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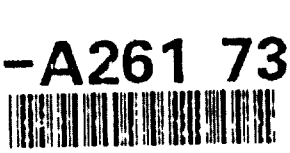

DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1a. REPORT SECURITY CLASSIFICATION N/A	1b. RESTRICTIVE MARKINGS N/A
2a. SECURITY CLASSIFICATION AUTHORITY N/A	3. DISTRIBUTION/AVAILABILITY OF REPORT UNCLASSIFIED/UNLIMITED
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE N/A	DISTRIBUTION STATEMENT A Approved for public release; Distribution Unlimited
4. PERFORMING ORGANIZATION REPORT NUMBER(S)	5. MONITORING ORGANIZATION REPORT NUMBER(S)
6a. NAME OF PERFORMING ORGANIZATION WOMACK ACH FT BRAGG, NC 28307-5000 — 6b. OFFICE SYMBOL (If applicable)	7a. NAME OF MONITORING ORGANIZATION US ARMY BAYLOR UNIVERSITY GRADUATE PROGRAM IN HEALTH CARE ADMIN
6c. ADDRESS (City, State, and ZIP Code)	7b. ADDRESS (City, State, and ZIP Code) AHS SAN ANTONIO, TEXAS 78234-6100
8a. NAME OF FUNDING/SPONSORING ORGANIZATION — 8b. OFFICE SYMBOL (If applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER
8c. ADDRESS (City, State, and ZIP Code)	10. SOURCE OF FUNDING NUMBERS PROGRAM ELEMENT NO. — PROJECT NO. — TASK NO. — WORK UNIT ACCESSION NO.

DTIC ELECTE MAR 08 1993 S B D

"REPRODUCED AT GOVERNMENT EXPENSE"

11. TITLE (Include Security Classification)
MILITARY
MEDICAL INSURANCE PRACTICES OF THE ELDERLY: SUPPLEMENTS TO MEDICARE

12. PERSONAL AUTHOR(S)
PFAFF, GAY LYNN

13a. TYPE OF REPORT	13b. TIME COVERED	14. DATE OF REPORT (Year, Month, Day)	15. PAGE COUNT
FINAL	FROM 7-89 TO 7-91	16 May 1991	70

16. SUPPLEMENTARY NOTATION

17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)
FIELD	GROUP	SUB-GROUP	DUALLY ELIGIBLE BENEFICIARIES MEDICARE VS. MILITARY ELDERLY; INSURANCE SUPPLEMENTS

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

The purpose of this study was to determine the effects knowledge of the Military Health Service System had on possession of sufficient supplemental health insurance for elderly beneficiaries. A total of 274 Medicare-eligible military beneficiaries completed a self-report questionnaire. Medicare "Part B" was not carried by 22% of the repondents. They felt the military owed them comprehensive care. Almost half (43%) did not feel supplemental insurance was required. Again, they had been promised free medical care by the military. Correct knowledge of the Military Health Service System was found to significantly influence the retirees possession of sufficient medical insurance. This study supports a growing need to enhance communications with the military retired population concerning health insurance practices and investments.

93 3 4 151

93-04779

20. DISTRIBUTION/AVAILABILITY OF ABSTRACT	21. ABSTRACT	
☐ UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT. ☐ DTIC USERS	N/A	
22a. NAME OF RESPONSIBLE INDIVIDUAL GAY LYNN PFAFF, CPT, MS	22b. TELEPHONE (Include Area Code) 919-432-9110/2906	22c. OFFICE SYMBOL

DD Form 1473, JUN 86 — Previous editions are obsolete. — SECURITY CLASSIFICATION OF THIS PAGE

"Medical Insurance Practices of the Military Elderly: Supplements to Medicare"

A Graduate Management Project

Submitted to the Faculty of

Baylor University

in Partial Fulfillment of the

Requirements for the Degree

of

Master of Health Care Administration

by

Captain Gay Lynn Pfaff, MS

Running head: Medicare Supplements

ACKNOWLEDGMENTS

This project was not completed by the author alone. Never in my life has constructive advice been sought more sincerely nor received more appreciatively. I am deeply indebted to the following contributors. My preceptor, Colonel Thomas C. Whitesell, who has spent long hours reviewing and improving several preliminary drafts. My husband, Lieutenant Colonel James A. Pfaff, M.D., who has patiently encouraged my efforts. My family, who as a whole have believed in my abilities. The United States Army, for allowing me this opportunity to enhance my skills. The faculty of the U.S. Army - Baylor University Program for assisting me in honing the skills for improvement: education, determination, and inspiration. Finally, the survey participants whose responsiveness enabled me to gain timely insight into their predicament.

