TRICARE SENIOR PHARMACY PROGRAM: INVESTIGATING THE CHOICE OF PRESCRIPTION DRUG COVERAGE AMONG MEDICARE-ELIGIBLE MILITARY RETIREES

By

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DEDICATION

This work is dedicated with love to my wife, Bonnie, and my daughters,
Monica and Jillian:
Without their love, support and understanding, my graduate education
would not have been possible;

and to

Professor Joseph B. Wiederholt:
Without his initial encouragement I would not have come this far.

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ABSTRACT

On April 1, 2001, the Department of Defense began offering prescription drug coverage to Medicare-eligible military retirees through a program called the TRICARE Senior Pharmacy Program (TSPP). The purpose of this study was to examine characteristics associated with the decision of Medicare-eligible military retirees to use or not use the TRICARE Senior Pharmacy Program. A secondary objective was to explore the reasons that the retirees selected for choosing to use or not to use the TSPP.

A cross-sectional, descriptive survey design was used. Data were collected by means of a mailed, self-administered survey sent to groups of users and non-users of the TSPP residing in a six-state area (Illinois, Indiana, Iowa, Michigan, Minnesota and Wisconsin). The status of the retiree regarding the TSPP (user vs. non-user) was determined prior to mailing the survey instrument so it could be tailored to collect more precise information from the two different groups. The dependent variable was the retiree's choice to use or not use the TSPP. Independent variables included factors from four domains: information about the retiree's previous/current medical care/prescription drug insurance, information about the retiree's current use of prescription drugs, attitudes about formal medical care, and demographic characteristics. Data were analyzed in several stages, including cross-classification of individual characteristics by the retiree's decision to use or not use the TSPP and logit regression models using the retiree's decision as the dependent variable and the retiree's characteristics as independent variables.

The useable response rate to the survey was 62.6%. The amount of a retiree's savings in out-of-pocket payment for prescription drugs, and their previous/current

prescription insurance status, level of financial assets and number of reported chronic conditions were the hypothesized factors that were associated with the retiree's decision. Other factors that were significantly associated with the retiree's decision were gender, ethnicity and marital status. Not having prescription drug insurance also was positively associated with using TSPP.

Economic factors were chosen as important reasons for using TSPP by the majority of the respondents, verifying that prescription insurance status was an important factor. There was a small subgroup of retirees who were not informed about TSPP, although the cause for this was not determined.

Overall, the results suggest TSPP is satisfying a previously unmet need for prescription drug insurance on the part of this group of retirees. Future research should examine how closely this group of retirees mirrors that of the general elderly population and if this need is present in that population as well. The TSPP could serve as a model upon which to base any future Medicare prescription drug plans if this population closely resembles the general elderly population.

I. INTRODUCTION

Prescription Drug Spending and Insurance Coverage for Prescriptions

Prescription drug coverage for the elderly has become an important issue in the last decade. Health care managers as well as numerous politicians have become concerned with this issue for at least four reasons. First, prescription drugs play an ever increasing role in the delivery of medical care. Prescription medications are an important element in the treatment of chronic diseases for the elderly population (NCHS, 2001). Second, there have been numerous new, often more expensive medicines marketed in recent years that have led to significant advancements in the treatment of numerous diseases, particularly diseases common in the elderly. Third, the number of elderly in the population is increasing. In 1994 about 1 in 8 Americans were elderly, but that ratio could increase to about 1 in 5 by the year 2030 (U.S. Bureau of the Census, 1996). And fourth, the elderly are on average the highest per capita users of medicines. For example, in 1998 the elderly accounted for 42% of all prescription drug expenditures and 34% of prescription drugs used but comprised only 13% of the US population. (Families USA, 2000; Freund, 2000)

When Medicare was enacted in 1965, prescription drugs were not as expensive as they are today, and did not play as large of a part in medical care as they do today. Prescription drugs that are given to inpatients in a hospital or as part of a physician visit are covered under Medicare Part A. Part B of Medicare covers outpatient physician visits, but not the medicines prescribed by the physician at these visits. However, there are several ways that Medicare beneficiaries, primarily the elderly, can obtain prescription drug coverage. Prescription drugs are included as part of the coverage for

Medicaid, as well as most other public programs. Most employer-sponsored plans include prescription drugs as a covered benefit. Some of the Medigap plans that individuals can purchase include prescription drugs as part of the covered benefit. Finally, most of the Medicare risk plans that have been devised in recent years also include prescription drugs as part of their coverage.

There have been several estimates of the level of prescription drug coverage among the elderly. Long used the 1987 National Medical Expenditure Survey (NMES), the precursor to the Medicare Current Beneficiary Survey (MCBS), to conclude that approximately 54 percent of the Medicare elderly had some form of coverage for prescription drug expenses. He stated that the figure could be higher, since any secondary sources of prescription drug coverage were excluded (Long 1994). Chulis, Eppig and Poisal (1995) used the 1992 MCBS data and estimated that about 50 percent of the Medicare beneficiaries had prescription drug coverage. Using data from the 1995 MCBS, Poisal and colleagues estimated that 65 percent of Medicare beneficiaries had some type of coverage for prescription drugs. They stated that this was a more accurate figure, since beneficiaries who receive their coverage from a second or third source rather than their primary source of insurance were included. This change in methodology added about 3.4 percentage points to the total (Poisal, et al 1999; Davis, et al 1999). Poisal and Chulis (2000) repeated the same study using 1996 MCBS data. They found that 69 percent of the Medicare beneficiaries in that sample had some form of prescription drug coverage. Poisal and Murray (2001) calculated the level of coverage using the 1998 MCBS data. They found that the level of drug coverage for Medicare beneficiaries had

increased to 73 percent for this sample. According to these studies, the level of coverage for prescription drugs has increased about 19 percentage points between 1987 and 1998.

Sources of Prescription Drug Insurance Coverage

Prescription drug insurance coverage can be segmented into three different sources to determine the origin of the coverage. The three different sources of coverage commonly used are: employer-sponsored, individually purchased and public programs. Also, starting with the 1995 MCBS data a new category was added that reflected the enrollment of Medicare beneficiaries into Medicare risk HMOs.

Employer-sponsored coverage is a plan that provides prescription coverage for a beneficiary as a result of past or current employment for either the beneficiary or a family member. The individually purchased category typically consists of the Medigap plans beneficiaries buy to help cover services and procedures not covered by Medicare. Included in the category of public programs are the various Federal and State programs that provide prescription medications to beneficiaries. Medicaid is the largest of these programs, but several states also have implemented state-administered prescription drug programs. At least 34 states have established or authorized some type of program to provide pharmaceutical coverage or assistance for low-income elderly or persons with disabilities (National Conference of State Legislatures 2002). Lastly, persons who receive their prescription medications through Department of Veterans Affairs (VA) or Department of Defense (DOD) programs because they have a military service connection are included in the public source category (Davis 1999).

The trend for prescription drug coverage of Medicare beneficiaries appears to be increasing, both as a whole and in each of the different categories. For example, the percentage of insured beneficiaries with drug coverage from their individually purchased plans increased by 24 percentage points over the last 11 years. However, it also appears that this trend may have reached a plateau. Prescription drug coverage in areas such as Medicare risk HMOs and Medicaid and other public programs appears to have leveled off in the most recent surveys (Long 1994; Chulis, Eppig and Poisal 1995; Poisal, et al 1999; Davis, et al 1999; Poisal and Chulis 2000; and Poisal and Murray 2001). Additionally, Glied and Stabile (1999), using trends from the Current Population Surveys from the years 1989, 1993 and 1997 concluded that private insurance coverage among the elderly may actually decrease in the future. They analyzed health insurance as a whole and determined that if the current trend continues, by 2005 there will be a decrease of 4.5 percent in the elderly with health insurance.

Although almost three-fourths of the Medicare population has some type of prescription drug coverage, there are problems with this coverage. The problems with prescription drug coverage for this population lead to problems with this population's access to prescription medications. Prescription medications are an important part of the therapy for this population, so this may lead to a decrease in the overall health of this population. First, not all of the beneficiaries have equal access to the coverage. For example, the majority of the public programs are need-based programs and are therefore tied to an individual's income. A study by Safran, et al, (2002) found that the depth of Medicaid coverage varied widely across states, since Medicaid inclusion criteria are set by the state. Different states will set the income level for participation in Medicaid at a

different percent of the poverty level. Some of the other public programs require a military service connection.

Second, the premiums for Medigap plans that include drug coverage are often prohibitively priced and only three out of ten Medigap plans even include a prescription drug benefit. For example, the average annual premium in the year 2000 for the Medigap plans that offered prescription drug coverage ranged from $2,347 to $3,065. In addition, all three plans have a $250 drug deductible and a cap on benefits (O'Sullivan, 2001). Third, the ability to enroll in a Medicare risk HMO is contingent on availability in the geographic region where the beneficiary lives. Unfortunately, many of these Medicare risk HMOs are reducing their service areas or pulling out of the program entirely due to increasing costs and decreasing government payments (O'Sullivan, 2001).

Fourth, as found by Glied and Stabile (1999), the percent of employers offering coverage is expected to decrease. Fifth, the cost of prescription medications can be prohibitive and has been increasing for at least the last seven years (Kreling, et al 2000). This is especially a problem for those individuals that do not have any type of prescription drug coverage. Among elderly without prescription drug coverage, 43 percent have reported spending more than $100 per month on prescriptions. Further, almost one-quarter (22%) of the elderly have reported skipping medications or not filling prescriptions due to costs (Safran, et al 2002).

Elderly Military Retirees and Prescription Drug Coverage

In 1997, elderly military retirees raised many concerns about their access to medical care in general and prescription drugs in particular. The concerns raised by the

elderly military retirees reflect the same concerns of the general elderly population; that there is unequal access to coverage, Medigap plans are expensive, and prescription medications are also expensive. Also, there was a request by the Subcommittee on Military Personnel for a review of the limits on older retirees' access to care. One conclusion from this study was that older military retirees have reduced access to care because their rate of insurance coverage is lower than that in the general elderly population. While 95 percent of the general elderly population has Medicare Part B coverage, only 90 percent of older military retirees have purchased Medicare Part B. For private insurance coverage, 75 percent of the general elderly population has coverage but only about 50 percent of the older military retirees have this coverage. These decreased levels of insurance coverage are linked to a problem with drug benefits and access to prescription drugs as well (General Accounting Office (GAO) 1997).

Recent policy debates have focused on the development of prescription drug benefits for elderly Americans that would be funded by the federal government. On April 1, 2001, the Department of Defense (DOD) began offering prescription drug coverage to Medicare-eligible military retirees. This program is called the TRICARE Senior Pharmacy Program, hereafter referred to as the TSPP. The TSPP is considered an entitlement under the 2001 National Defense Authorization Act and therefore there is no premium associated with its use. Thus, the TSPP likely is a useful benefit for those choosing to use this program. However, the latest figures show that approximately 400,000 of the estimated 1.5 million retirees and spouses that would be eligible for prescription benefits under this program have not chosen to use it.

Study Objectives

The primary objective of this study is to determine what factors are associated with a military retiree's choice to use the TRICARE Senior Pharmacy Program. Specifically, this study will determine if there is an association between use of the TSPP and a retiree's individual characteristics such as health status, current prescription utilization, demographics, and attitudes toward medical care. Also, this study will determine if there is an association between use of the TSPP and a retiree's previous/current insurance characteristics such as insurance status, premium paid, out-of-pocket expenses for prescriptions and how long the previous/current insurance had been in effect.

An additional objective of this study is to determine the reasons military retirees do or do not use the TRICARE Senior Pharmacy Program. This study will determine which reason and which group of factors is most important in a retiree's decision to use or not use the TSPP.

II. REVIEW OF THE LITERATURE

This section of the dissertation proceeds in the following manner. First, there is a description of the military health care system to give background information regarding the extent of prescription coverage that was previously available to the military retiree. This is followed by a description of the TRICARE Senior Pharmacy Program to help the reader understand the extent of the benefits included. Next, the literature on health plan choice, and where possible the literature on prescription drug insurance choice, is reviewed. These studies are reviewed using the constructs from the Cline (2001) model of prescription drug plan choice to organize the discussion. The hypotheses relevant to each part of the model are proposed during the appropriate sections. Finally, there is a brief discussion concerning issues in surveying the elderly.

Military Health Care System

There are health insurance programs available to individuals who have retired from the military service. All individuals who retired with 20 or more years of active Federal service in one of the military branches can obtain prescription drugs through the Department of Defense (DOD), provided they meet several requirements. These requirements have changed recently, which will be outlined in this section.

Historically, all military retirees were eligible to receive all of their medical care, including prescription medications, from any of the military Medical Treatment Facilities (MTFs) operated by the different branches of the DOD. It was the 1956 Dependents' Medical Care Act that gave DOD the authority to provide this care in the MTFs. However, the Dependents' Medical Care Act only authorized the care to be provided on a space-available basis, and there was a priority system in place to regulate the delivery of care to all the individuals eligible for care. According to the priority system, military retirees and their spouses were the lowest priority of care, after active duty service members and their spouses and families. One other option that was available to the retiree was to obtain care from a private health care provider and have the DOD pay the majority of the cost through the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS). CHAMPUS was the DOD's form of self-insurance and utilized deductibles and co-insurance for care outside of the MTFs. It was an all-inclusive type of medical insurance and included prescription drug coverage within the deductible and co-insurance limits. This option was only available to those retirees less than 65 years of age. At 65 years old, the retiree was no longer eligible for CHAMPUS since they were eligible for Medicare (GAO 1997).

Starting in early 1995, the DOD began implementing a regional managed care health program for the military services called TRICARE. The eligible beneficiaries for this program are the active duty service members and their family members. Military retirees under the age of 65 and their family members are eligible for this program if they pay the premium. None of the TRICARE options are available to military retirees older than age 65 since they are eligible for Medicare. Under the TRICARE plan, the DOD divided the United States into 12 different regions. Some of the regions began operation in 1995, and the system was phased in region-by-region on a nationwide basis. The last region began operation in 1998. Part of the delay for the different regions was that a health care contractor had to be hired to operate the plan in each of the regions. Although the different regions may have different contractors, the benefits are standardized across each of the regions. Each of the regions has three choices for the delivery of health care: TRICARE Prime, TRICARE Extra and TRICARE Standard.

TRICARE Prime is a voluntary health maintenance organization (HMO)-type option. It utilizes Primary Care Managers (PCM) from within the contractor's network or at the nearest military MTF that manage all of the care for the beneficiary. TRICARE Extra is a preferred provider-type option. If the individual uses this option and seeks care from a provider in the TRICARE Extra network, they get a discount on services and have reduced cost-shares. The TRICARE Standard option is essentially the same as the old CHAMPUS program, but with a new name. It utilizes the same deductibles and co-insurance as was present under CHAMPUS.

With the implementation of TRICARE, the system establishing priority of care at the MTFs changed. The order of priority for care is now TRICARE Prime, then Extra,

then Standard in decreasing order. Although this may help the retiree less than 65 in seeking care from a military MTF, the retiree older than 65 must still rely on space-available care. Unfortunately, this care is becoming more scarce with the implementation of TRICARE and the downsizing of DOD's health care system (TRICARE Standard Handbook 1997).

Prescription Drug Coverage in the Military System

In addition to the different options for the delivery of health care, with the implementation of TRICARE there are also options for the eligible beneficiaries to receive their prescription drugs. First, any eligible beneficiary, regardless of age can get their prescription filled at an MTF pharmacy with no co-payment, provided the particular medication is on the formulary at that MTF. This option has always been available to all eligible beneficiaries.

Second, when the DOD started TRICARE, it also started the National Mail Order Pharmacy Program (NMOP). Through this program, eligible beneficiaries can receive, by mail, up to a 90-day supply of non-controlled medication or up to a 30-day supply of controlled medication if it is on the NMOP formulary. The eligible beneficiaries are active duty members and their family members; all TRICARE beneficiaries under the age of 65, except in Regions 1, 2, and 5; and all Medicare-eligible retirees living in areas affected by the various Base Realignment and Closure Acts that had been passed up to that point. The co-payment amount is $0 for active duty members. For other beneficiaries the cost is $3 for generic or $9 for brand name medication.

The third option for eligible beneficiaries to receive their prescription drugs is to utilize a pharmacy that participates in the TRICARE retail pharmacy network. This option also was started with the implementation of TRICARE. The eligible beneficiaries are active duty members and all other TRICARE eligible beneficiaries. The pharmacies in this network have contracted with TRICARE to serve its beneficiaries and only bill the beneficiary the appropriate co-payment. Beneficiaries can receive up to a 30-day supply of medication. The co-payment amount is $0 for active duty members. Other beneficiaries pay $3 for generic or $9 for brand name medication.

The fourth option, which has also always been available to all beneficiaries, is to visit a non-network retail pharmacy. The individual pays the full retail price for the prescription. If they are under age 65, they can then submit a claim for reimbursement. The cost to the beneficiary is either $9 or 20% of total cost, whichever is greater, after meeting a deductible of $150 per person or $300 per family. There is no co-payment or co-insurance for the active duty service member using this option.

Access to Prescription Drugs for Medicare-eligible Military Retirees

Prior to the implementation of the TRICARE Senior Pharmacy Program, Medicare-eligible military retirees had five different options to obtain prescription drugs. Some of these options can be considered as actual prescription drug coverage, while other options are just a source of prescription drugs.

First, they could obtain prescription drugs through coverage provided by a private employer. Second, a Medicare-eligible military retiree may obtain prescription drugs from the Medicaid program provided they meet program requirements for eligibility.

Third, any eligible beneficiary, regardless of age can obtain prescription drugs at a Medical Treatment Facility (MTF) pharmacy with no co-payment, provided the particular medication is on the formulary at that MTF. Fourth, Medicare-eligible retirees living in areas affected by various Base Realignment and Closure Acts that have been passed could obtain prescription drugs from the National Mail Order Pharmacy Program (NMOP). Fifth, some Medicare-eligible military retirees may obtain prescription drugs from the Veteran's Administration system provided they meet the requirements for inclusion under the VA system.

Although there were five options for obtaining prescription drugs available to military retirees prior to the implementation of the TSPP, these options relied on previous employment, level of income, place of residence or previous military-connected disability. Additionally, there was little knowledge about who was using which source and how adequate the different sources were in providing access to prescription drugs for the Medicare-eligible military retiree population. This situation led to concern by the military retirees and the request from the Subcommittee on Military Personnel for a review of older retirees' access to care. Some of the proposals considered by this review were: allowing Medicare-eligible retirees to enroll in TRICARE Prime through Medicare subvention; providing older retirees the option of enrollment in the Federal Employees Health Benefit Plan (FEHBP) or CHAMPUS; having DOD pay the premiums for older retirees' Medigap plans; and providing older retirees with an expanded pharmacy benefit (GAO 1997). Only the last proposal was specifically targeted at increasing the retiree's access to prescription drugs.

Creation of the TRICARE Senior Pharmacy Program

On July 1, 2000, DOD started the Pharmacy Redesign Pilot Program at two test sites. By paying the $200 annual enrollment fee per person, Medicare-eligible military retirees at the test sites gained access to the TRICARE retail pharmacy network and the National Mail Order Pharmacy Program (NMOP). The appropriate co-payments had to be paid to obtain prescriptions. Individuals using the TRICARE pharmacies had a 20 percent co-payment for a 30-day supply of medication. The NMOP customers could obtain a 90-day supply of medication for an $8 co-payment (America's Pharmacist 2000).

The 2001 National Defense Authorization Act provided funding for the TRICARE Senior Pharmacy Program (TSPP), which started on April 1, 2001. The eligible retirees can chose whether they want to utilize the TSPP. This program replaces the Pharmacy Redesign Pilot Program and the Base Realignment and Closure pharmacy benefit. Through this program eligible beneficiaries can obtain prescription medications from the NMOP and TRICARE network and non-network pharmacies. They may also continue to use military MTF pharmacies. There is no enrollment fee, although there may be a co-payment, depending on which option is used to obtain the medication. Prescriptions obtained through the military MTF pharmacies are still no charge. Using the NMOP pharmacy will cost beneficiaries $3 or $9 for a 90-day supply of generic or brand name medication, respectively. The TRICARE retail network pharmacies will charge the beneficiary either $3 or $9 for a 30-day supply of generic or brand name medication, respectively. If the beneficiary uses a non-network retail pharmacy, there is an annual deductible ($150 per member or $300 per family) that must be met. After the

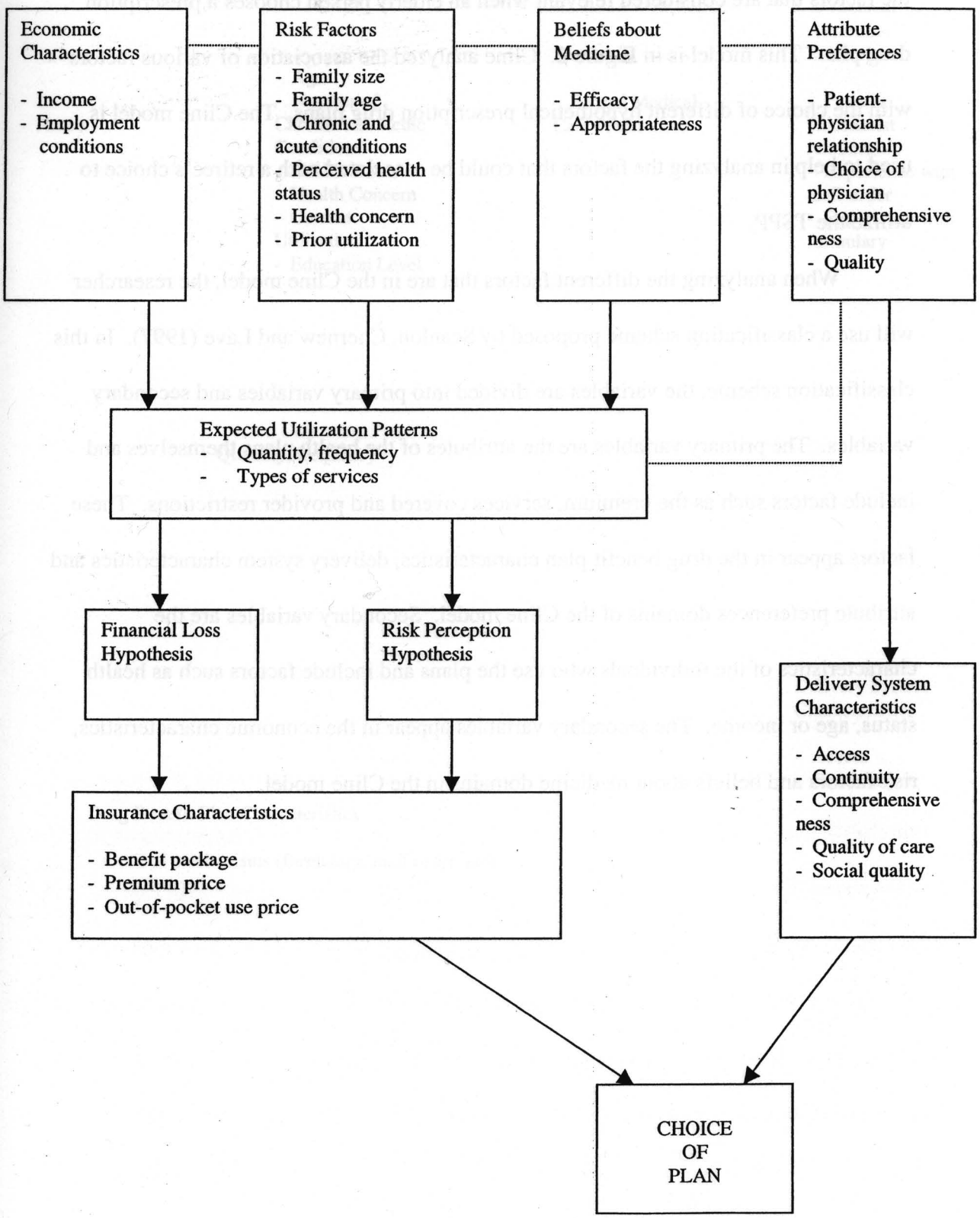
deductible is met, the cost for the medication is still 20% of the full retail price or $9; whichever is greater (TRICARE Senior Pharmacy Program Brochure 2001).

The TSPP is offered to military retirees as optional coverage for prescription drugs. Military retirees can either chose to utilize the program or decline coverage as they decide what is appropriate for their particular circumstances. If a military retiree selects the TSPP optional coverage, there are two ways that the TSPP will pay for prescription medications. First, TSPP can be utilized as a stand-alone prescription drug plan if the retiree has no other coverage for prescription drugs. Second, if the retiree has other coverage for prescription drugs, the TSPP can be utilized as second-payer to cover the out-of-pocket costs that may be associated with their primary coverage.

Literature on Health Plan choice

The research that has been conducted on the factors that influence health plan choice can be used as a starting point to examine what factors may be associated with the choice to use the TSPP. Since prescription drug coverage is rarely offered on a stand-alone basis, there has been little research conducted on what factors may influence the choice of prescription drug coverage. Berki and Ashcraft (1980) reviewed the literature and devised a model of health plan choice that is a useful framework for studying the factors that consumers use when making their choice of health plans. This model was originally developed to analyze consumers' choices among different Health Maintenance Organizations (HMOs) but can also be used to investigate the choice of health plans in general. This model is in Figure 1.

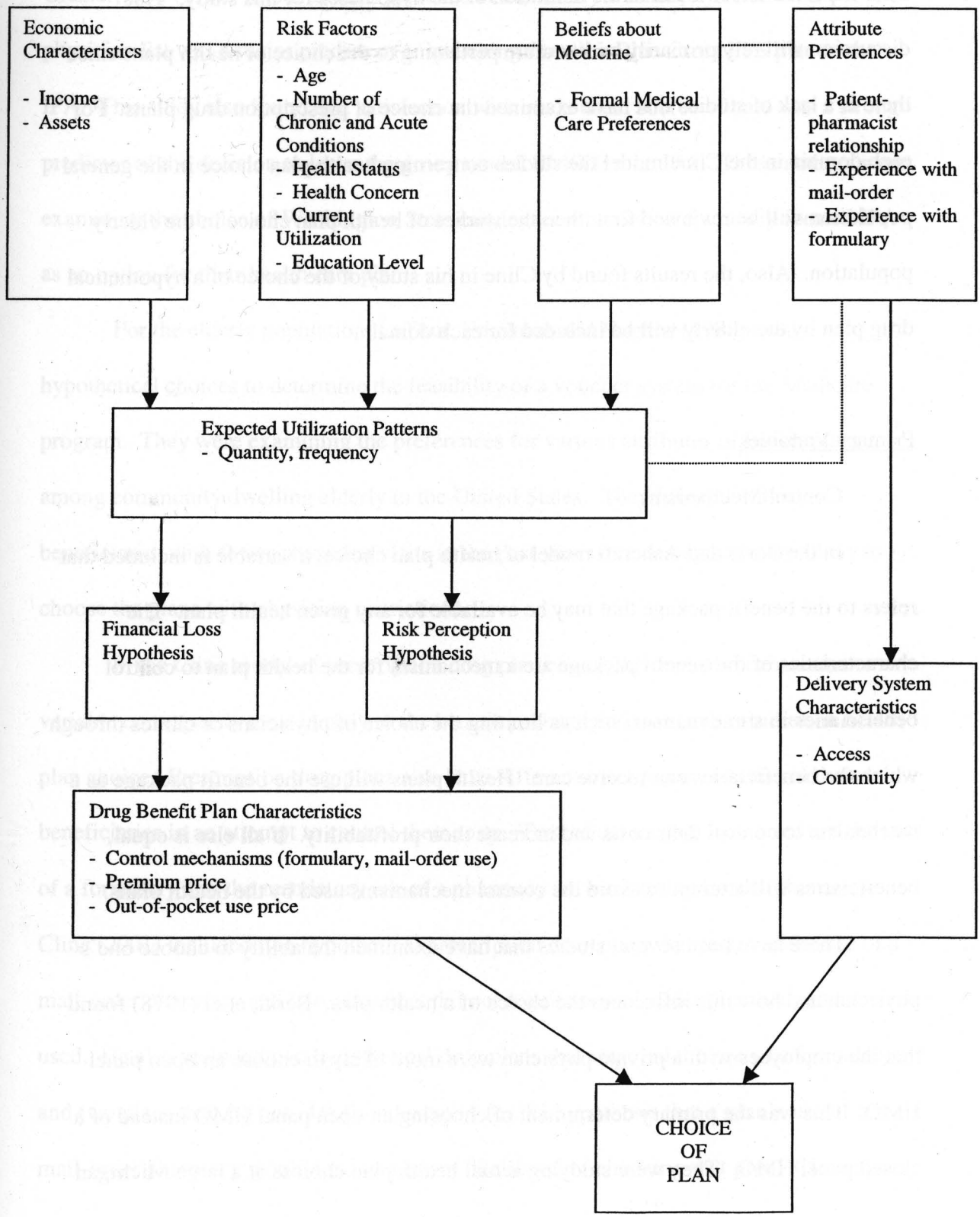
FIGURE 1
BERKI-ASHCRAFT MODEL OF HEALTH PLAN CHOICE



Cline (2001) adapted the Berki and Ashcraft model of health plan choice to study the factors that are considered relevant when an elderly person chooses a prescription drug plan. This model is in Figure 2. Cline analyzed the association of various factors with the choice of different hypothetical prescription drug plans. The Cline model is used to help in analyzing the factors that could be associated with a retiree's choice to utilize the TSPP.

When analyzing the different factors that are in the Cline model, the researcher will use a classification scheme proposed by Scanlon, Chernew and Lave (1997). In this classification scheme, the variables are divided into primary variables and secondary variables. The primary variables are the attributes of the health plans themselves and include factors such as the premium, services covered and provider restrictions. These factors appear in the drug benefit plan characteristics, delivery system characteristics and attribute preferences domains of the Cline model. Secondary variables are the characteristics of the individuals who use the plans and include factors such as health status, age or income. The secondary variables appear in the economic characteristics, risk factors and beliefs about medicine domains in the Cline model.

FIGURE 2
CLINE MODEL OF PRESCRIPTION DRUG PLAN CHOICE



The different domains from the Cline model will now be discussed, as well as their expected effect to aid in the definition of the hypotheses for this study. This discussion will rely primarily on literature pertaining to the choice of health plans since there is a lack of studies that have examined the choice of prescription drug plans. For each domain in the Cline model the studies concerning health plan choice in the general population will be reviewed first, then the studies of health plan choice in the elderly population. Also, the results found by Cline in his study of the choice of a hypothetical drug plan by the elderly will be included for each domain.

Primary Variables

Control Mechanisms

In the Berki and Ashcraft model of health plan choice, a variable is included that refers to the benefit package that may be available for any given health plan. The characteristics of the benefit package are a mechanism for the health plan to control beneficiaries in some manner, such as limiting the choice of physicians or clinics through which the beneficiaries can receive care. Health plans will use the benefit package as a mechanism to control their costs and increase their profitability. If all else is equal, beneficiaries will attempt to avoid the control mechanisms used by the health plans.

There have been several studies that have examined the ability to choose one's physician and how this influences the choice of a health plan. Berki, et al (1978) found that the employees with a private physician were more likely to choose an open panel HMO. This was the primary determinant of choosing an open panel HMO instead of a closed panel HMO. They were studying actual health plan choices at a large Michigan

manufacturing firm. In a study of the choices made by Washington State employees, Grazier, et al (1986) found that the presence of the family's usual physician on the IPA's physician list was a major predictor for switching from the Blue Cross FFS plan to the IPA. This study also found that satisfaction with one's usual source of care was a strong predictor of the decision to leave the group model HMO for the IPA. These authors were examining the choice of Washington State employees when offered a newly formed IPA as an option for their health care plan.

