | * | 2 | Long Eddy |
| 12762 | * | 1 | Mongaup Vly |
| 12764 | * | 5 | Narrowsburg |
| 12765 | * | 1 | Neversink |
| 12766 | * | 1 | North Branch |
| 12767 | * | 2 | Obernburg |
| 12768 | * | 3 | Parksville |
| 12769 | | 1 | Phillipsport |
| 12771 | | 27 | Port Jervis |
| 12775 | | 2 | Rockhill |
| 12776 | * | 1 | Roscoe |
| 12778 | * | 1 | Smallwood |
| 12780 | | 9 | Sparrow Bush |
| 12781 | | 4 | Summitville |
| 12783 | * | 3 | Swan Lake |
| 12788 | | 3 | Woodburne |
| 12789 | | 2 | Woodridge |
| 12790 | | 11 | Wurtsboro |
| 12791 | * | 3 | Younsville |
| 12792 | * | 1 | Yolan |
| 12815 | * | 2 | Brant Lake |
| 12850 | * | 3 | Middle Grove |
| 12866 | * | 2 | Saratoga Springs |
| 13440 | * | 1 | Rorne |

| | | | |
|-------|---|---|-----------------|
| 13478 | * | 1 | Verona |
| 13501 | * | 1 | Utica |
| 13756 | * | 1 | Easter Br |
| 13775 | * | 1 | Franklin |
| 13783 | * | 3 | Hancock |
| 13825 | * | 1 | Otega |
| 14110 | * | 1 | North Boston |
| 14221 | * | 1 | Buffalo |
| 14226 | * | 1 | Buffalo |
| 14467 | * | 1 | Henrietta |
| 14580 | * | 1 | Webster |
| 14609 | * | 1 | Rochester |
| 15003 | * | 1 | Ambridge |
| 16506 | * | 1 | Erie |
| 16514 | * | 1 | Erie |
| 17020 | * | 1 | Duncannon |
| 17404 | * | 1 | York |
| 18052 | * | 1 | Whitehall |
| 18235 | * | 1 | Lexington |
| 18337 | * | 2 | Milford |
| 18405 | * | 1 | Beach Lake |
| 18465 | * | 1 | Thompson |
| 18840 | * | 1 | Sajre |
| 18996 | * | 1 | South Hampton |
| 19545 | * | 1 | New Berlinville |
| 20007 | * | 1 | Washington |
| 21701 | * | 1 | Frederick |
| 22032 | * | 1 | Fairfax |
| 22401 | * | 1 | Fredericksburg |
| 28302 | * | 1 | Fayetteville |
| 28374 | * | 1 | Pinehurst |
| 28387 | * | 1 | Southern Pines |
| 28453 | * | 1 | Magnolio |
| 29356 | * | 1 | Landlum |
| 29801 | * | 1 | Aiken |
| 30458 | * | 2 | Statesboro |
| 31411 | * | 1 | Savannah |
| 32086 | * | 1 | Saint Augustin |
| 32514 | * | 1 | Pensacola |
| 32646 | * | 1 | Homassosa |
| 32789 | * | 1 | Winter Park |

Total: 4933

Note. * = Not listed in DMIS Catchment Area

Appendix D

KELLER ARMY COMMUNITY HOSPITAL QUESTIONNAIRE

REPLY TO
ATTENTION OFDEPARTMENT OF THE ARMY
UNITED STATES MILITARY ACADEMY
WEST POINT, NEW YORK 10996

October 30, 1991

Dear Military Beneficiary:

Keller Army Community Hospital (KACH) is continually striving to improve the healthcare services delivered to you, our customer. KACH wants to improve your healthcare services by:

- Improving access to care
- Maintaining/Improving the high quality of care, and
- Containing the skyrocketing costs of healthcare.

The first step towards improving your healthcare services is to learn about you. Essentially, we want to know what your health needs are, so that we can meet these needs.

The enclosed questionnaire is being used to gather this information. Please take the time to fill it out and mail it back. The questionnaire contains instructions for both filling out the form and mailing it back to KACH.

This questionnaire has been mailed to a random sample of our beneficiary population. The random sample comprises approximately five percent of the beneficiary population. Therefore, the success of this survey depends on a high return rate of this questionnaire.

Thank you for your assistance in improving your healthcare.

Sincerely,

A handwritten signature in cursive script, reading "Livio F. Pardi".

Livio F. Pardi
Colonel, U.S. Army
Commanding

KELLER ARMY COMMUNITY HOSPITAL

To improve the quality of your healthcare services at Keller Army Community Hospital, information is being gathered about the health needs of the beneficiaries that live within the West Point area. This information will allow us to improve your healthcare services. This questionnaire is voluntary and all information will be kept confidential.

INSTRUCTIONS: Please fill in the blank or place a check for each response as indicated.

1. Your Zip Code:_____.
2. Are you employed? Yes___ No___.
3. Status: Active Duty___ Retired___ Survivor___ Other_____.
4. Family Members: Total Number_____ (Including yourself)
5. Please place a check next to those health care services that you think your family will need in the next two years.

| | | |
|------------|-----------------------------|---------------------|
| Skin___ | Bones/Joints___ | Muscles___. |
| Eyes___ | Gynecological___ | Hormonal___. |
| Foot___ | Physical Therapy___ | New Born___. |
| Lung___ | Nuclear Medicine___ | Pediatric___. |
| Liver___ | Ears, Nose, Throat___ | Social Work___. |
| Heart___ | Reproductive System___ | Psychiatric___. |
| Blood___ | Adolescent Medicine___ | Radiological___. |
| Kidney___ | Brain/Nervous System___ | Urinary Tract___. |
| Cancer___ | Stomach/Digestive Tract___ | General Surgery___. |
| Allergy___ | Obstetrical (Childbirth)___ | Other_____. |

6. If you or anyone in your family have received OUTPATIENT care services in the last year, please indicate where you received these services:

- a. Military Healthcare Facility Yes___ No___.
If "yes" is checked, please indicate where: _____.
- b. Civilian Provider Yes___ No___.
If "yes" is checked, please indicate where: _____.

If a civilian provider was used, how did you pay for the services received? (Place a check next to all that apply)

CHAMPUS___.
MEDICARE/MEDICAID___.
Other Health Insurance___.
Personal Finances___.

Please return this form to Keller Army Community Hospital by folding on the lines indicated, taping closed, and dropping it in the nearest mailbox. If you have any questions about this questionnaire, please call Captain Randy Howard at 914-938-4300/4832. He'll be happy to assist you.

DEPARTMENT OF THE ARMY
KELLER ARMY COMMUNITY HOSPITAL
ATTN: HSUD
WEST POINT, NY 10996-1197



Howard

82

NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



BUSINESS REPLY MAIL

FIRST CLASS PERMIT NO. 51 WEST POINT POINT, N.Y.

POSTAGE WILL BE PAID BY ADDRESSEE

ATTN: HSUD
DEPARTMENT OF THE ARMY
KELLER ARMY COMMUNITY HOSPITAL
WEST POINT, NY 10996-9901



REFOLD ON RULES AND TAPE EDGE CLOSED

Appendix E

Distribution of Active Duty Respondents

| <u>Zip Code</u> | <u>Number of Respondents</u> |
|-----------------|------------------------------|
| 10928 | 2 |
| 10940 | 2 |
| 10996 | 107 |
| 11022 | 1 |
| 11364 | 1 |
| 12458 | 1 |
| 12520 | 1 |
| 12548 | 1 |
| 12550 | 8 |
| 12552 | 1 |
| 12553 | 53 |
| 12564 | 1 |
| 12566 | 2 |
| 12586 | 2 |
| 12589 | 1 |
| 12594 | 1 |
| 12603 | 1 |
| 13454 | 1 |
| 17026 | 1 |
| Total: | 188 |

Appendix F

Distribution of Retiree Respondents

| <u>Zip Code</u> | <u>Number of Respondents</u> |
|-----------------|------------------------------|
| 10019 | 1 |
| 10023 | 3 |
| 10024 | 2 |
| 10301 | 1 |
| 10424 | 1 |
| 10471 | 1 |
| 10504 | 1 |
| 10506 | 1 |
| 10509 | 2 |
| 10512 | 3 |
| 10514 | 1 |
| 10522 | 1 |
| 10524 | 1 |
| 10527 | 1 |
| 10530 | 2 |
| 10532 | 1 |
| 10536 | 1 |
| 10541 | 2 |
| 10543 | 3 |
| 10548 | 1 |
| 10549 | 2 |
| 10550 | 1 |
| 10552 | 1 |
| 10553 | 1 |
| 10560 | 1 |
| 10562 | 3 |
| 10566 | 6 |
| 10570 | 1 |
| 10573 | 1 |
| 10579 | 1 |
| 10580 | 2 |
| 10583 | 4 |
| 10588 | 1 |
| 10589 | 1 |
| 10591 | 3 |
| 10598 | 1 |
| 10603 | 1 |
| 10604 | 1 |
| 10606 | 2 |
| 10701 | 4 |
| 10703 | 1 |

| | |
|-------|----|
| 10704 | 2 |
| 10705 | 1 |
| 10707 | 1 |
| 10708 | 5 |
| 10709 | 1 |
| 10710 | 2 |
| 10801 | 2 |
| 10803 | 2 |
| 10804 | 4 |
| 10901 | 5 |
| 10913 | 1 |
| 10914 | 1 |
| 10918 | 1 |
| 10922 | 2 |
| 10923 | 2 |
| 10925 | 1 |
| 10926 | 2 |
| 10928 | 15 |
| 10930 | 1 |
| 10931 | 1 |
| 10932 | 1 |
| 10940 | 10 |
| 10950 | 5 |
| 10952 | 1 |
| 10954 | 2 |
| 10956 | 5 |
| 10960 | 3 |
| 10964 | 1 |
| 10965 | 2 |
| 10968 | 1 |
| 10977 | 3 |
| 10980 | 2 |
| 10983 | 1 |
| 10989 | 2 |
| 10992 | 2 |
| 10994 | 1 |
| 10996 | 4 |
| 11004 | 2 |
| 11010 | 3 |
| 11021 | 1 |
| 11022 | 1 |
| 11040 | 1 |
| 11426 | 1 |
| 11435 | 1 |
| 11530 | 1 |
| 11710 | 1 |
| 11735 | 1 |
| 11801 | 1 |