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Abstract

The purpose of this research project was to determine the effects of the independent variable, knowledge of the Military Health Service System (MHSS), upon the dependent variable, possession of sufficient supplemental medical insurance (SMI). A total of 274 Medicare-eligible, military beneficiaries completed a self-report questionnaire. Medicare "Part B" was not carried by 22% of the responding retirees; 43% of the participants did not possess supplements to their Medicare coverage; and 65% had incorrect knowledge of the Military Health Service System (MHSS).

Correct knowledge of the MHSS was found to significantly influence the retirees possession of sufficient medical insurance ($X^2 = 22.242$, $p<.005$). However, a multiple linear regression analysis of associated variables showed that military retired rank and employer insured status were the strongest factors influencing insurance practices. Combining the determinants in a full linear regression identified 30% of the dependent variable's total variance. This study supports a growing need to enhance communications with the military retired population concerning their health insurance practices.

Introduction

Persons 65 years of age and older represent 12 percent of the United States population (National Center for Health Statistics, 1987). This same population account for a disproportionately high percentage (31%) of the nation's expenditures for health care. Nine percent of the military, medical beneficiary population are age 65 or older (Review of the Military Health Benefit, 1989).

Conditions which prompted the study

Several issues prompted interest in this study. First, Colonel Douglas A. Braendel, United States Army, Medical Service Corps, suggests dually eligible beneficiaries (such as military retirees who are Medicare recipients) may be squeezed out of future military healthcare systems. In his paper, titled "A Managed Care Model For The Military Departments", Colonel Braendel claims that current catchment area management (CAM) demonstration projects are having problems with reimbursement responsibilities for Medicare eligible beneficiaries.

According to Colonel Braendel, the demonstration sites have a financial incentive to shift the cost of medical care for the elderly from the Department of Defense to the Medicare Trust Fund. "Under capitation, the catchment area plan can easily shift the costs of providing care to Medicare beneficiaries from the lower cost military system to the fee-for-service civilian sector with Medicare paying the higher costs in total" (p.82). In these cases the patient will be responsible for a percentage of the care received in the civilian sector.

This shift will impact on tax payers also. Care rendered under the Medicare Program costs the government more than care rendered through the military system. Colonel Braendel argues the Health Care Financing Administration (HCFA) contract with the military departments as Medicare Insured Groups (MIG) or as Competitive Medical Plans (CMP) to reduce the costs to the government and the patient. An environmental assessment concerning current insurance practices of the elderly could benefit Fort Bragg if such health care contracting occurs.

Secondly, in the June 1990 issue of the *Army Times*, Margaret Roth reported "retirees with serious illnesses such as heart attacks should no longer expect care from the hospital at Fort Lee, Virginia". The hospital commander at the time, Colonel Rossing, had encouraged all beneficiaries to invest in supplemental healthcare insurance. Unfortunately, the retirees living in the Virginia area were concerned that many healthcare needs could not be met through this system. It was pointed out that many insurance companies were unwilling to cover previously existing medical conditions.

A similar confrontation with retirees in the Fort Bragg, North Carolina area could be faced in the future, due to prolonged deployments of medical forces. The primary mission of the military healthcare system is to support active duty personnel, where ever they may be. The Fayetteville Observer-Times reported many families are anxious about the possibility of not receiving medical care through the military system because "their access to

military doctors has been reduced by the gulf crisis" (McAllister, 1991).

Thirdly, the following case study is an example of problems people could have who do not possess sufficient insurance. A retired command sergeant major (CSM) was brought to the military treatment facility's emergency room suffering a heart attack. The gentleman was immediately admitted to the cardiac intensive care unit.