For the elderly population, LaTour, Friedman and Hughes (1986) used hypothetical choices to determine the feasibility of a voucher system for the Medicare program. They were examining the preferences for various attributes of health plans among community dwelling elderly in the United States. They found that the beneficiaries with fewer physician visits in the past year were somewhat more likely to choose the plans with physician restrictions.

In the Cline model of prescription drug plan choice the control mechanisms variable corresponds most closely to the benefit package variable in the studies on health plan choice. Prescription drug plans also have different mechanisms to control their beneficiaries in an attempt to control their costs. Two of the mechanisms used are the use of a formulary and the mandatory use of a pharmacy network or mail-order pharmacy. Cline (2001) included two hypothetical prescription drug plans that required the use of a mail-order pharmacy and two plans that did not require a mail-order pharmacy to be used. He also included two hypothetical drug plans that required the use of a formulary and two plans that did not. He found support for the hypothesis that a plan's use of a mail-order pharmacy would lead to a lower likelihood of choosing that plan. Cline also

found that a plan's use of a formulary was associated with a higher likelihood of choosing that plan.

Based on these studies, it appears that being able to choose the provider of services is an important factor in health plan choice. The corresponding variable for prescription drug plan choice is the control mechanisms variable pertaining to the use of a formulary or use of a mandatory mail-order pharmacy. However, the TSPP is structured in such a way to give the retiree options if they do not want to use the mail-order pharmacy. This leads to the first study hypothesis:

H1: *There will be a positive association between a retiree's prior use of a mail-order pharmacy and their choice to use the TSPP.*

Premium

According to economic theory, if all else is equal between health plans, consumers should prefer the health plan with the lower premium. Several empirical studies have shown support for this hypothesis. In a study of employees of Yale University, McGuire (1981) found that the employees were quite sensitive to the price at which the insurance options were available. He found that the employees were more likely to join the prepaid group practice as the premium of the traditional Blue Cross/Blue Shield fee-for-service (FFS) plan increased. In a study of the HMO choices of a sample of Minneapolis employees, Long, Settle and Wrightson (1988) found a significant relationship between premium increases and disenrollment rates in the three HMOs that were studied. Short and Taylor (1989) used data from the National Medical Care Expenditure Survey (NMCES) to estimate the determinants of health insurance choices. They constructed a logit model with the data and concluded that price figured

significantly into the decision. Further, they found that the choice between traditional plans was about twice as sensitive to price as the decision to enroll in an HMO. In a study of employees from four plants of a large manufacturing firm, Barringer and Mitchell (1994) found that the premium was a significant predictor of the choice of health insurance plan by the employee. They found that the choice of plan was inversely related to the level of the premium. Royalty and Solomon (1998) used panel data on Stanford University employees to calculate their price elasticities for health insurance plans in a managed competition setting. Their estimated price elasticities were larger in value than previous estimates.

LaTour, et al (1986) conducted a national study of elderly Medicare beneficiaries to determine preferences for different health plan attributes. They found that there was price sensitivity among the various hypothetical plans offered, although its effect was not as great as for some of the other plan attributes. In a study of health plan choice in the Medicare market, Dowd and colleagues (1994) found evidence of price sensitivity in the Twin Cities area. They found that low income beneficiaries would likely switch from basic FFS plans into network HMOs if the HMOs were less expensive than the basic FFS Medicare.

Cline (2001) analyzed the effect of premium on the choice of hypothetical drug plans. When analyzing the effect of just the premium on the choice of the elderly respondents, he found that they preferred plans with higher premiums. However, when analyzed in a multivariate manner, there was support for the hypothesis that higher premium levels are associated with lower consumer purchase intentions.

These studies demonstrate that the premium price should be a significant predictor of the choice of a health plan or a prescription drug plan. Since there is no premium associated with choosing to use the TSPP, the second hypothesis for this study is:

H2: *There will be a positive association between a retiree's savings in insurance premium paid and their choice to use the TSPP.*

Out-of-pocket Payment

Another aspect of price that may be important when choosing between health plans is the amount of cost sharing inherent in each plan. A copayment is defined as a constant dollar amount charged to the patient per use of a service. For example, a patient may have to pay five dollars each time they receive a prescription at a pharmacy, regardless of the actual cost of the medication obtained. A coinsurance amount varies with the charge for each service provided. Thus, a patient with a twenty percent coinsurance rate for prescription drugs would be asked to pay four dollars for a medication costing twenty dollars and ten dollars for a medication costing fifty dollars. A deductible is a dollar amount that the patient must spend before the insurance plan pays any portion of medical expenses.

Short and Taylor (1989), using the NMCES data found that more generous benefits in terms of lower coinsurance rates increased the probability of enrollment in an HMO versus the traditional FFS plan. In a study of employees from four plants of a large manufacturing firm, Barringer and Mitchell (1994) analyzed the effect of both premiums and deductibles on their choice of health insurance plans. They found that both the premium and the deductible were a significant predictor of the choice of health insurance

plan by the employee. The choice of the plan was inversely related to the level of both the premium and the deductible.

To examine the effect of out-of-pocket costs, Cline (2001) had two hypothetical plans with a $5 copayment and two plans with a $10 copayment. He found support for the hypothesis that individuals with higher out-of-pocket payment levels are more likely to choose a more generous plan.

For the TSPP, the copayment level will vary for the retiree depending on which option they use. Although the out-of-pocket payment will vary for retirees, these studies show that beneficiaries will try to avoid higher out-of-pocket payment plans. Therefore, the third hypothesis for this study is:

H3: *There will be a positive association between a retiree's savings in out-of-pocket prescription drug spending and their choice to use the TSPP.*

Secondary Variables

Continuity

Neipp and Zeckhauser (1985) have proposed that the length of previous experience with a health plan is a possible factor in predicting the choice of a health plan. Their theory is that there are costs (transition costs) involved in switching between the different health plans available. These costs can be divided into tangible and intangible costs. The principal tangible cost is that involved in establishing a new medical history with the new plan. The main intangible cost is that of building a new physician-patient relationship. Further, Neipp and Zeckhauser state that the longer a patient is in a plan, the greater will be the transition costs of a switch to a new plan.

In their study of Washington State employees, Grazier, et al (1986) found that the length of time a family had been with their health plan from the previous year was a significant predictor of their enrollment in a new plan. The less time the family had been with the FFS plan or the PGP plan, the more likely they would leave that plan to join the newly offered PGP plan. Long, Settle and Wrightson (1988) analyzed disenrollment rates from HMOs for a sample of Minneapolis employees. They tested the hypothesis that disenrollment probabilities would decline as the length of enrollment increased and found only weak support. In the study of Stanford University employees, Royalty and Solomon (1998) found evidence that the longer-tenured employees were less likely to switch to a new plan. They attributed this to increased costs for the employees to switch between plans once established. These studies show some support for the hypothesis that there are costs involved in changing between health plans and that these costs can be used as a predictor of health plan choice. Based on these studies the fourth hypothesis for this study is:

H4: *There will be a negative association between a retiree's number of years of experience with their prescription drug plan and their choice to use the TSPP.*

Economic Characteristics

Studies of health plan choice often use income as an explanatory variable. According to economic theory, the expected effect is that, all else equal, beneficiaries with higher incomes will be more likely to choose plans that are more expensive. The beneficiary may consider both the premium and the expected out-of-pocket costs when making this decision. There is support for this hypothesis in the literature.

In the study by Berki et al (1978) on enrollment choices among different types of HMOs, families had the choice between a traditional FFS insurance plan, a open-panel HMO or two closed-panel HMOs. They found that the families with higher incomes were more likely to choose either the open-panel HMO or the FFS plan over the closed-panel HMOs which were the least expensive option. Barringer and Mitchell (1994) studied employees within a single manufacturing firm. They found that the employees with higher incomes were less likely to choose the prepaid group practice, again the least expensive option available.

Langwell and Hadley (1989) evaluated the Medicare Competition Demonstrations and found that the HMO enrollees, the least expensive option, were more likely to be low income. In their study of health plan choice in the Twin Cities Medicare market, Dowd et al (1994) found that the poorest beneficiaries were the most likely to have basic FFS Medicare coverage without supplementary insurance (the least expensive option).

Cline (2001) analyzed the effect of both income and financial assets on the choice of hypothetical drug plans in a multivariate manner. His model showed that having a higher income decreased the chance of selecting the plan with the lowest premium relative to the plan with the highest premium. Also, he found that having assets greater than $50,000 has a similar effect for the plan with the second lowest premium relative to the plan with the highest premium.

There is no premium associated with the use of the TSPP. Based on the above studies, low income retirees should be more inclined to choose the least expensive option. Another consideration in this regard is that elderly retirees may rely on accumulated

assets and other types of annuities in addition to the income from their pensions. This leads to the fifth and sixth hypotheses for this study:

H5: *There will be a negative association between a retiree's income level and their choice to use the TSPP.*
H6: *There will be a negative association between a retiree's level of financial assets and their choice to use the TSPP.*

Risk Factors

Age

Age is considered as a risk factor or explanatory variable in many health plan choice studies for at least two reasons. First, it is negatively correlated with overall health status and is therefore likely to be related to an individual's expectation of current or future health care needs. Second, analysts often include it because it may provide evidence of adverse selection for a given plan. This is due to the association between health care utilization and increasing age.

There is conflicting evidence in the literature regarding age and its relationship to health plan choice. Some studies have found no relationship between age and choice of health plan. In the study of Yale University employees, McGuire (1981) found no relationship between age and the employee's choice of the prepaid group practice. Long, Settle and Wrightson (1988) also found that age was not a significant predictor of HMO disenrollment. In other studies age was a significant predictor of plan choice. Grazier et al (1986) examined the choice of health plan for Washington State employees. They found that older individuals were more likely to switch to a new independent practice association (IPA) type HMO if switching from a staff-model HMO, but less likely to switch if they were previously in a traditional FFS plan. However, these studies must be

interpreted with some caution since the age range of the subjects involved is wider than what will be involved in the current study.

Short and Taylor (1989) used data from the NMCES to analyze health plan choices. They found that compared to individuals under the age of 65, those over the age of 65 were more likely to choose a 'high option' FFS plan (one with more generous benefits and lower cost-sharing provisions). This plan was also more expensive than the 'low option' plan. In their study of Medicare option choice, Dowd et al (1994) found that relative to basic Medicare coverage, males over the age of 85 were less likely to choose a network HMO.

The results of these studies are mixed concerning a relationship between age and health plan choice. Those studies that have found a significant relationship between age and health plan choice had a wider age range that that in this study. Since only elderly will be involved in this study, the seventh hypothesis for this study is:

H7: *There will be no association between a retiree's age and their choice to use the TSPP.*

Health Status

An individual's health status would also be expected to be important in their choice of a health plan. Economic theory would predict that sicker individuals would prefer health plans with more comprehensive benefits if all other factors are held constant. However, it is also important to note that health status has been operationalized in many different ways, such as counts of chronic conditions, past health care utilization and multi-item health status measures.

In their study of enrollment choices in different types of HMOs, Berki et al (1978) found that individuals with more chronic conditions were likely to choose an open panel HMO relative to either a FFS plan or a closed panel HMO. The explanation for this was that this allowed the individuals the generous payments of the HMO relative to the FFS plan and the greatest choice of physicians for the HMO options. Short and Taylor (1989) used the NMCES data to estimate determinants of health insurance choices and found no relationship between the choice of a health plan and the proportion of a family in poor health.

LaTour et al (1986) examined beneficiary decision making under a hypothetical Medicare voucher program. They found that elderly beneficiaries that had a higher physician utilization rate preferred health plans without physician restrictions.

Cline (2001) analyzed the effect of health status on the choice of a hypothetical prescription drug plan in two different ways. First he examined the effect of the number of chronic conditions for an individual on their purchase intentions in a bivariate manner. He found support for the hypothesis that individuals with more chronic conditions will show greater purchase intentions towards plans with the $5 (as opposed to $10) copayment level. Second, he used a measure of the respondent's health concern in a conditional logit model and found that it did not affect prescription drug plan purchase intentions.

The eighth hypothesis for this study is derived from the literature on health status and health plan choice and is:

H8: *There will be a positive association between a retiree's number of chronic conditions and their choice to use the TSPP.*

Education

Although not formally included in the Berki-Ashcraft model of health plan choice, an individual's education level has been used as a predictor of health plan choice. Shea and Stewart (1995) analyzed the public use files of the 1984 Panel Survey of Income and Program Participation. They selected from the original data set those individuals not working or seeking work and 65 years of age or older. When they constructed a model for the presence of any private health insurance supplemental to Medicare they found that education was a significant predictor. According to their model, individuals with more education had a higher probability of having private health insurance supplemental to Medicare. Lillard, et al (1997) analyzed data from the 1990 Health Supplement to the Panel Study of Income Dynamics. They included in the analysis only households where the head or spouse was 66 years old or older and complete data were available on insurance coverage. When they analyzed the overall pattern of insurance coverage, they found that less educated persons were less likely to have any supplemental insurance. They found the same results for employer-provided coverage. However, when they analyzed the data for drug coverage they found that persons with less than a college education were more likely to report this type of coverage.

Cline (2001) did not include education in his model of prescription drug plan choice either. However, he did include education as a variable in the conditional logit models predicting hypothetical prescription drug plan choice and it was a significant predictor. Cline found that the lower educated respondents were more likely to choose the lower cost plans. Since the respondents in Cline's study were forced to choose a plan,

this may mean that they would have chosen no coverage if given that option. The results from these studies give an indication that there may be an association between education level and health plan choice or prescription drug plan choice. The ninth hypothesis for this study is:

H9: *There will be a positive association between a retiree's education level and their choice to use the TSPP.*

Beliefs about Medicine

From the Cline model of prescription drug plan choice, another variable that may be important in the decision regarding a prescription drug plan is the individual's beliefs concerning the desirability and appropriateness of formal medical care. The reasoning is that if an individual believes self-care is preferable to formal medical care they may be less likely to purchase comprehensive prescription drug coverage.

Vistnes and Banthin (1997) studied the influence of attitudes toward medical care and risk on the decision to purchase supplemental Medicare policies. They found that the effects of attitudes are significant and are comparable in magnitude to those of education, asset income and self-reported health measures. Specifically, if an individual has a negative opinion of medical care they are less likely to purchase any supplemental insurance, in particular policies covering prescription drugs. Ganther (1999) examined prescription drug utilization among ambulatory residents of Wisconsin aged 55 and older. She found that higher scores on a measure of preferences for using formal medical care (as opposed to self-care) predicted greater use of prescription medicines, controlling for economic and insurance status. The scale developed and used by Ganther will be used in this study to measure consumer's attitudes toward prescription medicines.

Cline (2001) also used the scale developed by Ganther to examine the effects of medical care preferences on the choice of a hypothetical prescription drug plan. He found that when analyzed in a bivariate manner, there was support for the hypothesis that respondents with higher scores on the medical care preferences scale show higher purchase intentions for plans with the $5 (as opposed to $10) copayment level. However, when the medical care preferences score was used in a conditional logit model it was not significantly associated with drug plan choice.

The majority of these studies find support for an association between an individual's beliefs about formal medical care and their choice of a prescription drug plan. This leads to the tenth hypothesis for this study:

H10: *There will be a negative association between a retiree's score on the formal medical care preferences scale and their choice to use the TSPP.*

Attribute Preferences

Another important factor in the choice of a health plan is the individual's preferences for the provider-patient relationship. In the study of Washington State employees, Grazier et al (1986) found that the strongest variable for predicting which employees would join the new IPA type HMO was the proportion of family members with usual sources of care on the IPA list.

There are also studies that suggest the quality of the patient-pharmacist relationship is important to the patient when choosing a pharmacy. Worley and Schommer (1999) examined a pharmacist-patient relationship quality model from the patient's perspective. Their results suggested that the quality of the pharmacist-patient relationship had a strong mediating effect between the perceived expertise of the

pharmacist and relationship commitment. This effect was also seen between contact intensity and relationship commitment. These results are interpreted to mean that individuals who communicate more frequently with their pharmacist and perceive their pharmacist to be highly expert in providing medication consultation form high quality relationships with higher levels of commitment with their pharmacist. Hermansen and Wiederholt (2001) investigated the pharmacist-patient relationship from the patient's perspective using social exchange principles. They found that the patients who perceived their drug therapy to be important and who had experienced a medication-related critical incident formed higher quality pharmacist relationships.

Cline (2001) found little support for the hypothesis that the degree of commitment to the pharmacist-patient relationship was a significant predictor of drug plan purchase intentions. However, the Cline study was concerned with hypothetical drug plan purchase intentions as opposed to actual drug plan use as in this study. This leads to the eleventh study hypothesis:

H11: *There will be a negative association between a retiree's score on the pharmacist-patient relationship commitment scale and their choice to use the TSPP.*

Previous Prescription Drug Insurance

The Cline model of prescription drug plan choice does not address specifically why individuals purchase insurance, only what factors are used once the decision to purchase has already been made. A factor that may be important in this particular study but is not addressed in the Cline model of prescription drug plan choice is the marginal benefit that may be derived from purchasing the insurance. According to Feldstein (1988), an individual's demand for insurance represents the amount of insurance

coverage they are willing to buy at different prices (premiums) for insurance. According to this theory, the individual has purchased the appropriate amount of insurance when the marginal benefit of any additional coverage equals the cost of buying that insurance. Since there is no premium associated with the TSPP, the marginal benefit should always be greater than the marginal cost, particularly for those individuals who did not have prescription drug insurance prior to the implementation of the TSPP. This reasoning leads to the last study hypothesis:

H12: *There will be a positive association between the retirees who previously did not have prescription drug insurance and their choice to use the TSPP.*

Issues in surveying the elderly

Some of the problems inherent in survey research are validity, reliability and the presence of non-response bias. Although these problems can arise when conducting survey research on any population, they seem to be especially prevalent when studying the elderly. Conditions in the elderly population that may lead to increased concern regarding these problems are the higher incidence of impaired physical health, declining sensory function, cognitive impairment, and abnormal affect (Colsher and Wallace 1989).

Response Validity

Important to the conduct of this research is the validity of the responses to the survey items by the Medicare-eligible retiree. There have been mixed reports regarding the accuracy, and therefore the knowledge level of the elderly about their insurance coverage and medical care utilization. Cafferata (1984) used data from the NMCES to assess the knowledge level of persons 65 years of age or older in regards to their health

insurance coverage. She found that their knowledge is substantial, but generally lower than that of the population younger than 65 years of age. One exception is their knowledge regarding coverage for prescription drugs, where the knowledge level for the elderly is higher than those younger than 65 years of age. Other findings from this study were that knowledge level was highly associated with current experience of health problems, use of the health service in question and the cost of private insurance.

A study by McCall, Rice and Sangl (1986) assessed the knowledge of individuals 65 years or older regarding the Medicare program. The study was conducted in six states that were chosen to represent the mix of state regulatory approaches that were in place at that time. They found that the Medicare beneficiaries did not have high levels of knowledge either about Medicare or the supplemental health insurance policy they currently had. When they analyzed possible factors that could affect the knowledge level, they found that race and sex appeared to have no effect on knowledge of policies. However, increased age related negatively to the knowledge of policies. There were geographic differences as well, which the authors stated were due to the different regulatory policies of the different states.

These studies raise questions regarding the validity of the responses that will be obtained from the survey form used in this study. There will be reminder cues within the survey to aid in the recall of information for this population. Also, there will be some internal checks to the validity of questions within the survey itself. Questions will be asked about amount spent on prescription drugs in the last 30 days, number of drugs used in the last 30 days and amount of payment per prescription. The information for this group of questions is inter-related and can be used to check the validity of the responses.

Detection of Non-Response Bias

There are certain characteristics of respondents that have been shown to influence their chances of responding to a mailed survey, such as age and health status. Colsher and Wallace (1989) administered an in-person questionnaire concerning physical, social and psychological health to adults 65 years of age and older. They found that individual item non-response and inconsistent responses increased with age. Adams, et al (1990) conducted a household census of persons aged 65 or older living in East Boston, MA in 1982-83. They found a significant association between participation status and age. The older a person was, the less likely they were to respond.

Herzog and Rodgers (1988) compared response rates for three large-scale surveys conducted by the Survey Research Center at The University of Michigan. Although the age range for these surveys was very broad, they analyzed age-specific response rates for the surveys. They found that "in each of the three studies the three oldest age groups – 65 through 74 years, 75 through 84 years, and 85 years and older – have lower response rates than almost all younger age groups, ranging from 49% to 69%." Grotzinger, Stuart and Ahern (1994) surveyed a random sample of 6,500 Pennsylvania Medicare enrollees regarding medicine use, insurance status and health status. They found that the likelihood of responding to the survey decreased as the respondent's age increased.

Health status has also been shown to influence the response rate to a survey. The study by Grotzinger, Stuart and Ahern (1994), found four proxies of the health status of an individual that were significant predictors of response status. If a person had an office or other ambulatory physician visit they were more likely to respond. But if the

physician visit was to their home, at a nursing home, or at a boarding home, they were less likely to respond. Therefore it is unclear what effect the health status of the population studied will have on the response rate for a study.

These studies show that non-response bias may be a problem in this study, either due to the age of the retiree or their health status. To check for possible non-response bias, an abbreviated survey will be sent to non-respondents to gather information on variables that may influence the response rate. This information will then be used in a Heckman two-stage selection model to adjust the original model coefficients for the presence of any non-response bias.

Summary of Study Objectives and Hypotheses

By initiating the TSPP, the DOD has started a natural experiment in the research field concerning the elderly and prescription drug coverage. Never before has such a large group of Medicare-eligible military retirees been allowed the choice of expanded coverage for prescription medications. This natural experiment can be used to examine what factors are associated with the choice of the TSPP to obtain prescription drugs. The purpose of this study is to examine factors associated with military retirees decisions to use the TSPP. In summary, the hypotheses tested in this study are:

H1: *There will be a positive association between a retiree's prior use of a mail-order pharmacy and their choice to use the TSPP.*
H2: *There will be a positive association between a retiree's savings in insurance premium paid and their choice to use the TSPP.*
H3: *There will be a positive association between a retiree's savings in out-of-pocket prescription drug spending and their choice to use the TSPP.*
H4: *There will be a negative association between a retiree's number of years of experience with their prescription drug plan and their choice to use the TSPP.*
H5: *There will be a negative association between a retiree's income level and their choice to use the TSPP.*
H6: *There will be a negative association between a retiree's level of financial assets and their choice to use the TSPP.*
H7: *There will be no association between a retiree's age and their choice to use the TSPP.*
H8: *There will be a positive association between a retiree's number of chronic conditions and their choice to use the TSPP.*
H9: *There will be a positive association between a retiree's education level and their choice to use the TSPP.*
H10: *There will be a negative association between a retiree's score on the formal medical care preferences scale and their choice to use the TSPP.*
H11: *There will be a negative association between a retiree's score on the pharmacist-patient relationship commitment scale and their choice to use the TSPP.*
H12: *There will be a positive association between the retirees who previously did not have prescription drug insurance and their choice to use the TSPP.*

III. RESEARCH METHODS

In this section of the dissertation, the methods used to address the research questions are discussed. First the design of the study will be discussed, followed by the data collection procedures that were used. Then the definition and measurement of the study variables will be discussed. Next, the methods used to handle missing data in this study will be reviewed. The statistical methods used to analyze the data, test for possible non-response bias and test the study hypotheses will also be discussed. Finally, the logit model used for multivariate analysis will be discussed.

Study design

Since prescription drug benefits are typically bundled with other health plan components, they are often not studied by themselves. One notable exception is the research done by Cline (2001), where he studied elderly consumers' choice for a hypothetical Medicare prescription drug benefit. Past research on health plan choice has employed one of two techniques. The first technique uses administrative data sets where it is possible to observe actual health insurance choices among the members of a given group. These data are then augmented as needed with survey data on theoretically relevant variables. The second technique employed examines the choices or judgments of purchase likelihood among hypothetical health plans. In this technique the actual choices of the respondents are not observed.

The choice of the TRICARE Senior Pharmacy Program is an actual choice made by the retirees that can be observed; therefore the most logical technique for conducting this study was the first technique. This study utilized a cross-sectional descriptive survey design to gather information about factors that were thought to be associated with the choice of using the TSPP. The choice of the respondent was known prior to the fielding of the survey. The survey was used to collect a wide variety of potentially relevant individual level variables.

Information was collected on variables deemed to be important from the Cline (2001) model of prescription drug plan choice and a review of the health plan choice literature. Since it is a descriptive design, the variables were operationalized and measured with the aid of a mailed, self-administered survey instrument but were not manipulated as they would have been in an experimental design.

Data collection

The data for this study were collected through the use of a cross-sectional survey design. A mailed, self-administered survey instrument was sent to two different groups of beneficiaries: those who have started to use the TSPP and those who have not used the TSPP as of the date the sample was drawn for the study (January 21, 2002). Initially, the survey verified the participation status of the retiree in the TSPP. The main body of the survey instrument collected information about medical care and prescription drug utilization prior to the implementation of the TSPP, current prescription utilization and demographic variables. Information also was collected on other factors that may be associated with the choice of the TSPP such as the respondent's perceived health status, degree of health concern, number of limitations in activities of daily living, and the number of comorbidities they currently suffer from. The respondent's attitudes concerning their degree of commitment toward their usual pharmacist and their preferences for using prescription drugs to treat illnesses as opposed to self-treatment strategies was gathered due to the possible influence on the decision to utilize the TSPP.

Sampling Procedure and Data Collection

Sample Size Calculation

The most important factor taken into consideration when calculating the sample size necessary for this study was the statistical power needed to properly estimate the statistical models of prescription drug plan choice. Two different methods of calculation were used to arrive at the necessary sample size for this study. The calculations yielded a

minimum sample size of 1000 respondents. Details of the two methods of calculation can be found in Appendix A. Response rates to consumer surveys conducted by the Department of Social and Administrative Sciences at The University of Wisconsin School of Pharmacy have ranged from 40-60%. Assuming a survey response rate of 50%, it was estimated that 2,000 surveys would have to be mailed in the main mailing (1,000/0.50).

Sampling Frame and Plan

The target population for this study was Medicare-eligible military retirees residing in a six state region including Wisconsin, Minnesota, Iowa, Illinois, Indiana and Michigan. Prior experience in the Department of Social and Administrative Sciences at The University of Wisconsin suggested that the response rates to mail surveys would be higher in Wisconsin than in the United States as a whole. However, there was a concern that there may not be a large enough population of retirees residing only in Wisconsin from which to choose. Therefore, the six state region was chosen in an effort to insure that an adequate number of responses would be obtained.

A Department of Defense (DOD) database was used to identify and sample the subjects. The database contains mailing information for all retirees eligible for medical benefits. By cross-referencing the eligibility database with a separate prescription drug claims database from the TSPP maintained by the DOD, it was possible to distinguish between retirees who had utilized the TSPP and those who had not. This procedure created two separate groups of retirees. One group of retirees consisted of individuals who had utilized the TSPP as of the date the sample was drawn (January 21, 2002); the other group was retirees who had not utilized the TSPP as of the date the sample was

drawn. A random sample of names was drawn from each of the two separate groups. Personnel from the DOD forwarded the name, address and limited demographic information such as age and gender for those retirees whose name was chosen in the random sample. The age and gender information was used as one check for possible non-response bias in the sample of individuals responding to the survey.

Survey Design

The survey instrument was designed following the principles of the Tailored Design Method (TDM) advocated by Dillman (2000). Copies of the survey instruments can be found in Appendices E and F. These principles have been field tested extensively and shown to improve survey response rates and to decrease item non-response. The survey instrument was designed to collect information in four different areas (variable definitions follow later in this chapter):

1) **Medical Care/Prescription Drug Insurance Information.** This section was designed to gather information on extent and source of previous/current medical care and/or prescription drug insurance. Information about premiums and out-of-pocket expenses also was gathered in this section. The length of time the retiree had any previous coverage also was obtained. This section also gathered information concerning the reasons the respondent did or did not choose to use the TSPP and when they first found out about the TSPP.

2) **Information About Prescription Utilization.** This section gathered information about prescription utilization in the past 30 days and the type of pharmacies these prescriptions were obtained from. It also asked questions concerning the strength of the pharmacist-patient relationship.

3) **Information Regarding Medical Care Preferences and Health Concerns.** This section contains a formal medical care use scale developed by Ganther (1999) and a measure of health concern developed by Berki et al (1978).

4) **Demographic Information.** This section was designed to gather socio-demographic information including age, marital status, gender, race, educational attainment, employment status, household income, and total assets. There are also three questions in this section concerning the respondent's health status.

There were minor differences in the surveys distributed to the two different groups. Primarily the differences in the surveys arise from the possible differences in prescription drug insurance coverage that could theoretically exist between these two groups. Some members of the group utilizing the TRICARE Senior Pharmacy Program may not have had drug coverage prior to the beginning of the program, or alternately, may have had drug coverage and chose to continue this coverage in addition to the TSPP. For the group that has not utilized the TSPP the survey contained questions about their current insurance coverage for prescription drugs since it likely was the only source of payment for prescription drugs.

Telephone Calls to Retirees

To ensure that the list of reasons for using or not using the TSPP was as complete as possible before pilot testing the survey instrument, the researcher made telephone calls to retirees who were potentially eligible for the TSPP but did not reside in the six-state area being used for the study. The original list of reasons was developed by the researcher by using a theoretical basis and hypothesizing possible responses for use or non-use of the TSPP. The retirees contacted by telephone were the relatives of staff and faculty members at The University of Wisconsin School of Pharmacy. Their names and addresses were forwarded to the researcher after they had been contacted by the staff or faculty member to determine if they wished to have the researcher interview them. A total of six retirees were contacted through this procedure. During the interview with the researcher, it was first determined if they were using the TSPP and what their level of knowledge was concerning the TSPP. After this information was obtained and the TSPP explained in greater detail if needed, the researcher probed for possible reasons why the

retiree did or did not use the TSPP. There were several reasons added to each list by using this technique and it aided the researcher in understanding the thought processes of this group of retirees.

Survey Pre-Test

After the telephone calls to the retirees, the survey instrument was pre-tested to determine if any of the items were confusing or otherwise ambiguous. The survey instrument was reviewed by fellow graduate students and faculty members in the Department of Social and Administrative Sciences at The University of Wisconsin School of Pharmacy. All of these individuals were familiar with mail survey research. Their comments and suggestions were incorporated into the instrument by rewording or otherwise altering any problematic questions.

Survey Administration

The survey was fielded using the methods outlined by Dillman (2000) and proceeded in the following manner. First, a pre-notification postcard was sent to all potential respondents on March 18, 2002. This postcard explained briefly the nature and purpose of the forthcoming survey and asked for the retiree's cooperation in completing it. The postcard was printed on blue heavyweight card stock and featured the School of Pharmacy's return address as well as the signatures in black ink of the researcher and his advisor. A copy of this postcard can be found in Appendix B.

Second, the survey packet was sent to all potential respondents about one week later on March 25, 2002. The survey packet was mailed in a six-by-nine white envelope with the School of Pharmacy's return address. The packet contained a one-page cover letter explaining the purpose of the study and requesting participation. This letter was

printed on color, 8 ½" by 11" School of Pharmacy letterhead and featured the signatures in black ink of the researcher and his advisor. The cover letters sent to the users (Appendix C) and non-users (Appendix D) of the TSPP were slightly different to call attention to their use or non-use of the program, respectively. The packet also contained the survey form for either a user or non-user of the TSPP. The survey form was printed on cream heavyweight paper for users and gray heavyweight paper for non-users so they could be easily differentiated. The survey form was numbered in black ink on the upper right corner of the front page. This number was pre-assigned and unique to each potential respondent so responses to the survey could be tracked. The survey form was folded once (with the cover letter on top) before it was placed in the envelope. A copy of the survey form for users can be found in Appendix E. A copy of the survey form for non-users can be found in Appendix F. The survey packet also contained a postage-paid, white, six-by-nine inch return envelope.