| | |
|-------|---|
| 11937 | 1 |
| 12037 | 2 |
| 12075 | 1 |
| 12087 | 1 |
| 12106 | 1 |
| 12110 | 1 |
| 12401 | 2 |
| 12412 | 1 |
| 12414 | 3 |
| 12428 | 1 |
| 12431 | 1 |
| 12443 | 1 |
| 12466 | 1 |
| 12474 | 1 |
| 12477 | 3 |
| 12486 | 1 |
| 12500 | 1 |
| 12501 | 1 |
| 12508 | 3 |
| 12515 | 1 |
| 12516 | 2 |
| 12518 | 6 |
| 12520 | 6 |
| 12522 | 1 |
| 12524 | 1 |
| 12525 | 1 |
| 12528 | 3 |
| 12533 | 1 |
| 12534 | 3 |
| 12538 | 2 |
| 12542 | 2 |
| 12545 | 1 |
| 12547 | 1 |
| 12549 | 1 |
| 12550 | 8 |
| 12552 | 1 |
| 12553 | 4 |
| 12556 | 1 |
| 12575 | 1 |
| 12580 | 2 |
| 12581 | 1 |
| 12582 | 1 |
| 12586 | 1 |
| 12589 | 4 |
| 12590 | 1 |
| 12601 | 3 |
| 12603 | 6 |
| 12701 | 1 |

| | |
|--------|-----|
| 12721 | 1 |
| 12738 | 1 |
| 12746 | 1 |
| 12748 | 1 |
| 12771 | 2 |
| 12775 | 1 |
| 12780 | 4 |
| 12783 | 1 |
| 12790 | 1 |
| 12940 | 1 |
| 13775 | 1 |
| 16470 | 1 |
| 16776 | 1 |
| 16777 | 1 |
| 16780 | 1 |
| 16850 | 1 |
| 16854 | 1 |
| 16880 | 1 |
| 16902 | 1 |
| 17012 | 1 |
| 17047 | 1 |
| 17422 | 1 |
| 17436 | 1 |
| 17506 | 1 |
| 17603 | 1 |
| 17632 | 1 |
| 17642 | 1 |
| 17675 | 3 |
| 22047 | 1 |
| 32976 | 1 |
| 34230 | 1 |
| 36792 | 1 |
| 76180 | 1 |
| Total: | 315 |

Appendix G

Distribution of Survivor Respondents

| <u>Zip Code</u> | <u>Number of Respondents</u> |
|-----------------|------------------------------|
| 10510 | 1 |
| 10512 | 1 |
| 10535 | 1 |
| 10538 | 2 |
| 10553 | 1 |
| 10562 | 1 |
| 10583 | 2 |
| 10701 | 2 |
| 10705 | 1 |
| 10709 | 1 |
| 10928 | 8 |
| 10977 | 1 |
| 12106 | 1 |
| 12125 | 1 |
| 12508 | 1 |
| 12522 | 1 |
| 12526 | 1 |
| 12550 | 2 |
| 12553 | 1 |
| 12572 | 1 |
| 12603 | 1 |
| 18733 | 1 |
| Total: | 33 |

Appendix H

THREE DIGIT ZIP CODE MAPS

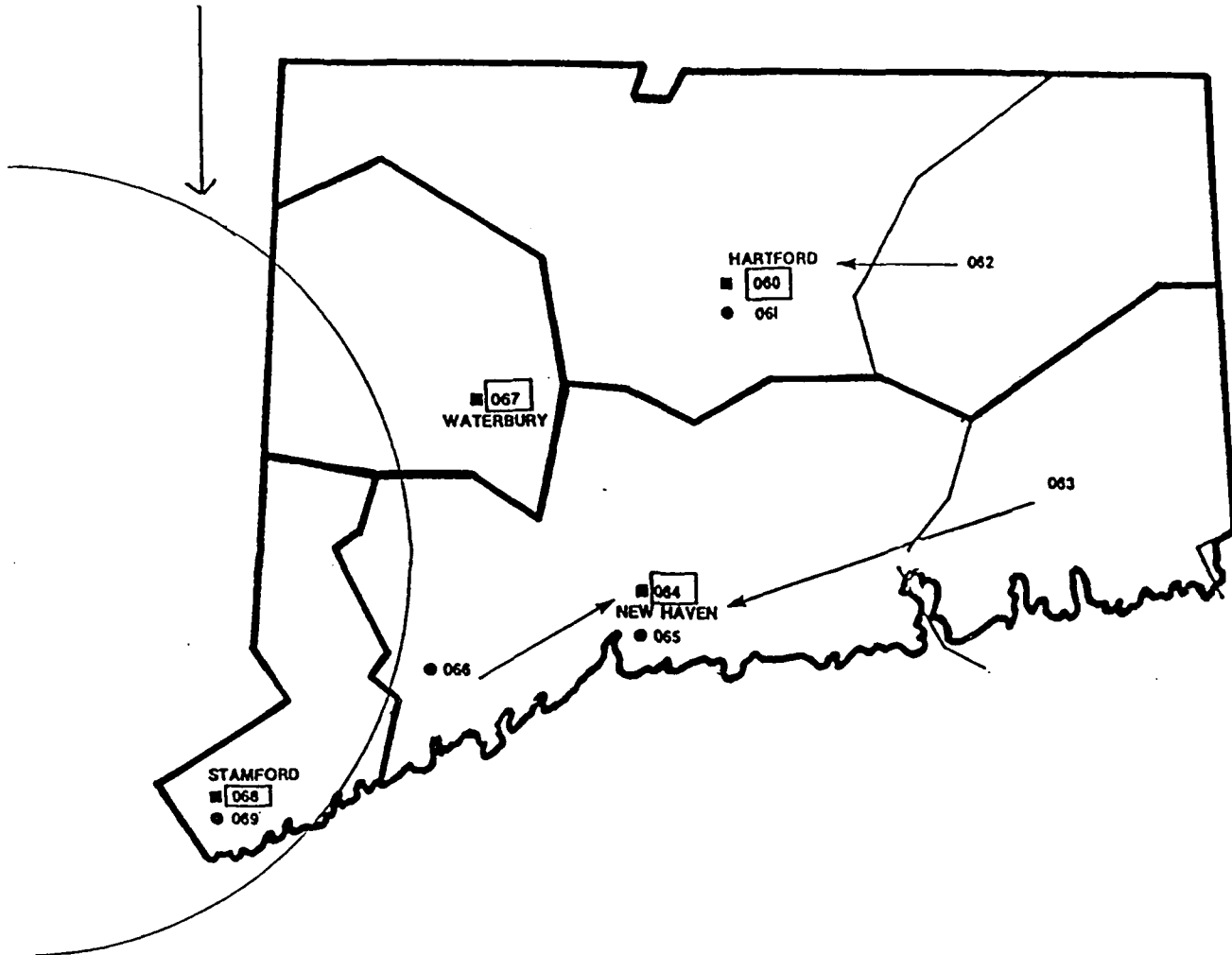
THREE-DIGIT ZIP CODE MAP

Howard

90

CONNECTICUT

Area within circle represents catchment area.



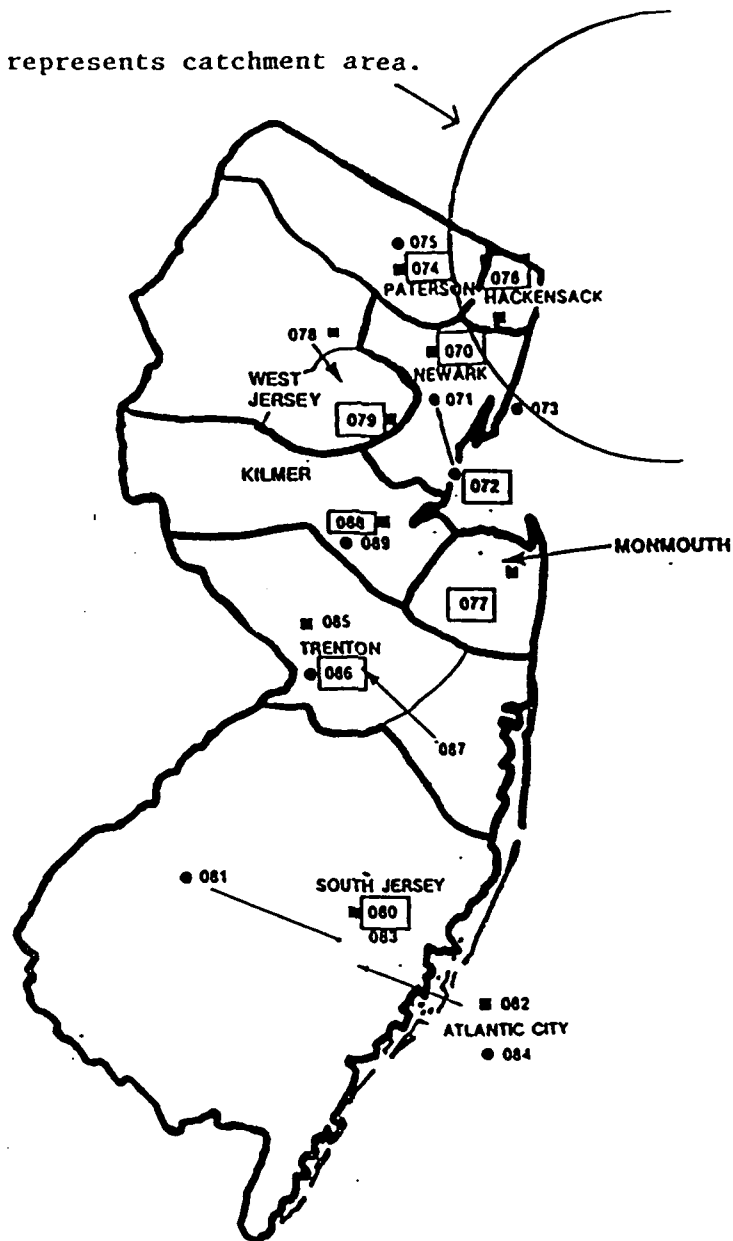
Three-Digit Zip Code
064

Number of Active Duty Households
3

THREE-DIGIT ZIP CODE MAP

NEW JERSEY

Area within circle represents catchment area.