Within a few hours, the assigned physician realized the facility's inability to continue to provide appropriate medical care for the patient. The wife was notified of her husband's pending transfer to the nearest civilian medical center that could provide the needed care. Due to the patient's age, it was assumed that any accumulated civilian bills would be covered by Medicare.

The patient died ten days later; while still occupying a bed in the civilian facility. Four weeks after the funeral, the wife received notice of unpaid medical expenses for her late husband totalling over $4,000. The widow was later told that her husband had failed to enroll in Medicare Part B. The widow protested her responsibility for these claims due to the military's involvement in the transfer. After eighteen months of review and command level adjudication of her claims, the military stood firm on its denial of responsibility for the outstanding bills.

Background

A cursory understanding of Medicare, the Army's healthcare policy, and Womack Army Community Hospital's catchment area are required to demonstrate the need for this management project.

Medicare covers individuals (including retired military) over 65 who are eligible for Social Security benefits, disabled individuals, and individuals who have end-stage renal disease. This program was instituted with the passage of Title XVIII of the Social Security Act, entitled "Health Insurance for the Aged" (Jacobs, 1987). The main focus of the program is on individuals over 65. Medicare's percentage of the total U.S. expenditures for health care was 16 percent in 1982 (American College of Hospital Administrators, 1984). An expert panel from the American College of Healthcare Executives predicts this percentage to climb to 18 percent in 1990 and 19 percent by the year 1995.

Medicare coverage is in two parts. Medicare "Part A", referred to as Hospital Insurance, helps pay for four kinds of medically necessary care: (1) inpatient hospitalization; (2) inpatient care in a skilled nursing facility following a hospital stay; (3) home health care; and (4) hospice care (The Medicare Handbook, 1990). "Part A" covers 90 days of hospitalization per benefit period. A benefit period ends when you have been out of a hospital for 60 consecutive days. In addition, each enrollee has a lifetime reserve of 60 days.

The Florida Department of Insurance summarizes "Part A" coverage as follows: Semi-private room and board, supplies such as

meals and drugs, special care units, diagnostic X-rays, lab tests, operating and recovery rooms, and all but the first three pints of blood (Lynch, 1990). During 1990, Medicare hospital insurance paid for all covered services except the first $592 (for days 1-60), and all but the first $148 per day for days 61-90 (The Medicare Handbook). Medicare (Part A) does not help pay for doctors' services received in a hospital setting; this is a "Part B" responsibility.

Medicare "Part B", also referred to as Medical Insurance, helps pay for the following healthcare provisions: (1) services of a physician, speech or physical therapist; (2) outpatient hospital care; (3) use of an ambulance; (4) physician-administered diagnostic tests; and (5) durable medical equipment and supplies other than prescribed medicines. This supplement to "Part A" is voluntary, with enrollees required to pay a premium. Most "Part B" premiums are $28.60 per month, but some pay an additional amount due to late enrollment in the supplement. As of 1986, enrollees in Medicare "Part B" became subject to a deductible and a copayment of 20 percent of the reasonable charges for services received. In 1990, the first $75.00 of approved charges must have been paid by the patient in order to meet his deductible.

A study to determine the mix of inpatient to outpatient reimbursements was conducted in 1984 (American College of Hospital Administrators). In 1982, outpatient revenues comprised 13% of total hospital revenues. Outpatient treatments are predicted to increase to 20% in 1990 and to 25% by 1995. If these predictions

are founded, participation in Medicare "Part B" may increase in value and have a major impact on outpatient reimbursements.

By law, Medicare cannot pay for certain services. Nor does the program pay 100% of charges for any qualified care received. Its purpose is only to assist individuals in meeting their obligations. It is important to keep in mind the various costs that must be shouldered by the patient.

For example, Medicare does not pay for custodial care. Care is considered custodial when it is primarily for the purpose of meeting personal needs and could be provided by persons without professional skills or training (The Medicare Handbook, 1990). Medicare will also deny payment for services declared "not reasonable and necessary" for the diagnosis or treatment of an illness or injury.