Approximately one week after mailing the survey packet a reminder postcard was mailed to all potential respondents thanking them for their participation if they had completed the survey and asking them to complete it if they had not yet done so. This postcard was mailed on April 1, 2002. It was printed on green heavyweight card stock and featured the School of Pharmacy's return address as well as the signatures in black ink of the researcher and his advisor. A copy of this postcard can be found in Appendix G.

A second survey packet was sent to all potential respondents who had not responded within three weeks of the first mailing of the survey. This survey packet was mailed on April 15, 2002. It contained identical materials as the first mailing with two

exceptions. The cover letter for this mailing was reworded to call attention to the first mailing and the surveys were numbered in blue ink instead of black ink so they could be differentiated from those of the first mailing when they were returned. Again, the cover letters were slightly different for users and non-users of the TSPP. A copy of the cover letter for the second mailing for users can be found in Appendix H. A copy of the cover letter for the second mailing for non-users can be found in Appendix I.

Another reminder postcard was mailed to all potential respondents who had not responded within one week of the second mailing. This reminder postcard was mailed on April 22, 2002. It was identical to the reminder postcard used after the first mailing.

Finally, a non-respondent survey packet was sent to all potential respondents who had not responded to the second mailing of the main survey within three weeks. This survey packet was mailed on May 6, 2002. The survey packet contained a one-page cover letter emphasizing the importance of the research and calling attention to the main mailing of the survey. It also asked for the respondent's participation in this shorter version of the survey. This cover letter was again printed on color, 8 ½" by 11" School of Pharmacy letterhead and featured the signatures in black ink of the researcher and his advisor. For the non-respondent survey the cover letter was identical for users and non-users. A copy of this cover letter can be found in Appendix J. This survey packet also contained a non-respondent survey for either a user or non-user of the TSPP.

The non-respondent survey was an attempt to ensure that the characteristics of respondents to the main mailing reflected the characteristics of all potential respondents. This survey asked primarily the questions from the demographic section of the main mailing survey. However, there were slight differences in the survey for the users and

non-users of the TSPP. The survey form was printed on sky blue heavyweight paper for users and cream heavyweight paper for non-users so they could be easily differentiated. The survey form was numbered in black ink on the upper right corner of the front page. The survey form was folded once (with the cover letter on top) before it was placed in the envelope. A copy of the survey form for users can be found in Appendix K. A copy of the survey form for non-users can be found in Appendix L. The survey packet also contained a postage-paid, white, six-by-nine inch return envelope.

Survey Pilot-Test

The survey was pilot-tested on a sub-sample of 100 retirees from each of the two different groups. The pilot test was fielded in the same manner as the survey main mailing with the exception that only the first three steps of the administration procedure as outlined above were used. The pilot-test was used to identify potential problems with the survey design such as item non-response and survey non-response that could not be identified during the pre-test (Dillman 2000). Pilot-test results were used to guide modifications of the survey instrument and changes to the administration method as needed. No responses from the pilot-test were analyzed with those of the main mailing.

Mailing of Survey Packets to Mis-Classified Respondents

The surveys mailed to all potential respondents contained a question on the first page to verify that they had indeed received the correct form of the survey based on their participation status in the TSPP. This question asked the potential respondent if they had used the TSPP since it started on April 1, 2001. Depending on the response to this initial question, the retiree was instructed to either complete the survey or return the survey so the researcher could send the repondent the correct form. When surveys were returned to

the researcher that showed that the potential respondent had received the incorrect version of the survey, a notation was made in the address database to this effect. A survey packet containing the correct version of the survey (with the respondent's number) and the corresponding cover letter was prepared and mailed to the retiree the next business day. This survey packet also contained a postage-paid, white, six-by-nine inch return envelope.

Questionnaire Design and Variables

Dependent Variable

The dependent variable for this study was the retiree's decision to utilize the TSPP. This was determined prior to mailing the survey by cross-referencing the TSPP prescription claims database with the database of retirees eligible for medical benefits as stated earlier. To make the mailing of the surveys most efficient it was best to determine the retiree's participation status prior to mailing the survey since there were minor differences in the instrument depending on whether they had utilized the TSPP or not. However, there was also a question on the survey to validate that the respondent was completing the correct form of the survey.

Independent Variables

The survey collected information on a retiree's coverage for health care expenditures such as physician visits and prescription drugs. This information was important since it provided a perspective on the type of prescription drug coverage the retiree decided to forego when they chose to participate in the TSPP; or alternatively, what they decided to keep instead of using the TSPP. The information on coverage for physician visits also provides an indication of a retiree's access to health care and

prescription drugs. The surveys contained questions to determine whether the prescription drug coverage information was previous coverage (for TSPP users) or current coverage (for TSPP non-users). This distinction was made because of the possible differences in insurance coverage that were outlined earlier in this section. Also, this information was needed on an individual-level basis to calculate the variables describing changes in insurance premium and out-of-pocket expenses for prescription drugs. Prescription drug utilization information was collected to calculate the out-of-pocket spending on prescriptions for each retiree on an individual-level basis.

Physician Visit and Prescription Drug Insurance Coverage

The information on coverage for physician visits was coded into four discrete levels representing no coverage for physician visit costs, part of physician visit costs paid for, all of physician visit costs paid for and don't know. The information on coverage for prescription medications was coded into three discrete levels representing no coverage for prescriptions, part of prescription cost paid for and all of prescription cost paid for. When performing analyses based on whether or not the respondent had prescription drug coverage, the categories representing part and all of prescription costs paid for were combined. The categories of part of physician visit costs paid for and all of physician visit costs paid for were combined when estimating logit models to increase the power of the model.

Change (Savings) in Insurance Premium Paid

The change in the insurance premium paid by the retiree was calculated using the information provided by the retiree regarding the premium paid for previous insurance and if they had continued that insurance. For retirees that are not using the TSPP, the

change in premium if they had selected TSPP would be the current premium for drug insurance minus zero (the premium for TSPP). For retirees that are using the TSPP, the change in insurance premium paid will be either the premium previously paid or zero, depending on whether the retiree has continued or dropped their previous insurance, respectively. This will yield a continuous variable since the amount of premium paid will vary according to the policy for each retiree.

Length of Previous Prescription Drug Coverage

If respondents reported they had previous prescription drug coverage they were asked to report the length of time that coverage had been in effect. The question was worded so respondents could report this time in either years or months. The length of time reported by the respondents was converted to months to yield a continuous variable reflecting the length of their previous or current prescription drug coverage.

Number of Physician Visits and Hospital Days

Respondents were asked to report the number of times that they went to see a doctor in the past six months and the number of days spent in a hospital in the last year. The length of time for each of these questions was chosen to aid in recall and facilitate comparison with past research. This information was hypothesized to be important because it could give an indication of possible need for prescription drug coverage on the part of the respondent. These two variables were coded as the actual number reported by the respondent yielding continuous variables.

Number of Prescriptions Used

A variable was created from the information provided by the retiree regarding the number of prescription medications they had taken in the last 30 days. This was coded as

the actual number of prescription medications they reported taking yielding a continuous variable.

Change (Savings) in Out-of-Pocket Prescription Drug Spending

This variable represents the differences in out-of-pocket spending for prescription drugs for each retiree by comparing out-of-pocket spending under the TSPP with former coverage (for those using TSPP) and current coverage (for those not using TSPP). For those retirees using TSPP, their out-of-pocket spending for prescription drugs may decrease because of the copayments associated with TSPP, if they had drug insurance before TSPP, and characteristics of that insurance coverage. For retirees not using TSPP, out-of-pocket costs may be less if they keep their current drug insurance coverage instead of using the TSPP.

The change in the retiree's expected out-of-pocket spending for prescription drugs for the past 30 days was calculated using prescription drug use in the past 30 days, the extent of prescription drug coverage and the usual source of prescriptions as reported by the retiree. Prescription drug utilization was measured by asking the respondents to report prescription drug utilization for the past 30 days. The 30-day period was chosen to limit the problem of recall bias from self-report for longer periods of time. The information collected on each medication included the name of the drug, strength of the drug and directions for use. Respondents also were asked to report how much they spent on all prescriptions for themselves in the past 30 days. The extent of drug coverage pertained to information regarding copayments, coinsurance and deductibles for prescription drugs.

Retirees could be classified into one of four different categories depending on their TSPP status and prescription drug insurance status. Table 1 shows how the different information was combined to calculate the change in out-of-pocket spending for each category of retiree. Regardless of how this variable was calculated, the result was a continuous variable.

Following Mott (1995), values were assigned to each prescription the retirees reported using. These values were assigned by using the average wholesale price (AWP) for all branded products and the federal upper limit (FUL) price for all generic products where available. Where a FUL price was not available, the median cost of generic products was used. These prices were assigned using the year 2002 edition of the *Red Book* (Medical Economics, 2002). The *Red Book* is a pharmacy trade reference containing a variety of data including the availability and prices (AWP and/or FUL) for all drug products currently distributed in the United States.

TABLE 1
Schematic Diagram for Calculating Change in Out-of-Pocket Prescription Drug Spending for Different Categories of Retirees

Category of retiree	Out-of-Pocket Spending before TSPP	Out-of-Pocket Spending after TSPP	Change in Out-of-Pocket Spending
Previously uninsured TSPP user	Calculated using the pricing paradigm developed by Mott (1995) described in text	This is the value reported by this category of retirees regarding the amount they spent on prescriptions in the last 30 days	Calculated as the difference between out-of-pocket spending before TSPP and out-of-pocket spending after TSPP
Previously insured TSPP user	Calculated using the pricing paradigm developed by Mott (1995) and/or information on cost-sharing for the retiree's previous prescription drug coverage	This is the value reported by this category of retirees regarding the amount they spent on prescriptions in the last 30 days	Calculated as the difference between out-of-pocket spending before TSPP and out-of-pocket spending after TSPP
Currently uninsured TSPP non-user	This is the value reported by this category of retirees regarding the amount they spent on prescriptions in the last 30 days	Calculated using prescription utilization information regarding brand/generic drugs used, type of pharmacy prescriptions are obtained from and TSPP copayment levels	Calculated as the difference between out-of-pocket spending before TSPP and probable out-of-pocket spending after TSPP
Currently insured TSPP non-user	This is the value reported by this category of retirees regarding the amount they spent on prescriptions in the last 30 days	Calculated using prescription utilization information regarding brand/generic drugs used, type of pharmacy prescriptions are obtained from and TSPP copayment levels	Calculated as the difference between out-of-pocket spending before TSPP and probable out-of-pocket spending after TSPP

Cost per unit was determined by reference to consistent pack sizes (i.e. bottles of 100) because prices differ across pack sizes. For tablets and capsules, cost was based on a pack size of 100. For liquids, cost was computed by reference to the cost of a pint bottle. For metered dose inhalers and other unit-of-use products (e.g. creams, bottles of insulin, etc.) cost was based on the appropriate pack size. In order to compute prescription values the per-unit cost was multiplied by the number of units that would have been consumed during the previous 30 days if the retiree had followed the stated dosing instructions. These values were then summed across all prescriptions used by the retiree in the last 30 days.

Therefore, this dollar amount represents only one measure of value and is not intended to mirror retail price or Federal Supply Schedule costs. Instead this system allows the assignment of a constant metric of economic value to each retiree's prescription drug usage in the past 30 days regardless of where they obtained their prescriptions.

Experience with Mail-order or Veterans Administration Pharmacies

Based on the information provided by the respondent regarding usual source of prescriptions, two variables were created that reflected experience with either a mail-order or Veterans Administration pharmacy. Experience with either type of pharmacy was hypothesized to be associated with the retiree's choice to use or not use the TSPP. A separate variable was created for mail-order pharmacy and Veterans Administration pharmacy use and they were coded as '1' if the retiree reported having used that pharmacy and '0' if the retiree did not report having used that pharmacy, respectively.

Medical Care Preferences

The retiree's attitudes about formal medical care were operationalized in this study as their preference for using formal medical care and prescription drugs instead of self-treatment strategies to treat their illness episodes. A scale developed and validated by Ganther (1999) was used to measure this attitude. The scale consists of eight items, each scored on a five-point Likert type scale ranging from '1' (strongly disagree) to '5' (strongly agree). Two of the items in the scale are worded in a manner that the responses must be reverse coded before being added to the remaining six items of the scale ("I usually like to talk to a doctor when I have a health problem" and "When I have a health problem, I usually contact a doctor right away"). The scores on all the items were added to yield a score for this variable ranging from eight to forty. Higher scores on this item reflect a lower preference for the use of formal medical care.

Pharmacist-Patient Relationship Commitment

The degree of relationship commitment between a respondent and their usual pharmacist was operationalized in this study by using a three-item measure developed and validated by Worley and Schommer (1999). These three items measure the respondent's likelihood of seeking future contact with their usual pharmacist. The items in this measure are each scored on a five-point Likert type scale ranging from '1' (strongly disagree) to '5' (strongly agree). The scores on all the items were added to yield a score for this variable ranging from three to fifteen. Higher scores on this item reflect a higher level of commitment to the pharmacist-patient relationship by the consumer.

Health Status

Health status was assessed using four different measures. The first was a three-item measure developed and validated by Berki et al (1978). This measure asks the respondent about the degree they think about their current and/or future health. Each item response is measured on a five-point Likert type scale. The item scores are then summed for a possible score ranging from 3 to 15. Higher scores on this scale represent higher degrees of health concern.

In the demographic section of the survey there are three questions related to health status. The first asks respondents to rate their perceived health status (compared to others their age) on the five-point E-VG-G-F-P scale. Next, the respondent was asked if they suffer from any of 21 chronic conditions with a space available for the respondent to report an additional condition. The number of chronic conditions was added to form a summary score with a possible range from zero to 22. The diseases in this list were adapted from the Medicare Current Beneficiary Survey (MCBS) and augmented with suggestions from the researcher's major advisor. The third question asked respondents if they have any difficulty performing any of the six activities of daily living (ADLs) comprising the Katz et al. (1963) ADL scale. The number of limitations in ADLs was added to form a summary score with a possible range of zero to six. This value was then categorized so that respondents who reported any limitations in ADLs received a '1' for this measure and all other respondents received a '0'.

Socio-Demographic Factors

Several socio-demographic factors were hypothesized to be important in the retiree's choice to use or not use the TSPP. Information on these socio-demographic factors was collected on the survey form. These factors included:

Age – naturally coded as a continuous variable

Education – coded as five discrete levels representing less than high school, high school graduate, some post high school education, college graduate, or higher

Gender –coded as a '0' for males and '1' for females

Annual household income – coded into nine discrete levels representing less than $5,000/year, $5,000 to $9,999/year, $10,000 to $14,999/year, $15,000 to $24,999/year, $25,000 to $34,999/year, $35,000 to $49,999/year, $50,000 to $64,999/year, $65,000 to $79,999/year, and $80,000 or more per year

Total household assets – coded into five discrete levels representing less than $15,000, $15,001 to $30,000, $30,001 to $50,000, $50,001 to $100,000, and more than $100,000

Race – coded into six discrete levels representing Black (Non-Hispanic), Asian/Pacific Islander, Hispanic, Native American/Alaska Native, White (Non-Hispanic), or 'Other'

Marital status – coded into four discrete levels representing 'married', 'single', 'widowed' or 'divorced/separated'

Employment status – coded into four discrete levels representing 'retired or otherwise not working', 'work 1 to 14 hours per week', 'work 15 to 34 hours per week' or 'work 35 or more hours each week'

The wording for these items was derived from health surveys conducted by the federal government such as the MCBS and the Medical Expenditure Panel Survey as well as from survey forms developed by Ganther (1999) and Cline (2001).

Data Processing and Entry

All survey forms were returned to the School of Pharmacy by first class U.S. mail. This allowed the researcher to identify non-deliverable survey packets and develop a more accurate estimate of the response rate. When the survey forms were received by the researcher they were numbered consecutively in blue ink so they could be identified later for data entry purposes. The number placed on the survey form before mailing was used only to track responses. The number placed on the survey after receipt allowed the

responses to remain anonymous since there was no connection to the respondent's original number except on the survey form itself and therefore no connection to the respondent's name or address.

Data entry and tabulation represent potentially serious sources of error when primary data are used to conduct research. To help minimize the occurrence of this error all data were coded and entered by the researcher. After data entry had been completed, the data were examined using frequency counts for all variables. This allowed the researcher to identify any cases where the values fell outside the expected values. These cases were then verified by referral to the appropriate survey form and if in error they were corrected.

Missing Data

Missing data is another potentially serious problem when conducting research with primary data. This is especially true when multivariate analysis is involved since most analysis programs will serially reject cases if any of the variables involved are missing. This results in the potential problem of reducing the power of the analysis by a substantial amount if many cases are missing values.

For this study there were no cases of missing data for the dependent variable. The retiree's choice to use or not use the TSPP was known before the surveys were mailed and was verified on the first page of the survey form.

Missing data for independent variables for this study were handled in the following manner. If either the gender or age variable was missing when the survey was received, this variable was filled in for that survey by referring back to the address database for that respondent which contained that information. For some variables, such

as previous/current coverage for prescription drugs, it was possible to determine what the respondent's category would have been. For instance, the respondent may not have answered the question that asked specifically about this coverage, but supplied information later in the survey about the specifics of their coverage. For some of the categorical variables, such as income and assets, a category was added to the coding that reflected the respondent did not answer this question. These categories were then used in the subsequent analyses. If the missing data occurred on one question of a multi-item measure, such as the health concern scale or the medical care preferences scale, the respondent's average ranking for the rest of the items on the scale was substituted for the missing value. Finally, for some variables, such as number of prescriptions used in the last 30 days and premium paid for insurance coverage, the mean value for all similar cases was substituted for the missing value. For example, if the respondent did not report the number of prescriptions used in the last 30 days but did report the number of chronic conditions, the mean number of prescriptions for other respondents with the same number of chronic conditions was substituted. Or, alternatively if the respondent did not report their premium paid, the mean premium paid for other respondents with a similar type and source of coverage was substituted for the missing premium.

Data Analyses

Univariate Analyses

Data analysis for this study consisted of a number of different phases including univariate, bivariate, and multivariate phases. The first phase consisted of calculating descriptive statistics for all variables in the data set. This includes calculating proportions

and counts for all categorical variables and means and standard deviations for all continuous variables. These analyses were conducted using the Statistical Package for the Social Sciences (SPSS) version 10.0.

Non-Respondent Analysis

For survey research it is important to determine if there is any non-response bias present in the responses obtained since this may influence the validity of the conclusions from the survey. There are several different methods that can be used. A common method is to compare the early responders to the survey to the late responders on key variables. This usually involves comparing the first 20% of responders to the last 20% of responders, with the assumption that the latter group is more like the non-responders. Another method used is to collect information on non-responders through the use of a shorter version of the original survey. This survey attempts to collect information from the non-responders on variables that may influence their response to the original survey. This method was used for this study.

First, a bivariate analysis was performed between the main survey respondents and the non-respondent survey respondents to determine if there were any differences on the variables collected. The non-respondent survey also asked for possible reasons for non-response to the original survey. These reasons were analyzed to determine why sampled subjects did not respond to the main survey.

Previous research has shown that response to surveys asking for information about prescription drug use is related to health status (Grotzinger 1994). The relationship between response and characteristics of sampled individuals (i.e. sample selection bias) can result in bias in estimated coefficients due to specification error. Selection bias was

tested in the present study by using a modified Heckman procedure that accounts for the dichotomous nature of the dependent variable in the present study (i.e. whether to participate in the TSPP) (Van de Ven 1981).

Evaluation of Multi-Item Measures

To insure that the multi-item measures used in this study actually measured what they were intended to measure they were tested for reliability and validity. The reliability of a measure is the extent to which it measures what it is designed to measure on a consistent basis. At a minimum, a measure must be reliable in order for it to be valid. Validity concerns the degree of accuracy with which an instrument measures what it is supposed to measure. It is commonly discussed using three different categories: Content, criterion and construct. The content and criterion validity of the multi-item measures used in this study were assumed based on their prior use and testing in other studies. Two tests were used to evaluate the reliability and construct validity of the medical care preferences, pharmacist-patient relationship commitment and health concern scales.

First, the internal consistency reliability of each of the scales was assessed. The Cronbach's Coefficient Alpha was used to assess the reliability of the three scales since they were all assumed to be measured on an interval scale. Construct validity of the three scales was measured using factor analysis. Factor analysis can be used to explore two different aspects of the validity of the items: convergent and discriminant. Convergent validity measures the extent that items that should correlate highly with a particular trait do so. Discriminant validity measures how much items from one measure correlate with items from an unrelated measure. The convergent and discriminant validity of each

measure was assessed through a confirmatory factor analysis using PROMAX rotation that involved all three scales simultaneously. All reliability and factor analyses were conducted using 'available case' analysis. The sample sizes available were as noted in the tables in Chapter 4.

Bivariate Analyses

In this phase of the analysis all respondent-level variables were cross-classified by the retiree's decision to utilize the TSPP. The bivariate relationships between the independent variables and the utilization of the TSPP were tested using the Pearson chi-square test of independence for categorical variables and the Student's t-test for continuous variables. All statistical tests will be evaluated at a minimum alpha (Type I error) level of 0.05. These analyses were conducted using SPSS version 10.0.

Multivariate Analyses

A logit model was used as the primary multivariate analysis technique in this study. The model was used to estimate factors associated with participation in the TSPP by the military retirees. It was estimated using the variables from the model of prescription drug plan choice. The statistical significance of the coefficients in the model was evaluated with the t-statistic. The overall fit of the model was assessed using a pseudo r-squared measure ($\sim R^2$). This analysis was conducted using SPSS version 10.0.

After the logit model was estimated using the entire sample of respondents, the sample was split into two groups, those retirees who previously had prescription drug insurance and those who did not. This was done because some of the variables collected in the study were logically valid only for those respondents who previously had prescription drug insurance (i.e., premium paid for prescription drug insurance and length

of experience with prescription drug plan). Splitting the entire sample into two groups allowed these variables to be tested in a multivariate format.

Analysis of Respondent's Reasons for Their Choice

Following the multivariate analysis, the information collected from the respondents concerning their reasons for using or not using the TSPP were analyzed. Respondents were provided a list of reasons for using or not using and asked to report all of the reasons that influenced their decision to use or not use the TSPP. From the reasons selected they then were asked to report the first, second and third most important reasons for their decision. For the analysis, the reasons were ordered by a total importance score and the number of times that each reason was selected. The total importance score for each reason was computed by giving a value of three to each selection that was reported as most important, two to each selection reported as second most important and one to each selection reported as third most important and then summing these values for that reason. Using this method, a higher importance score means a more important reason for the respondents.

First, the reasons were ranked using the entire user or non-user group. After the reasons were ranked for all respondents, the user and non-user groups were divided according to previous prescription insurance status to determine if a difference existed between previously insured users and uninsured users or currently insured non-users and uninsured non-users. The reasons for these four different groups were ranked by total importance score and visually compared for differences. Also, the researcher divided the different reasons for using or not using the TSPP into categories that could influence the retiree's decision. These categories were beneficial in determining if particular groups of

retirees were using the same reasoning for their decision but expressing it in a different way. The categories were: access, benefits, continuity, economic, knowledge, satisfaction and miscellaneous. Table 2 contains a list of the reasons for using or not using the TSPP and their respective category.

The category for most of the reasons was readily apparent based on the wording of the reason. However, two of the reasons on the non-user's version of the survey were placed in categories different from the initial interpretation of their wording. The reason "there are no military facilities close to me" appears initially to belong in the access category. Since a user of the TSPP is not required to use a military facility, a respondent choosing this reason for not using the TSPP is displaying a lack of knowledge of the operation of the TSPP. Therefore, this reason was placed in the knowledge category. Similarly, the reason "the enrollment fee is too high for the TRICARE Senior Pharmacy Program" appears to belong in the economic category. Again, since there is no enrollment fee for the TSPP, a respondent choosing this reason is displaying a lack of knowledge of the TSPP.

TABLE 2
Categories of Reasons for Using or Not Using the
TRICARE Senior Pharmacy Program

Category	User's Survey	Non-User's Survey
Access	I want the convenience of using a mail-order pharmacy	I don't want to use a mail-order pharmacy
	I think there will be a greater variety of prescription medications available to me than with the coverage I had before I started using the TSPP	I think there will be less variety of prescription medications available with the TSPP
	More pharmacies accept the TSPP than the prescription drug coverage I had before	There are not enough pharmacies that accept the TSPP
Benefits	The TSPP offers a wider range of benefits than the prescription drug coverage I had before	I have a wider range of benefits with the prescription drug coverage I currently use
	I want to use all of the military benefits available to me	
Continuity	I was able to continue using the same pharmacy with the TSPP	I don't want to change the pharmacy where I obtain my prescription medication
	I have used a military pharmacy before and want to continue using that pharmacy	I currently use a Veteran's Administration pharmacy
		I don't want to switch prescription drug coverage at this time
Economic	I did not have coverage for prescription medications before I started using the TSPP	I already have coverage for prescription medications
	The co-payment amounts per prescription are less for the TSPP than the coverage I had for prescription medications	The co-payment amounts per prescription are more for the TSPP than the coverage I have for prescription medications

TABLE 2 (cont.)

Category	User's Survey	Non-User's Survey
Economic (cont.)	I use a lot of prescription medications and I need as much insurance coverage as I can get	I do not use any prescription medications
	There is no enrollment fee	
		I don't think I need prescription drug coverage
	The TSPP will pay the amount not covered by my other prescription insurance program	
Knowledge	I live near a military pharmacy but did not know that I could use it until the TSPP started	
		I don't know enough about the TSPP
		I didn't know the TSPP existed
		I think the paperwork to start using the TSPP is too confusing
		There are no military facilities close to me
		The enrollment fee is too high for the TSPP
		I am a spouse of a military retiree and did not think I was covered
Satisfaction	I was not satisfied with the prescription drug coverage that I had before I started using the TSPP	I am satisfied with the prescription drug coverage that I have now
Miscellaneous	Other reason	Other reason
		I don't trust the Department of Defense to run a prescription drug plan

IV. RESULTS

The results of the study will be discussed in this chapter of the dissertation. First the results of the pilot-test procedure will be discussed. This will be followed by descriptions of the respondent sample on the variables gathered in the survey. Next will be a description of the retirees that chose to use the TRICARE Senior Pharmacy Program (TSPP) and those that chose not to use the TSPP. The results of the analysis for non-response bias will then be discussed. Next, the multi-item measures collected in the survey will be evaluated for reliability and validity. The results of the bivariate tests of study hypotheses are then provided. Finally, the results of the multivariate analyses using the logit methods will be discussed. These results are displayed in a series of tables.

Pilot Test Results

Two hundred survey packets were mailed late February 2002 for the pilot test in this study. One hundred were mailed to retirees who were users of the TRICARE Senior Pharmacy Program and one hundred to non-users of the TSPP. The fielding procedure used for these surveys was an abbreviated procedure from that used for the main mailing. There were only three steps involved in this fielding procedure; a pre-notification postcard, the survey packet containing a cover letter, the survey and a postage-paid envelope, and a follow-up postcard (see Appendices B through G for facsimiles of the documents used in the pilot test). The survey methodology and the mailing pieces are described in detail in Chapter 3 of this document. Each of the mailings for the pilot test were separated in time by about one week.

An overall useable response rate of 53.1% (95/179) was obtained in the pilot test (18 surveys were not deliverable and three of the retirees were deceased). The response rate for the users of the TSPP was higher than that for the non-users; 63.8% (67/105) versus 37.8% (28/74). This response rate was deemed to be adequate, particularly since the planned fielding procedure for the main mailing was to have five steps (an additional mailing of the survey packet and follow-up postcard) that would increase the response rate. Although all of the retirees that were deceased or had undeliverable addresses were from the group of non-users, it was determined that this problem could not be easily solved since the only readily available source of address information for these retirees was the DOD database, and the decision was made to proceed with the sampling frame as sent from the DOD.

The responses to the pilot test were reviewed for inappropriate responses or individual item non-response to determine if any changes needed to be made to the survey instrument. Some minor changes were made to the survey forms. Specifically, there were four changes made to the survey. First, there was a question deleted pertaining to the type of plan (individual or family) the retiree may have had for prescription drug insurance. There was a high percentage of non-response on this item and therefore the researcher determined that information from this question would not be used in future analyses. Second, the order of the questions in the section on medical care/prescription drug insurance was re-arranged to aid the flow of this section and to help the retiree in their thought process in answering the questions. Third, the wording of some questions was changed to make it clear that the question was seeking responses on an individual-level basis rather than a family-level basis or that a question was seeking a specific date instead of a general timeframe. Fourth, a question was added to the users version of the survey to aid in determining how the monthly use of prescriptions may have changed since the retiree began using the TSPP.

After the modifications were made to the survey forms, they were mailed to a sample of 2000 Medicare-eligible military retirees residing in a six-state area (Illinois, Indiana, Iowa, Michigan, Minnesota and Wisconsin) in March 2002. None of the responses from the pilot test were analyzed with those from the main mailing.

Main Survey Mailing Results

Survey Response Rate and Study Sample

The main mailing for this study took place in late March of 2002. Two thousand surveys were mailed during the initial mailing; 1000 to retirees who were users of the

TSPP and 1000 to retirees who had not used the TSPP. Three weeks after mailing the initial survey packet, a second survey packet was mailed to those retirees from whom a response had not yet been received. The results of the mailings for this study are summarized in Table 3. Of the 2000 surveys mailed, 269 of the retirees were either deceased or had undeliverable addresses for various reasons. Additionally, there was a net total of 77 retirees who initially received the wrong version of the survey (see Table 4) and returned it so they could be sent the correct version. Of the 1731 surveys assumed deliverable, a total of 1083 useable responses were returned, for an adjusted response rate of 62.6% overall. This response rate was slightly higher than that obtained from the pilot test, likely due to the additional mailing to those retirees who had not responded after three weeks. Fourteen surveys were returned but were determined to be unuseable because either the majority of the survey was left blank or the spouse of the retiree to whom it was addressed completed the survey. Table 3 also shows the response rate by user and non-user category. The response rate was higher for the user category when compared to the non-user category.

TABLE 3
Study response rate description

	All respondents	Users	Non-users
Surveys mailed	2000	1000	1000
Adjustments to sample			
Moved and new address not in sample area	3	2	1
Undeliverable	134	15	119
Deceased	123	15	108
Not community dwelling	9	3	6
Net addition (subtraction) due to wrong survey[1]		77	(77)
Adjusted sample	1731	1042	689
Responses	1097	766	331
Useable responses	1083	757	326
Adjusted response rate	62.6%	72.6%	47.3%
Statistics for 1st mailing			
Responses	952	679	273
Useable responses	942	673	269
Adjusted response rate	54.4%	64.6%	39.0%
Statistics for 2nd mailing			
Surveys mailed[2]	982	420	562
Responses	145	87	58
Useable responses	141	84	57
Adjusted response rate	14.4%	20.0%	10.1%
Statistics for non-respondent mailing			
Surveys mailed[3]	656	274	382
Responses	101	62	39
Useable responses	98	62	36
Adjusted response rate	14.9%	22.6%	9.4%

[1]See Table 4 for an explanation of how this figure was derived.
[2]The number of surveys mailed for the second mailing is more than the adjusted sample minus the number of responses from the first mailing due to receipt of responses from the first mailing after the second mailing date.
[3]The number of surveys mailed for the non-respondent mailing is more than the adjusted sample minus the number of responses from the first and second mailings due to receipt of responses from the first and second mailings after the non-respondent mailing date.

TABLE 4
Agreement of User vs. Non-user categories

		Department of Defense reported	
		User	Non-user
Respondent Reported	User	698	101
	Non-user	24	321
	Total	722	422

Note: The difference between the cells where there is disagreement in classification between the respondent and the Department of Defense (101 – 24 = 77 cases) is the net addition (subtraction) due to wrong survey in Table 3. The response rate for these cases is 78 of 125 overall for a 62.4% response rate; 68 of 101 users for a 67.3% response rate; and 10 of 24 non-users for a 41.7% response rate.