Three-Digit Zip Code

070

074

076

Number of Active Duty Households

2

3

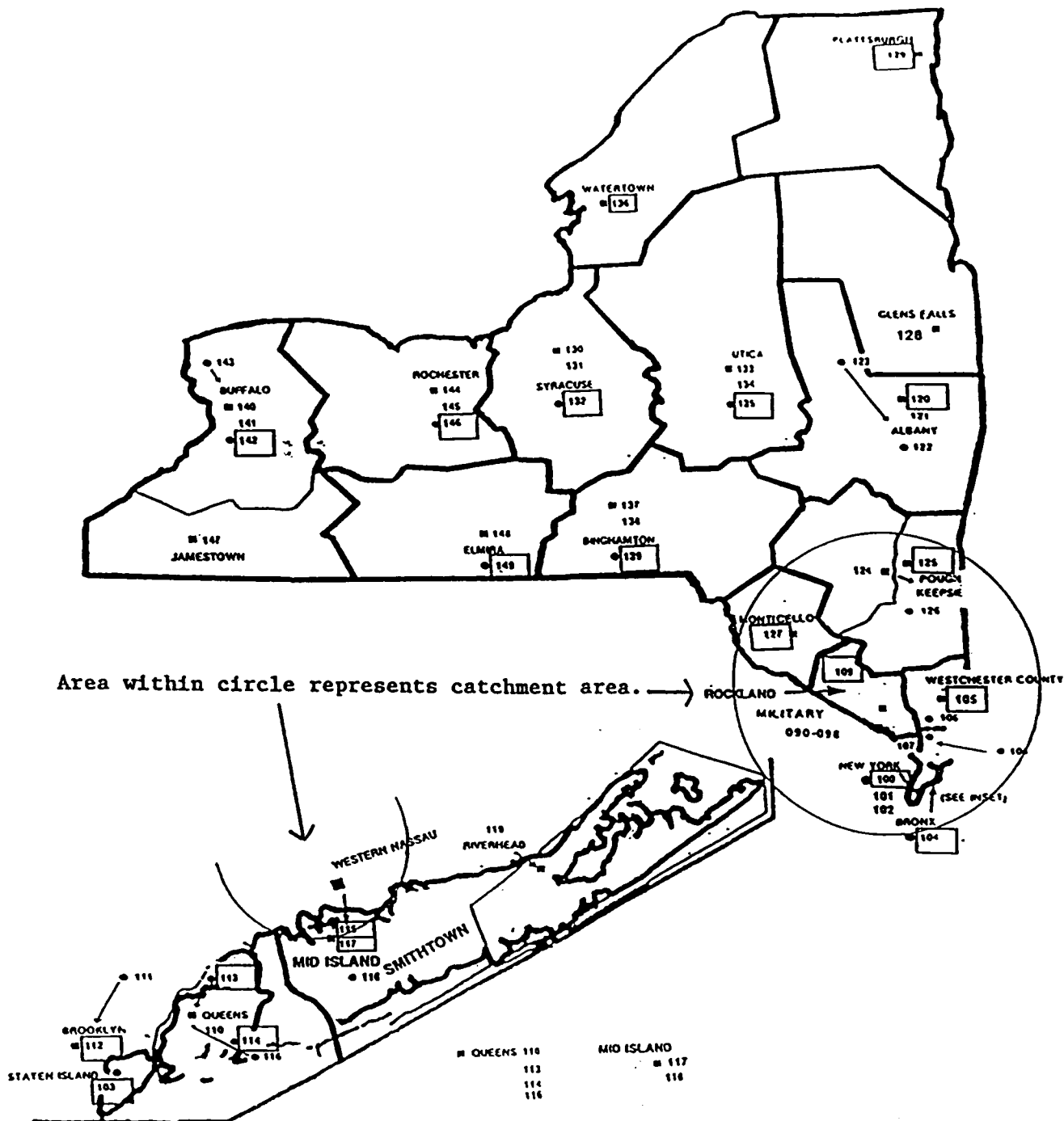
1

THREE-DIGIT ZIP CODE MAP

Howard

92

NEW YORK



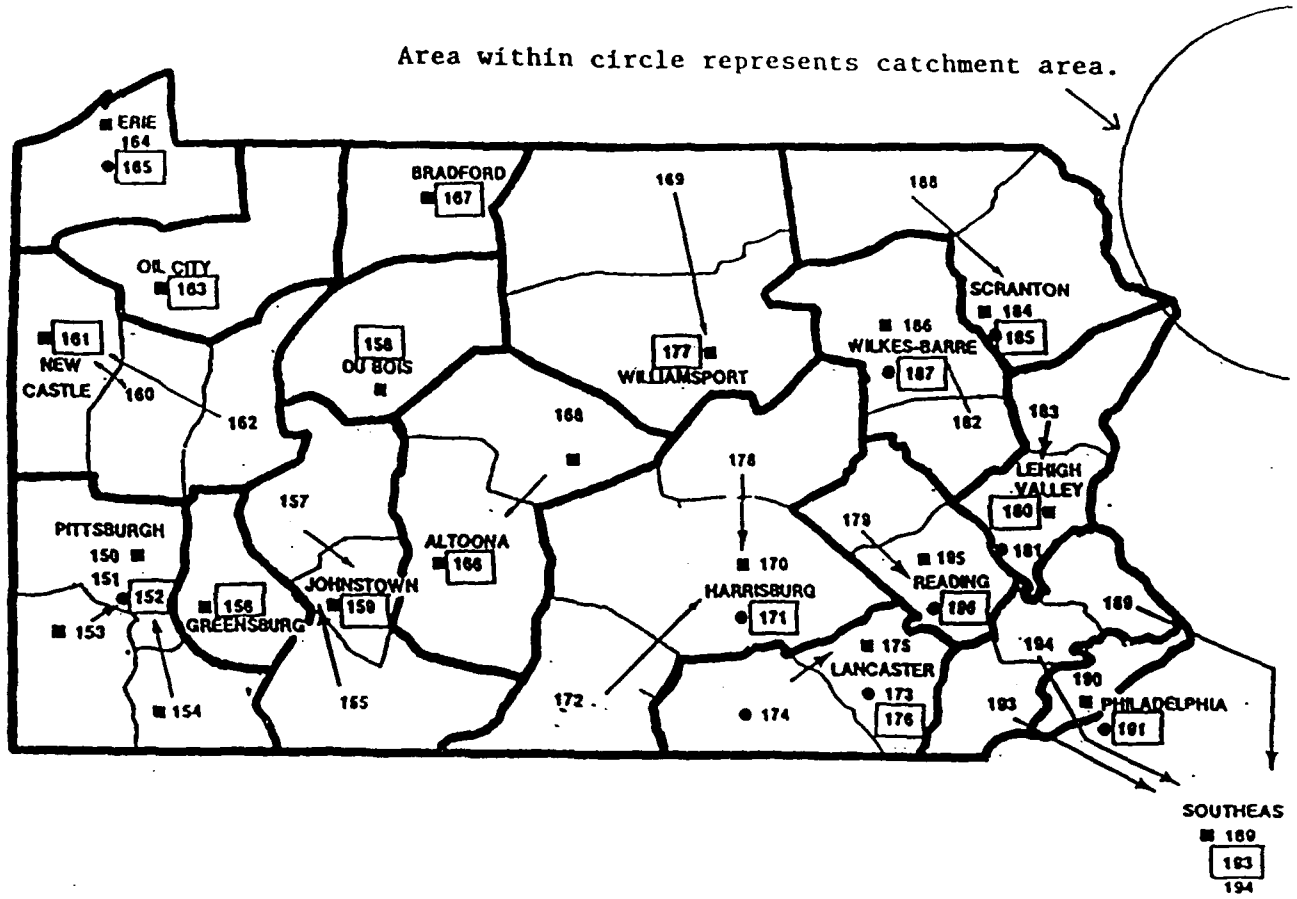
| Three-Digit Zip Code | Number of Active Duty Households |
|----------------------|----------------------------------|
| 100 | 1 |
| 104 | 1 |
| 105 | 7 |
| 109 | 1062 |
| 124 | 10 |
| 125 | 1069 |
| 126 | 12 |
| 127 | 6 |