In addition, this medical insurance program does not pay for care in connection with the treatment, filling, removal, or replacement of teeth. Medicare will not pay for routine eye exams, or for eyeglasses (to include corrective lenses unless they are prosthetic lenses that replace the natural lens of the eye). Neither can Medicare pay for services rendered by another government agency.

According to Gail Wilensky, the Director of the Health Care Financing Administration (HCFA), two significant gaps in Medicare coverage exist. Ms. Wilensky identifies long-term care needs as the most prominent area lacking coverage. Her second concern involves the absence of limits on out-of-pocket liabilities

(1988). Due to the repeal of the Medicare Catastrophic Coverage Act of 1988, the limit on out-of-pocket expenses and the expanded prescription drug benefit, both under Medicare "Part B" have been cancelled.

A private market for supplemental insurance has evolved to assist senior citizens cover their medical expenses. The term "Medigap" coverage has been coined to identify supplemental insurance policies that help Medicare beneficiaries pay personal medical expenses. For example, many "Medigap" policies take the responsibility for paying Medicare patients' deductibles and copayments (Jacobs, 1987).

The American College of Healthcare Executives panel studying healthcare trends in the 1990s predicts a significant increase in Medicare premiums, deductibles and coinsurance this decade (American College of Hospital Administrators). This in turn should enhance Medigap policies' market share. Unfortunately, approximately 30% of the 20 million elderly Americans covered by Medicare do not possess supplemental health insurance (Benac, 1990).

In 1988, Michael Zimmerman, Director of Medicare and Medicaid Issues of the Human Resources Division, testified before the United States General Accounting Office. At this hearing he stated, "under the National Association of Insurance Commissions (NAIC) standards, Medigap policies were not intended to provide

full catastrophic insurance coverage for acute or long-term care." In addition, they do not limit a policyholder's out-of-pocket expense.

The Pepper Commission has made a number of specific recommendations designed to protect the elderly from excessive out-of-pocket healthcare expenses (Eastman, 1990). Overall, the commission recommends that all person's over age 65 with incomes below 200% of the national poverty level receive governmental assistance with their Medicare premiums, deductibles, and cost-sharing fees. The federal poverty level is currently set at $12,675 for a family of four (Kim, 1990). Over 15% of Medicare recipients, who fall below the poverty line but are not eligible for Medicaid, are subject to balance billing (Hammons & Pawlson, 1989).

U. S. Army healthcare policy

The Civilian Health and Medical Program of the Uniformed Services' (CHAMPUS) Handbook recommends that Medicare eligible individuals "use a uniformed service hospital or clinic whenever possible" (CHAMPUS Handbook p.99). Unfortunately, federal hospitals are not always resourced for the health related complications seen in the elderly population. For example, Army Regulation 40-3, paragraph 2-3, states "when a medical treatment facility (MTF) commander must deny care to eligible personnel because of a temporary lack of capability, the priority system will be used." Table 1 summarizes this priority system as found in Table 2-1 of Army Regulation 40-3. Retired members of the

uniformed services, their dependents and the dependents of deceased retired members have the fourth of six levels of priority for care.

Under the auspices of this regulation, healthcare providers can defer treatment to civilian sources or disengage treatment and transfer patient care to alternate healthcare facilities. Medical staff will argue these actions are taken to provide quality of care to the patients. However, the financial burden potentially placed on patients referred to civilian sources is seldom known at the time of transfer.

Fort Bragg's catchment area

Womack Army Community Hospital located at Fort Bragg, North Carolina provides services to a large military retiree population. In fact, this state has the seventh largest retiree population of the nation (Woelfer, 1991). There are over 53,000 retirees, not including their family members, currently residing in North Carolina.

Fort Bragg lies primarily in Cumberland County, where approximately 10,497 military retirees dwell. There are an additional 7,000 military retirees within a fifty mile radius of this treatment facility. These retirees, in total, sponsor more than 25,000 family members.

Mr. John H. Bell is the Retirement Services Coordinator at Fort Bragg. He estimates 8,000 Medicare eligible military

beneficiaries live in and around this community. Currently, there is no accurate count for the total number of senior, military retirees who utilize the medical services provided at Womack.