In order to assess the representativeness of the respondent sample, it was compared to the survey sample and the entire population on three variables. These variables were age, gender and state of residency and were chosen because the DOD was able to supply this information for the survey sample and the population as a whole. This information is presented in Table 5. The respondent sample appears to compare well on the age and state of residency to the population as a whole, but the gender breakdown of the respondent sample appears to have a higher proportion of males. An explanation for this can be seen in Table 6. This table shows that both the survey and respondent sample are representative of the gender proportions present in each of these groups in the population. However, since the researcher had asked for an equal number of users and non-users in the survey sample, this inadvertently skewed the gender proportions present in the survey sample received away from those present in the population in the six-state area.

A summary of the overall respondent sample on demographic characteristics is in Table 7. This table shows that overall the average age of the respondents was approximately 73 years. The majority of the respondents was male (55.5%), married (74.3%), and had at least some college education (56.9%). Over 85 percent of the respondents were truly retired. Overall, more respondents reported an income above $35,000 and assets greater than $50,000 than those below these figures. However, these proportions must be interpreted with caution since almost one-fifth (18.7%) and more than one-quarter (26.1%) of the respondents did not wish to disclose either their income or their assets, respectively.

TABLE 5

Comparison of the respondents on the main mailing to the entire sample and the population in the six-state area

Variable	Respondent Sample	Study Sample	Population
		Mean (SD)	
Age	73.08 (5.99)	74.00 (6.39)	73.38
		N (%)[a]	
Gender			
Male	601 (55.5)	1071 (53.6)	41,280 (45.2)
Female	482 (44.5)	929 (46.5)	50,012 (54.8)
Residency State			
Iowa	116 (10.6)	196 (9.8)	8,048 (8.8)
Illinois	273 (24.9)	553 (27.7)	23,567 (25.8)
Indiana	163 (14.9)	319 (16.0)	15,770 (17.2)
Michigan	203 (18.5)	385 (19.3)	17,779 (19.4)
Minnesota	148 (13.5)	246 (12.3)	12,631 (13.8)
Wisconsin	194 (17.7)	301 (15.1)	13,710 (15.0)

a = All percentages are column percentages

TABLE 6

Gender characteristics of respondents on the main mailing, the entire sample and the population in the six-state area by User vs. Non-user category

	Respondent Sample	Study Sample	Population
	N (%)[a]		%
Users			
Male	376 (49.7)	467 (46.7)	47.1
Female	381 (50.3)	533 (53.3)	52.9
Non-users			
Male	225 (69.0)	604 (60.4)	60.0
Female	101 (31.0)	396 (39.6)	40.0

a = All percentages are column percentages

TABLE 7
Demographic characteristics of respondent sample
(n = 1083)

Variable	N (%)	Mean (SD)
Age		73.08 (5.99)
Gender		
Male	601 (55.5)	
Female	482 (44.5)	
Ethnicity		
White	993 (91.7)	
Non-White	54 (5.0)	
Missing	36 (3.3)	
Marital Status		
Married	805 (74.3)	
Single	24 (2.2)	
Widowed	199 (18.4)	
Divorced/Separated	31 (2.9)	
Missing	24 (2.2)	
Education[1]		
Less than High School	58 (5.4)	
High School degree	384 (35.5)	
Some College	334 (30.8)	
College degree	163 (15.1)	
Post graduate degree	119 (11.0)	
Missing	25 (2.3)	
Annual Household Income[1]		
Less than $35,000	413 (38.2)	
$35,000 or more	467 (43.2)	
Missing	203 (18.7)	
Total Liquid Assets		
Less than $50,000	327 (30.2)	
$50,000 or more	473 (43.7)	
Missing	283 (26.1)	
Employment Status[1]		
Retired or otherwise not working	928 (85.7)	
Work 1 to 14 hours per week	45 (4.2)	
Work 15 to 34 hours per week	45 (4.2)	
Work 35 or more hours per week	40 (3.7)	
Missing	25 (2.3)	

[1]Adds to more than 100 percent due to rounding.

Table 8 is a description of the overall respondent sample for the four different health status variables that were collected in the survey. On average the respondents reported the presence of greater than three chronic diseases, but only 15% reported that they had any limitations in their activities of daily living. Approximately one-fifth (19.0%) perceived their health status as either fair or poor. The average score on the health concern scale was 6.83, signifying that these retirees are in the upper part of the scale when measuring the concern for their health.

A description of all of the respondents on insurance variables is contained in Table 9. A significant point from Table 9 is that a main source of health and prescription drug insurance for this group is an employer or former employer, with about one-third (30.3%) using this source alone for their health insurance and almost one-half (45.1%) using this source alone for their prescription drug insurance. Also from Table 9, the average amount of time that respondents had their previous/current prescription drug insurance is about 15 years.

Table 10 contains a description of the various access to care variables collected in the survey for all of the respondents. Overall the respondents report having seen a physician about four times in the past six months with about one-quarter (24.7%) having seen the physician five or more times in the past six months. The average number of prescription drugs used in the past 30 days is greater than four (4.58), and more than one-fifth (22.1%) are taking seven or more prescription drugs. Only 6.5% of the respondents have not taken any prescription drugs in the past 30 days. Almost three-fourths (72.9%) of the respondents have not spent a day in the hospital in the last year; the average number of days in the hospital in the last year is slightly more than two (2.13).

TABLE 8

Description of respondent sample on health status variables
(n = 1083)

Variable	N (%)	Mean (SD)
Self-Rated Health Status[1]		
Poor	43 (4.0)	
Fair	162 (15.0)	
Good	392 (36.2)	
Very Good	337 (31.1)	
Excellent	130 (12.0)	
Missing	19 (1.8)	
Any Limitation in Activities of Daily Living (ADLs)		
Yes	163 (15.0)	
No	904 (83.5)	
Missing	16 (1.5)	
Number of Reported Chronic Conditions		3.55 (2.17)
None	48 (4.4)	
1-2	311 (28.7)	
3-4	418 (38.6)	
5 or more	289 (26.7)	
Missing	17 (1.6)	
Score on Health Concern Scale[2]		6.83 (2.06)
Missing	64 (5.9)	

[1]Adds to more than 100 percent due to rounding.

[2]The score on the health concern scale is derived from adding the score for two of the items on the Berki, etal scale which were measured on a 5-point Likert scale. The possible range for the score is from 2 to 10. A higher score means greater concern for their health by the respondent.

TABLE 9
Description of respondent sample on insurance characteristics
(n = 1083)

Variable	N (%)	Mean (SD)
Enrollment in Medicare		
Not enrolled	13 (1.2)	
Enrolled in Part A only	61 (5.6)	
Enrolled in Parts A and B	997 (92.1)	
Missing	12 (1.1)	
Insurance for Physician Visits		
None	116 (10.7)	
Part of visit paid for	524 (48.4)	
All of visit paid for	419 (38.7)	
Don't know	12 (1.1)	
Missing	12 (1.1)	
Source of supplemental health insurance plan		
Employer or former employer alone	286 (30.3)	
Medicaid alone	8 (0.8)	
Veterans Administration alone	83 (8.8)	
Medigap plan alone	269 (28.5)	
Medicare HMO alone	43 (4.6)	
Other source alone	44 (4.7)	
2 different sources[1]	182 (19.3)	
3 different sources[2]	15 (1.6)	
Missing	13 (1.4)	
Insurance for Prescription Drugs		
None	437 (40.4)	
Part of prescription drug costs paid for	596 (55.0)	
All of prescription drug costs paid for	43 (4.0)	
Missing	7 (0.6)	
Source of prescription drug insurance		
Employer or former employer alone	288 (45.1)	
Medicaid alone	9 (1.4)	
Veterans Administration alone	139 (21.8)	
Medigap plan alone	71 (11.1)	
Medicare HMO alone	19 (3.0)	
Other source alone	27 (4.2)	
2 different sources[3]	64 (10.0)	
3 different sources[4]	2 (0.3)	
Missing	20 (3.1)	

TABLE 9 (cont.)

Variable	N (%)	Mean (SD)
Types of prescription drug insurance		
Co-payment alone	326 (54.7)	
Co-insurance alone	76 (12.8)	
Deductible alone	15 (2.5)	
Combination of co-payment and co-insurance	34 (5.7)	
Combination of co-payment, co-insurance and deductible	13 (2.2)	
Combination of deductible and co-payment	33 (5.5)	
Combination of deductible and co-insurance	42 (7.0)	
Other type	10 (1.7)	
Missing	47 (7.9)	
Monthly premium paid for health insurance that included prescription drug coverage		$101.62 (113.94)
Missing	17 (2.3)	
Length (in months) of prescription drug coverage		179.61 (131.41)
Missing	140 (26.0)	

[1]The three most common combinations for two different sources of supplemental health insurance were: Medigap plan plus other source – 33
Employer plus Veteran's Administration – 29
Employer plus Medicaid – 18

[2]The three most common combinations for three different sources of supplemental health insurance were: Employer plus Medicaid plus Veteran's Administration – 8
Employer plus Veteran's Administration plus Medicare HMO – 2
Medicaid plus Veteran's Administration plus Medigap plan – 2

[3]The two most common combinations for two different sources of prescription drug insurance were: Employer plus Veteran's Administration – 26
Employer plus Medicaid – 10

[4]The two cases for three different sources of prescription drug insurance were:
Employer plus Medicaid plus Veteran's Administration – 1
Employer plus Veterans Administration plus Medigap plan – 1

TABLE 10
Description of respondent sample on access to care indicators
(n = 1083)

Variable	N (%)	Mean (SD)
Number of physician visits in past 6 months		4.02 (5.61)
None	73 (6.7)	
One	176 (16.3)	
Two	238 (22.0)	
3-4	293 (27.1)	
5 or more	268 (24.7)	
Missing	35 (3.2)	
Number of days in a hospital in the last year		2.13 (8.57)
None	789 (72.9)	
1-4	136 (12.5)	
5 or more	133 (12.3)	
Missing	25 (2.3)	
Number of prescriptions used in previous 30 days[1]		4.58 (3.46)
None	70 (6.5)	
1-2	245 (22.6)	
3-4	301 (27.8)	
5-6	222 (20.5)	
7 or more	239 (22.1)	
Missing	6 (0.6)	
Out-of-pocket expense for prescriptions in previous 30 days		$32.15 (46.95)
Missing	3 (0.3)	
Score on medical care preferences scale[2]		20.31 (6.29)
Missing	74 (6.8)	
Score on pharmacist-patient relationship commitment scale[3]		11.58 (2.50)
Missing	83 (7.7)	

[1]Adds to more than 100 percent due to rounding.

[2]The score on the medical care preferences scale is derived from adding the score for each of the eight individual items on the Ganther scale which were measured on a 5-point Likert scale. Two of the items on the scale were reversed before adding. The possible range for the score is from 8 to 40. A higher score means a lower preference for formal medical care.

[3]The score on the pharmacist-patient relationship commitment scale is derived from adding the score for each of the three individual items on the Worley and Schommer scale which were measured on a 5-point Likert scale. The possible range for the score is from 3 to 15. A higher score means a greater degree of commitment to the relationship by the respondent.

Estimation of Non-Response Bias

The next phase of data analysis was determining if non-response bias was present in the respondent sample. Non-response bias can occur when the responses obtained from the individuals who responded to the survey are significantly different from what would have been obtained if there had been complete participation by all of the individuals in the survey sample. First the main mailing respondents were compared to the non-respondent respondents for all of the variables that were collected in the non-respondent survey. This is shown in Table 11. The non-respondent respondents are significantly different from the main mailing respondents on the number of reported chronic conditions (see note in table) and ethnicity. Table 12 shows the reasons that non-respondents chose not to respond to the main mailing of the survey.

Next, a modified Heckman procedure was used to detect if non-response bias was present in the respondent sample. The procedure was conducted using all available respondents from the main mailing and non-respondent mailing of the survey. It showed that the two equations were independent. The results from the Heckman procedure using all available respondents were interpreted to mean that non-response bias was not present in the respondent sample and the rest of the data analyses could proceed as planned with no adjustment for non-response bias. The researcher considered analyzing the user and non-user respondents separately to determine if there was any non-response bias present in these groups. However, after dividing the non-respondent respondents into the user and non-user groups there were only 39 cases left in the non-user group, which is not enough to perform an adequate analysis.

TABLE 11
Comparison between Main Mailing and Non-Respondent Respondents

Variable	Main mailing respondents (N=1083)	Non-respondent respondents (N=98)	
	Mean (SD)		T-score (df)
Age	73.08 (5.99)	73.40 (6.18)	0.61 (1179)
Monthly premium paid for health insurance that included prescription drug coverage	$101.62 (113.94)	$78.48 (107.85)	0.18 (666)
Out-of-pocket expense on prescriptions in previous 30 days	$32.15 (46.95)	$33.81 (73.40)	0.76 (1166)
Number of days in a hospital in the last year	2.13 (8.47)	2.21 (6.16)	0.93 (1179)
Number of prescriptions used in previous 30 days	4.58 (3.46)	4.08 (3.74)	0.18 (1171)
Number of Reported Chronic Conditions[1]	3.55 (2.15)	2.48 (2.25)	0.00* (1179)
	N (%)[a]		Chi-square (df)[b]
Gender			
Male	601 (55.5)	51 (52.0)	0.43 (1)
Female	482 (44.5)	47 (48.0)	
Ethnicity			
White	993 (91.7)	85 (86.7)	10.69* (1)
Non-White	54 (5.0)	13 (13.3)	
Missing	36 (3.3)	0 (0.0)	
Marital Status			
Married	805 (74.3)	68 (69.4)	4.03 (3)
Single	24 (2.2)	2 (2.0)	
Widowed	199 (18.4)	22 (22.4)	
Divorced/Separated	31 (2.9)	6 (6.1)	
Missing	24 (2.2)	0 (0.0)	
Education			
Less than High School	58 (5.4)	10 (10.2)	4.15 (4)
High School degree	384 (35.5)	32 (32.7)	
Some College	334 (30.8)	29 (29.6)	
College degree	163 (15.1)	17 (17.3)	
Post graduate degree	119 (11.0)	10 (10.2)	
Missing	25 (2.3)	0 (0.0)	

TABLE 11 (cont.)

Variable	N (%)[a]		Chi-square (df)[b]
Self-Rated Health Status			
Poor	43 (4.0)	6 (6.1)	4.61 (4)
Fair	162 (15.0)	13 (13.3)	
Good	392 (36.2)	35 (35.7)	
Very Good	337 (31.1)	26 (26.5)	
Excellent	130 (12.0)	18 (18.4)	
Missing	19 (1.8)	0 (0.0)	
Any Limitation in Activities of Daily Living (ADLs)			
Yes	163 (15.1)	16 (16.3)	0.08 (1)
No	904 (83.5)	82 (83.7)	
Missing	16 (1.5)	0 (0.0)	
Insurance for Prescription Drugs			
None	437 (40.4)	39 (42.3)	0.11 (1)
All or part of prescription drug costs paid for	639 (59.0)	53 (54.1)	
Missing	7 (0.6)	6 (6.1)	

[1]The difference noted in reported number of chronic conditions between non-respondent respondents and main mailing respondents may be due to a difference between the main mailing survey and the non-respondent survey in how the chronic conditions were presented. The wording that appears in the non-respondent survey was used for the pilot-test, but changed due to confusion on the part of the respondents. This wording change was inadvertently missed when the non-respondent survey was prepared. It was noted during the pilot-test that respondents were not checking the 'hardening of the arteries (arteriosclerosis)' condition, even though they were taking medication for that condition. This could account for the difference between the main mailing respondents and the non-respondent respondents on the number of reported chronic conditions.

*=$p<0.05$, two-tailed

a = All percentages are column percentages

b = The missing category was not included in the Chi-square analyses

TABLE 12

Reasons for not responding to the main mailing of the survey[1]

Reason	Percentage of respondents selecting reason[2]	Number of times reason selected	Ranking by number of times selected
Do not remember receiving the first survey	18.7	17	1
Do not usually respond to surveys	17.6	16	2
Thought the questions on the first survey were too intrusive	12.1	11	3
Thought that the first survey did not apply to me	9.9	9	4
Did not have enough time to participate in the first survey	7.7	7	T-5
Afraid name would be added to junkmail mailing list	7.7	7	T-5
Believe I have returned the first survey to you	6.6	6	7
Did not understand the questions on the first survey	5.5	5	T-8
Other reason	5.5	5	T-8
Thought the first survey was too long to complete	4.4	4	T-10
Not interested in the TRICARE Senior Pharmacy Program	4.4	4	T-10

[1]The question asked on the non-respondent survey was, "What was your primary reason for not responding to the first survey on the TRICARE Senior Pharmacy Program?"

[2]Adds to more than 100 percent due to rounding.

Evaluations of Multi-Item Measures

In addition to testing for non-response bias, the multi-item measures used in this study were evaluated for reliability and validity before proceeding with the bivariate and multivariate analyses. This was done to verify that these measures were valid enough to be included in further analyses. These analyses were conducted using 'available cases', so each analysis was conducted with less than 1083 cases. To begin this evaluation, all multi-item scales were tested for reliability. This consisted of an examination of the corrected item-to-total correlation for the items in each scale and the Cronbach coefficient alpha for each scale as a whole.

The reliability analysis revealed that the third question of the health concern scale (I am satisfied with my ability to count on good health) was slightly negatively correlated with the other two items in this scale and the researcher thought this could be the reason for the low overall scale reliability. This item was dropped from this scale for further analyses. The final reliability results for the three multi-item scales, along with other descriptive statistics, are found in Table 13. These results show acceptable reliability for each of the measures. Therefore, a score for each respondent was computed for the medical care preferences scale, the pharmacist-patient relationship commitment scale and the health concern scale by summing the scores on each individual item of that scale.

TABLE 13
Reliability and Summary Statistics for Purified Multi-Item Scales
(N as noted in Table)

Scale	Items[a]	Reliability	Mean	Standard Deviation	Per-Item Mean
Medical Care Preferences (n=1009)	8/8	0.85[b]	20.31[d]	6.29	2.54
Pharmacist-Patient Relationship Commitment (n=1000)	3/3	0.73[b]	11.58[d]	2.50	3.86
Health Concern (n=1019)	3/2	0.84[c]	6.83[d]	2.06	3.41

a = Items in original measure/ items in final measure
b = Cronbach coefficient alpha
c = Pearson correlation
d = Items measured by 1 = Strongly Disagree to 5 = Strongly Agree

Bivariate Analyses

The next step in data analysis was cross-tabulating the variables by the retiree's decision to use or not use the TSPP. This aids in distinguishing important differences between the users and non-users and may give some indication of variables that are important in their choice decision. These variables can then be examined further in a multivariate model. The overall bivariate relationship between each variable and the retiree's choice decision were tested with either the Pearson chi-square test or the Student's t-test as appropriate to determine which differences were significant between the two groups.

Table 14 shows a comparison between the users and the non-users of the TSPP on the demographic variables collected in the survey instrument. The retirees in the different groups are roughly the same age. Non-users of the TSPP are more likely to be male, non-white, divorced or separated versus married, working to some extent, and have assets greater than $50,000 when compared to users of the TSPP.

The health status variables collected in the survey instrument are compared between the users and non-users of the TSPP in Table 15. Non-users perceive themselves to be in better health (as reflected in the self-rating of their health status), and they report fewer chronic conditions.

TABLE 14

A comparison between Users and Non-users of the TRICARE Senior Pharmacy Program on demographic variables

Variable	Users	Non-users	
	Mean (SD)		T-score (df)
Age	73.18 (5.94)	72.83 (6.10)	0.90 (1081)
	N (%)[a]		Chi-square (df)[b]
Gender			
Male	376 (49.7)	225 (69.0)	34.54* (1)
Female	381 (50.3)	101 (31.0)	
Ethnicity			
White	700 (92.5)	293 (89.9)	5.41* (1)
Non-White	30 (4.0)	24 (7.4)	
Missing	27 (3.6)	9 (2.8)	
Marital Status			
Married	572 (75.6)	233 (71.5)	9.67* (3)
Single	16 (2.1)	8 (2.5)	
Widowed	138 (18.2)	61 (18.7)	
Divorced/Separated	14 (1.8)	17 (5.2)	
Missing	17 (2.2)	7 (2.1)	
Education			
Less than High School	43 (5.7)	15 (4.6)	3.72 (4)
High School degree	274 (36.2)	110 (33.7)	
Some College	236 (31.2)	98 (30.1)	
College degree	109 (14.4)	54 (16.6)	
Post graduate degree	76 (10.0)	43 (13.2)	
Missing	19 (2.5)	6 (1.8)	
Annual Household Income			
Less than $35,000	295 (39.0)	118 (36.2)	1.15 (1)
$35,000 or more	318 (42.0)	149 (45.7)	
Missing	144 (19.0)	59 (18.1)	
Total Liquid Assets			
Less than $50,000	242 (32.04)	85 (26.1)	4.75* (1)
$50,000 or more	316 (41.7)	157 (48.2)	
Missing	199 (26.3)	84 (25.8)	

TABLE 14 (cont.)

	N (%)[a]		Chi-square (df)[b]
Employment Status			
Retired or otherwise not working	666 (88.0)	262 (80.4)	21.20* (3)
Work 1 to 14 hours per week	27 (3.6)	18 (5.5)	
Work 15 to 34 hours per week	29 (3.8)	16 (4.9)	
Work 35 or more hours per week	16 (2.1)	24 (7.4)	
Missing	19 (2.5)	6 (1.8)	

*=$p<0.05$, two-tailed

a = All percentages are column percentages

b = The missing category was not included in the Chi-square analyses

TABLE 15

A comparison between Users and Non-users of the TRICARE Senior Pharmacy Program on health status variables

Variable	Users	Non-users	T-score (df)
	Mean (SD)		
Score on health concern scale	6.81 (2.02)	6.87 (2.15)	-0.44 (1017)
Number of reported chronic conditions	3.71 (2.21)	3.16 (2.02)	3.86* (1064)
	N (%)[a]		Chi-square (df)[b]
Self-Rated Health Status			
Poor	34 (4.5)	9 (2.8)	10.09* (4)
Fair	116 (15.3)	46 (14.1)	
Good	288 (38.0)	104 (31.9)	
Very Good	229 (30.3)	108 (33.1)	
Excellent	79 (10.4)	51 (15.6)	
Missing	11 (1.5)	8 (2.5)	
Any Limitation in Activities of Daily Living (ADLs)			
Yes	110 (14.5)	53 (16.3)	0.68 (1)
No	639 (84.4)	265 (81.3)	
Missing	8 (1.1)	8 (2.5)	

*=$p<0.05$, two-tailed

a = All percentages are column percentages

b = The missing category was not included in the Chi-square analyses

A comparison between users and non-users on the different insurance characteristics collected in the survey instrument is presented in Table 16. The most striking difference from this table is that two of the three prescription drug insurance characteristics were significantly different between the two groups. The group of users of the TSPP were less likely to have coverage for prescription drugs before the TSPP and were less likely to have coverage from an employer or former employer.

Table 17 is a comparison between the users and non-users of the TSPP on the access to care indicators from the survey instrument. The non-users reported fewer physician visits in the past six months and fewer prescription drugs used in the previous 30 days relative to users of the TSPP. It is interesting to note, however, that even though the users are using more prescription drugs, they are paying less out of pocket for those prescriptions. This may be an effect of using the TSPP for prescription drug coverage.

After conducting the analyses for the tables comparing the user and non-user groups, the researcher tested the hypotheses from Chapter 2 in a bivariate format before proceeding to multivariate hypothesis testing, since many of the analyses that needed to be performed had already been conducted. The hypotheses were tested using the Chi-square goodness-of-fit statistic or the T-statistic as appropriate.

TABLE 16

A comparison between Users and Non-users of the TRICARE Senior Pharmacy Program on insurance characteristics

Variable	Users	Non-users	
	Mean (SD)		T-score (df)
Premium paid for health insurance that included prescription drug coverage	$109.90 (112.31)	$90.47 (115.63)	2.12* (620)
Length (in months) of prescription drug coverage	176.02 (113.13)	184.52 (120.08)	-0.91 (497)
	N (%)[a]		Chi-square (df)[b]
Enrollment in Medicare			
Not enrolled	2 (0.3)	11 (3.4)	63.45* (2)
Enrolled in Part A only	20 (2.6)	41 (12.6)	
Enrolled in Parts A and B	729 (96.3)	268 (82.2)	
Missing	6 (0.8)	6 (1.8)	
Insurance for Physician Visits			
None	82 (10.8)	34 (10.4)	1.12 (3)
Part of visit paid for	361 (47.7)	163 (50.0)	
All of visit paid for	296 (39.1)	123 (37.7)	
Don't know	7 (0.9)	5 (1.5)	
Missing	11 (1.5)	1 (0.3)	
Source of supplemental health insurance plan			
Employer or former employer alone	154 (23.4)	132 (46.2)	113.73* (7)
Medicaid alone	7 (1.1)	1 (0.3)	
Veterans Administration alone	46 (7.0)	37 (12.9)	
Medigap plan alone	247 (37.6)	22 (7.7)	
Medicare HMO alone	37 (5.6)	6 (2.1)	
Other source alone	30 (4.6)	14 (4.9)	
2 different sources	118 (18.0)	64 (22.4)	
3 different sources	9 (1.4)	6 (2.1)	
Missing	9 (1.4)	4 (1.4)	

TABLE 16 (cont.)

Variable	N (%)[a]		Chi-square (df)[b]
Insurance for Prescription Drugs			
None	383 (50.6)	54 (16.6)	119.46* (2)
Part of prescription drug costs paid for	353 (46.6)	243 (74.5)	
All of prescription drug costs paid for	16 (2.1)	27 (8.3)	
Missing	5 (0.7)	2 (0.6)	
Source of prescription drug insurance			
Employer or former employer alone	137 (37.1)	151 (55.9)	31.34* (7)
Medicaid alone	7 (1.9)	2 (0.7)	
Veterans Administration alone	86 (23.3)	53 (19.6)	
Medigap plan alone	55 (14.9)	16 (5.9)	
Medicare HMO alone	14 (3.8)	5 (1.9)	
Other source alone	20 (5.4)	7 (2.6)	
2 different sources	34 (9.2)	30 (11.1)	
3 different sources	1 (0.3)	1 (0.4)	
Missing	15 (4.1)	5 (1.9)	
Types of prescription drug insurance			
Co-payment alone	178 (50.4)	148 (60.9)	11.25 (7)
Co-insurance alone	48 (13.6)	28 (11.5)	
Deductible alone	12 (3.4)	3 (1.2)	
Combination of co-payment and co-insurance	17 (4.8)	17 (7.0)	
Combination of co-payment, co-insurance and deductible	7 (2.0)	6 (2.5)	
Combination of deductible and co-payment	19 (5.4)	14 (5.8)	
Combination of deductible and co-insurance	31 (8.8)	11 (4.5)	
Other type	7 (2.0)	3 (1.2)	
Missing	34 (9.6)	13 (5.3)	

*=$p<0.05$, two-tailed

a = All percentages are column percentages

b = The missing category was not included in the Chi-square analyses

TABLE 17

A comparison between Users and Non-users of the TRICARE Senior Pharmacy Program on access to care indicators

Variable	Users	Non-users	T-score (df)
	Mean (SD)		
Number of physician visits in past 6 months	4.28 (5.79)	3.42 (5.12)	2.27* (1046)
Number of days in a hospital in the last year	2.00 (7.26)	2.44 (11.05)	-0.75 (1056)
Number of prescriptions used in previous 30 days	4.95 (3.56)	3.71 (3.03)	-5.46* (1075)
Out-of-pocket expense for prescriptions in previous 30 days	$28.11 (35.45)	$41.61 (65.64)	3.49* (404)
Score on medical care preferences scale	20.24 (6.20)	20.47 (6.51)	-0.53 (1007)
Score on pharmacist-patient relationship commitment scale	11.72 (2.38)	11.24 (2.75)	2.61* (481)
	N (%)[a]		
Usual source of prescriptions before using the TRICARE Senior Pharmacy Program			
Chain pharmacy only	189 (25.0)		
Independent pharmacy only	83 (11.0)		
Clinic pharmacy only	14 (1.8)		
Mail order pharmacy only	22 (2.9)		
Veterans Administration pharmacy only	16 (2.1)		
Military Medical Treatment Facility pharmacy only	106 (14.0)		
Other type of pharmacy only	3 (0.4)		
No pharmacy utilized	2 (0.3)		
2 different pharmacies	240 (31.7)		
3 different pharmacies	49 (6.5)		
4 different pharmacies	14 (1.8)		
Missing	19 (2.5)		

TABLE 17 (cont.)

Variable	Mean (SD)	
Miles traveled to a Military Medical Treatment Facility pharmacy for all respondents using that source	81 (94)	
Missing	50 (17.5)	
Miles traveled to a Military Medical Treatment Facility pharmacy for respondents using only that source	65 (66)	
Missing	26 (24.5)	
Usual source of prescriptions after TSPP	N (%)[a]	
Chain pharmacy only	174 (23.0)	88 (27.0)
Independent pharmacy only	68 (9.0)	34 (10.4)
Clinic pharmacy only	9 (1.2)	12 (3.7)
Mail order pharmacy only	72 (9.5)	14 (4.3)
Veterans Administration pharmacy only	9 (1.2)	14 (4.3)
Military Medical Treatment Facility pharmacy only	57 (7.5)	0 (0.0)
Other type of pharmacy only	2 (0.3)	3 (0.9)
No pharmacy utilized	16 (2.1)	53 (16.3)
2 different pharmacies	266 (35.1)	83 (25.5)
3 different pharmacies	64 (8.5)	5 (1.5)
4 different pharmacies	10 (1.3)	0 (0.0)
Missing	10 (1.3)	7 (2.1)
	Mean (SD)	
Miles traveled to a Military Medical Treatment Facility pharmacy for all respondents using that source	68 (92)	
Missing	70 (30.8)	
Miles traveled to a Military Medical Treatment Facility pharmacy for respondents using only that source	56 (90)	
Missing	22 (38.6)	

*=$p<0.05$, two-tailed

a = All percentages are column percentages

Table 18 is a comparison between the users and non-users of the TSPP on their previous mail order pharmacy use. The table shows that the non-users of the TSPP were significantly more likely to have used a mail order pharmacy than the users. Hypothesis #1 stated that there would be a positive association between a retiree's prior use of a mail order pharmacy and their choice to use the TSPP, meaning that more retirees who had previously used a mail order pharmacy would choose to use the TSPP. This is clearly not the case; in fact, just the opposite is true. Therefore, hypothesis #1 is not supported.

The change in the average monthly premium paid for respondents with prescription drug insurance is compared for users and non-users in Table 19. There is very little difference between the two groups in the change in premium paid. Hypothesis #2 stated that there would be a positive association between a retiree's savings in insurance premium paid and their choice to use the TSPP. From the results in Table 19, hypothesis #2 is not supported.

In Table 20 the change in the average monthly out-of-pocket expense for prescription drugs is compared for users and non-users of the TSPP. The difference between the two groups is significant when the entire group is analyzed; this difference persists when the groups are subdivided into those with insurance and those without insurance. Hypothesis #3 stated that there would be a positive association between a retiree's savings in out-of-pocket prescription drug spending and their choice to use the TSPP. There is support for hypothesis #3 and this support persists even when the respondents are divided into those with insurance and those without insurance.