THREE-DIGIT ZIP CODE MAP

Howard

93

PENNSYLVANIA



Three-Digit Zip Code

Number of Active Duty Households

0

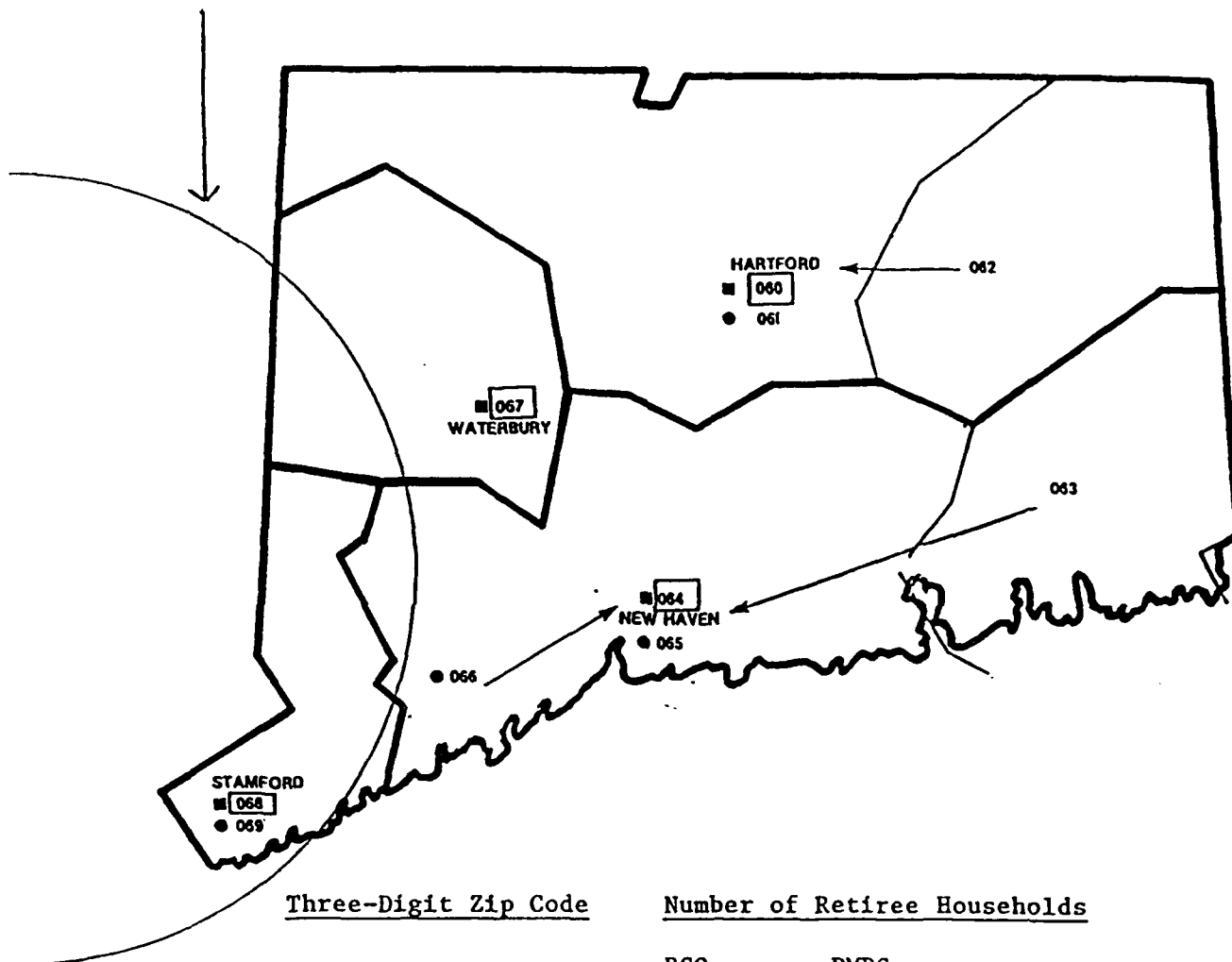
THREE-DIGIT ZIP CODE MAP

Howard

94

CONNECTICUT

Area within circle represents catchment area.



Three-Digit Zip Code

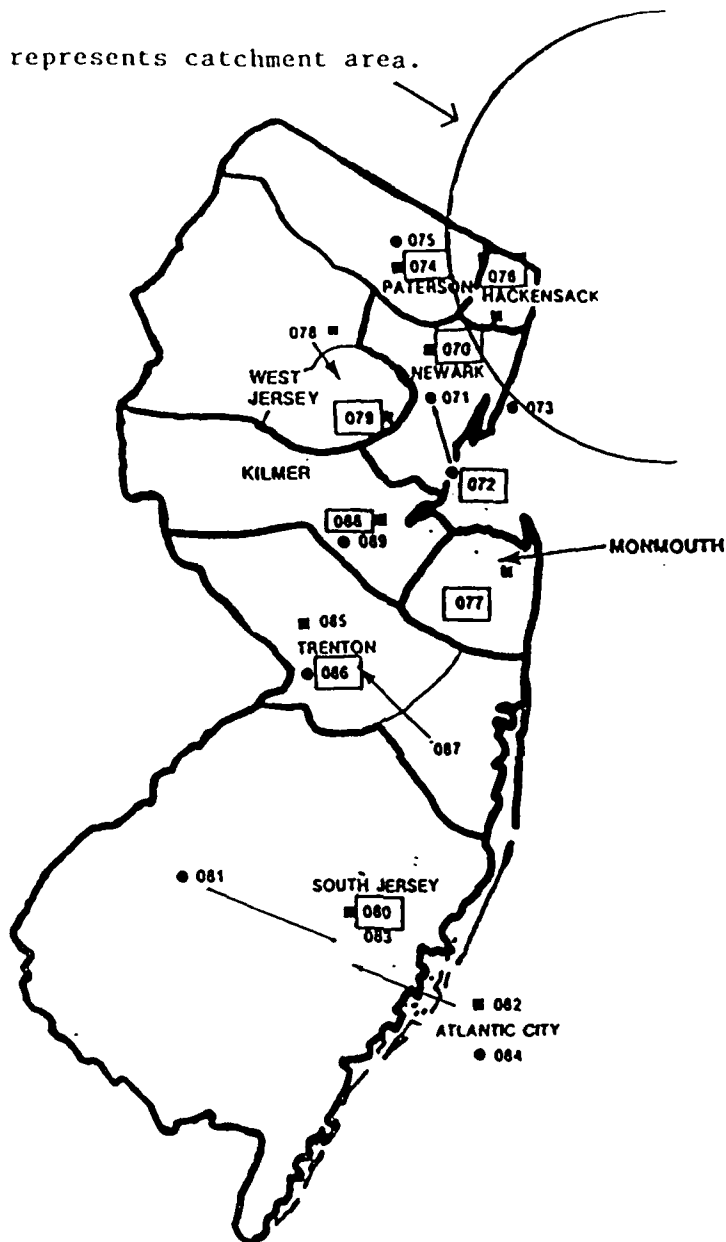
Number of Retiree Households

| | <u>RSO</u> | <u>DMDC</u> |
|-----|------------|-------------|
| 064 | 19 | 218 |
| 065 | 3 | 0 |
| 066 | 5 | 14 |
| 067 | 16 | 104 |
| 068 | 31 | 710 |
| 069 | 4 | 154 |

THREE-DIGIT ZIP CODE MAP

NEW JERSEY

Area within circle represents catchment area.

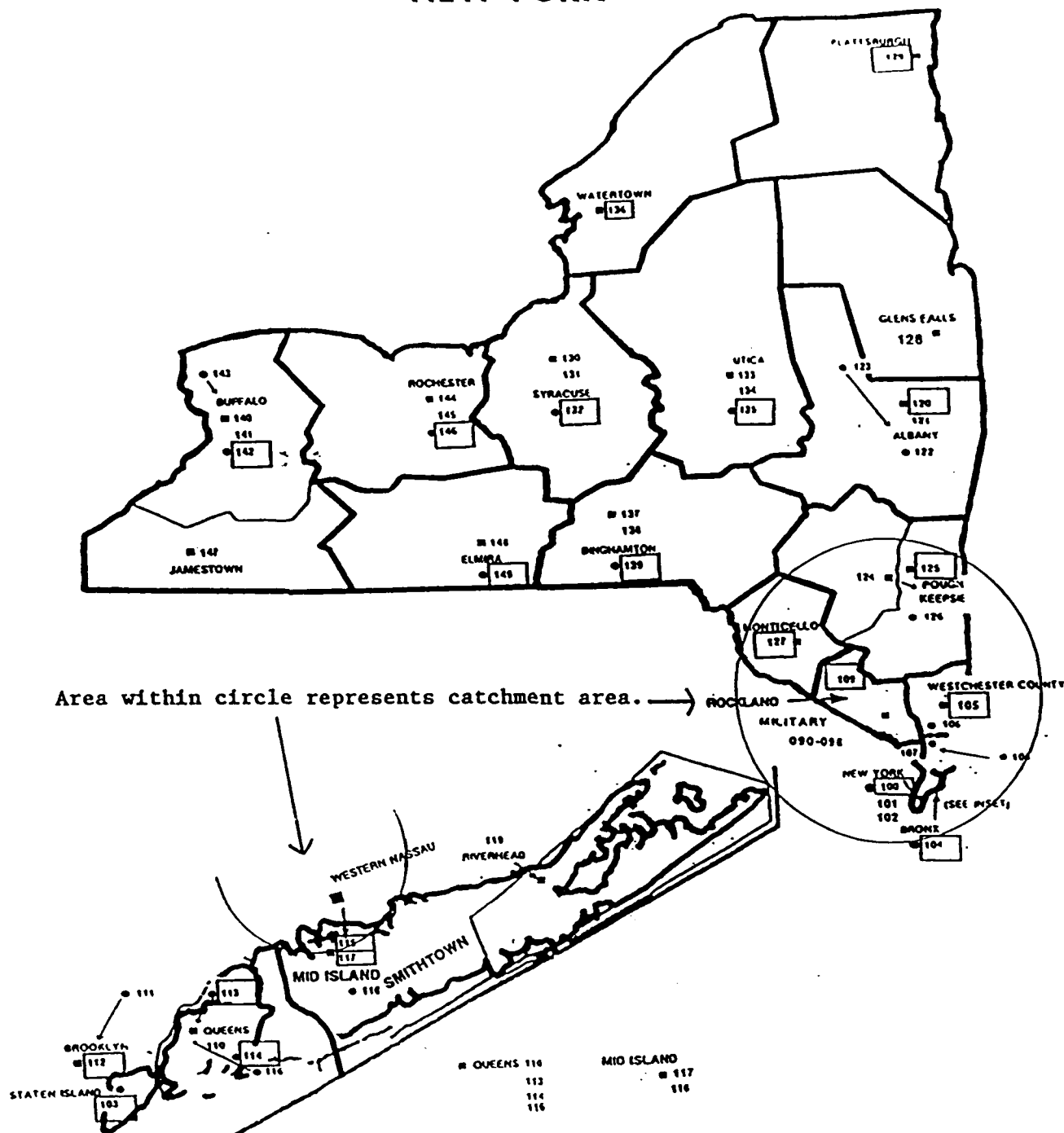
Three-Digit Zip CodeNumber of Retiree Households

| | <u>RSO</u> | <u>DMDC</u> |
|-----|------------|-------------|
| 070 | 12 | 160 |
| 074 | 45 | 665 |
| 075 | 0 | 140 |
| 076 | 57 | 663 |
| 078 | 4 | 0 |
| 079 | 2 | 0 |
| 085 | 4 | 0 |