Occasionally the military hospital must disengage treatment and transfer patients to civilian facilities. The responsibility for payment of care received under these circumstances belongs to the family. In order to continue strong relations with local community hospitals, it is important to establish mechanisms that encourage military beneficiaries to meet their financial responsibilities.

Research Questions

Do Medicare eligible, military beneficiaries have a misconception concerning the healthcare resources available to them through the Military Health Services System? Has this misconception culminated in insufficient insurance investments? What variables influence military retiree families to invest in supplemental health insurance?

Literature Review

Published research focusing on the insurance practices of elderly, military retirees and their dependents were not found. Persons on Medicare and eligible for military benefits represent a very small proportion of the aged Medicare population (Garfinkel & Corder, 1985). There seems to be a general lack of interest in the reimbursement capabilities of dually eligible senior citizen. The majority of the Medicare descriptive studies reviewed dealt with two issues: knowledge of the extent of Medicare coverage by

recipients, and the insurance practices of the elderly concerning supplemental medical coverage.

The Health Care Financing Administration (HCFA), which is responsible for the management of the Medicare Program, stated "data in the Medicare Decision Support System are constrained by the lack of an indicator for military service. As a result, we are unable to identify military retirees from the Health Care Financing Administrations' (HCFA) Health Insurance Enrollment Master File" (Lyman, 1990). Several healthcare studies excluded the elderly population (McCall, Rice & Sangl, 1982 and Marquis, 1983). In November of 1989, Thomas Wan reported his findings on the impact that managed care had on the use of health services by a different set of dually eligible elderly. His sample population possessed dual membership in Medicaid and Medicare. There was no tie to military benefits in this study.

Knowledge of coverage

Several articles concerning healthcare consumerism dealt with Medicare recipients' knowledge of their covered benefits. McCall, Rice & Sangl (1982) asserted "relatively little research has been conducted on consumer knowledge of health insurance policies; and unfortunately, much that has been done excluded the elderly population." Their article identified previous research that found "older and poorer beneficiaries had lower levels of Medicare coverage knowledge than their counterparts".

McCall et al. conceded "although it is clear that attempts in some states and by the federal government to make information

available to consumers, serious gaps still appear to exist in the knowledge of the average Medicare beneficiary." These researchers argued for further research into the likely determinants of beneficiary knowledge. McCall et al. concluded "if consumers are well informed about what Medicare covers and understands the healthcare expenses that private insurance policies do or do not pay for, they will be in a much better position to make insurance choices that best meet their needs."

Marquis (1983) maintained "some health policy recommendations rest on assumptions about consumer knowledge of the healthcare system." Market competition for allocation of medical care resources assumes a well-informed consumer, and regulation of healthcare services and reimbursements assumes that consumers do not have sufficient information to make economic choices about their medical treatment. Marquis' results did not support either extreme. Her data showed that more than 90% of families surveyed accurately reported whether or not they are insured. She concluded "there is evidence that consumer education could be effective in improving knowledge about benefits."

Cafferata (1984) claimed little research had been completed measuring how well-informed the American consumer was of public or private health insurance. Cafferata found "correct knowledge of health insurance coverage was low among groups at high risk of serious illness, such as persons enrolled in Medicare, but without Medicaid or private insurance supplement." In her study, Cafferata identified the more common error in knowledge about coverage of

particular services as the false negative, rather than the false positive. This meant the Medicare beneficiary tended to err in believing he/she was not covered when in fact they were.

LaTour, Friedman, and Hughes (1986) found "beneficiaries lack important information about Medicare and health insurance in general." They claimed major educational efforts should be undertaken to better inform the elderly of their insurance options. This in turn would improve participation of the elderly in supplemental insurance investments.

In Greenfield's study (1986), HCFA is recognized for its endeavors. However, the author was concerned with HCFA's declining interest in funding new proposals for beneficiary awareness programs. Many state governments are now more involved in ensuring their older citizens have access to healthcare information.

Two highly acclaimed programs are funded by California and Massachusetts, Health Insurance Counseling & Advocacy Program (HICAP) and Serving Health Information Needs of Elders (SHINE) respectively. Greenfield believed the goals of such state programs should be to enhance the beneficiary's ability to easily gather and assimilate new information on health insurance. Progressive awareness out-reach programs may augment pre-retirement agendas that narrowly focus on healthcare issues and replace a traditional role of the physicians to provide healthcare financial information during times of crisis.