TABLE 18

Previous mail order and Veterans Administration pharmacy use by User vs. Non-user category

	Users N (%)	Non-users N (%)	Chi-square (df)
Have previously used a mail order pharmacy	106 (14.0)	63 (19.3)	4.90* (1)
Have not previously used a mail order pharmacy	651 (86.0)	263 (80.7)	
Have previously used a Veterans Administration pharmacy	76 (10.0)	54 (16.6)	9.18* (1)
Have not previously used a Veterans Administration pharmacy	681 (90.0)	272 (83.4)	

*=$p<0.05$, two-tailed

TABLE 19

Difference in average monthly premium paid for respondents with prescription drug insurance by User vs. Non-user category

	N	Mean	SD	T-test value (df)
Difference for users	337	$97.40	113.85	0.51 (595)
Potential difference for non-users	260	$92.56	116.13	

TABLE 20
Change in average monthly out-of-pocket expense for prescription drugs by User vs. Non-user category

	Mean (SD) before TSPP	Mean (SD) after TSPP	Change	T-test value[1] (df)
Users				
All (N = 750)	$93.70	$28.11	$65.42	
	(167.49)	(35.45)	(159.42)	6.53* (1051)
With insurance	$63.28	$31.93	$31.21	
(N = 366)	(95.21)	(37.97)	(83.51)	3.00* (606)
Without insurance	$123.29	$24.49	$98.54	
(N = 382)	(211.33)	(32.57)	(202.72)	2.80* (156)
			Potential change	
Non-users				
All (N = 322)	$41.61	$19.83	$21.83	
	(65.64)	(17.29)	(58.54)	
With insurance	$36.25	$21.00	$15.29	
(N = 266)	(54.72)	(16.76)	(49.12)	
Without insurance	$69.63	$14.78	$54.85	
(N = 54)	(100.71)	(18.93)	(85.71)	

*=$p<0.05$, two-tailed

[1]The T-test values are for comparing all users to all non-users, users with insurance to non-users with insurance, and users without insurance to non-users without insurance, respectively.

Hypothesis #4 stated that there would be a negative association between a retiree's number of years of experience with their prescription drug plan and their choice to use the TSPP. The analysis for this hypothesis is in Table 16, where the length of prescription drug coverage for users and non-users is compared. Although the trend is in the correct direction, it does not reach statistical significance. Therefore, there is no support for hypothesis #4.

The analysis for hypothesis #5 is in Table 14 that shows the comparison between users and non-users on the different levels of income. This hypothesis states that there will be a negative association between a retiree's income level and their choice to use the TSPP. The trend for hypothesis #5 is in the correct direction, but it does not reach statistical significance; there is no support for this hypothesis.

Table 14 contains a comparison of the asset levels for users and non-users of the TSPP; the results of the analysis for hypothesis #6. Hypothesis #6 stated that there would be a negative association between a retiree's asset level and their choice to use the TSPP. From Table 14, there is a higher proportion of non-users with assets of $50,000 or more when compared to the users. This is support for hypothesis #6.

Hypothesis #7 stated that there would be no association between a retiree's age and their choice to use the TSPP. Table 14 contains a comparison of the mean age of the user and non-user groups. The comparison of the mean ages of the two different groups shows that there is no difference. This is support for hypothesis #7.

The analysis for hypothesis #8 is contained in Table 15, where there is a comparison of the number of reported chronic conditions between the user and non-user group. This hypothesis states that there will be a positive association between a retiree's

number of chronic conditions and their choice to use the TSPP. Table 15 shows that the users of the TSPP have a significantly higher average number of chronic conditions than the non-users. There is support for hypothesis #8.

Table 21 contains the analysis for hypothesis #9. This hypothesis stated that there would be a positive association between a retiree's education level and their choice to use the TSPP. For this analysis, the levels of the education variable were collapsed into two different levels and the category of 'missing' was added. This was done to increase the power of the statistical test and facilitate comparisons to past research. The table shows that although the trend is in the correct direction, it does not reach the level of significance. There is no support for hypothesis #9.

Hypothesis #10 stated that there would be a negative association between a retiree's score on the formal medical care preferences scale and their choice to use the TSPP. The analysis for this hypothesis is contained in Table 17 that shows a comparison of the average score on the medical care preferences scale for the user and non-user groups. There is very little difference in the average scores for these two groups. Hypothesis #10 is not supported.

There is also a comparison of the average score on the pharmacist-patient relationship commitment scale for the user and non-user groups contained in Table 17. This is the analysis for hypothesis #11 that states there will be a negative association between a retiree's score on this scale and their choice to use the TSPP. These results show that there is a significant difference in the average score between the two groups on this scale. However, it is in the direction opposite from that hypothesized, so there is no support for hypothesis #11.

TABLE 21
Education level by User vs. Non-user category

	Users N (%)	Non-users N (%)	Chi-square (df)[a]
High School degree or less	317 (41.9)	125 (38.3)	1.39 (1)
Some College or more	421 (55.6)	195 (59.8)	
Missing	19 (2.5)	6 (1.8)	

a = The missing category was not included in the Chi-square analyses

The analysis for hypothesis #12 is contained in Table 22. This hypothesis stated that there would be a positive association between the retirees who previously did not have prescription drug insurance and their choice to use the TSPP. For this analysis, the categories of 'all of prescription drug costs paid for' and 'part of prescription drug costs paid for' were combined since the hypothesis does not specify a certain level of prescription drug insurance; only that it exists for the retiree. Table 22 shows that there is a significant difference between the two groups in the proportion of retirees that previously had prescription drug insurance. There is support for hypothesis #12.

In summary, the bivariate analyses showed there was support found for four of the twelve hypotheses proposed. There was support for hypotheses #3, 6, 7, 8 and 12. These hypotheses relate to the differences between the user and non-user groups in their age, total liquid assets, savings in out-of-pocket payment, number of chronic conditions and previous prescription drug insurance status.

TABLE 22

Previous prescription drug coverage by User vs. Non-user category

	Users N (%)	Non-users N (%)	Chi-square (df)[a]
Did not have prescription drug coverage before the TRICARE Senior Pharmacy Program	383 (50.6)	54 (16.6)	110.22* (1)
Did have prescription drug coverage before the TRICARE Senior Pharmacy Program	369 (48.7)	270 (82.8)	
Missing	5 (0.7)	2 (0.6)	

*=$p<0.05$, two-tailed

a = The missing category was not included in the Chi-square analyses

Multivariate Analyses

The next phase of data analysis was to estimate logit models predicting the retiree's choice to use or not use the TSPP. These models allow the testing of the hypotheses in a multivariate manner. In other words, assessing what the impact of an independent variable is when taken in context with all of the other factors that may influence the choice decision of the retiree. This is contrasted with the bivariate analysis that considers only the effect of the particular independent variable being considered on the choice decision of the retiree. To improve the power of the analysis for these models, the categories of 'part of physician visit costs paid for' and 'all of physician visit costs paid for' were combined to represent that the respondent had insurance that paid some portion of the physician visit.

To start the model estimation, the researcher developed a zero-order correlation matrix for all individual-level variables employed in the multivariate models. The correlation matrix is displayed in Table 23. The correlation matrix was analyzed for strong correlations between variables, which might suggest signs of possible multi-collinearity problems. One potential problem was that the correlation between the number of prescriptions and the number of chronic conditions reported was very high at 0.64. A mechanism to overcome this potential problem would be to drop one of the variables from the model since both are measuring a similar attribute, likely the health or level of need of the respondent. The researcher decided to drop the number of prescriptions variable from the model for two reasons. First, there was a hypothesis (#8) specifically related to the number of chronic conditions but no hypothesis for the number of prescriptions. Second, the researcher thought that the number of chronic conditions

variable would be a more stable indicator of the health of the respondents since the number of prescriptions could have changed after the retirees started using the TSPP.

Another potential problem in the correlation matrix was the correlation among all of the health status variables. The variables included as health status variables were: health concern scale score, number of reported chronic conditions, self-reported health status, limitations in activities of daily living, number of physician visits in the past six months, number of days in the hospital in the last year and number of prescriptions used in the previous 30 days. Although none of the correlations is very strong, they are all significant, which could be an indication of multi-collinearity. Therefore, the researcher decided to simplify the model by including only one of the health status variables. The number of chronic conditions variable was chosen because it was to be tested in hypothesis #8.

Finally, other variables were deleted from the model that were not found to be significant when tested in a bivariate sense. The final model tested contained those variables related to a specific hypothesis or found to be significant when tested in a bivariate manner.

TABLE 23
Correlation Matrix for Individual-Level Variables

	Age	Female	Non-White	Married	Some College	Income
Female	0.02					
Non-White	-0.04	-0.02				
Married	-0.17*	-0.16*	-0.04			
Some College or more	0.04	-0.19*	0.02	0.02		
Income $35,000 or more	-0.01	-0.11*	-0.06	0.32*	0.22*	
Assets $50,000 or more	0.04	-0.006	-0.11*	0.12*	0.16*	0.49*
Working to some extent	-0.15*	-0.09*	-0.02	0.05	0.02	0.10*
Health Concern Score	0.04	-0.03	0.14*	0.01	-0.12*	0.11*
Number of Chronic Conditions	0.13*	0.08*	0.02	-0.02	-0.04	-0.07*
Health is Good, Very Good or Excellent	-0.05	-0.07*	0.01	0.05	0.09*	0.13*
Any Limits in ADLs	0.18*	0.12*	0.01	-0.08*	-0.13*	-0.10*
Savings in monthly premium	-0.05	-0.04	-0.02	0.10*	0.03	0.09*
Length of previous prescription coverage	0.12*	0.01	0.05	-0.03	0.02	0.05
Insurance for All or Part of Physician Visit	0.04	-0.01	-0.10*	0.10*	0.11*	0.15*
Insurance for Prescriptions	-0.02	-0.15*	-0.01	0.08*	0.02	0.02
Number of Physician Visits	0.06	0.02	0.06	-0.03	-0.001	-0.03
Number of days in Hospital	0.07*	-0.01	0.07*	-0.03	-0.07*	-0.05
Number of Prescriptions	0.09*	0.14*	0.02	0.000	-0.07*	-0.13*
Savings in Out-of-Pocket Cost on Prescriptions	0.03	0.15*	0.03	-0.08*	-0.12*	-0.13*
Medical Care Preference Score	-0.08*	0.08*	-0.14*	0.01	0.02	0.002
Pharmacist Relationship Commitment Score	0.05	0.09*	0.03	-0.02	-0.04	-0.10*
Has used Mail Order pharmacy	-0.02	-0.05	-0.02	0.08*	0.03	0.06*
Has used VA pharmacy	-0.01	-0.27*	0.09*	0.06	-0.01	-0.08*

TABLE 23 (cont.)

	Assets	Working	Health Concern Score	Number Chronic Cond.	Health is G, VG or E	Any Limits ADLS
Working to some extent	0.07*					
Health Concern Score	-0.12*	-0.02				
Number of Chronic Conditions	-0.15*	-0.12*	0.17*			
Health is Good, Very Good, or Excellent	0.10*	0.11*	-0.18*	-0.37*		
Any Limits in ADLs	-0.07*	-0.03	0.14*	0.29*	-0.36*	
Savings in monthly premium	0.05	-0.02	-0.05	0.08*	-0.10*	0.07*
Length of previous prescription coverage	0.02	-0.03	-0.05	-0.09*	-0.02	0.04
Insurance for All or Part of Physician Visits	0.10*	0.02	-0.06*	0.02	-0.01	-0.01
Insurance for Prescriptions	0.01	0.09*	0.06	0.03	-0.04	0.04
Number of Physician Visits	-0.05	-0.06	0.16*	0.26*	-0.21*	0.16*
Number of days in Hospital	-0.07*	-0.06	0.12*	0.12*	-0.18*	0.17*
Number of Prescriptions	-0.16*	-0.09*	0.20*	0.64*	-0.39*	0.31*
Savings in Out-of-Pocket Cost on Prescriptions	-0.06*	-0.05	0.10*	0.19*	-0.13*	0.11*
Medical Care Preference Score	0.08*	0.04	-0.22*	-0.19*	0.14*	-0.09*
Pharmacist Relationship Commitment Score	-0.11*	-0.03	0.08*	0.11*	-0.06	0.07*
Has used Mail Order pharmacy	0.04	-0.04	0.08*	0.07*	-0.05	-0.02
Has used VA pharmacy	-0.12*	0.01	0.07*	0.08*	-0.01	0.05

TABLE 23 (cont.)

	Saving prem.	Length cover.	Ins. Phy. Visit	Ins. Prescr.	# Phy. Visits	# days Hosp.
Length of previous prescription coverage	0.02					
Insurance for All or Part of Physician Visit	0.15*	-0.08				
Insurance for Prescriptions	0.25*	---[a]	0.13*			
Number of Physician Visits	0.04	0.03	0.06	0.002		
Number of days in Hospital	0.02	0.06	-0.04	-0.002	0.47*	
Number of Prescriptions	0.08*	0.02	0.02	0.000	0.25*	0.16*
Savings in Out-of-Pocket Cost on Prescriptions	-0.08*	-0.07	-0.05	-0.19*	0.02	0.01
Medical Care Preference Score	-0.01	-0.05	-0.02	-0.01	-0.13*	-0.07*
Pharmacist Relationship Commitment Score	0.02	0.05	0.02	-0.07*	0.03	-0.02
Has used Mail Order pharmacy	0.10*	0.04	0.07*	0.12*	0.02	-0.02
Has used VA pharmacy	-0.01	-0.08	-0.01	0.16*	0.09*	0.07*

	# of Prescr.	Savings Prescr.	Med. Care Score	R.Ph. Commit. Score	Used Mail Order
Savings in Out-of-Pocket Cost on Prescriptions	0.27*				
Medical Care Preference Score	-0.26*	-0.07*			
Pharmacist Relationship Commitment Score	0.11*	0.08*	-0.07*		
Has used Mail Order pharmacy	0.08*	-0.04	-0.02	-0.06*	
Has used VA pharmacy	0.08*	-0.08*	-0.07*	-0.002	-0.09*

*=$p<0.05$, two-tailed

a = Cannot be computed because at least one of the variables is constant

Table 24 shows the results of the logit equation predicting the retiree's choice to use or not use the TSPP for all of the respondents. Demographic variables that significantly predict a retiree's choice are their gender, ethnicity, marital status and level of assets. Being married and female significantly increased a retiree's odds of using the TSPP; being of non-white ethnicity or having total assets of $50,000 or more decreases the odds. The health status variable of number of reported chronic conditions significantly predicts a retiree's choice; as the number of reported chronic conditions increases, this increases their odds of using the TSPP. The presence of any previous prescription drug insurance also was a significant predictor of a retiree's choice for using the TSPP; this decreased their odds of using the TSPP. The only access to care variable found to be significant in predicting a retiree's choice for using the TSPP was the retiree's savings in out-of-pocket expense for prescriptions in the previous 30 days. As retirees saved more in out-of-pocket expense on prescriptions they were more likely to use the TSPP.

After the logit model using all of the respondents was estimated, the researcher divided the retirees into those who had previous prescription insurance coverage and those who did not. This was done to include the variables related specifically to insurance as stated earlier. Also, the retiree's previous prescription drug insurance status was such a strong predictor of the retiree's choice in the model using all variables that the researcher thought it would be fruitful to examine the associations of other variables without this variable in the model. A description of the insured respondents grouped according TSPP status is contained in Tables 25 through 28. The uninsured respondents grouped according to TSPP status are described in Tables 29 through 32.

TABLE 24
Logistic Regression Results Predicting Whether a Respondent Used the TRICARE Senior Pharmacy Program (All Respondents)
(N = 1072)

Variable	Odds Ratio (95 percent confidence interval)
Constant	1.39
Demographic variables	
Age	0.998 (0.974, 1.023)
Gender	
Female	1.90 (1.38, 2.61)*
Ethnicity	
Non-White	0.48 (0.26, 0.89)*
Marital Status	
Married and/or missing	1.82 (1.27, 2.60)*
Education	
Some college or more	1.009 (0.748, 1.362)
Annual Household Income	
$35,000 or more and/or missing	1.18 (0.83, 1.68)
Total Liquid Assets	
$50,000 or more and/or missing	0.68 (0.47, 0.98)*
Employment Status	
Working to some extent and/or missing	0.70 (0.47, 1.04)
Health status variables	
Number of Reported Chronic Conditions	1.14 (1.05, 1.23)*
Insurance variables	
Insurance for Prescription Drugs	0.34 (0.24, 0.48)*
Access to care variables	
Savings in out-of-pocket expense for prescriptions in previous 30 days	1.002 (1.001, 1.004)*
Medical Care Preferences Scale Score	0.998 (0.974, 1.022)
Pharmacist-Patient Relationship Commitment Scale Score	1.04 (0.98, 1.10)
Previous mail order pharmacy use	0.80 (0.55, 1.17)
Previous use of a Veterans Administration pharmacy	0.95 (0.61, 1.46)

Note: The reference categories of the variables are male, white and/or missing, not married, high school degree or less and/or missing, less than $35,000, less than $50,000 and retired or otherwise not working.
* Likelihood ratio test, $p < 0.05$

TABLE 25

A comparison between Previously Insured Users and Non-users of the TRICARE Senior Pharmacy Program on demographic variables

(N=639)

	Users (N=369)	Non-users (N=270)	
Variable	Mean (SD)		T-score (df)
Age	72.57 (5.93)	72.74 (5.99)	-0.36 (637)
	N (%)[a]		Chi-square (df)[b]
Gender			
Male	212 (57.5)	200 (74.1)	18.81* (1)
Female	157 (42.5)	70 (25.9)	
Ethnicity			
White	345 (93.5)	241 (89.3)	7.32* (1)
Non-White	12 (3.3)	22 (8.1)	
Missing	12 (3.3)	7 (2.6)	
Marital Status			
Married	305 (82.7)	200 (74.1)	9.97* (3)
Single	8 (2.2)	7 (2.6)	
Widowed	42 (11.4)	44 (16.3)	
Divorced/Separated	5 (1.4)	12 (4.4)	
Missing	9 (2.4)	7 (2.6)	
Education			
Less than High School	17 (4.6)	11 (4.1)	2.56 (4)
High School degree	136 (36.9)	86 (31.9)	
Some College	105 (28.5)	80 (29.6)	
College degree	56 (15.2)	49 (18.1)	
Post graduate degree	45 (12.2)	38 (14.1)	
Missing	10 (2.7)	6 (2.2)	
Annual Household Income			
Less than $35,000	121 (32.8)	93 (34.4)	0.06 (1)
$35,000 or more	177 (48.0)	130 (48.1)	
Missing	71 (19.2)	47 (17.4)	
Total Liquid Assets			
Less than $50,000	114 (30.9)	69 (25.6)	2.94 (1)
$50,000 or more	158 (42.8)	133 (49.3)	
Missing	97 (26.3)	68 (25.2)	

TABLE 25 (cont.)

	N (%)[a]		Chi-square (df)[b]
Employment Status			
Retired or otherwise not working	322 (87.3)	215 (79.6)	13.09* (3)
Work 1 to 14 hours per week	12 (3.3)	16 (5.9)	
Work 15 to 34 hours per week	17 (4.6)	12 (4.4)	
Work 35 or more hours per week	9 (2.4)	21 (7.8)	
Missing	9 (2.4)	6 (2.2)	

*=$p<0.05$, two-tailed

a = All percentages are column percentages

b = The missing category was not included in the Chi-square analyses

TABLE 26

A comparison between Previously Insured Users and Non-users of the TRICARE Senior Pharmacy Program on health status variables
(N=639)

	Users (N=369)	Non-users (N=270)	
Variable	Mean (SD)		T-score (df)
Score on health concern scale	6.90 (1.90)	6.88 (2.06)	0.12 (637)
Number of reported chronic conditions	3.94 (2.23)	3.29 (1.95)	3.79* (637)
	N (%)[a]		Chi-square (df)[b]
Self-Rated Health Status			
Poor	19 (5.1)	7 (2.6)	11.98* (4)
Fair	64 (17.3)	38 (14.1)	
Good	141 (38.2)	89 (33.0)	
Very Good	113 (30.6)	89 (33.0)	
Excellent	28 (7.6)	39 (14.4)	
Missing	4 (1.1)	8 (3.0)	
Any Limitation in Activities of Daily Living (ADLs)			
Yes	65 (17.6)	44 (16.3)	0.10 (1)
No	301 (81.6)	218 (80.7)	
Missing	3 (0.8)	8 (3.0)	

*=$p<0.05$, two-tailed

a = All percentages are column percentages

b = The missing category was not included in the Chi-square analyses

TABLE 27

A comparison between Previously Insured Users and Non-users of the TRICARE Senior Pharmacy Program on insurance characteristics

(N=639)

	Users (N=369)	Non-users (N=270)	
Variable	Mean (SD)		T-score (df)
Premium paid for prescription drug coverage	$109.90 (112.31)	$90.47 (115.63)	2.10* (617)
Length (months) of drug coverage	176.02 (113.13)	184.52 (120.08)	-0.91 (637)
	N (%)[a]		Chi-square (df)[b]
Enrollment in Medicare			
Not enrolled	0 (0.0)	8 (3.0)	42.34* (2)
Part A only	7 (1.9)	34 (12.6)	
Parts A and B	358 (97.0)	223 (82.6)	
Missing	4 (1.1)	5 (1.9)	
Insurance for Physician Visits			
None	15 (4.1)	15 (5.6)	0.89 (3)
Part paid for	203 (55.0)	146 (54.1)	
All paid for	144 (39.0)	106 (39.3)	
Don't know	3 (0.8)	3 (1.1)	
Missing	4 (1.1)	0 (0.0)	
Source of supplemental health insurance plan			
Employer or former employer alone	137 (39.5)	129 (51.2)	39.69* (7)
Medicaid alone	3 (0.9)	0 (0.0)	
Veterans Administration alone	30 (8.6)	32 (12.7)	
Medigap plan alone	76 (21.9)	13 (5.2)	
Medicare HMO alone	13 (3.7)	5 (2.0)	
Other source alone	7 (2.0)	9 (3.6)	
2 different sources	71 (20.5)	56 (22.2)	
3 different sources	8 (2.3)	5 (2.0)	
Missing	2 (0.6)	3 (1.2)	

TABLE 27 (cont.)

Variable	N (%)[a]	
Insurance for Prescription Drugs		
None	0 (0.0)	0 (0.0)
Part paid for	353 (95.7)	243 (90.0)
All paid for	16 (4.3)	27 (10.0)
Source of prescription drug insurance		
Employer or former employer alone	137 (37.1)	151 (55.9)
Medicaid alone	7 (1.9)	2 (0.7)
Veterans Administration alone	86 (23.3)	53 (19.6)
Medigap plan alone	55 (14.9)	16 (5.9)
Medicare HMO alone	14 (3.8)	5 (1.9)
Other source alone	20 (5.4)	7 (2.6)
2 different sources	34 (9.2)	30 (11.1)
3 different sources	1 (0.3)	1 (0.4)
Missing	15 (4.1)	5 (1.9)
Types of prescription drug insurance		
Co-payment alone	178 (50.4)	148 (60.9)
Co-insurance alone	48 (13.6)	28 (11.5)
Deductible alone	12 (3.4)	3 (1.2)
Combination of co-payment and co-insurance	17 (4.8)	17 (7.0)
Combination of co-payment, co-insurance and deductible	7 (2.0)	6 (2.5)
Combination of deductible and co-payment	19 (5.4)	14 (5.8)
Combination of deductible and co-insurance	31 (8.8)	11 (4.5)
Other type	7 (2.0)	3 (1.2)
Missing	34 (9.6)	13 (5.3)

*=$p<0.05$, two-tailed

a = All percentages are column percentages

b = The missing category was not included in the Chi-square analyses

TABLE 28

A comparison between Previously Insured Users and Non-users of the TRICARE Senior Pharmacy Program on access to care indicators (N=639)

Variable	Users (N=369)	Non-users (N=270)	T-score (df)
	Mean (SD)		
# physician visits in past 6 months	4.55 (6.41)	3.67 (5.39)	1.83 (637)
# days in hospital in the last year	1.76 (6.49)	2.67 (11.89)	-1.24 (637)
# prescriptions in previous 30 days	5.29 (3.72	4.02 (2.95)	4.79* (626)
Out-of-pocket expense for prescriptions in previous 30 days	$31.93 (37.97)	$36.25 (54.72)	-1.11 (445)
Medical care preferences score	20.07 (5.95)	20.24 (6.25)	-0.35 (637)
Pharmacist relationship commitment score	11.67 (2.42)	11.23 (2.58)	2.21* (637)
	N (%)[a]		
Usual source of prescriptions before using the TSPP			
Chain pharmacy only	81 (22.0)		
Independent pharmacy only	36 (9.8)		
Clinic pharmacy only	6 (1.6)		
Mail order pharmacy only	16 (4.3)		
Veterans Administration pharmacy only	16 (4.3)		
Military Medical Treatment Facility pharmacy only	13 (3.5)		
Other type of pharmacy only	1 (0.3)		
No pharmacy utilized	1 (0.3)		
2 different pharmacies	144 (39.0)		
3 different pharmacies	36 (9.8)		
4 different pharmacies	10 (2.7)		
Missing	9 (2.4)		
	Mean (SD)		
Miles for all[1]	70.83 (82.89)		
Missing	15 (13.8)		
Miles for only that source[2]	73.20 (89.18)		
Missing	3 (23.1)		

TABLE 28 (cont.)

Usual source of prescriptions after TSPP	N (%)[a]	
Chain pharmacy only	76 (20.6)	74 (27.4)
Independent pharmacy only	33 (8.9)	26 (9.6)
Clinic pharmacy only	4 (1.1)	11 (4.1)
Mail order pharmacy only	37 (10.0)	14 (5.2)
Veterans Administration pharmacy only	8 (2.2)	27 (10.0)
Military Medical Treatment Facility pharmacy only	9 (2.4)	0 (0.0)
Other type of pharmacy only	0 (0.0)	3 (1.1)
No pharmacy utilized	4 (1.1)	25 (9.3)
2 different pharmacies	144 (39.1)	80 (29.6)
3 different pharmacies	42 (11.3)	5 (1.9)
4 different pharmacies	8 (2.2)	0 (0.0)
Missing	4 (1.1)	5 (1.9)
	Mean (SD)	
Miles for all[1]	62.25 (83.61)	
Missing	36 (37.9)	
Miles for only that source[2]	11.20 (6.06)	
Missing	4 (44.4)	

[1] Miles traveled to a MTF for all respondents using that source
[2] Miles traveled to MTF for respondents using only that source
a = All percentages are column percentages

TABLE 29

A comparison between Previously Uninsured Users and Non-users of the TRICARE Senior Pharmacy Program on demographic variables

(N=437)

	Users (N=383)	Non-users (N=54)	
Variable	Mean (SD)		T-score (df)
Age	73.71 (5.85)	73.41 (6.72)	0.76 (435)
	N (%)[a]		Chi-square (df)[b]
Gender			
Male	160 (41.8)	24 (44.4)	0.14 (1)
Female	223 (58.2)	30 (55.6)	
Ethnicity			
White	350 (91.4)	50 (92.6)	0.11 (1)
Non-White	18 (4.7)	2 (3.7)	
Missing	15 (3.9)	2 (3.7)	
Marital Status			
Married	263 (68.7)	32 (59.3)	7.97* (3)
Single	8 (2.1)	1 (1.9)	
Widowed	95 (24.8)	16 (29.6)	
Divorced/Separated	9 (2.3)	5 (9.3)	
Missing	8 (2.1)	0 (0.0)	
Education			
Less than High School	26 (6.8)	4 (7.4)	2.58 (4)
High School degree	135 (35.2)	24 (44.4)	
Some College	129 (33.7)	18 (33.3)	
College degree	53 (13.8)	4 (7.4)	
Post graduate degree	31 (8.1)	4 (7.4)	
Missing	9 (2.3)	0 (0.0)	
Annual Household Income			
Less than $35,000	170 (44.4)	24(44.4)	0.08 (1)
$35,000 or more	140 (36.6)	18 (33.3)	
Missing	73 (19.1)	12 (22.2)	
Total Liquid Assets			
Less than $50,000	126 (32.9)	15 (27.8)	0.39 (1)
$50,000 or more	155 (40.5)	23 (42.6)	
Missing	102 (26.6)	16 (29.6)	

TABLE 29 (cont.)

	N (%)[a]		Chi-square (df)[b]
Employment Status			
Retired or otherwise not working	341 (89.0)	46 (85.2)	3.67 (3)
Work 1 to 14 hours per week	13 (3.4)	2 (3.7)	
Work 15 to 34 hours per week	12 (3.1)	3 (5.6)	
Work 35 or more hours per week	7 (1.8)	3 (5.6)	
Missing	10 (2.6)	0 (0.0)	

*=$p<0.05$, two-tailed

a = All percentages are column percentages

b = The missing category was not included in the Chi-square analyses

TABLE 30

A comparison between Previously Uninsured Users and Non-users of the TRICARE Senior Pharmacy Program on health status variables

(N=437)

	Users (N=383)	Non-users (N=54)	
Variable	Mean (SD)		T-score (df)
Score on health concern scale	6.72 (2.02)	6.76 (2.20)	-0.15 (435)
Number of reported chronic conditions	3.50 (2.15)	2.56 (2.13)	3.01* (435)
	N (%)[a]		Chi-square (df)[b]
Self-Rated Health Status			
Poor	15 (3.9)	2 (3.7)	4.08 (4)
Fair	50 (13.1)	8 (14.8)	
Good	145 (37.9)	14 (25.9)	
Very Good	116 (30.3)	19 (35.2)	
Excellent	50 (13.1)	11 (20.4)	
Missing	7 (1.8)	0 (0.0)	
Any Limitation in Activities of Daily Living (ADLs)			
Yes	44 (11.5)	9 (16.7)	1.11 (1)
No	334 (87.2)	45 (83.3)	
Missing	5 (1.3)	0 (0.0)	

*=$p<0.05$, two-tailed

a = All percentages are column percentages

b = The missing category was not included in the Chi-square analyses

TABLE 31

A comparison between Previously Uninsured Users and Non-users of the TRICARE Senior Pharmacy Program on insurance characteristics (N=437)

Variable	Users (N=383) N (%)[a]	Non-users (N=54)	Chi-square (df)[b]
Enrollment in Medicare			
Not enrolled	2 (0.5)	3 (5.6)	22.54* (2)
Part A only	12 (3.1)	7 (13.0)	
Parts A and B	367 (95.8)	43 (79.6)	
Missing	2 (0.5)	1 (1.9)	
Insurance for Physician Visits			
None	67 (17.5)	18 (33.3)	10.78* (3)
Part paid for	156 (40.7)	16 (29.6)	
All paid for	150 (39.2)	17 (31.5)	
Don't know	4 (1.0)	2 (3.7)	
Missing	6 (1.6)	1 (1.9)	
Source of supplemental health insurance plan			
Employer or former employer alone	16 (5.2)	3 (9.1)	17.95* (7)
Medicaid alone	4 (1.3)	1 (3.0)	
Veterans Administration alone	16 (5.2)	5 (15.2)	
Medigap plan alone	169 (55.2)	9 (27.3)	
Medicare HMO alone	23 (7.5)	1 (3.0)	
Other source alone	23 (7.5)	5 (15.2)	
2 different sources	47 (15.4)	7 (21.2)	
3 different sources	1 (0.3)	1 (3.0)	
Missing	7 (2.3)	1 (3.0)	
Insurance for Prescription Drugs			
None	383 (100.0)	54 (100.0)	
Part paid for	0(0.0)	0 (0.0)	
All paid for	0 (0.0)	0 (0.0)	

*=$p<0.05$, two-tailed

a = All percentages are column percentages

b = The missing category was not included in the Chi-square analyses

TABLE 32

A comparison between Previously Uninsured Users and Non-users of the TRICARE Senior Pharmacy Program on access to care indicators

(N=437)

	Users (N=383)	Non-users (N=54)	
Variable	Mean (SD)		T-score (df)
# physician visits in past 6 months	4.01 (4.93)	2.39 (2.76)	2.37* (435)
# days in hospital in the last year	2.23 (7.82)	1.28 (3.01)	0.88 (435)
# prescriptions in previous 30 days	4.64 (3.39)	2.35 (3.03)	4.70* (434)
Out-of-pocket expense for prescriptions in previous 30 days	$24.49 (32.57)	$69.63(100.71)	-3.27* (55)
Medical care preferences score	20.45 (6.00)	21.17 (6.50)	-0.82 (435)
Pharmacist relationship commitment score	11.77 (2.16)	11.54 (2.78)	0.71 (435)
	N (%)[a]		
Usual source of prescriptions before using the TSPP			
Chain pharmacy only	108 (28.2)		
Independent pharmacy only	47 (12.3)		
Clinic pharmacy only	8 (2.1)		
Mail order pharmacy only	5 (1.3)		
Veterans Administration pharmacy only	0 (0.0)		
Military Medical Treatment Facility pharmacy only	93 (24.3)		
Other type of pharmacy only	2 (0.5)		
No pharmacy utilized	1 (0.3)		
2 different pharmacies	95 (24.8)		
3 different pharmacies	13 (3.4)		
4 different pharmacies	4 (1.0)		
Missing	7 (1.8)		
	Mean (SD)		
Miles for all[1]	87.69 (100.25)		
Missing	34 (19.3)		
Miles for only that source[2]	63.96 (62.70)		
Missing	23 (24.7)		

TABLE 32 (cont.)