THREE-DIGIT ZIP CODE MAP

96

NEW YORK



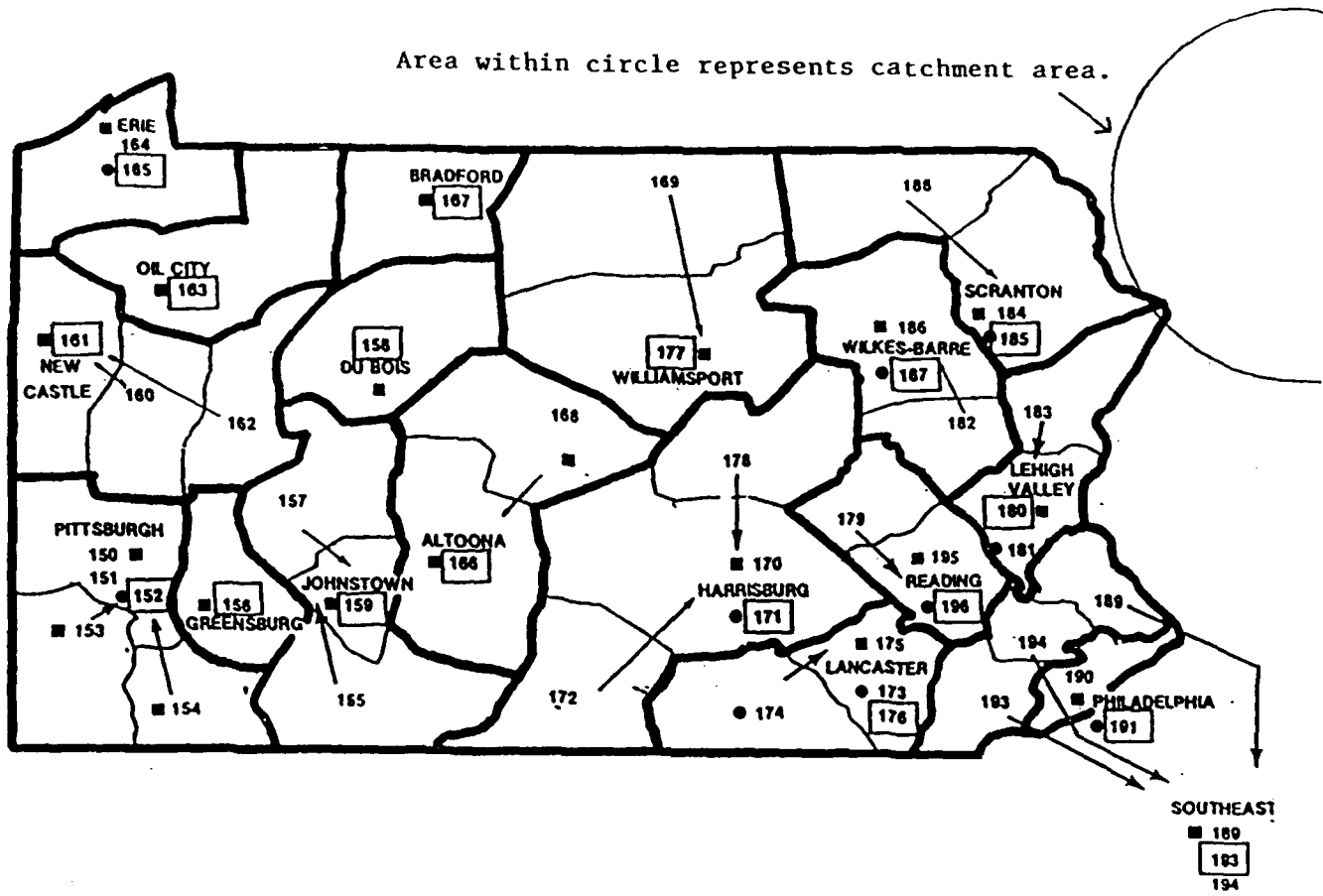
| Three-Digit Zip | No. of Retiree Households | | Three-Digit Zip | No. of Retiree Households | |
|-----------------|---------------------------|------|-----------------|---------------------------|------|
| | RSO | DMDC | | RSO | DMDC |
| 100-104 | 147 | 1192 | 123 | 1 | 0 |
| 105-106 | 1065 | 1006 | 124-127 | 1691 | 1443 |
| 107-108 | 478 | 425 | 128 | 7 | 0 |
| 109 | 934 | 923 | 134 | 5 | 0 |
| 110-119 | 197 | 47 | 137 | 5 | 0 |
| 120-122 | 210 | 0 | | | |

THREE-DIGIT ZIP CODE MAP

Howard

97

PENNSYLVANIA



Three-Digit Zip Code

Number of Retiree Households

RSO DMDC

183

0 4

Appendix I

Means for Active Duty Households

Number of Cases: 188

| Variable | Mean |
|--|--------|
| 1. Employed | 1.0000 |
| 2. Number of Family Members | 3.6489 |
| 3. Health care Services Needed: | |
| a. Skin | .4894 |
| b. Eyes | .7340 |
| c. Foot | .2500 |
| d. Lung | .0319 |
| e. Liver | .0160 |
| f. Heart | .0745 |
| g. Blood | .1489 |
| h. Kidney | .0160 |
| i. Cancer | .0266 |
| j. Allergy | .2606 |
| k. Bones/Joints | .3404 |
| l. Gynecological | .8298 |
| m. Physical Therapy | .2340 |
| n. Nuclear Medicine | .0213 |
| o. Ears, Nose, Throat | .5266 |
| p. Reproductive System | .1170 |
| q. Adolescent | .2500 |
| r. Central Nervous System | .0319 |
| s. Gastrointestinal | .1277 |
| t. Obstetrical | .1596 |
| u. Muscles | .0851 |
| v. Hormonal | .0957 |
| w. Newborn | .1543 |
| x. Pediatric | .5798 |
| y. Social Work | .0213 |
| z. Psychological/Psychiatric | .0426 |
| aa. Radiological | .1702 |
| bb. Urinary Tract | .0745 |
| cc. General Surgery | .0585 |
| 4. Used a MMTF | .8564 |
| 5. Used a Civilian Provider | .3989 |
| Method of Financing Civilian Health care | |
| a. CHAMPUS | .7733 |
| b. Used MEDICARE/MEDICAID | 0 |
| c. Other Health Insurance | .1867 |
| d. Personal Finances | .4800 |

Appendix J

Means for Zip Code Area 109

Number of Cases: 111

| Variable | Mean |
|--|--------|
| 1. Employed | 1.0000 |
| 2. Number of Family Members | 3.7477 |
| 3. Health care Services Needed: | |
| a. Skin | .5586 |
| b. Eyes | .7928 |
| c. Foot | .2342 |
| d. Lung | .0272 |
| e. Liver | .0090 |
| f. Heart | .0811 |
| g. Blood | .1622 |
| h. Kidney | .0090 |
| i. Cancer | .0090 |
| j. Allergy | .2613 |
| k. Bones/Joints | .3423 |
| l. Gynecological | .8378 |
| m. Physical Therapy | .2072 |
| n. Nuclear Medicine | .0090 |
| o. Ears, Nose, Throat | .5586 |
| p. Reproductive System | .1351 |
| q. Adolescent | .2703 |
| r. Central Nervous System | .0270 |
| s. Gastrointestinal | .1351 |
| t. Obstetrical | .1261 |
| u. Muscles | .0811 |
| v. Hormonal | .1171 |
| w. Newborn | .1081 |
| x. Pediatric | .5676 |
| y. Social Work | .0090 |
| z. Psychological/Psychiatric | .0541 |
| aa. Radiological | .1532 |
| bb. Urinary Tract | .0721 |
| cc. General Surgery | .0360 |
| 4. Used a MMTF | .8829 |
| 5. Used a Civilian Provider | .3694 |
| Method of Financing Civilian Health care | |
| a. CHAMPUS | .8049 |
| b. Used MEDICARE/MEDICAID | 0 |
| c. Other Health Insurance | .2195 |
| d. Personal Finances | .4146 |

Appendix K

Means for Zip Code Area 125

Number of Cases: 71

| Variable | Mean |
|--|--------|
| 1. Employed | 1.0000 |
| 2. Number of Family Members | 3.4930 |
| 3. Health care Services Needed: | |
| a. Skin | .3944 |
| b. Eyes | .6338 |
| c. Foot | .2535 |
| d. Lung | .0423 |
| e. Liver | .0282 |
| f. Heart | .0704 |
| g. Blood | .1268 |
| h. Kidney | .0282 |
| i. Cancer | .0563 |
| j. Allergy | .2394 |
| k. Bones/Joints | .3380 |
| l. Gynecological | .8451 |
| m. Physical Therapy | .2676 |
| n. Nuclear Medicine | .0423 |
| o. Ears, Nose, Throat | .4648 |
| p. Reproductive System | .0986 |
| q. Adolescent | .1972 |
| r. Central Nervous System | .0423 |
| s. Gastrointestinal | .1127 |
| t. Obstetrical | .2254 |
| u. Muscles | .0986 |
| v. Hormonal | .0704 |
| w. Newborn | .2394 |
| x. Pediatric | .6056 |
| y. Social Work | .0282 |
| z. Psychological/Psychiatric | .0000 |
| aa. Radiological | .1972 |
| bb. Urinary Tract | .0845 |
| cc. General Surgery | .0845 |
| 4. Used a MMTF | .8310 |
| 5. Used a Civilian Provider | .4225 |
| Method of Financing Civilian Health care | |
| a. CHAMPUS | .7660 |
| b. Used MEDICARE/MEDICAID | 0 |
| c. Other Health Insurance | .1666 |
| d. Personal Finances | .5333 |

Appendix L

Distribution of Retiree Households as Listed by the
Defense Medical Data Center

| <u>Zip Code</u> | <u>Number of Households</u> | <u>City</u> |
|-----------------|-----------------------------|---------------|
| 06430 | 95 | Fairfield |
| 06468 | 23 | Monroe |
| 06470 | 3 | Newtown |
| 06471 | 17 | Newtown |
| 06482 | 11 | Sandy Hook |
| 06488 | 69 | Southbury |
| 06612 | 14 | Easton |
| 06752 | 5 | Bridgewater |
| 06755 | 2 | Gaylordsville |
| 06757 | 5 | Kent |
| 06776 | 42 | New Milford |
| 06777 | 4 | Washington DT |
| 06783 | 10 | Roxbury |
| 06784 | 8 | Sherman |
| 06785 | 2 | South Kent |
| 06792 | 1 | Washington DT |
| 06794 | 7 | Washington DT |
| 06798 | 18 | Woodbury |
| 06801 | 35 | Bethel |
| 06804 | 24 | Brookfield |
| 06805 | 4 | Brookfield |
| 06807 | 15 | COS COB |
| 06810 | 47 | Danbury |
| 06811 | 43 | Danbury |
| 06812 | 27 | Fairfield |
| 06813 | 2 | Danbury |
| 06820 | 51 | Darien |
| 06830 | 74 | Greenwich |
| 06840 | 43 | New Canaan |
| 06850 | 31 | Norwalk |
| 06851 | 60 | Norwalk |
| 06854 | 19 | Norwalk |
| 06855 | 13 | Norwalk |
| 06870 | 18 | Old Greenwich |
| 06877 | 67 | Ridgefield |
| 06878 | 13 | Riverside |
| 06880 | 61 | Westport |
| 06883 | 20 | Weston |
| 06896 | 6 | West Redding |
| 06897 | 37 | Wilton |

| | | |
|-------|----|----------------|
| 06901 | 5 | Stamford |
| 06902 | 71 | Stamford |
| 06903 | 32 | Stamford |
| 06905 | 26 | Stamford |
| 06906 | 9 | Stamford |
| 06907 | 11 | Stamford |
| 07011 | 41 | Clifton |
| 07013 | 59 | Clifton |
| 07026 | 27 | Garfield |
| 07035 | 17 | Lincoln Park |
| 07045 | 8 | Montville |
| 07082 | 8 | Towaco |
| 07401 | 10 | Allendale |
| 07403 | 11 | Bloomington |
| 07405 | 22 | Butler |
| 07407 | 21 | Elmwood Park |
| 07410 | 58 | Fair Lawn |
| 07416 | 12 | Franklin |
| 07417 | 17 | Franklin |
| 07418 | 9 | Glenwood |
| 07419 | 8 | Hamburg |
| 07420 | 4 | Haskell |
| 07421 | 4 | Hewitt |
| 07422 | 11 | Highland LKS |
| 07423 | 10 | HO HO KUS |
| 07424 | 22 | Little Falls |
| 07428 | 3 | McAffee |
| 07430 | 17 | Mahwah |
| 07432 | 10 | Midland Park |
| 07432 | 5 | Newfoundland |
| 07436 | 34 | Oakland |
| 07438 | 12 | Oak Ridge |
| 07439 | 2 | Ogdensburg |
| 07442 | 20 | Pompton Lakes |
| 07444 | 12 | Pompton Plains |
| 07446 | 24 | Ramse |
| 07450 | 64 | Ridgewood |
| 07452 | 35 | Glen Rock |
| 07456 | 12 | Ringwood |
| 07457 | 3 | Riverdale |
| 07458 | 25 | Saddle River |
| 07460 | 4 | Stockholm |
| 07461 | 30 | Sussex |
| 07462 | 4 | Vernon |
| 07463 | 12 | Waldwick |
| 07465 | 1 | Wanaque |
| 07470 | 71 | Wayne |
| 07480 | 16 | W. Milford |

| | | |
|-------|----|------------------|
| 07481 | 30 | Wyckoff |
| 07501 | 15 | Paterson |
| 07502 | 11 | Paterson |
| 07503 | 10 | Paterson |
| 07504 | 10 | Paterson |
| 07505 | 5 | Paterson |
| 07506 | 17 | Hawthorne |
| 07508 | 20 | Haledon |
| 07509 | 4 | Paterson |
| 07512 | 10 | Totowa |
| 07514 | 14 | Paterson |
| 07522 | 18 | Paterson |
| 07524 | 6 | Paterson |
| 07601 | 50 | Hackensack |
| 07602 | 2 | Hackensack |
| 07603 | 7 | Bogota |
| 07605 | 14 | Leonia |
| 07606 | 1 | Hackensack |
| 07607 | 11 | Maywood |
| 07620 | 43 | Bergenfield |
| 07624 | 10 | Closter |
| 07626 | 17 | Creskill |
| 07627 | 7 | Demarest |
| 07628 | 32 | Dumont |
| 07630 | 15 | Emerson |
| 07631 | 41 | Englewood |
| 07632 | 11 | Englewood Cliffs |
| 07640 | 8 | Harrington park |
| 07641 | 13 | Haworth |
| 07642 | 24 | Hillsdale |
| 07644 | 24 | Lodi |
| 07645 | 9 | Montvale |
| 07646 | 23 | New Milford |
| 07647 | 7 | Northvale |
| 07648 | 5 | Norwood |
| 07649 | 23 | Oradell |
| 07652 | 43 | Paramis |
| 07656 | 12 | Park Ridge |
| 07661 | 26 | River Edge |
| 07662 | 24 | Rochelle Park |
| 07666 | 69 | Teaneck |
| 07670 | 25 | Tenafly |
| 07675 | 67 | Westwood |
| 10027 | 55 | New York |
| 10029 | 52 | New York |
| 10030 | 15 | New York |
| 10031 | 31 | New York |
| 10032 | 29 | New York |

| | | |
|-------|----|------------------|
| 10033 | 20 | New York |
| 10034 | 13 | New York |
| 10035 | 15 | New York |
| 10037 | 40 | New York |
| 10039 | 33 | New York |
| 10040 | 26 | New York |
| 10451 | 34 | Bronx |
| 10452 | 21 | Bronx |
| 10453 | 27 | Bronx |
| 10454 | 11 | Bronx |
| 10456 | 33 | Bronx |
| 10457 | 32 | Bronx |
| 10458 | 39 | Bronx |
| 10459 | 18 | Bronx |
| 10460 | 23 | Bronx |
| 10461 | 38 | Bronx |
| 10462 | 60 | Bronx |
| 10463 | 61 | Bronx |
| 10464 | 12 | Bronx |
| 10465 | 48 | Bronx |
| 10466 | 53 | Bronx |
| 10467 | 60 | Bronx |
| 10468 | 35 | Bronx |
| 10469 | 69 | Bronx |
| 10470 | 14 | Bronx |
| 10471 | 33 | Bronx |
| 10472 | 44 | Bronx |
| 10473 | 52 | Bronx |
| 10474 | 3 | Bronx |
| 10475 | 43 | Bronx |
| 10502 | 5 | Ardsley |
| 10504 | 15 | Armonk |
| 10506 | 8 | Bedford |
| 10507 | 4 | Bedford Hills |
| 10509 | 28 | Brewster |
| 10510 | 20 | Briarcliff |
| 10511 | 7 | Buchanan |
| 10512 | 27 | Carmel |
| 10514 | 17 | Chappaqua |
| 10516 | 4 | Cold Spring |
| 10517 | 2 | Crompond |
| 10519 | 4 | Croton Falls |
| 10520 | 16 | Croton on Hudson |
| 10522 | 22 | Dobbs Ferry |
| 10523 | 9 | Elmsford |
| 10524 | 9 | Garrison |
| 10527 | 2 | Granite |
| 10528 | 11 | Harrison |

| | | |
|-------|----|------------------|
| 10530 | 16 | Hartsdale |
| 10532 | 6 | Hawthorne |
| 10533 | 16 | Irvington |
| 10536 | 17 | Katonah |
| 10538 | 33 | Larchmont |
| 10541 | 36 | Mahopac |
| 10543 | 26 | Mamaroneck |
| 10547 | 9 | Mohegan Lake |
| 10548 | 19 | Montrose |
| 10549 | 26 | Mount Kisco |
| 10550 | 44 | Mount Vernon |
| 10552 | 51 | Mount Vernon |
| 10560 | 4 | North Salem |
| 10562 | 30 | Ossining |
| 10566 | 68 | Peekskill |
| 10570 | 17 | Pleasantville |
| 10573 | 39 | Port Chester |
| 10576 | 7 | Pound Ridge |
| 10577 | 2 | Purchase |
| 10578 | 6 | Purdys |
| 10579 | 11 | Putnam Valley |
| 10580 | 31 | Rye |
| 10583 | 63 | Scarsdale |
| 10587 | 4 | Shenrock |
| 10588 | 10 | Shrub Oak |
| 10589 | 18 | Somers |
| 10590 | 7 | S. Salem |
| 10592 | 23 | Tarrytown |
| 10594 | 11 | Thornwood |
| 10595 | 9 | Valhalla |
| 10596 | 3 | Verplanck |
| 10598 | 33 | Yorktown Heights |
| 10601 | 15 | White Plains |
| 10603 | 22 | White Plains |
| 10604 | 13 | White Plains |
| 10605 | 26 | White Plains |
| 10606 | 14 | White Plains |
| 10607 | 11 | White Plains |
| 10701 | 52 | Yonkers |
| 10702 | 2 | Yonkers |
| 10703 | 20 | Yonkers |
| 10704 | 50 | Yonkers |
| 10705 | 41 | Yonkers |
| 10706 | 21 | Hastings |
| 10707 | 22 | Tuckahoe |
| 10708 | 46 | Bronxville |
| 10709 | 8 | Eastchester |
| 10710 | 39 | Yonkers |