Usual source of prescriptions after TSPP	N (%)[a]	
Chain pharmacy only	95 (24.8)	14 (25.9)
Independent pharmacy only	35 (9.1)	8 (14.8)
Clinic pharmacy only	5 (1.3)	1 (1.9)
Mail order pharmacy only	34 (8.9)	0 (0.0)
Veterans Administration pharmacy only	0 (0.0)	0 (0.0)
Military Medical Treatment Facility pharmacy only	48 (12.5)	0 (0.0)
Other type of pharmacy only	2 (0.5)	0 (0.0)
No pharmacy utilized	12 (3.1)	26 (48.1)
2 different pharmacies	122 (32.0)	3 (5.7)
3 different pharmacies	22 (5.9)	0 (0.0)
4 different pharmacies	2 (0.5)	0 (0.0)
Missing	6 (1.6)	2 (3.7)
	Mean (SD)	
Miles for all[1]	72.15 (97.60)	
Missing	33 (25.2)	
Miles for only that source[2]	63.47 (95.08)	
Missing	18 (37.5)	

[1] Miles traveled to a MTF for all respondents using that source
[2] Miles traveled to MTF for respondents using only that source
a = All percentages are column percentages

The logit models for the respondents based on previous prescription insurance status were constructed in the following manner. Only those variables that were significantly different between the users and the non-users in a bivariate manner were included in the respective model for either the insured or uninsured respondents. However, the savings in monthly premium and length of previous prescription coverage variables were added to the logit model for insured respondents because they had not been tested in a multivariate manner yet. The results of the logit model for those retirees who had previous prescription drug insurance are in Table 33; those for retirees who did not have previous prescription drug insurance are in Table 34.

For retirees who previously had prescription drug insurance, four demographic variables were significant in predicting their choice to use the TSPP. These variables were gender, ethnicity, marital status and employment status. Being married and female again significantly increased the odds of using the TSPP; working to any extent and being non-white decreases the odds. The health status variable number of reported chronic conditions significantly predicted the choice to use TSPP for this group, as the number of reported chronic conditions increases the odds of using the TSPP increase. The retiree's savings in out-of-pocket expense for prescriptions in the previous 30 days also significantly predicted the choice to use the TSPP for this group. As their savings increase, it increases their odds of using the TSPP.

TABLE 33
Logistic Regression Results Predicting Whether a Respondent Used the TRICARE Senior Pharmacy Program (Only Insured Respondents) (N = 622)

Variable	Odds Ratio (95 percent confidence interval)
Constant	0.20
Demographic variables	
Gender	
Female	2.12 (1.47, 3.06)*
Ethnicity	
Non-White	0.38 (0.18, 0.82)*
Marital Status	
Married and/or missing	2.32 (1.49, 3.62)*
Employment Status	
Working to some extent and/or missing	0.61 (0.38, 0.97)*
Health status variables	
Number of Reported Chronic Conditions	1.16 (1.06, 1.27)*
Insurance variables	
Savings in average monthly premium for prescription drug insurance	0.999 (0.997, 1.000)
Length (in months) of previous prescription drug coverage	0.999 (0.998, 1.001)
Access to care variables	
Savings in out-of-pocket expense for prescriptions in previous 30 days	1.003 (1.000, 1.006) *[a]
Pharmacist-Patient Relationship Commitment Scale Score	1.068 (0.997, 1.144)

Note: The reference categories of the variables are male, white and/or missing, not married and retired or otherwise not working.
* Likelihood ratio test, $p < 0.05$
[a]Although this confidence interval contains one, the likelihood ratio test used to test significance is more powerful than the exact method used to construct confidence intervals.

TABLE 34
Logistic Regression Results Predicting Whether a Respondent Used the TRICARE Senior Pharmacy Program (Only Uninsured Respondents) (N = 436)

Variable	Odds Ratio (95 percent confidence interval)
Constant	1.43
Demographic variables	
Marital Status	
Married and/or missing	1.60 (0.86, 2.92)
Health status variables	
Number of Reported Chronic Conditions	1.21 (1.03, 1.43)*
Insurance variables	
Insurance for Physician Visits	
All or Part of visit paid for and/or missing	2.34 (1.25, 4.37)*
Access to care variables	
Savings in out-of-pocket expense for prescriptions in previous 30 days	1.001 (0.999, 1.004)

Note: The reference categories of the variables are not married and no insurance for physician visits and/or don't know.
* Likelihood ratio test, $p < 0.05$

For retirees who were previously uninsured, the health status variable number of reported chronic conditions significantly predicted their choice to use the TSPP. As their number of reported chronic conditions increased the odds of using the TSPP increased. Also, having insurance for physician visits was a significant predictor of the retiree's choice to use the TSPP; having all or part of the physician visit paid for increased the odds of using the TSPP.

After estimating all of the logit models, the hypotheses were tested in a multivariate framework. The logit model using all of the respondents was used for hypothesis testing whenever possible since the hypotheses were developed in a general sense, meaning that sub-populations of the retirees were not considered when developing hypotheses. Hypotheses # 2 and #4 (related to the insurance premium paid and the length of previous prescription insurance coverage) were exceptions due to their specificity to the previously insured population. These results will be reviewed next.

The first hypothesis states there will be a positive association between a retiree's prior use of a mail-order pharmacy and their choice to use the TSPP. None of the multivariate models show a relationship between mail order pharmacy use and the choice to use the TSPP. There is no support for hypothesis #1.

Hypothesis #2 examines the relationship between a retiree's change in premium for their previous or current prescription drug insurance and their choice to use the TSPP. If there is an association between premium paid and the choice to use the TSPP it should only exist for those retirees who had prescription drug insurance previously since they are the only ones who would have had to pay a premium. There is no association shown in Table 33 between these two variables; there is no support for hypothesis #2.

According to hypothesis #3 there will be a positive association between a retiree's savings in their out-of-pocket payment and their choice to use the TSPP. Table 24 shows a significant association between out-of-pocket payment level and a retiree's choice to use the TSPP. Based on the results from Table 24 there is support for hypothesis #3.

Hypothesis #4 states there will be a negative association between a retiree's number of years of experience with their prescription drug plan and their choice to use the TSPP. If there is an association between these two variables, it should only exist for those retirees who previously had prescription drug insurance. Table 33 does not show a significant association between these two variables; there is no support for hypothesis #4.

The multivariate model with all respondents did not find a significant association between a retiree's income level and their choice to use the TSPP. Hypothesis #5 stated that there would be a negative association; therefore there is no support for hypothesis #5.

Hypothesis #6 states there will be a negative association between a retiree's level of financial assets and their choice to use the TSPP. The results in Table 24 show that as the retiree's assets increase, their odds of using the TSPP decrease. This is support for hypothesis #6.

The association between a retiree's age and their choice to use the TSPP is stated in hypothesis #7. According to this hypothesis, there should be no association. The multivariate model with all of the respondents did not find a significant association, supporting hypothesis #7.

Hypothesis #8 states there will be a positive association between a retiree's number of chronic conditions and their choice to use the TSPP. The results from the multivariate model with all of the respondents found that as the number of reported

chronic conditions increases. The odds of using the TSPP increase. This is support for hypothesis #8.

The association between a retiree's education level and their choice to use the TSPP is examined in hypothesis #9. This hypothesis stated there would be a positive association between these two variables. There is no support for hypothesis #9 since the multivariate model with all of the respondents did not find a significant association.

Hypothesis #10 states there will be a negative association between a retiree's score on the formal medical care preferences scale and their choice to use the TSPP. The multivariate model with all of the respondents did not find a significant association between these two variables; there is no support for hypothesis #10.

The multivariate model in Table 24 did not find a significant association between a retiree's score on the pharmacist-patient relationship commitment scale and their choice to use the TSPP. Hypothesis #11 states there will be a negative association between these two variables. There is no support for hypothesis #11.

Hypothesis #12 states there will be a positive association between the retirees who previously did not have prescription drug insurance and their choice to use the TSPP. Table 24 shows a strong positive association between these two variables; there is support for hypothesis #12.

In summary, the multivariate analyses showed there was support found for five of the twelve hypotheses proposed. There was support for hypotheses #3, 6, 7, 8 and 12. These hypotheses relate to the differences between the user and non-user groups in their age, level of financial assets, savings in out-of-pocket payment, number of reported

chronic conditions, and previous prescription drug insurance status. There was also support for these five hypotheses in the bivariate analyses.

Analysis of Respondent's Reasons for Their Choice

Finally, the reasons respondents selected for using or not using the TSPP were analyzed to gain an understanding of the thought process they used in making their decision. The ranking of the reasons selected by the users of the TSPP are in Table 35; those for non-users of the TSPP are in Table 36. Users of the TSPP selected a benefit reason as the most important reason for using the TSPP. Economic reasons were also very important to this group, with three of the top five reasons selected from this category. The non-users of the TSPP selected an economic reason as their most important reason. The category of knowledge is represented with two reasons in the top five for non-users.

TABLE 35

User's ranking of specific reasons for using the TRICARE Senior Pharmacy Program as First, Second, and Third most important

Reason[1]	Most Important	Second Important	Third Important	Total Importance Score[2]	Ranking by Total Score	Total number of times selected	Rank by number of times selected
Want to use all of the military benefits available to me (B)	160	143	91	857	1	539	1
Did not have coverage for prescription medications before (E)	208	23	13	683	2	302	3
There is no enrollment fee (E)	34	75	115	367	3	425	2
Co-payment amounts are less than the coverage I had previously (E)	71	54	29	350	4	211	6
Able to continue using the same pharmacy (C)	18	85	72	296	5	288	4
Have used a military pharmacy before and want to continue (C)	46	53	25	269	6	198	7
Use a lot of prescription medications and need all the coverage (E)	33	40	61	240	7	212	5
Want the convenience of using a mail-order pharmacy (A)	26	48	44	218	8	169	8
Other reason (M)	43	10	7	156	9	69	T-12

TABLE 35 (cont.)

Reason[1]	Most Important	Second Important	Third Important	Total Importance Score[2]	Ranking by Total Score	Total number of times selected	Rank by number of times selected
Was not satisfied with the coverage I had before (S)	17	10	10	81	10	72	11
Think there will be a greater variety of prescription medications available (A)	5	24	14	77	11	90	10
TSPP will pay the amount not covered by my other prescription insurance program (E)	8	17	11	69	12	69	T-12
TSPP offers a wider range of benefits than the coverage I had before (B)	3	10	20	49	13	105	9
More pharmacies accept TSPP than the drug coverage I had before (A)	2	6	7	26	14	57	14
Live near a military pharmacy but did not know I could use it until TSPP started (K)	2	3	6	18	15	24	15

[1]A=access, B=benefits, C=continuity, E=economic, K=knowledge, M=miscellaneous, S=satisfaction

[2]Formula for total importance score is: (3 x (most important)) + (2 x (second important)) + (1 x (third important))

TABLE 36

Non-user's ranking of specific reasons for not using the TRICARE Senior Pharmacy Program as First, Second, and Third most important

Reason[1]	Most Important	Second Important	Third Important	Total Importance Score[2]	Ranking by Total Score	Total number of times selected	Rank by number of times selected
Already have coverage for prescription medications (E)	88	33	12	342	1	178	1
Don't know enough about the TRICARE Senior Pharmacy Program (K)	35	26	42	199	2	163	2
Satisfied with the prescription drug coverage have now (S)	13	53	14	159	3	128	4
There are no military facilities close to me (K)	17	23	20	117	4	131	3
Currently use a Veteran's Administration pharmacy(C)	28	9	2	104	5	55	9
Other reason (M)	30	4	5	103	6	48	10
Didn't know the TRICARE Senior Pharmacy Program existed (K)	14	18	14	92	7	75	T-6
Do not use any prescription medications (E)	23	5	2	81	8	45	11
Don't want to switch prescription drug coverage at this time (C)	2	13	18	50	9	75	T-6

TABLE 36 (cont.)

Reason[1]	Most Important	Second Important	Third Important	Total Importance Score[2]	Ranking by Total Score	Total number of times selected	Rank by number of times selected
Don't want to use a mail-order pharmacy (A)	4	8	12	40	10	76	5
Don't want to change the pharmacy where I obtain my prescription medication (C)	3	7	13	36	T-11	60	8
Co-payment amounts are more (E)	7	5	5	36	T-11	26	15
Paperwork to start using is too confusing (K)	4	7	4	30	13	31	T-13
Spouse of a military retiree and did not think I was covered (K)	5	3	4	25	14	32	12
Don't trust the DoD to run a prescription drug plan (M)	4	4	3	23	15	18	19
Think there will be less variety of prescription medications (A)	6	1	1	21	16	20	T-17
Not enough pharmacies accept TRICARE Senior Pharmacy Program (A)	2	3	7	19	17	22	16
Don't think I need prescription drug coverage (E)	1	5	2	15	T-18	20	T-17

TABLE 36 (cont.)

Reason[1]	Most Important	Second Important	Third Important	Total Importance Score[2]	Ranking by Total Score	Total number of times selected	Rank by number of times selected
Wider range of benefits with the coverage I currently use (B)	2	1	7	15	T-18	31	T-13
Enrollment fee is too high (K)	1	0	2	5	20	12	20

[1]A=access, B=benefits, C=continuity, E=economic, K=knowledge, M=miscellaneous, S=satisfaction

[2]Formula for total importance score is: (3 x (most important)) + (2 x (second important)) + (1 x (third important))

To determine if the ranking of the individual reasons accurately reflected how important the categories of the reasons were to the groups of respondents, the categories of reasons also were ranked according to an average importance score and an average number of times selected. The results for the TSPP users are in Table 37; those for the TSPP non-users are in Table 38. Ranking of the categories for the TSPP users mirrors that of the ranking of the individual reasons. However, Table 38 shows that the category of satisfaction may be more important for the non-users as a whole; a satisfaction reason did not appear in the individual ranking until third.

After the reasons for using or not using were analyzed for all respondents, the groups of users and non-users of the TSPP were divided into insured and uninsured respondents and their reasons for using or not were rank-ordered separately. The researcher wanted to explore if there were any differences in the thought processes of the different groups based on their prescription drug insurance status since it was such a strong predictor in the choice of the respondents. A comparison of the rank-order of the reasons for users divided by prescription insurance status is in Table 39; the reasons for non-users divided by insurance status is in Table 40.

TABLE 37

Comparison of the Mean Rank for Categories of Reasons for Using the TRICARE Senior Pharmacy Program

Category	Average Importance Score[1]	Ranking by Average Importance Score	Average Number of Times Selected	Rank by Average Number of Times Selected
Benefits	453	1	322	1
Economic	342	2	244	2
Continuity	283	3	243	3
Miscellaneous	156	4	69	6
Access	107	5	105	4
Satisfaction	81	6	72	5
Knowledge	18	7	24	7

[1]Calculated by summing the importance score for all reasons in that category and dividing by the number of reasons in that category.

TABLE 38
Comparison of the Mean Rank for Categories of Reasons for Not Using the TRICARE Senior Pharmacy Program

Category	Average Importance Score[1]	Ranking by Average Importance Score	Average Number of Times Selected	Rank by Average Number of Times Selected
Satisfaction	159	1	128	1
Economic	119	2	67	3
Knowledge	78	3	74	2
Continuity	63	T-4	63	4
Miscellaneous	63	T-4	33	6
Access	27	6	39	5
Benefits	15	7	31	7

[1]Calculated by summing the importance score for all reasons in that category and dividing by the number of reasons in that category.

TABLE 39

Comparison of the Rank of Reasons for Uninsured versus Insured Users of the TSPP

Reason	Uninsured rank	Insured rank
Did not have coverage for prescription medications before	1	T-9
Want to use all of the military benefits available to me	2	1
There is no enrollment fee	3	3
Have used a military pharmacy before and want to continue	4	6
Able to continue using the same pharmacy	5	4
Want the convenience of using a mail-order pharmacy	6	T-7
Use a lot of prescription medications and need all the coverage	7	5
Other reason	8	T-7
Co-payment amounts are less than the coverage I had previously	9	2
Think there will be a greater variety of prescription medications available	10	12
Was not satisfied with the coverage I had before	11	T-9
TSPP offers a wider range of benefits than the coverage I had before	12	13
More pharmacies accept TSPP than the drug coverage I had before	13	15
TSPP will pay the amount not covered by my other prescription insurance program	14	11
Live near a military pharmacy but did not know I could use it until TSPP started	15	14

TABLE 40
Comparison of the Rank of Reasons for Insured versus Uninsured Non-Users of the TSPP

Reason	Insured rank	Uninsured rank
Already have coverage for prescription medications	1	14
Don't know enough about the TRICARE Senior Pharmacy Program	2	2
Satisfied with the prescription drug coverage have now	3	T-17
Currently use a Veteran's Administration pharmacy	4	T-11
There are no military facilities close to me	5	4
Other reason	6	5
Didn't know the TRICARE Senior Pharmacy Program existed	7	3
Don't want to switch prescription drug coverage at this time	8	T-19
Co-payment amounts are more	9	T-15
Do not use any prescription medications	10	1
Don't want to change the pharmacy where I obtain my prescription medication	11	13
Don't want to use a mail-order pharmacy	12	7
Paperwork to start using is too confusing	13	10
Not enough pharmacies accept TRICARE Senior Pharmacy Program	14	T-15
Spouse of a military retiree and did not think I was covered	15	8
Don't trust the DoD to run a prescription drug plan	T-16	9
Wider range of benefits with the coverage I currently use	T-16	T-19
Don't think I need prescription drug coverage	18	T-11
Think there will be less variety of prescription medications	19	6
Enrollment fee is too high	20	T-17

The uninsured and insured users of the TSPP are very similar in the reasons they believe are most important for using the TSPP. With the exception of 'did not have coverage for prescription medications before' and 'co-payment amounts are less than the coverage I had previously' the reasons differ by only a few places in their rank order. There appears to be a great difference in the reasons for not using between the insured and uninsured non-users of the TSPP. The insured non-users seem to have coverage that they are satisfied with and do not wish to change coverage at this time. Uninsured non-users either do not have any prescription needs or experience a knowledge gap pertaining to the TSPP. The uninsured non-users appear to be a group that has not been informed of the existence of the TSPP.

V. DISCUSSION AND CONCLUSIONS

The discussion and interpretation of the results of this study are presented in this chapter. This chapter will begin with a discussion of the research methods that were used in this study. A discussion of the results, particularly as they pertain to the different hypotheses that were advanced at the beginning of the study will follow. The implications of the results for future research will be discussed next. Finally, the limitations of the research will be discussed.

Study Methodology

This study started with a Department of Defense dataset regarding eligibility for the TRICARE Senior Pharmacy Program. The data were then cross-referenced with a prescription claims database to differentiate if the eligible beneficiaries had or had not used the TSPP. Once the status of the eligible retirees had been determined in this manner, this information was augmented with a mail survey to gather data regarding prescription insurance status and individual level variables. Using this methodology, the researcher hoped to gather more individualized data regarding the characteristics of each of the groups than if their status was not known prior to the fielding of the survey.

At the start of this project there was a concern if the retirees would be able to give valid information on two of the different sections of the survey. The two main areas of concern were the information on prescription utilization and previous/current insurance coverage. These areas were a concern because this information was hypothesized *a priori* to be very important in the retiree's decision regarding the TSPP. Since this information was deemed to be so important to the conduct of this study, different means of gathering it were reviewed. The studies by both Ganther (1999) and Cline (2001) gathered either prescription utilization or insurance coverage information. The questions utilized in these previous studies proved to be successful and were replicated in this study.

Another concern at the start of this study was whether the response rate obtained would be adequate. Originally the researcher wanted to use a national sampling frame and either Department of Defense or Department of the Army letterhead to give the survey and the project a more official purpose. It was thought that this official purpose

would increase the response rate. However, because of the legal implications involved in using letterhead that denotes official sponsorship, this project was unable to obtain consent to use the official letterhead. After permission was denied to use the official letterhead, the researcher decided to survey retirees in only a six-state area, assuming that the name recognition of the University of Wisconsin School of Pharmacy would assist in maintaining an adequate response rate. This technique appeared to work well since the overall response rate (62.6%) was adequate for the purposes of this study.

There are several strengths present in how this study was conducted. The initial strength of this study was the ability of the researcher to determine before the fielding of the survey what the status (TSPP or not) of the potential respondent was. This was due to the extensive amount of information the DOD maintains on the possible beneficiaries and the unique method of cross-referencing the separate databases for this study. Although this mechanism was more time consuming at the beginning of the study, it enabled the researcher to target the surveys to the retirees more appropriately and increase the level of specificity of the information gathered with the survey.

Additionally, the status of the potential respondent was verified at the beginning of the survey. This allowed the researcher to ensure that the information being gathered from the retiree was appropriate and if not, the retiree was sent the correct form of the survey. There are three possible reasons why the retiree may have received the wrong version of the survey. First, there may have been an error in one of the databases maintained by the DOD that lead to the misclassification of a potential respondent. The question on the survey verifying the status of the retiree was then a check on the accuracy of the databases. Second, the retiree may have been confused as to their actual TSPP

status. There were four cases where this occurred based on the following scenario. All cases occurred in the TSPP users group. The retiree would return the original version of the survey indicating they were to complete the other version of the survey. When the retiree received the other version of the survey they would then return that version uncompleted as well. If the retiree was truly confused about their TSPP status, which could be an explanation for this scenario, it may have been beneficial that they returned their surveys unanswered since the validity of responses from a confused retiree could be called into question. Third, the retiree may have started to use the TSPP between the time the sample had been drawn and the time they received the survey since there is no enrollment period or fee involved in the use of this program. By allowing these retirees to obtain the opposite version of the survey, this allows a more up-to-date accounting of the retirees and what factors may be associated with their decision to use the TSPP.

Another strength of this study was the fielding mechanism whereby a number was placed on the survey before it was mailed to the retiree. This mechanism allowed the researcher to track which retirees had responded and several other things. First, it enabled the researcher to send the opposite version of the survey to those retirees who needed it without requesting additional information from the retiree. This decreased the respondent burden. Second, it contributed to the accuracy of the information gathered in two ways. It allowed the researcher to complete age and gender information for those respondents who did not complete these items on the survey. Also, the researcher was able to check if the response was actually from the retiree to whom it was addressed. There were five instances where someone other than the retiree completed and sent back the response; these responses were classified as unusable. Third, it allowed the second

increases, their likelihood of choosing to use the TSPP increases. These results are understandable from an economic viewpoint. Individuals who are utility maximizers will pursue the most advantageous route in financial terms. However the amount of premium paid by the retirees is not a significant predictor of their choice to use the TSPP, which is not in line with economic theory. One possible explanation for this result could be that the payment of the premium for prescription drug insurance is more of a budgeted expense and is therefore not as visible to this population. The out-of-pocket expenses may have more impact because the retirees are confronted with this expense each and every time they have a prescription dispensed. In other words, the out-of-pocket expense is in the retiree's evoked set and is the primary variable upon which the retirees are basing their decision. Hence, the hypothesis concerning the out-of pocket expenses is significant while that concerning the premium is not.

Hypothesis #6 concerning the retiree's level of financial assets and their choice to use the TSPP also was significant. This hypothesis found that as a retiree's assets increased, they were less likely to use the TSPP. Although past studies that found an association between plan choice and economic characteristics used income (Berki, et al 1978; Langwell and Hadley 1989; Barringer and Mitchell 1994; Dowd et al 1994; Cline 2001) as the variable representing financial status, the past studies are support for this finding. Perhaps in the elderly, who are more likely to be on a fixed income of some type, a more appropriate indicator of financial status is the amount of their total liquid assets. Since there is no enrollment fee associated with the use of the TSPP, it is somewhat surprising that there was any relationship between assets and the choice to use the TSPP. A possible explanation is that the retirees form an association between the

premium for insurance coverage and the quality of that coverage. This would mean that those retirees with the financial assets are willing to pay a premium in order to obtain what they consider to be higher quality coverage.

There was no relationship between the age of a retiree and their choice to use the TSPP. This is also understandable. Age has not been shown to be a consistent predictor in the choice of health plans. Those studies that have shown age to significantly predict the choice of health plans had a wider age range than the current study. Studies that used only an elderly population did not find a significant relationship between an individual's age and their choice of a health plan. It is possible that in the studies using a wide age range there was a high correlation between age and number of reported chronic conditions.

The number of reported chronic conditions may be a better predictor of health plan choice, but this information often was not collected in past studies. Past studies have either used health status as a proxy for the level of need, or not included any variable that would give an indication of need. In this study hypothesis #8 relates to the number of reported chronic conditions and the retiree's choice to use the TSPP and therefore this information was collected. All of the logit models in this study found that the number of reported chronic conditions was a significant predictor of a retiree's choice to use the TSPP. This gives support for collecting and using this information in future studies when examining insurance plan choice, since this variable was significant regardless of previous prescription insurance status. Also, the results of the logit models suggest that the need for the insurance is a strong factor in the retiree's decision to use the TSPP. Those retirees with more chronic conditions will have more prescriptions (as

evidenced by the correlation of 0.64 between these two variables), and therefore will need the TSPP more.

The final hypothesis supported concerned the retiree's previous prescription drug insurance status and their choice to use the TSPP. This hypothesis stated that those retirees who were not previously insured for prescription drug costs would be more likely to choose to use the TSPP. This is understandable from an economic standpoint. This also can be interpreted as an indication that the previously uninsured group in this population was more in need of prescription insurance coverage. Prior to the implementation of the TSPP, there were two possible reasons that the previously uninsured population would have been without insurance. Either it was by their own choice or due to a problem with access to appropriate coverage. The underlying reason was often difficult to determine since this information was not gathered from the uninsured. The results found for this hypothesis lend support to the belief that the majority of the uninsured population is without coverage due to a problem in their access to appropriate prescription drug coverage since they will chose to use the coverage when it is offered to them.

When interpreted together, the findings for hypotheses #8 and #12 can be interpreted to mean that the TSPP is beginning to address a previously unmet need. Hypothesis #8 tells us that the retirees with more chronic conditions may need more coverage for prescription medications and will use it if offered to them. Previously insured retirees with more chronic conditions were more likely to use the TSPP as well. This may mean that their previous insurance was not satisfying their need due to a high level of co-insurance and therefore they switched to the TSPP. Those retirees with no

coverage for prescriptions need the coverage and, again, start using it when offered to them. In other words, both of these variables are indicators of the level of need and both are significant in predicting a retiree's choice in using the TSPP.

From a policy perspective, it is just as important to examine the hypotheses that were not supported in this study as those that were supported. The hypotheses concerning a retiree's income level could have an impact on future Medicare policy. There have been state-level Medicare initiatives proposed that would include only those elderly that are below a particular income level. However, the results from this study demonstrate that there is an unmet need at all income levels. The poor elderly do not have a higher demand for prescription drug coverage than the wealthy. Restricting Medicare coverage to individuals below a certain income level would be excluding a significant portion of the population and therefore not satisfying all of the need.

The results from the analysis for hypothesis #1 also have implications for policy or plan proposals. This hypothesis was related to possible restrictions being imposed on plan participants through the use of a mail-order pharmacy. Since the TSPP is structured in such a way to give retirees the option from which pharmacy to get their prescription dispensed, this hypothesis is not exactly like those in past studies. The restrictions placed on beneficiaries in past studies were more confining. For example, in the Cline study one of the factors studied was the mandatory use of a mail-order pharmacy. In the studies on health plan choice, the restrictions often were imposed as the mandatory use of a certain physician or clinic. Perhaps this difference in the level of restriction is the reason that hypothesis #1 was not supported in this study. The plan or policy implications from this are that coverage should be structured to give the beneficiary options in their choice of

services. Then through the use of differential reimbursement mechanisms, it may be possible to influence the beneficiaries to use the point of service that is most advantageous to the plan administrator.

There was no association found in this study between the length of previous prescription insurance coverage and the choice to use the TSPP. Past studies have hypothesized that there is a continuity effect due to the tangible and intangible costs of switching from one insurance plan to another. All of the past studies were conducted in health plan choice. There were no studies examining continuity in prescription drug plans. There are two possible reasons that the hypothesis related to continuity was not supported. First, since the TSPP is essentially a free program, this may have decreased the transition costs to the point that other economic factors were able to overcome any disincentive of switching to the TSPP. Second, the transitions costs discussed in the health plan literature may not translate well for prescription drug plans. Often the transition costs are expressed as the cost to establish a new physician-patient relationship. For the TSPP, it may have been possible for the retiree to continue utilizing the same pharmacy and thereby continue their relationship with their pharmacist.

Perhaps a better indicator of transition costs in this study was the strength of the pharmacist-patient relationship measured by the relationship commitment scale. However, this hypothesis was not supported either. There are two possible reasons for this finding. First, the results displayed in Table 19 show that over 40% of the users were using either two or more pharmacies or no pharmacies before they started using the TSPP. For the non-users, over 47% were using either two or more pharmacies or no pharmacies. Given these statistics, the pharmacist-patient relationship may not have been

that strong. Second, the past studies regarding a pharmacist-patient relationship are aimed more at how a relationship develops rather than using the strength of the relationship in predicting loyalty to a particular pharmacy. With this in mind, as well as the fact that a retiree may have been able to continue using the same pharmacy, it is understandable that this hypothesis was not supported.

Another interesting finding from this study was the difference in participation in TSPP based on gender. There was not a hypothesis related to gender since this was not used as a factor in previous research on health insurance plans and there is no theoretical basis for expecting to find a difference in this variable. After discovering this finding, the researcher examined some possible underlying causes. Table 41 shows one explanation. It appears that the gender difference is an artifact caused by the underlying difference in the source of prescription drug insurance for females. In this particular elderly population, females are less likely to have prescription drug insurance from an employer or another government program such as the Veterans Administration. The females in this group appear to be more economically vulnerable in terms of having to put either their income or assets at risk in order to obtain prescription coverage. Although the females did have more coverage that had been purchased from Medigap plans, these plans were probably dropped in favor of the TSPP. This would mean a substantial savings for this group of elderly females. The important finding from Table 41 is that females in this population were less likely to have any prescription drug insurance, which was previously shown to be a strong predictor of using the TSPP. The source of prescription insurance coverage through Medigap plans is probably the underlying reason for gender being a significant predictor in the insured population as well.

TABLE 41
Source of Prescription Drug Insurance by Gender

Source of prescription drug insurance	Male N (%)[a]	Female N (%)[a]	Chi-square (df)
Employer or former employer alone	172 (28.6)	116 (24.1)	83.12* (8)
Medicaid alone	6 (1.0)	3 (0.3)	
Veterans Administration alone	116 (19.3)	24 (5.0)	
Medigap plan alone	32 (5.3)	39 (8.1)	
Medicare HMO alone	10 (1.7)	9 (1.9)	
Other source alone	15 (2.5)	12 (2.5)	
2 different sources	46 (7.7)	18 (3.7)	
3 different sources	2 (0.3)	0 (0.0)	
None or Missing	202 (33.6)	261 (54.1)	

a = All percentages are column percentages
*=$p<0.05$, two-tailed

A secondary objective of this study was to explore the underlying reasons retirees used to make their choice decision. Both the users and the non-users appear to be similar in the reasons for their decision. For the non-users, an economic reason was selected as the most important reason; while for the users economic reasons were listed as three of the top five reasons. This means that economic reasons are very important for both groups.