| | | |
|-------|-----|----------------|
| 10801 | 52 | New Rochelle |
| 10802 | 2 | New Rochelle |
| 10803 | 19 | Pelham |
| 10804 | 51 | New Rochelle |
| 10901 | 41 | Suffern |
| 10912 | 2 | Bellvale |
| 10913 | 8 | Blauvelt |
| 10914 | 2 | Blooming Grove |
| 10915 | 2 | Bullville |
| 10916 | 6 | Campbell Hall |
| 10917 | 3 | Central Valley |
| 10918 | 19 | Chester |
| 10919 | 4 | Circleville |
| 10920 | 15 | Congers |
| 10921 | 6 | Florida |
| 10922 | 16 | Ft. Montgomery |
| 10923 | 16 | Garnerville |
| 10924 | 28 | Goshen |
| 10925 | 14 | Greenwood Lake |
| 10926 | 6 | Harriman |
| 10927 | 6 | Haverstraw |
| 10928 | 123 | Highland Falls |
| 10930 | 15 | Highland Mills |
| 10932 | 3 | Howells |
| 10933 | 1 | Johnson |
| 10940 | 107 | Middletown |
| 10950 | 42 | Monroe |
| 10952 | 19 | Monsey |
| 10953 | 2 | Mountainville |
| 10954 | 25 | Nanuet |
| 10956 | 46 | New City |
| 10958 | 9 | New Hampton |
| 10960 | 24 | Nyack |
| 10962 | 9 | Orangeburg |
| 10963 | 10 | Otisville |
| 10964 | 4 | Palisades |
| 10965 | 40 | Pearl River |
| 10968 | 3 | Piermont |
| 10969 | 4 | Pine Island |
| 10970 | 6 | Pomona |
| 10973 | 5 | Slate Hill |
| 10974 | 5 | Sloatsburg |
| 10976 | 4 | Sparkill |
| 10977 | 39 | Spring Valley |
| 10980 | 32 | Stony Point |
| 10983 | 17 | Tappan |
| 10984 | 2 | Thiells |
| 10987 | 8 | Tuxedo Park |

| | | |
|-------|----|--------------------|
| 10988 | 4 | Unionville |
| 10989 | 11 | Vly Cottage |
| 10990 | 28 | Warwick |
| 10992 | 21 | Washingtonville |
| 10993 | 3 | Havertraw |
| 10994 | 17 | West Nyack |
| 10996 | 38 | West Point |
| 10998 | 3 | Westtown |
| 11542 | 37 | Glen Cove |
| 11709 | 10 | Bayville |
| 12401 | 84 | Kingston |
| 12404 | 4 | Accord |
| 12411 | 2 | Bloomington |
| 12417 | 2 | Connelly |
| 12420 | 1 | Cragsmoor |
| 12428 | 6 | Ellenville |
| 12429 | 1 | Esopus |
| 12435 | 1 | Greenfield Park |
| 12440 | 5 | High Falls |
| 12443 | 5 | Hurley |
| 12446 | 8 | Kerhonkson |
| 12449 | 7 | Lake Katrine |
| 12458 | 3 | Napanoch |
| 12466 | 9 | Port Ewen |
| 12472 | 6 | Rosendale |
| 12476 | 1 | Stone Valley |
| 12484 | 8 | Stone Ridge |
| 12486 | 6 | Tillson |
| 12487 | 4 | Ulster Park |
| 12489 | 3 | Wawarsing |
| 12501 | 8 | Amenia |
| 12507 | 4 | Barrytown |
| 12508 | 43 | Beacon |
| 12512 | 2 | Chelsea |
| 12514 | 4 | Clinton Corner |
| 12515 | 2 | Clintondale |
| 12518 | 54 | Cornwall |
| 12520 | 55 | Cornwall on Hudson |
| 12522 | 9 | Dover Plains |
| 12524 | 23 | Fishkill |
| 12525 | 11 | Gardiner |
| 12527 | 4 | Glenham |
| 12528 | 29 | Highland |
| 12531 | 4 | Holmes |
| 12533 | 32 | Hopewell Jct |
| 12538 | 28 | Hyde Park |
| 12540 | 4 | Lagrangeville |
| 12542 | 13 | Marlboro |

| | | |
|--------|------|------------------|
| 12543 | 7 | Maybrook |
| 12545 | 14 | Millbrook |
| 12547 | 5 | Milton |
| 12548 | 2 | Modena |
| 12549 | 25 | Montgomery |
| 12550 | 255 | Newburgh |
| 12551 | 5 | Newburgh |
| 12553 | 90 | New Windsor |
| 12561 | 37 | New Paltz |
| 12563 | 5 | Patterson |
| 12564 | 9 | Pawling |
| 12566 | 12 | Pine Bush |
| 12568 | 2 | Plattekill |
| 12569 | 7 | Pleasant Valley |
| 12570 | 8 | Poughquag |
| 12572 | 20 | Rhinebeck |
| 12575 | 8 | Rock Tavern |
| 12577 | 4 | Salisbury |
| 12578 | 1 | Salt Point |
| 12580 | 9 | Staatsburg |
| 12581 | 6 | Stanfordville |
| 12582 | 4 | Stormville |
| 12584 | 8 | Vails Gate |
| 12585 | 35 | Walden |
| 12588 | 2 | Walker Valley |
| 12589 | 33 | Wallkill |
| 12590 | 55 | Wappingers Falls |
| 12594 | 7 | Wingdale |
| 12601 | 75 | Poughkeepsie |
| 12602 | 3 | Poughkeepsie |
| 12603 | 90 | Poughkeepsie |
| 12721 | 18 | Bloomington |
| 12729 | 2 | Cuddebackville |
| 12738 | 8 | Huguenot |
| 12751 | 1 | Kiamesha Lake |
| 12769 | 1 | Phillipsport |
| 12771 | 39 | Port Jervis |
| 12775 | 3 | Rock Hill |
| 12779 | 1 | S. Fallsburg |
| 12780 | 10 | Sparrow Bush |
| 12785 | 4 | Westbrookville |
| 12788 | 7 | Woodbourne |
| 12790 | 11 | Wurtsboro |
| 18336 | 4 | Matamoras |
| Total: | 7864 | |

Appendix M

Means for Retiree Households

Number of Cases: 315

| Variable | Mean |
|--|-------|
| 1. Employed | .2794 |
| 2. Number of Family Members | 2.044 |
| 3. Health care Services Needed: | |
| a. Skin | .3566 |
| b. Eyes | .6540 |
| c. Foot | .2921 |
| d. Lung | .1016 |
| e. Liver | .0603 |
| f. Heart | .4286 |
| g. Blood | .3143 |
| h. Kidney | .0857 |
| i. Cancer | .1206 |
| j. Allergy | .1587 |
| k. Bones/Joints | .3683 |
| l. Gynecological | .2889 |
| m. Physical Therapy | .1492 |
| n. Nuclear Medicine | .0413 |
| o. Ears, Nose, Throat | .3937 |
| p. Reproductive System | .0317 |
| q. Adolescent | .0286 |
| r. Central Nervous System | .0476 |
| s. Gastrointestinal | .2444 |
| t. Obstetrical | .0063 |
| u. Muscles | .0984 |
| v. Hormonal | .0444 |
| w. Newborn | .0032 |
| x. Pediatric | .0286 |
| y. Social Work | .0063 |
| z. Psychological/Psychiatric | .0190 |
| aa. Radiological | .1365 |
| bb. Urinary Tract | .3524 |
| cc. General Surgery | .1365 |
| 4. Used a MMTF | .5175 |
| 5. Used a Civilian Provider | .7175 |
| Method of Financing Civilian Health care | |
| a. CHAMPUS | .1726 |
| b. Used MEDICARE/MEDICAID | .6018 |
| c. Other Health Insurance | .7345 |
| d. Personal Finances | .6106 |

Appendix N

Means for Zip Code Area 105

Number of Cases: 51

| Variable | Mean |
|--|--------|
| 1. Employed | .2941 |
| 2. Number of Family Members | 1.9804 |
| 3. Health care Services Needed: | |
| a. Skin | .3137 |
| b. Eyes | .6275 |
| c. Foot | .2745 |
| d. Lung | .0784 |
| e. Liver | .0000 |
| f. Heart | .4314 |
| g. Blood | .3137 |
| h. Kidney | .0588 |
| i. Cancer | .0196 |
| j. Allergy | .1765 |
| k. Bones/Joints | .3725 |
| l. Gynecological | .2745 |
| m. Physical Therapy | .1176 |
| n. Nuclear Medicine | .0392 |
| o. Ears, Nose, Throat | .3725 |
| p. Reproductive System | .0196 |
| q. Adolescent | .0000 |
| r. Central Nervous System | .0392 |
| s. Gastrointestinal | .3137 |
| t. Obstetrical | .0000 |
| u. Muscles | .0588 |
| v. Hormonal | .0000 |
| w. Newborn | .0000 |
| x. Pediatric | .0196 |
| y. Social Work | .0000 |
| z. Psychological/Psychiatric | .0196 |
| aa. Radiological | .1373 |
| bb. Urinary Tract | .3922 |
| cc. General Surgery | .1176 |
| 4. Used a MMTF | .4510 |
| 5. Used a Civilian Provider | .7647 |
| Method of Financing Civilian Health care | |
| a. CHAMPUS | .1025 |
| b. Used MEDICARE/MEDICAID | .6666 |
| c. Other Health Insurance | .7692 |
| d. Personal Finances | .5641 |

Appendix O

Means for Zip Code Area 107

Number of Cases: 17

| Variable | Mean |
|--|--------|
| 1. Employed | .2942 |
| 2. Number of Family Members | 2.0588 |
| 3. Health care Services Needed: | |
| a. Skin | .1765 |
| b. Eyes | .6471 |
| c. Foot | .2353 |
| d. Lung | .0588 |
| e. Liver | .0588 |
| f. Heart | .4118 |
| g. Blood | .1765 |
| h. Kidney | .1176 |
| i. Cancer | .0588 |
| j. Allergy | .1765 |
| k. Bones/Joints | .4118 |
| l. Gynecological | .2353 |
| m. Physical Therapy | .1176 |
| n. Nuclear Medicine | .0000 |
| o. Ears, Nose, Throat | .4118 |
| p. Reproductive System | .0000 |
| q. Adolescent | .0000 |
| r. Central Nervous System | .0000 |
| s. Gastrointestinal | .1765 |
| t. Obstetrical | .0000 |
| u. Muscles | .0588 |
| v. Hormonal | .0000 |
| w. Newborn | .0000 |
| x. Pediatric | .0000 |
| y. Social Work | .0000 |
| z. Psychological/Psychiatric | .0000 |
| aa. Radiological | .1765 |
| bb. Urinary Tract | .1765 |
| cc. General Surgery | .0588 |
| 4. Used a MMTF | .1765 |
| 5. Used a Civilian Provider | .8235 |
| Method of Financing Civilian Health care | |
| a. CHAMPUS | .2142 |
| b. Used MEDICARE/MEDICAID | .7142 |
| c. Other Health Insurance | .8571 |
| d. Personal Finances | .6428 |

Appendix P

Means for Zip Code Area 109

Number of Cases: 78

| Variable | Mean |
|--|--------|
| 1. Employed | .3846 |
| 2. Number of Family Members | 2.1282 |
| 3. Health care Services Needed: | |
| a. Skin | .3974 |
| b. Eyes | .6538 |
| c. Foot | .4359 |
| d. Lung | .1923 |
| e. Liver | .0897 |
| f. Heart | .4615 |
| g. Blood | .3718 |
| h. Kidney | .0641 |
| i. Cancer | .1538 |
| j. Allergy | .1667 |
| k. Bones/Joints | .4103 |
| l. Gynecological | .3205 |
| m. Physical Therapy | .1923 |
| n. Nuclear Medicine | .0513 |
| o. Ears, Nose, Throat | .4231 |
| p. Reproductive System | .0256 |
| q. Adolescent | .0641 |
| r. Central Nervous System | .0256 |
| s. Gastrointestinal | .2564 |
| t. Obstetrical | .0256 |
| u. Muscles | .1154 |
| v. Hormonal | .0769 |
| w. Newborn | .0128 |
| x. Pediatric | .0385 |
| y. Social Work | .0128 |
| z. Psychological/Psychiatric | .0256 |
| aa. Radiological | .1282 |
| bb. Urinary Tract | .4359 |
| cc. General Surgery | .2692 |
| 4. Used a MMTF | .6795 |
| 5. Used a Civilian Provider | .6410 |
| Method of Financing Civilian Health care | |
| a. CHAMPUS | .2800 |
| b. Used MEDICARE/MEDICAID | .5200 |
| c. Other Health Insurance | .7400 |
| d. Personal Finances | .6600 |

Appendix Q

Means for Zip Code Area 124

Number of Cases: 14

| Variable | Mean |
|--|--------|
| 1. Employed | .2857 |
| 2. Number of Family Members | 1.8571 |
| 3. Health care Services Needed: | |
| a. Skin | .3571 |
| b. Eyes | .7143 |
| c. Foot | .1429 |
| d. Lung | .0714 |
| e. Liver | .0714 |
| f. Heart | .2857 |
| g. Blood | .3571 |
| h. Kidney | .1429 |
| i. Cancer | .1429 |
| j. Allergy | .0714 |
| k. Bones/Joints | .2857 |
| l. Gynecological | .2857 |
| m. Physical Therapy | .0000 |
| n. Nuclear Medicine | .0714 |
| o. Ears, Nose, Throat | .4286 |
| p. Reproductive System | .0000 |
| q. Adolescent | .0000 |
| r. Central Nervous System | .0000 |
| s. Gastrointestinal | .2143 |
| t. Obstetrical | .0000 |
| u. Muscles | .0714 |
| v. Hormonal | .0000 |
| w. Newborn | .0000 |
| x. Pediatric | .0000 |
| y. Social Work | .0000 |
| z. Psychological/Psychiatric | .0000 |
| aa. Radiological | .1429 |
| bb. Urinary Tract | .3571 |
| cc. General Surgery | .0714 |
| 4. Used a MMTF | .1429 |
| 5. Used a Civilian Provider | .6429 |
| Method of Financing Civilian Health care | |
| a. CHAMPUS | .0000 |
| b. Used MEDICARE/MEDICAID | .4000 |
| c. Other Health Insurance | .8000 |
| d. Personal Finances | .4000 |

Appendix R

Means for Zip Code Area 125

Number of Cases: 63

| Variable | Mean |
|--|--------|
| 1. Employed | ..2857 |
| 2. Number of Family Members | 2.1270 |
| 3. Health care Services Needed: | |
| a. Skin | .3651 |
| b. Eyes | .5873 |
| c. Foot | .2698 |
| d. Lung | .0952 |
| e. Liver | .1111 |
| f. Heart | .4127 |
| g. Blood | .3333 |
| h. Kidney | .0952 |
| i. Cancer | .1587 |
| j. Allergy | .2222 |
| k. Bones/Joints | .3492 |
| l. Gynecological | .3651 |
| m. Physical Therapy | .1270 |
| n. Nuclear Medicine | .0159 |
| o. Ears, Nose, Throat | .4127 |
| p. Reproductive System | .0476 |
| q. Adolescent | .0317 |
| r. Central Nervous System | .0317 |
| s. Gastrointestinal | .1905 |
| t. Obstetrical | .0000 |
| u. Muscles | .1429 |
| v. Hormonal | .0476 |
| w. Newborn | .0000 |
| x. Pediatric | .0635 |
| y. Social Work | .0000 |
| z. Psychological/Psychiatric | .0000 |
| aa. Radiological | .1270 |
| bb. Urinary Tract | .2381 |
| cc. General Surgery | .1270 |
| 4. Used a MMTF | .6190 |
| 5. Used a Civilian Provider | .6349 |
| Method of Financing Civilian Health care | |
| a. CHAMPUS | .2500 |
| b. Used MEDICARE/MEDICAID | .4500 |
| c. Other Health Insurance | .5750 |
| d. Personal Finances | .5250 |

Appendix S

Means for Zip Code Area 127

Number of Cases: 14

| Variable | Mean |
|--|-------|
| 1. Employed | .1429 |
| 2. Number of Family Members | 1.714 |
| 3. Health care Services Needed: | |
| a. Skin | .3571 |
| b. Eyes | .7857 |
| c. Foot | .0714 |
| d. Lung | .0000 |
| e. Liver | .0000 |
| f. Heart | .7143 |
| g. Blood | .6429 |
| h. Kidney | .2143 |
| i. Cancer | .0000 |
| j. Allergy | .1429 |
| k. Bones/Joints | .5714 |
| l. Gynecological | .1429 |
| m. Physical Therapy | .2857 |
| n. Nuclear Medicine | .1429 |
| o. Ears, Nose, Throat | .2857 |
| p. Reproductive System | .1429 |
| q. Adolescent | .0000 |
| r. Central Nervous System | .1429 |
| s. Gastrointestinal | .4286 |
| t. Obstetrical | .0000 |
| u. Muscles | .2857 |
| v. Hormonal | .0000 |
| w. Newborn | .0000 |
| x. Pediatric | .0000 |
| y. Social Work | .0000 |
| z. Psychological/Psychiatric | .0714 |
| aa. Radiological | .1429 |
| bb. Urinary Tract | .2857 |
| cc. General Surgery | .1429 |
| 4. Used a MMTF | .6429 |
| 5. Used a Civilian Provider | .7143 |
| Method of Financing Civilian Health care | |
| a. CHAMPUS | .2000 |
| b. Used MEDICARE/MEDICAID | .7000 |
| c. Other Health Insurance | .8000 |
| d. Personal Finances | .8000 |

Appendix T

Means for Survivor Households

Number of Cases: 33

| Variable | Mean |
|--|---------|
| 1. Employed | .2727 |
| 2. Number of Family Members | 1.27279 |
| 3. Health care Services Needed: | |
| a. Skin | .2424 |
| b. Eyes | .5758 |
| c. Foot | .2424 |
| d. Lung | .0303 |
| e. Liver | .0000 |
| f. Heart | .3030 |
| g. Blood | .1212 |
| h. Kidney | .0303 |
| i. Cancer | .0303 |
| j. Allergy | .2121 |
| k. Bones/Joints | .2424 |
| l. Gynecological | .3333 |
| m. Physical Therapy | .0909 |
| n. Nuclear Medicine | .0000 |
| o. Ears, Nose, Throat | .3636 |
| p. Reproductive System | .0000 |
| q. Adolescent | .0000 |
| r. Central Nervous System | .0000 |
| s. Gastrointestinal | .2727 |
| t. Obstetrical | .0000 |
| u. Muscles | .0303 |
| v. Hormonal | .1515 |
| w. Newborn | .0000 |
| x. Pediatric | .0000 |
| y. Social Work | .0000 |
| z. Psychological/Psychiatric | .0000 |
| aa. Radiological | .0909 |
| bb. Urinary Tract | .0303 |
| cc. General Surgery | .0303 |
| 4. Used a MMTF | .4545 |
| 5. Used a Civilian Provider | .6061 |
| Method of Financing Civilian Health care | |
| a. CHAMPUS | .0500 |
| b. Used MEDICARE/MEDICAID | .5500 |
| c. Other Health Insurance | .7000 |
| d. Personal Finances | .5000 |