However, from Table 40, it appears that the non-user group is not a homogeneous group. Over half of the reasons for not using the TSPP had a difference in rank of at least five places between the insured and uninsured non-users. The insured non-users are basing their decision on economic reasons, and since they are the majority of the group, their decision criteria are influencing the overall results for non-users. But the uninsured non-users appear to be using a different set of reasons to make their decision about the TSPP. Although economic reasons were chosen as the most important reason for the uninsured non-user, they also chose knowledge reasons for three of their top five, which means that this is a very important category for this group as well. Thus it appears that there could be two separate groups of non-users with differing reasons for their choice.

When analyzed in this manner, it appears that the insured non-users are very similar to the users in the reasons they use to make their decision. Both the users and the insured non-users base the decision of participation in the TSPP on economic reasons. However, in the case of the insured non-users they already have prescription insurance coverage and are satisfied with that coverage. For the uninsured non-users the knowledge (or lack of knowledge) reasons figure strongly into their decision-making framework. It cannot be determined from the information collected if this is due to a lack

of information dissemination on the part of the DOD or a lack of information seeking on the part of the retiree. The underlying reason for this knowledge deficit should be assessed to determine how the DOD could best target any future marketing regarding the TSPP. If the knowledge deficit is due to a lack of information seeking on the part of the retiree, the DOD may not be able to overcome this. However, if the knowledge deficit is due to a lack of information dissemination, the DOD should determine which groups of retirees to target in the future.

To look at this issue from a different perspective, Table 42 shows that there is a significant difference between the users and the non-users in the number of prescriptions used in the past 30 days and the value of those prescriptions. There is also a large difference between the insured and uninsured non-users in the number of prescriptions used in the past 30 days and the value of those prescriptions. The uninsured non-users reported the lowest number of prescriptions used in the past 30 days of any of the different groups. The dollar value (as calculated by the AWP cost) of the prescriptions used by the uninsured non-users is lowest, and the average value (AWP cost per prescription) of prescriptions for the uninsured non-users is the lowest as well. This is further evidence that there may be two separate groups of non-users. When looking at the information in this manner, it appears that the uninsured non-users use few prescriptions, so their level of need is lower than that of any other group of retirees. The uninsured non-users have not experienced a need for prescription insurance coverage yet and may not have initiated the information seeking behavior to find out about their options.

TABLE 42
Average monthly number of prescriptions and value of prescription drugs by User vs. Non-user category

	Mean (SD) number of prescriptions	T-test value[1] (df)	Mean (SD) value of prescriptions	T-test value[1] (df)
Users				
All	4.95 (3.56)	5.46* (1075)	$247.73 (243.92)	5.04* (848)
With insurance	5.29 (3.72)	4.79* (626)	$265.83 (242.60)	4.05* (632)
Without insurance	4.64 (3.39)	4.70* (434)	$231.02 (245.62)	3.71* (434)
Non-users				
All	3.71 (3.03)		$182.02 (171.10)	
With insurance	4.02 (2.95)		$199.31 (170.86)	
Without insurance	2.35 (3.03)		$103.63 (149.40)	

*=$p<0.05$, two-tailed
[1]The T-test values are for comparing all users to all non-users, users with insurance to non-users with insurance, and users without insurance to non-users without insurance, respectively.

To keep the issue of the uninsured non-users of the TSPP in perspective, it may be beneficial to examine how large this group is. Given previous estimates of the non-user proportion of 27% and the proportion of non-users who are uninsured in this study of 16.6%, a quick estimate of the size of the uninsured non-user group is 4.5% of the Medicare-eligible military population. From Table 9, the proportion of Medicare-eligible military that did not have any prescription drug insurance before TSPP was approximately 40%. This means that the implementation of the TSPP has dramatically reduced the proportion of Medicare-eligible military without prescription drug insurance. The group of Medicare-eligible military retirees who are still without prescription drug insurance either do not have a need for the TSPP at this time or are unaware of its existence. Based on comments received with the surveys, either scenario could be true. Some of the uninsured non-users stated that, "this (the survey) is the first I have ever heard of such a program." Other uninsured non-users appeared to know about TSPP and its benefits, since they said, "I have not had a need for it (TSPP) yet because I don't use any prescriptions, but will definitely use it when I get a prescription."

All of the information on economic reasons and level of need points to the conclusion that the TSPP is economically beneficial for the retirees who use it and serves an unmet need as well. The previously uninsured users of the TSPP find that using TSPP is particularly beneficial. For example, one retiree wrote that she has "been very pleased with (her) new policy." She went on to explain how she can now get up to a three-month supply of one of her medications at a cost less than she had paid for one month under her old plan, and she thought that was a good plan at the time. Another retiree stated that the TSPP is "a wonderful program – a model for expanding coverage to all Veterans, now

poorly served thru the VA." These are just some of the comments that proclaim how well received the TSPP is and how beneficial it has been to this group of retirees.

Improvements in the Theoretical Model

The results of this study can be used to improve the underlying theory and models used in the research on health and prescription drug insurance plan choice. There are four different areas that could be improved upon using what was found in this study. First, a health status indicator is important in the prediction model used for the research. The choice of the need variable should be one that will work well for all of the different groups present in the population being studied. For the elderly population in this study, the number of reported chronic conditions appeared to work well to capture the variation in need for the TSPP. It was correlated highly with the number of prescriptions used and also was a more stable indication of the health status of the retiree since it is not influenced by day-to-day events like self-reported measures of health status can be. The number of reported chronic conditions was a significant predictor for the population as a whole and in both of the sub-groups analyzed. Past studies have used the number of physician visits or number of days in the hospital. However, these variables may be more indicative of acute health rather than chronic need.

Second, economic characteristics appear to be important in the choice of insurance plans. Therefore, a financial indicator must be included in the model. For the elderly population, the level of assets may be a better indicator than income. Since the elderly may have a fixed income, they may evaluate their financial well-being more in terms of their level of assets than in their income. This appeared to be the case in this

study. Past research among the elderly has found that financial status is associated with plan choice (Langwell and Hadley 1989; Dowd 1994). The majority of these studies have used income as the indicator of financial status. This study lends support to using level of assets as an indicator of financial status, particularly in the elderly. Regardless, it may be best to use only one financial status indicator in future studies to decrease the possibility of multi-collinearity.

Third, not all of the domains present in the Berki-Ashcraft (1978) or Cline (2001) model appear to be important in predicting plan choice. Additionally, even if a domain is important for predicting choice, not all of the attributes within that domain should be used for predicting choice. If all of the attributes are put into the model at the same time, there may be problems with multi-collinearity. This could lead to the conclusion that there are no good predictors of choice in the population being studied instead of discovering what attributes are most important for the population being studied. Data should be collected on more than one of the variables in each domain. However, when building a model for predicting plan choice, exploratory analyses should be done to determine which variable is the best indicator for a particular domain, and only one variable should be included for each domain. The most important domains from the Cline model appear to be the economic characteristics and risk factors domains, particularly for the uninsured population. However, drug benefit plan characteristics, such as the out-of-pocket savings also were important in this study for the population as a whole and the insured sub-population.

Finally, the choice of model or theory appears to be important when studying plan choice. From the results presented here, previous insurance coverage should be

collected. This information can then be used to determine if all of the population being studied is influenced by the same factors, regardless of insurance status. The uninsured group may be more influenced by need and economic factors than the insured group. The same model may not work in different groups, so different models should be explored for their applicability in order to decide what theory or model is best in which population.

Implications for Future Research

This study was beneficial in determining what factors may be associated with the choice of prescription drug coverage by a military elderly population. There are many implications of these results for future research. These results can be viewed as an initial glimpse of what may happen when a Medicare prescription drug benefit is implemented. In order to assess how realistic these results are to that scenario, the population used in this study should be compared to the entire Medicare-eligible population to see how closely the two different populations are aligned in terms of the factors that are associated with the use of the TSPP. Are the factors that caused the gender differences in this study also present in the entire Medicare-eligible population? Will the gender differences from this study persist when future generations reach the age to qualify for Medicare?

This study has found that use of the TSPP is based on a need for prescription drug insurance. Additional information collected with this survey showed that about 89% of the TSPP users report using about the same number of prescriptions now compared to before they started to use the TSPP. Although this means that prescription drug use should not increase because of the implementation of a prescription drug plan, it does mean that only those who expect to use the plan will sign up and pay to use it. Future

researchers and policy makers should keep this in mind when examining programs that will provide prescription drug coverage. Since it will be primarily those that use the program that will sign up for the benefits, this will have implications when performing cost projections for those programs. If the cost projections for a program rely on revenue from a premium to break even, then policy analysts should keep in mind that beneficiaries will probably use economic reasons in their decision to join the program as well. Therefore, it will be important when exploring funding for any proposed program to use the average number of prescriptions for the population that will actually be using the program rather than the average number of prescriptions for the general population.

Not having prescription drug insurance was a strong predictor of the retiree's choice to use the TSPP. An area for possible future research would be to explore the characteristics of the uninsured population. It may be beneficial to find out the underlying reasons why this sub-population was uninsured. Are there certain characteristics of this group that are associated with their lack of insurance? How do their attitudes toward medical care influence their perception of insurance? The retirees in this population who were uninsured yet did not use the TSPP could have experienced some cost savings. Does this mean that they are acting irrationally? From the results presented in Tables 33 and 34 it is apparent that the factors associated with the decision for the uninsured group are different than those for the insured group. The previous insurance status of the respondent is a very strong predictor of their choice for future insurance coverage and is very important when analyzing different groups in the elderly population.

Another area for possible future research is to explore the outcomes that are related to the implementation of the TSPP. For example, has the TSPP improved the quality of life of this population? If so, at what cost? Is it affordable? To pursue this question further, a researcher may have to take a very broad view of quality of life. There were many comments from respondents on the benefits of the TSPP, how well it was being received and appreciated. However, one comment was especially poignant. This particular respondent wrote, "Before the TRICARE Program it was meds and no eat, or eat and no meds. Now I can have both."

Some other possible outcomes that may be associated with the implementation of the TSPP are its potential impact on health care expenses in other areas. Since this was an elderly population for which the prescription drug coverage was implemented, it may be possible to track what happened to their medical claims in other areas. By cross-referencing the beneficiary of the TSPP with their claims from the HCFA database, it should be possible to determine if other health care claims have decreased, increased or stayed the same. This will shed light on how effective prescription medications are in decreasing other health care expenses. If it can be shown that prescription medications have the overall effect of decreasing other health care expenses, then it may be possible to transfer funds from other programs to initiate a Medicare prescription drug program for the entire elderly population.

Limitations

This research has limitations, as with all research, and those limitations must be kept in mind when interpreting these results. The first limitation that should be

mentioned is that the sample for this study was drawn from only a six-state area. The TRICARE Senior Pharmacy Program is a national program in which the entire DOD Medicare-eligible retiree population can participate. It is possible that the retirees residing in the six-state area chosen are in some way different than the eligible population as a whole. It was pointed out earlier that the survey sample drawn, and therefore the respondent sample received, was different than the eligible population in the gender proportions present. This discrepancy can be corrected by weighting the responses in such a manner to correct for the differences in the proportions. However, if the respondent sample used differs from the eligible population in some characteristic for which the DOD does not keep statistics and this characteristic is also important in the choice decision of the retiree, then these results could not be corrected.

Another area where the sampling frame used for this study will cause a limitation is in its generalization to other populations. Although there are no studies known to this researcher that would substantiate it, the elderly military retiree population may be a unique population. Perhaps they are more accustomed to the transitory nature of the military health care system. At the very least, the TRICARE Senior Pharmacy Program presents a unique situation; other elderly populations have not been presented with the same options as has this population. With the current knowledge on prescription drug plans, it would be difficult to predict what factors the general elderly population would use to make their choice if given an option similar to the TSPP. More than likely, the general elderly population would use economic and need factors as well. However, this study is an initial exploration of what factors are associated with a choice for prescription

drug coverage, and more research will need to be done to substantiate these results in other populations.

The survey instrument used to collect data on the retirees in this study gathered information on a limited set of individual-level characteristics. The decision on which variables to include was driven by theory and past empirical research, but there may be some variables that past research has not discovered that should have been included in the survey instrument. From the results obtained it appears that the most important variable was included; whether the retirees had any previous prescription drug insurance coverage. The researcher added the collection of information on previous prescription drug insurance and utilization patterns to this area of research, which appear to be beneficial. The information collected on the amount of cost savings realized also was new to this area of research. However, future research should expand on this work. It is possible that there are other important variables that should be included in a multivariate model for predicting an individual's choice for prescription drug coverage. Some examples of other variables include the point of service for prescriptions classified in terms of the level of cognitive or pharmaceutical care services, the proximity of the point of service to the beneficiaries home or workplace, or possibly the breadth of the coverage (i.e., if over-the-counter or herbal remedies are covered in a particular plan).

A final limitation that must be considered is the validity of the information collected from the retirees on the survey instrument. As stated previously, there are problems with response validity when surveying the elderly. An attempt was made in this study to overcome these problems by providing reminder cues in the survey form. Also, internal checks of the validity of the responses were incorporated into the survey

instrument by asking questions that were inter-related and used to check validity. A better mechanism to check the validity of the information collected on prescription utilization would have been to obtain this information from the claims database for TSPP maintained by the DOD. However, the researcher was not allowed access to this information. Even if this information would have been available, it would have been only for the users of the TSPP; there would not have been a comparable source of information for the non-users.

Conclusions

The goal of this study was to examine what characteristics are associated with the decision of Medicare-eligible military retirees to use or not use the TRICARE Senior Pharmacy Program. A secondary objective was to explore the reasons that the retirees selected for choosing to use or not use the TSPP. The study was conducted using a mailed survey to groups of users and non-users of the TSPP residing in a six-state area (Illinois, Indiana, Iowa, Michigan, Minnesota and Wisconsin). The status of the retiree regarding the TSPP (user vs. non-user) was determined prior to mailing the survey so the survey instrument could be tailored to collect more precise information from the two different groups.

The results suggest that there are some individual characteristics that are associated with the retiree's decision. The amount of a retiree's savings in out-of-pocket payment, and their previous/current prescription insurance status, level of financial assets and number of reported chronic conditions were the hypothesized factors that were associated with the retiree's decision. All of these factors are economically based and

can be associated with the level of need being experienced by the retiree. Other factors that were important in the retiree's decision were gender, ethnicity and marital status. Previous prescription insurance status was the strongest overall predictor of the retiree's decision.

The reasons that retirees selected for using or not using the TSPP helped to substantiate the findings of what factors were associated with their decision. Economic factors were chosen as important by the majority of the respondents, verifying that prescription insurance status was an important factor. There was a small subgroup of retirees who may be suffering from a lack of knowledge, although the cause for this cannot be determined.

Overall, it appears that the TSPP is satisfying a previously unmet need for prescription drug insurance on the part of this group of retirees. Future research should examine how closely this group of retirees mirrors that of the general elderly population and if this need is present in that population as well. The TSPP could serve as a model upon which to base any future Medicare prescription drug plans if this population closely resembles the general elderly population.

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APPENDIX A

Sample Size Calculations

Method 1

To properly estimate the statistical models of prescription drug plan choice that will be used in this study, approximately 1,000 subjects will be needed (J. Logan, personal communication, 2000).

Method 2

Another method for calculating the sample size needed is to use the following formula for estimating a proportion provided in Churchill (1995):

$$n=(z^2/H^2)(p(1-p))$$

Where:

n=sample size to be determined

z=Desired confidence level (in this case 2 for 95%)

H=Desired level of absolute precision (0.03 in this case)

p=estimated proportion in the population (according to DOD records, about 400,000 of 1.5 million Medicare-eligible military retirees have not utilized the TSPP, which gives a proportion of 0.27)

This formula yields an estimate of 876 respondents. The more conservative estimate of the two methods will be used to ensure that an adequate response is obtained. Therefore, the sample size needed for this study is 1,000 respondents. This sample size will provide a confidence level of 95% and a 3% margin of error.

APPENDIX B

Pre-Notification Postcard

Dear Sir or Madam:

In about a week you will receive a survey from us concerning the TRICARE Senior Pharmacy Program and factors associated with its use. We are writing to you in advance because we have found many people like to know ahead of time they will be contacted.

It is very important that you complete the survey even if you are not using the TRICARE Senior Pharmacy Program. Your name has been selected at random and your participation in this research study is completely voluntary. We want our results to reflect the opinions of all military retirees.

We want to **Thank You** in advance for taking the time to complete the survey! It's only with the generous help of people like you that our research can be successful.

Sincerely,

Timothy Lobner
Major, United States Army

David A. Mott, Ph.D., R.Ph.

APPENDIX C

Cover Letter for User's Survey Packet (First Mailing)

(LETTERHEAD)

April 2002

Dear Sir or Madam,

Beginning on April 1, 2001, the Department of Defense extended prescription drug benefits to Medicare-eligible military retirees. This program is called the TRICARE Senior Pharmacy Program. We are interested in finding out more about this program.

You are invited to participate in a research study to gather more information about the TRICARE Senior Pharmacy Program. Specifically, we want to know who chose to participate in this program and their reasons for participation. We hope that the information we gather can be used to make improvements in the program.

We would appreciate it if you would take 25 or 30 minutes to complete the enclosed survey and return it to us in the postage paid return envelope. Your name was selected at random from a list of military retirees eligible for the TRICARE Senior Pharmacy Program supplied to us by the Department of Defense. Your participation in this survey is voluntary. There should be no physical risks or discomforts related to being in the study. The only inconvenience to you is the time that it will take to complete the survey. You may skip any questions that you do not feel comfortable answering.

Your responses to the survey are **confidential**. Please do not place your name or address anywhere on the survey. The number on the face of the survey booklet will be used to keep track of respondents to the survey. Your name will not be connected with your responses to the survey in any way and no one will be able to tell what your responses were. If you decide not to participate, it will not affect your eligibility for the TRICARE Senior Pharmacy Program or any of the other military benefits to which you are now entitled.

Thank you very much for your time and help! Your cooperation is valued and greatly appreciated. If you have comments or questions about this survey, please call us at (608) 265-9268.

Sincerely,

Timothy Lobner
Major, United States Army
Doctoral Student
Division of Social and
Administrative Sciences

David A. Mott, Ph.D., R.Ph.
Assistant Professor
Division of Social and
Administrative Sciences

APPENDIX D

Cover Letter for Non-user's Survey Packet (First Mailing)

(LETTERHEAD)

April 2002

Dear Sir or Madam,

Beginning on April 1, 2001, the Department of Defense extended prescription drug benefits to Medicare-eligible military retirees. This program is called the TRICARE Senior Pharmacy Program. We are interested in finding out more about this program.

As you are not participating in the TRICARE Senior Pharmacy Program, you are very important to a research study we are conducting to gather more information about this program. Specifically, we want to gather information about the retirees that chose not to use the program and their reasons for not participating. We hope that the information we gather can be used to make improvements in the program.

We would appreciate it if you would take 25 or 30 minutes to complete the enclosed survey and return it to us in the postage paid return envelope. Your name was selected at random from a list of military retirees eligible for the TRICARE Senior Pharmacy Program supplied to us by the Department of Defense. Your participation in this survey is voluntary. There should be no physical risks or discomforts related to being in the study. The only inconvenience to you is the time that it will take to complete the survey. You may skip any questions that you do not feel comfortable answering.

Your responses to the survey are **confidential**. Please do not place your name or address anywhere on the survey. The number on the face of the survey booklet will be used to keep track of respondents to the survey. Your name will not be connected with your responses to the survey in any way and no one will be able to tell what your responses were. If you decide not to participate, it will not affect your eligibility for the TRICARE Senior Pharmacy Program or any of the other military benefits to which you are now entitled.

Thank you very much for your time and help! Your cooperation is valued and greatly appreciated. If you have comments or questions about this survey, please call us at (608) 265-9268.

Sincerely,

Timothy Lobner
Major, United States Army
Doctoral Student
Division of Social and
Administrative Sciences

David A. Mott, Ph.D., R.Ph.
Assistant Professor
Division of Social and
Administrative Sciences

APPENDIX E

Survey Instrument for Users of the TRICARE Senior Pharmacy Program

Survey on the TRICARE Senior Pharmacy Program

You can help us learn more about the TRICARE Senior Pharmacy Program and who is choosing to use it. **We are interested in responses from the retirees that use the TRICARE Senior Pharmacy Program. Your thoughts and opinions will help us to understand why you use the program and what we can do to improve it. Your thoughts and opinions are important to us whether you use prescription drugs or not.**

All responses are very important to us!!

Answering these questions will take 20 to 30 minutes. To preserve the anonymity of your responses, please do not write your name anywhere on the form or put your address on the return envelope. If you wish, you can give us additional comments in the space provided at the end of the form. Again, these comments should not include your name, address, or any other information that would identify you.

Have you used the TRICARE Program since it started on April 1, 2001?

_____ Yes → Please complete the entire survey.
_____ No → You have received the wrong survey. Please return this uncompleted survey to us in the envelope so we can send you the correct survey.

Part 1: Medical Care/Prescription Drug Insurance

First we would like to find out information about your medical care use and insurance coverage. Some people have all or part of their health care costs paid for by a private insurance plan or public program, for example Medicaid. We would like to know about your past and present coverage for doctor visits and prescription drugs. Please check (✔) the correct line or write in the appropriate response.

1. Are you enrolled in Medicare?

_____Yes, Part A only
_____Yes, Parts A and B
_____No

2. How many times did you visit a doctor in the past 6 months? _____

3. About how many days did you spend in a hospital for any reason in the last year?

_____days

The following questions ask about your source of prescriptions and your insurance coverage <u>before</u> you started using the TRICARE Senior Pharmacy Program. Many people keep their previous prescription insurance after using the TRICARE Senior Pharmacy Program. If you kept your previous insurance, please refer to that prescription coverage when asked about prescription coverage.

4. Before you started using the TRICARE Senior Pharmacy Program did you have an insurance plan or other program that paid for your <u>doctor visits</u>?

_____Yes, **All** of my doctor visit costs were paid for
_____Yes, **Part** of my doctor visit costs were paid for
_____No
_____Don't know

5. What was the source of your health insurance plan? Check (✔) all that apply.

_____ My employer, a family member's employer, or former employer **(answer 5a)**
_____ Medical Assistance (Medicaid)
_____ Other government program (Veterans Administration, etc.)
_____ I purchased it directly from an insurance company (Medigap plan)
_____ I belong to a Medicare HMO
_____ Other (please describe)_____

5a. If your health insurance plan was from an employer, approximately how many employees does the employer have?

_____ 10 or less
_____ 11 to 25
_____ 26 to 50
_____ 51 to 100
_____ 101 to 500
_____ more than 500

6. Before you started using the TRICARE Senior Pharmacy Program what types of pharmacies did you get your prescription drugs from? (Check (✔) **ALL** that apply)

_____Chain pharmacy (for example Walgreens, Shopko, K-mart, Wal-Mart, Osco)
_____Independent pharmacy (pharmacy that is locally owned)
_____Clinic pharmacy (pharmacy that is inside a medical clinic)
_____Mail order pharmacy
_____Veteran's Administration pharmacy
_____Military Medical Treatment Facility pharmacy
➔ How far did you have to drive, <u>one-way</u>, to the military pharmacy?_____ miles
_____Other (please describe)_____

7. In the 12 months before you started using the TRICARE Senior Pharmacy Program was there any time when you did **NOT** have insurance for prescription drugs?

_____ Yes
_____ No
_____ Don't know

8. Before you started using the TRICARE Senior Pharmacy Program did you have a private insurance plan or other program that paid for your <u>prescription</u> drugs?

_____ Yes, **ALL** of my prescription drug costs were paid for. **Continue with Question 10**
_____ Yes, **PART** of my prescription drug costs were paid for. **Continue with Question 9**
_____ No. **Go to Question 13**
_____ Don't know. **Continue with Question 9**

9. This question relates to your prescription drug coverage **before** you started using the TRICARE Senior Pharmacy Program. Sometimes people with prescription drug insurance may have to pay part of the cost for prescription drugs. Please check (✔) ANY of the types of cost sharing listed below that your prescription drug insurance plan used (copayment, coinsurance, deductible, or other). For each type you check, fill in the cost that you had to pay. Sometimes the amount of cost sharing is different for brand name and generic prescriptions. If you are not sure about the amount you paid and you still have the old prescription drug card, the information may be on the card.

_____ COPAYMENT: **A fixed amount** that you paid each time you received a prescription. (For example $10 for brand name, $5 for generic)

➔ What is the amount you had to pay for each prescription?

$_____ for brand name prescriptions
$_____ for generic prescriptions

_____ COINSURANCE: **A fixed percent** of the price that you paid each time you received a prescription. (For example 20%)

➔ What percent of the price did you pay for each prescription?

_____% for brand name prescriptions
_____% for generic prescriptions

_____ DEDUCTIBLE: A fixed amount that you had to pay before your insurance company started to pay for prescriptions. (For example $200)

➔ What was the amount of your deductible? $_____

_____ OTHER: If your plan had any other type of cost sharing, please describe it below.

_____
_____

10. What was the source of your prescription drug insurance before you started using the TRICARE Senior Pharmacy Program? Check (✔) all that apply.

_____ My employer, a family member's employer, or former employer
_____ Medical Assistance (Medicaid)
_____ I obtained all of my prescriptions from a military pharmacy
_____ Other government program (Veterans Administration, etc.)
_____ I purchased it directly from an insurance company (Medigap plan)
_____ I belong to a Medicare HMO and they cover prescription drugs
_____ Other (please describe)_____

11. About how much did **you** have to pay **each month** for your health insurance plan that included prescription drug coverage before you started using the TRICARE Senior Pharmacy Program?

$_____

12. How long did you have the prescription drug coverage you had prior to the TRICARE Senior Pharmacy Program? _____ years or _____ months

Only answer question 13 if you did NOT have insurance coverage for prescription drugs before you started using the TRICARE Senior Pharmacy Program. If you had prescription drug insurance please skip to Question 14 below.

13. Please check (✔) the reason which **BEST** describes why you did **NOT** have prescription drug insurance before you started using the TRICARE Senior Pharmacy Program.

_____ The insurance offered by my employer did not include prescription drug insurance
_____ I could have purchased prescription drug insurance but I decided it cost too much
_____ I did not think I needed prescription drug insurance
_____ The insurance company refused to give me prescription drug insurance
_____ Other (please describe)_____
_____

Now we are interested in your insurance coverage since you started using the TRICARE Senior Pharmacy Program.

14. Since starting to use the TRICARE Senior Pharmacy Program do you have an insurance plan that pays for your doctor visits?

_____Yes, **All** of my doctor visit costs are paid for
_____Yes, **Part** of my doctor visit costs are paid for
_____No
_____Don't know

15. Since starting to use the TRICARE Senior Pharmacy Program do you maintain an additional insurance plan that pays for your prescription drugs?

_____Yes → Do you plan to continue this coverage? ____ Yes _____ No
_____No

16. What are the reasons you started using the TRICARE Senior Pharmacy Program? (Check (✔) all that apply.)

_____ a. I did not have coverage for prescription medications before I started using the TRICARE Senior Pharmacy Program
_____ b. I was not satisfied with the prescription drug coverage that I had before I started using the TRICARE Senior Pharmacy Program
_____ c. I want the convenience of using a mail-order pharmacy
_____ d. I want to use all of the military benefits available to me
_____ e. I have used a military pharmacy before and want to continue using that pharmacy
_____ f. I live near a military pharmacy but I did not know that I could use it until the TRICARE Senior Pharmacy Program started
_____ g. The co-payment amounts per prescription are less for the TRICARE Senior Pharmacy Program than the coverage I had for prescription medications
_____ h. I think there will be a greater variety of prescription medications available to me than with the coverage I had before I started using the TRICARE Senior Pharmacy Program
_____ i. The TRICARE Senior Pharmacy Program will pay the amount not covered by my other prescription insurance program
_____ j. I was able to continue using the same pharmacy with the TRICARE Senior Pharmacy Program
_____ k. There is no enrollment fee for the TRICARE Senior Pharmacy Program
_____ l. I use a lot of prescription medications and I need as much insurance coverage as I can get
_____ m. The TRICARE Senior Pharmacy Program offers a wider range of benefits than the prescription drug coverage I had before
_____ n. More pharmacies accept the TRICARE Senior Pharmacy Program than the prescription drug coverage I had before
_____ o. Other _____
_____

17. Of the items checked above, which three are the most important? (write the letter in the space)

Most important: _____
Second most important: _____
Third most important: _____

18. When did you first learn about the TRICARE Senior Pharmacy Program?

_____ (month/year)

19. When did you first use the TRICARE Senior Pharmacy Program?

_____ (month/year)

Part 2: Information About Prescription Utilization

Now we want to gather information about the pharmacy and pharmacists from which you obtain prescription drugs. Please use the following scale to rate the following statements. Write the corresponding number from the scale in the space after each question.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

20. It is important to me to take my prescription to the same pharmacist or group of pharmacists whenever I need a prescription filled. _____

21. If I had a general health related question that did not require me to obtain a prescription, I would still rely on my pharmacist for advice related to these matters. _____

22. I plan to use my current pharmacist to meet my prescription needs in the future. _____

23. About how much did you spend on prescription drugs for yourself in the **last 30 days**?

$_____

24. Now we need some information about the specific prescription drugs you use. Please list the drug name and strength, and the directions for use for **each** prescription drug you took in the **last 30 days** (you may need to look at your prescription vials to get some of this information). If you need more room use the back of the survey.

Drug Name and Strength	Directions (how you took it)	Quantity used in last 30 days
Example: Amoxicillin 500mg	1 capsule 3 times a day	30
Example: Zocor 20mg	1 tablet each evening	30

25. Compared to before you started using the TRICARE Senior Pharmacy Program, how has the number of prescription drugs you use monthly changed? (Please circle one answer)

I use **more** drugs now It is about the **same** I use **fewer** drugs now

26. What types of pharmacies do you currently get prescription drugs from? (Check (✔) **ALL** that apply)

_____Chain pharmacy (for example Walgreens, Shopko, K-mart, Wal-Mart, Osco)
_____Independent pharmacy (pharmacy that is locally owned)
_____Clinic pharmacy (pharmacy that is inside a medical clinic)
_____Mail order pharmacy
_____Veteran's Administration pharmacy
_____Military Medical Treatment Facility pharmacy
_____Other (please describe)_____

Part 3: Medical Care Preferences/Health Concerns

The following section is gathering information about your beliefs and attitudes about health care and your concern about your health. Please use the following scale to rate the following statements. Write the corresponding number from the scale in the space after each question.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

27. For most health problems, I would rather treat myself than go to the doctor. _____

28. For most health problems, I prefer to avoid taking prescription drugs. _____

29. I usually like to talk to a doctor when I have a health problem. _____

30. I know my health better than most doctors do. _____

31. For most health problems, I wait and see if I get better on my own before taking a prescription drug. _____

32. When I have a health problem, I often prefer to use home remedies instead of prescription drugs. _____

33. When I have a health problem, I usually contact a doctor right away. _____

34. I prefer to treat most health problems without help from doctors or prescription drugs. _____

35. I think about my current health a great deal. _____

36. I think about my future health a great deal. _____

37. I am satisfied with my ability to count on good health. _____

Part 4: Demographic Information

Finally, we would like to ask some questions about yourself to help us analyze the results of this study.

38. How would you rate your health relative to others your age? (Please check (✔) one answer.)

_____ Excellent
_____ Very good
_____ Good
_____ Fair
_____ Poor

39. Please check any of the following medical conditions that a doctor has ever told you that you have. (Check (✔) all that apply.)

_____ Anxiety or panic attacks
_____ Arthritis (not rheumatoid)
_____ Asthma or emphysema
_____ Broken hip
_____ Cancer
_____ Coronary heart disease
_____ Congestive heart failure
_____ Dementia
_____ Depression
_____ Epilepsy
_____ Fragile or soft bones (osteoporosis)
_____ Glaucoma
_____ Heart attack
_____ High blood pressure
_____ High blood sugar (diabetes)
_____ High cholesterol level
_____ Parkinson's disease
_____ Problems with your heart rhythm
_____ Rheumatoid arthritis
_____ Skin problems (psoriasis or other)
_____ Stroke or brain hemorrhage
_____ Other _____

40. Please check any of the following activities that you currently have trouble doing without special equipment and/or help from someone else. (Check (✔) all that apply.)

_____ Bathing or showering
_____ Dressing
_____ Eating
_____ Getting in or out of bed or chairs
_____ Walking
_____ Using the toilet

41. What is your age? _____ years

42. What is your gender? _____ Male
_____ Female

43. What is the highest level of education you have completed? (Please check (✔) one answer.)

_____ Less than high school
_____ High school
_____ Some college
_____ College degree
_____ Post graduate degree

44. Are you currently employed? (Please check (✔) one answer.)

_____ No, I'm retired or otherwise not working
_____ Yes, I work 1 to 14 hours per week
_____ Yes, I work 15 to 34 hours a week
_____ Yes, I work 35 or more hours each week

45. What is your marital status? (Please check (✔) one answer.)

_____ Married
_____ Single
_____ Widowed
_____ Divorced/Separated

46. What is your annual household income from all sources? (Please check (✔) one answer.)

_____ less than $5,000
_____ $5,000 to $9,999
_____ $10,000 to $14,999
_____ $15,000 to $24,999
_____ $25,000 to $34,999
_____ $35,000 to $49,999
_____ $50,000 to $64,999
_____ $65,000 to $79,999
_____ $80,000 or more

47. Think about all the things you (or you and your spouse) own besides your home. These things might include a farm or business, any vehicles, bank accounts, IRAs or Keogh accounts, CDs, mutual funds, stocks and bonds, and other properties. If you added up what all these things are worth and then subtracted out the amount you owe for bills, loans, and other debts, about how much money do you think would be left? (Please check (✔) one answer.)

_____ Less than $15,000
_____ $15,001 to $30,000
_____ $30,001 to $50,000
_____ $50,001 to $100,000
_____ More than $100,000

48. Which of the following best describes your ethnicity? (Please check (✔) one answer.)

_____ Black (Non-Hispanic)
_____ Asian/Pacific Islander
_____ Hispanic
_____ Native American/Alaska Native
_____ White (Non-Hispanic)
_____ Other _____

49. Zip Code in which you live _____

COMMENTS:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Please fold this survey and place in the enclosed postage paid envelope and mail it back.

THANK YOU.

APPENDIX F

Survey Instrument for Non-users of the TRICARE Senior Pharmacy Program

Survey on the
TRICARE Senior Pharmacy Program

You can help us learn more about the TRICARE Senior Pharmacy Program and the reasons why retirees may chose not to use it. **We are especially interested in the retirees that do not use the TRICARE Senior Pharmacy Program. Your thoughts and opinions will shed some light on what the problems are with the program and how we can improve it. Your thoughts and opinions are important to us whether you use prescription drugs or not.**

All responses are very important to us!!

Answering these questions will take 20 to 30 minutes. To preserve the anonymity of your responses, please do not write your name anywhere on the form or put your address on the return envelope. If you wish, you can give us additional comments in the space provided at the end of the form. Again, these comments should not include your name, address, or any other information that would identify you.

Have you used the TRICARE Program since it started on April 1, 2001?

_____ **Yes** → **You have received the wrong survey. Please return this uncompleted survey to us in the envelope so we can send you the correct survey.**

_____ **No** → **Please complete the entire survey.**

Part 1: Medical Care/Prescription Drug Insurance

First we would like to find out information about your medical care use and insurance coverage. Some people have all or part of their health care costs paid for by a private insurance plan or public program, for example Medicaid. We would like to know about your coverage for doctor visits and prescription drugs. Please check (✔) the correct line or write in the appropriate response.

1. Are you enrolled in Medicare?

   _____Yes, Part A only
   _____Yes, Parts A and B
   _____No

2. About how many days did you spend in a hospital for any reason in the last year?

   _____days

3. How many times did you visit a doctor in the past 6 months? _____

4. Is there an insurance plan or other program that pays for your doctor visits?

   _____Yes, **All** of my doctor visit costs are paid for
   _____Yes, **Part** of my doctor visit costs are paid for
   _____No
   _____Don't know

5. What is the source of your health insurance plan? Check (✔) all that apply.

   _____ My employer, a family member's employer, or former employer **(answer 5a)**
   _____ Medical Assistance (Medicaid)
   _____ Other government program (Veterans Administration, etc.)
   _____ I purchased it directly from an insurance company (Medigap plan)
   _____ I belong to a Medicare HMO
   _____ Other (please describe)_____

5a. If your health insurance plan was from an employer, approximately how many employees does the employer have?

_____ 10 or less
_____ 11 to 25
_____ 26 to 50
_____ 51 to 100
_____ 101 to 500
_____ more than 500

6. Is there a private insurance plan or other program that pays for your prescription drugs?

_____ Yes, **ALL** of my prescription drug costs are paid for. **Continue with Question 8**
_____ Yes, **PART** of my prescription drug costs are paid for. **Continue with Question 7**
_____ No. **Go to Question 12.**
_____ Don't know. **Continue with Question 7**

7. This question relates to your current prescription drug coverage. Even people with prescription drug insurance may have to pay part of the cost for prescription drugs. Please check (✔) **ANY** of the types of cost sharing listed below that your prescription drug insurance plan uses (copayment, coinsurance, deductible, or other). For each type you check, fill in the cost that you have to pay. Sometimes the amount of cost sharing is different for brand name and generic prescriptions. If you are not sure about the amount you pay and you have a prescription drug card, the information may be on the card.

_____ COPAYMENT: **A fixed amount** that you pay each time you get a prescription. (For example $10 for brand name, $5 for generic)
→ What is the amount you have to pay for each prescription?

$_____ for brand name prescriptions
$_____ for generic prescriptions

_____ COINSURANCE: **A fixed percent** of the price that you pay each time you get a prescription. (For example 20%)
→ What percent of the price do you have to pay for each prescription?

_____% for brand name prescriptions
_____% for generic prescriptions

_____ DEDUCTIBLE: A fixed amount that you have to pay before your insurance company starts to pay for prescriptions. (For example $200)
→ What is the amount of your deductible? $_____

_____ OTHER: If your plan has any other type of cost sharing, please describe it below.

_____

8. What is the source of your prescription drug insurance? Check (✔) all that apply.

_____ My employer, a family member's employer, or former employer
_____ Medical Assistance (Medicaid)
_____ Other government program (Veterans Administration, etc.)
_____ I purchased it directly from an insurance company (Medigap plan)
_____ I belong to a Medicare HMO and they cover prescription drugs
_____ Other (please describe)_____

9. About how much do **you** have to pay **each month** for your health insurance plan that includes prescription drug coverage?

$_____

10. How long have you had your current prescription drug coverage?

_____ years or _____ months

11. Was there any time in the last year when you did **NOT** have insurance for prescription drugs?

_____ Yes
_____ No
_____ Don't know

Only answer question 12 if you do <u>NOT</u> have insurance coverage for prescription drugs. If you have prescription drug insurance please skip to Question 13 on the next page.

12. Please check (✔) the reason which **BEST** describes why you do **NOT** have prescription drug insurance.

_____ The insurance offered by my employer did not include prescription drug insurance
_____ I could have purchased prescription drug insurance but I decided it cost too much
_____ I do not think I need prescription drug insurance
_____ The insurance company refused to give me prescription drug insurance
_____ Other (please describe)_____
_____

The following questions relate to the decision you made regarding the TRICARE Senior Pharmacy Program.

13. What are your reasons for not using the TRICARE Senior Pharmacy Program? (Check (✔) all that apply.)

_____ a. I already have coverage for prescription medications
_____ b. I am satisfied with the prescription drug coverage that I have now
_____ c. I don't know enough about the TRICARE Senior Pharmacy Program
_____ d. I don't think I need prescription drug coverage
_____ e. I don't want to switch prescription drug coverage at this time
_____ f. I didn't know the TRICARE Senior Pharmacy Program existed
_____ g. I don't want to change the pharmacy where I obtain my prescription medication
_____ h. I think the paperwork to start using the TRICARE Senior Pharmacy Program is too confusing
_____ i. The co-payment amounts per prescription are more for the TRICARE Senior Pharmacy Program than the coverage I had for prescription medications
_____ j. I think there will be less variety of prescription medications available with the TRICARE Senior Pharmacy Program
_____ k. There are no military facilities close to me
_____ l. I don't want to use a mail-order pharmacy
_____ m. I don't trust the Department of Defense to run a prescription drug plan
_____ n. I currently use a Veteran's Administration pharmacy
_____ o. I do not use any prescription medications
_____ p. I have a wider range of benefits with the prescription drug coverage I currently use
_____ q. There are not enough pharmacies that accept the TRICARE Senior Pharmacy Program
_____ r. The enrollment fee is too high for the TRICARE Senior Pharmacy Program
_____ s. I am a spouse of a military retiree and did not think I was covered
_____ t. Other _____

14. Of the items checked above, which three are the most important? (write the letter in the space)

Most important: _____
Second most important: _____
Third most important: _____

15. When did you first learn about the TRICARE Senior Pharmacy Program?

_____ (month/year)

16. Do you plan to use the TRICARE Senior Pharmacy Program in the future?

_____ Yes ⟶ When do you plan to start using TRICARE? _____
_____ No

Part 2: Information About Prescription Utilization

Now we want to gather information about the pharmacy and pharmacists from which you obtain prescription drugs. Please use the following scale to rate the following statements. Write the corresponding number from the scale in the space after each question.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

17. It is important to me to take my prescription to the same pharmacist or group of pharmacists whenever I need a prescription filled. _____

18. If I had a general health related question that did not require me to obtain a prescription, I would still rely on my pharmacist for advice related to these matters. _____

19. I plan to use my current pharmacist to meet my prescription needs in the future. _____

20. About how much did you spend on prescription drugs for yourself in the **last 30 days**?

$_____

21. We would like to find out if the different drugs people use are the reason they chose not to use the TRICARE Senior Pharmacy Program. Please list the drug name and strength, and the directions for use for **each** prescription drug you took in the **last 30 days** (you may need to look at your prescription vials to get some of this information). If you need more room please use the comments section at the end of the survey.

Drug Name and Strength	Directions (how you took it)	Quantity used in last 30 days
Example: Amoxicillin 500mg	1 capsule 3 times a day	30
Example: Zocor 20mg	1 tablet each evening	30

22. What types of pharmacies do you get prescription drugs from? (Check (✔) **ALL** that apply)

_____Chain pharmacy (for example: Walgreens, Shopko, K-mart, Wal-Mart, Osco)
_____Independent pharmacy (pharmacy that is locally owned)
_____Clinic pharmacy (pharmacy that is inside a medical clinic)
_____Mail order pharmacy
_____Veteran's Administration pharmacy
_____Military Medical Treatment Facility pharmacy
_____Other (please describe)_____

Part 3: Medical Care Preferences/Health Concerns

The following section is gathering information about your beliefs and attitudes about health care and your concern about your health. Please use the following scale to rate the following statements. Write the corresponding number from the scale in the space after each question.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

23. For most health problems, I would rather treat myself than go to the doctor. _____

24. For most health problems, I prefer to avoid taking prescription drugs. _____

25. I usually like to talk to a doctor when I have a health problem. _____

26. I know my health better than most doctors do. _____

27. For most health problems, I wait and see if I get better on my own before taking a prescription drug. _____

28. When I have a health problem, I often prefer to use home remedies instead of prescription drugs. _____

29. When I have a health problem, I usually contact a doctor right away. _____

30. I prefer to treat most health problems without help from doctors or prescription drugs. _____

31. I think about my current health a great deal. _____

32. I think about my future health a great deal. _____

33. I am satisfied with my ability to count on good health. _____

Part 4: Demographic Information

Finally, we would like to ask some questions about yourself to help us analyze the results of this study.

34. How would you rate your health relative to others your age? (Please check (✔) one answer.)

_____ Excellent
_____ Very good
_____ Good
_____ Fair
_____ Poor

35. Please check any of the following medical conditions that a doctor has ever told you that you have. (Check (✔) all that apply.)

_____ Anxiety or panic attacks
_____ Arthritis (not rheumatoid)
_____ Asthma or emphysema
_____ Broken hip
_____ Cancer
_____ Coronary heart disease
_____ Congestive heart failure
_____ Dementia
_____ Depression
_____ Epilepsy
_____ Fragile or soft bones (osteoporosis)
_____ Glaucoma
_____ Heart attack
_____ High blood pressure
_____ High blood sugar (diabetes)
_____ High cholesterol level
_____ Parkinson's disease
_____ Problems with your heart rhythm
_____ Rheumatoid arthritis
_____ Skin problems (psoriasis or other)
_____ Stroke or brain hemorrhage
_____ Other _____

36. Please check any of the following activities that you currently have trouble doing without special equipment and/or help from someone else. (Check (✔) all that apply.)

_____ Bathing or showering
_____ Dressing
_____ Eating
_____ Getting in or out of bed or chairs
_____ Walking
_____ Using the toilet

37. What is your age? _____ years

38. What is your gender?
_____ Male
_____ Female

39. What is the highest level of education you have completed? (Please check (✔) one answer.)

_____ Less than high school
_____ High school
_____ Some college
_____ College degree
_____ Post graduate degree

40. Are you currently employed? (Please check (✔) one answer.)

_____ No, I'm retired or otherwise not working
_____ Yes, I work 1 to 14 hours per week
_____ Yes, I work 15 to 34 hours a week
_____ Yes, I work 35 or more hours each week

41. What is your marital status? (Please check (✔) one answer.)

_____ Married
_____ Single
_____ Widowed
_____ Divorced/Separated

42. What is your annual household income from all sources? (Please check (✔) one answer.)

_____ less than $5,000
_____ $5,000 to $9,999
_____ $10,000 to $14,999
_____ $15,000 to $24,999
_____ $25,000 to $34,999
_____ $35,000 to $49,999
_____ $50,000 to $64,999
_____ $65,000 to $79,999
_____ $80,000 or more

43. Think about all the things you (or you and your spouse) own besides your home. These things might include a farm or business, any vehicles, bank accounts, IRAs or Keogh accounts, CDs, mutual funds, stocks and bonds, and other properties. If you added up what all these things are worth and then subtracted out the amount you owe for bills, loans, and other debts, about how much money do you think would be left? (Please check (✔) one answer.)

_____ Less than $15,000
_____ $15,001 to $30,000
_____ $30,001 to $50,000
_____ $50,001 to $100,000
_____ More than $100,000

44. Which of the following best describes your ethnicity? (Please check (✔) one answer.)

_____ Black (Non-Hispanic)
_____ Asian/Pacific Islander
_____ Hispanic
_____ Native American/Alaska Native
_____ White (Non-Hispanic)
_____ Other _____

45. Zip Code in which you live _____

COMMENTS:

_____
_____
_____
_____
_____
_____
_____
_____

Please fold this survey and place in the enclosed postage paid envelope and mail it back.

If you want more information about the TRICARE Senior Pharmacy Program,

please call 1-877-363-6337.

THANK YOU.

APPENDIX G

Follow-up Postcard

Dear Sir or Madam:

About a week ago you should have received a survey from us concerning the TRICARE Senior Pharmacy Program and factors associated with its use. If you have already completed the survey and returned it, **Thank You Very Much!** If you haven't completed the survey yet, we would very much appreciate it if you would take the time to do so now.

If you did not receive a survey or have misplaced the first one, please call us at (608) 265-9268 and we will be happy to send you another. We look forward to receiving your completed survey. Please remember that your participation is completely voluntary.

Sincerely,

Timothy Lobner
Major, United States Army

David A. Mott, Ph.D., R.Ph.

APPENDIX H

Cover Letter for User's Survey Packet (Second Mailing)

(LETTERHEAD)

April 2002

Dear Sir or Madam,

About three weeks ago you should have received a survey packet in the mail inviting you to participate in a research study on the TRICARE Senior Pharmacy Program. **Our records show you have not responded to the survey.** If, however, you have already completed and mailed the survey, thank you. It is possible your response and this letter crossed in the mail. **If the person to whom this envelope was addressed is deceased, please check here ___ _____ and return this letter and the survey in the enclosed envelope.**

We are interested in finding out more about this program. Specifically, we want to know who chose to participate in this program and their reasons for participation. We hope that the information we gather can be used to make improvements in the program.

We are sending another survey packet to you because of the significance each survey form has to the usefulness of this study. We would appreciate it if you would take 25 or 30 minutes to complete the enclosed survey and return it to us in the postage paid return envelope. Your name was selected at random from a list of military retirees eligible for the TRICARE Senior Pharmacy Program supplied to us by the Department of Defense. Your participation in this survey is voluntary. There should be no physical risks or discomforts related to being in the study. The only inconvenience to you is the time that it will take to complete the survey. You may skip any questions that you do not feel comfortable answering.

Your responses to the survey are **confidential**. Please do not place your name or address anywhere on the survey. The number on the face of the survey booklet will be used to keep track of respondents to the survey. Your name will not be connected with your responses to the survey in any way and no one will be able to tell what your responses were. If you decide not to participate, it will not affect your eligibility for the TRICARE Senior Pharmacy Program or any of the other military benefits to which you are now entitled.

Thank you very much for your time and help! Your cooperation is valued and greatly appreciated. If you have questions about this survey, please call us at (608) 262-4723.

Sincerely,

Timothy Lobner
Major, United States Army
Doctoral Student
Division of Social and
Administrative Sciences

David A. Mott, Ph.D., R.Ph.
Assistant Professor
Division of Social and
Administrative Sciences

APPENDIX I

Cover Letter for Non-user's Survey Packet (Second Mailing)

(LETTERHEAD)

April 2002

Dear Sir or Madam,

About three weeks ago you should have received a survey packet in the mail inviting you to participate in a research study on the TRICARE Senior Pharmacy Program. **Our records show you have not responded to the survey.** If, however, you have already completed and mailed the survey, thank you. It is possible your response and this letter crossed in the mail. **If the person to whom this envelope was addressed is deceased, please check here _____ and return this letter and the survey in the enclosed envelope.**

We are interested in finding out more about this program. Specifically, we want to gather information about the retirees that chose not to use the program and their reasons for not participating. We hope that the information we gather can be used to make improvements in the program.

We are sending another survey packet to you because of the significance each survey form has to the usefulness of this study. We would appreciate it if you would take 25 or 30 minutes to complete the enclosed survey and return it to us in the postage paid return envelope. Your name was selected at random from a list of military retirees eligible for the TRICARE Senior Pharmacy Program supplied to us by the Department of Defense. Your participation in this survey is voluntary. There should be no physical risks or discomforts related to being in the study. The only inconvenience to you is the time that it will take to complete the survey. You may skip any questions that you do not feel comfortable answering.

Your responses to the survey are **confidential**. Please do not place your name or address anywhere on the survey. The number on the face of the survey booklet will be used to keep track of respondents to the survey. Your name will not be connected with your responses to the survey in any way and no one will be able to tell what your responses were. If you decide not to participate, it will not affect your eligibility for the TRICARE Senior Pharmacy Program or any of the other military benefits to which you are now entitled.

Thank you very much for your time and help! Your cooperation is valued and greatly appreciated. If you have questions about this survey, please call us at (608) 262-4723.

Sincerely,

Timothy Lobner
Major, United States Army
Doctoral Student
Division of Social and
Administrative Sciences

David A. Mott, Ph.D., R.Ph.
Assistant Professor
Division of Social and
Administrative Sciences

APPENDIX J

Cover Letter for Non-Respondent Survey Packet

(LETTERHEAD)

May 2002

Dear Sir or Madam,

About four weeks ago you should have received a survey packet in the mail inviting you to participate in a research study on the TRICARE Senior Pharmacy Program. If you have already completed and mailed the survey, thank you. It is possible your response and this letter crossed in the mail. If you have already completed the earlier survey you do not need to complete this survey.

We are interested in information about people who did not complete the first survey. We invite you to complete the enclosed shorter survey to allow us to gather information on the characteristics of those who have not responded. This smaller amount of information will allow us to determine if those not responding to the longer survey are similar to the group who responded to the study. This will be the final piece of correspondence you will receive from us to ensure that our response is representative of all military retirees.

We would appreciate it if you would take 10 minutes to complete the enclosed survey and return it to us in the postage paid return envelope. Your name was selected at random from a list of military retirees eligible for the TRICARE Senior Pharmacy Program supplied to us by the Department of Defense. Your participation in this survey is voluntary. There should be no physical risks or discomforts related to being in the study. The only inconvenience to you is the time that it will take to complete the survey. You may skip any questions that you do not feel comfortable answering.

Your responses to the survey are **confidential**. Please do not place your name or address anywhere on the survey. The number on the face of the survey booklet will be used to keep track of respondents to the survey. Your name will not be connected with your responses to the survey in any way and no one will be able to tell what your responses were. If you decide not to participate, it will not affect your eligibility for the TRICARE Senior Pharmacy Program or any of the other military benefits to which you are now entitled.

Thank you very much for your time and help! Your cooperation is valued and greatly appreciated. If you have questions about this survey, please call us at (608) 262-4723.

Sincerely,

Timothy Lobner
Major, United States Army
Doctoral Student
Division of Social and
Administrative Sciences

David A. Mott, Ph.D., R.Ph.
Assistant Professor
Division of Social and
Administrative Sciences

APPENDIX K

Non-Respondent Survey Instrument for Users of the

TRICARE Senior Pharmacy Program

Survey on the TRICARE Senior Pharmacy Program

You can help us learn more about retirees eligible for the TRICARE Senior Pharmacy Program. **We are interested in responses from ALL retirees eligible to use the TRICARE Senior Pharmacy Program. We need this information to obtain a clearer understanding of what the characteristics are of those retirees that are eligible for the TRICARE Senior Pharmacy Program. Your responses are important to us whether you use prescription drugs or not.**

All responses are very important to us!!

Answering these questions will take about 10 minutes. To preserve the anonymity of your responses, please do not write your name anywhere on the form or put your address on the return envelope. If you wish, you can give us additional comments in the space provided at the end of the form. Again, these comments should not include your name, address, or any other information that would identify you.

Have you used the TRICARE Program since it started on April 1, 2001?

_____ Yes → Please complete the entire survey.
_____ No → You have received the wrong survey. Please return this uncompleted survey to us in the envelope so we can send you the correct survey.

First we would like to know why you did not respond to the longer version of this survey concerning the TRICARE Senior Pharmacy Program.

1. What was your primary reason for not responding to the first survey on the TRICARE Senior Pharmacy Program? (Please check (✔) one answer.)

_____ I did not have enough time to participate in the first survey
_____ I do not remember receiving the first survey
_____ I thought the first survey was too long to complete
_____ I thought the questions on the first survey were too intrusive
_____ I did not understand the questions on the first survey
_____ I believe I have returned the first survey to you
_____ I am not interested in the TRICARE Senior Pharmacy Program
_____ I thought that the first survey did not apply to me
_____ I do not usually respond to surveys
_____ I was afraid my name would be added to a junkmail mailing list
_____ Other _____

Part 1: Medical Care/Prescription Drug Insurance

Now we would like to find out information about your medical care use. Please write in the appropriate response.

2. How many times did you visit a doctor in the last 30 days? _____

3. About how many days did you spend in a hospital for any reason in the last year?

_____days

The following questions ask about your insurance coverage <u>before</u> you started using the TRICARE Senior Pharmacy Program. Many people keep their previous prescription insurance after using the TRICARE Senior Pharmacy Program. If you kept your previous insurance, please refer to that prescription coverage when asked about prescription coverage. Please check (✔) the correct line or write in the appropriate response.

4. Before you started using the TRICARE Senior Pharmacy Program did you have a private insurance plan or other program that paid for your <u>prescription</u> drugs?

_____ Yes, **ALL** of my prescription drug costs are paid for. **Continue with Question 5**
_____ Yes, **PART** of my prescription drug costs are paid for. **Continue with Question 5**
_____ No. **Go to Question 7**
_____ Don't know. **Continue with Question 5**

5. About how much did **you** have to pay **each month** for your health insurance plan that included prescription drug coverage before you started using the TRICARE Senior Pharmacy Program?

$_____

6. In the 12 months before you started using the TRICARE Senior Pharmacy Program was there any time when you did **NOT** have insurance for prescription drugs?

_____ Yes
_____ No
_____ Don't know

7. About how much did you spend on prescription drugs in the **last 30 days**? $_____

8. How many different prescription drugs have you used in the **last 30 days**? _____

Part 2: Demographic Information

Finally, we would like to ask some questions about yourself to help us analyze the results of this study.

9. How would you rate your health relative to others your age? (Please check (✔) one answer.)

_____ Excellent
_____ Very good
_____ Good
_____ Fair
_____ Poor

10. Do you suffer from any of the following chronic conditions? (Check (✔) all that apply.)

_____ Anxiety or panic attacks
_____ Arthritis (not rheumatoid)
_____ Asthma or emphysema
_____ Broken hip
_____ Cancer
_____ Coronary heart disease
_____ Congestive heart failure
_____ Dementia
_____ Depression
_____ Epilepsy
_____ Hardening of the arteries (arteriosclerosis)
_____ Fragile or soft bones (osteoporosis)
_____ Glaucoma
_____ Heart attack
_____ High blood pressure
_____ High blood sugar (diabetes)
_____ Parkinson's disease
_____ Problems with your heart rhythm
_____ Rheumatoid arthritis
_____ Skin problems (psoriasis or other)
_____ Stroke or brain hemorrhage
_____ Other _____

11. Please check any of the following activities that you currently have trouble doing without special equipment and/or help from someone else. (Check (✔) all that apply.)

_____ Bathing or showering
_____ Dressing
_____ Eating
_____ Getting in or out of bed or chairs
_____ Walking
_____ Using the toilet

12. What is your age? _____ years

13. What is your gender?
_____ Male
_____ Female

14. What is the highest level of education you have completed? (Please check (✔) one answer.)

_____ Less than high school
_____ High school
_____ Some college
_____ College degree
_____ Post graduate degree

15. What is your marital status? (Please check (✔) one answer.)

_____ Married
_____ Single
_____ Widowed
_____ Divorced/Separated

16. Which of the following best describes your ethnicity? (Please check (✔) one answer.)

_____ Black (Non-Hispanic)
_____ Asian/Pacific Islander
_____ Hispanic
_____ Native American/Alaska Native
_____ White (Non-Hispanic)
_____ Other _____

COMMENTS:

_____

_____

Please fold this survey and place in the enclosed postage paid envelope and mail it back.

THANK YOU.

APPENDIX L

Non-Respondent Survey Instrument for Non-users of the TRICARE Senior Pharmacy Program

Survey on the TRICARE Senior Pharmacy Program

You can help us learn more about retirees eligible for the TRICARE Senior Pharmacy Program. **We are interested in responses from ALL retirees eligible to use the TRICARE Senior Pharmacy Program, especially those who have not used it yet. We need this information to obtain a clearer understanding of what the characteristics are of those retirees that are eligible for the TRICARE Senior Pharmacy Program. Your responses are important to us whether you use prescription drugs or not.**

All responses are very important to us!!

Answering these questions will take about 10 minutes. To preserve the anonymity of your responses, please do not write your name anywhere on the form or put your address on the return envelope. If you wish, you can give us additional comments in the space provided at the end of the form. Again, these comments should not include your name, address, or any other information that would identify you.

Have you used the TRICARE Program since it started on April 1, 2001?

_____ Yes → You have received the wrong survey. Please return this uncompleted survey to us in the envelope so we can send you the correct survey.

_____ No → Please complete the entire survey.

First we would like to know why you did not respond to the longer version of this survey concerning the TRICARE Senior Pharmacy Program.

1. What was your primary reason for not responding to the first survey on the TRICARE Senior Pharmacy Program? (Please check (✔) one answer.)

_____ I did not have enough time to participate in the first survey
_____ I do not remember receiving the first survey
_____ I thought the first survey was too long to complete
_____ I thought the questions on the first survey were too intrusive
_____ I did not understand the questions on the first survey
_____ I believe I have returned the first survey to you
_____ I am not interested in the TRICARE Senior Pharmacy Program
_____ I thought that the first survey did not apply to me
_____ I do not usually respond to surveys
_____ I was afraid my name would be added to a junkmail mailing list
_____ Other _____

Part 1: Medical Care/Prescription Drug Insurance

Now we would like to find out information about your medical care use and insurance coverage. We also would like to know about your coverage for prescription drugs. Please check (✔) the correct line or write in the appropriate response.

2. About how many days did you spend in a hospital for any reason in the last year?

_____days

3. How many times did you visit a doctor in the last 30 days? _____

4. Is there a private insurance plan or other program that pays for your prescription drugs?

_____ Yes, **ALL** of my prescription drug costs are paid for. **Continue with Question 5**
_____ Yes, **PART** of my prescription drug costs are paid for. **Continue with Question 5**
_____ No. **Go to Question 7**
_____ Don't know. **Continue with Question 5**

5. About how much do **you** have to pay **each month** for your health insurance plan that includes prescription drug coverage? $_____

6. Was there any time in the last year when you did **NOT** have insurance for prescription drugs?

_____ Yes
_____ No
_____ Don't know

7. About how much did you spend on prescription drugs in the **last 30 days**? $_____

8. How many different prescription drugs have you used in the **last 30 days**? _____

Part 2: Demographic Information

Finally, we would like to ask some questions about yourself to help us analyze the results of this study.

9. How would you rate your health relative to others your age? (Please check (✔) one answer.)

_____ Excellent
_____ Very good
_____ Good
_____ Fair
_____ Poor

10. Do you suffer from any of the following chronic conditions? (Check (✔) all that apply.)

_____ Anxiety or panic attacks
_____ Arthritis (not rheumatoid)
_____ Asthma or emphysema
_____ Broken hip
_____ Cancer
_____ Coronary heart disease
_____ Congestive heart failure
_____ Dementia
_____ Depression
_____ Epilepsy
_____ Hardening of the arteries (arteriosclerosis)
_____ Fragile or soft bones (osteoporosis)
_____ Glaucoma
_____ Heart attack
_____ High blood pressure
_____ High blood sugar (diabetes)
_____ Parkinson's disease
_____ Problems with your heart rhythm
_____ Rheumatoid arthritis
_____ Skin problems (psoriasis or other)
_____ Stroke or brain hemorrhage
_____ Other _____

11. Please check any of the following activities that you <u>currently</u> have trouble doing without special equipment and/or help from someone else. (Please check (✔) one answer.)

_____ Bathing or showering
_____ Dressing
_____ Eating
_____ Getting in or out of bed or chairs
_____ Walking
_____ Using the toilet

12. What is your age? _____ years

13. What is your gender?
_____ Male
_____ Female

14. What is the highest level of education you have completed? (Please check (✔) one answer.)

_____ Less than high school
_____ High school
_____ Some college
_____ College degree
_____ Post graduate degree

15. What is your marital status? (Please check (✔) one answer.)

_____ Married
_____ Single
_____ Widowed
_____ Divorced/Separated

16. Which of the following best describes your ethnicity? (Please check (✔) one answer.)

_____ Black (Non-Hispanic)
_____ Asian/Pacific Islander
_____ Hispanic
_____ Native American/Alaska Native
_____ White (Non-Hispanic)
_____ Other _____

COMMENTS:

_____

_____

Please fold this survey and place in the enclosed postage paid envelope and mail it back.

THANK YOU.