Hibbard and Weeks' study (1987) demonstrated Medicare enrollees are less likely to have consumer attributes such as cost

sensitivity. They further attested "the Medicare population is the least prepared to behave as critical consumers of healthcare services." The authors commented that "consumerism in healthcare has only begun to be investigated. The role of consumer in health services is in stark contrast to the traditional patient role."

Their concern echoed that of many other authors, patients who are not knowledgeable about the healthcare delivery system may pay higher out-of-pocket costs. Hibbard and Weeks believed "if competitive approaches aimed at the users of care are to be both equitable and successful in controlling costs, supporting policies and programs need to be designed to assist the vulnerable populations. Policy approaches designed to increase cost sharing need to be accompanied by efforts to increase consumer sophistication, by increasing the availability of information to consumers."

Davidson's (1988) analysis of health insurance information policies concluded "information deficiency, inherent in the health insurance and medical care markets, has resulted in fundamental inefficiencies that may be contributing to the continuing spiraling increase of healthcare costs." He claimed little research is available on the effectiveness of specific consumer health insurance education programs. Davidson alleged "insurance information programs provide an example of government intervention to rectify a market distortion in order to permit that market to more closely approach the competitive model."

This author identified the federal government as the responsible agency "to provide its own beneficiaries with the information required to function competently within its own structure." The Health Care Financing Administration has sponsored six Medicare health insurance information programs since the early 1980s. No other federal agency appears to have sponsored such a program.

Paul Kenkel (1990) reported the findings of a survey conducted by a market research firm specializing in healthcare. A total of 800 individuals participated in the project. The most significant finding was that "consumers are becoming informed about healthcare choices." Kenkel believed consumers are getting smarter simply because they have to make more decisions these days. As a result, this author emphasized the responsibility of those with knowledge (that impacts on healthcare practices) to provide accurate and timely information to the public.

Supplemental coverage

The second common topic of research in the literature centered on the supplemental insurance investment practices of the elderly. In her article, Cafferata (1984) defined Medigap insurance as "the coverage offered by private insurance companies to assist the elderly with their out-of-pocket medical expenses." In 1977, 65.2% of the 65 and over American population were covered by some form of private health insurance; for which they paid a total of $3.94 billion in premiums (Cafferata, 1984).

Wattenberg & McGann (1984) found that many of the elderly tended to purchase insurance policies that duplicated Medicare hospital coverage rather than supplemented coverage for ambulatory care. McCall et al. (1982) reported LaTour, Friedman & Hughes surveyed a sample population of supplemental insurance participants in Illinois. These individuals tended to overestimate the breadth of services covered by their policies (a false positive finding).

In their own study, McCall et al. (1982) reported that the "Medigap" policies (designed to supplement Medicare) had an average annual premium ranging from $234 - $473. This was determined to be a major financial investment for the majority of the elderly. As of 1986, approximately two-thirds of all Medicare eligibles possessed such coverage.

Garfinkel & Corder (1985) found Medicare combined with private supplemental coverage "the predominant form of coverage for the aged Medicare population as a whole and for every subgroup defined by age, race, census region, family income, and perceived health status." Their study also identified 67 percent of the aged Medicare beneficiary as having private insurance coverage. Persons with Medicare alone represented 21 percent of the population. They also established that aged beneficiaries with Medicare and private insurance paid less of their total medical expenditures out-of-pocket, compared to those carrying only Medicare (20% and 29% respectively).

"The issue of supplementation has taken on a greater weight, not only in relation to the financial protection of the beneficiaries, but also as it relates to the long-term financial stability of the Medicare program (Davidson, 1987). Davidson recalls a previous study conducted by Rice & Gabel in 1986, where a total of 67% of all beneficiaries were identified as supplementing their Medicare coverage. Davidson reported approximately 36% of all supplements were received as a retirement benefit, leaving 64% to purchase supplemental health insurance as an individual (rather than as a member of a group).

Purpose

The purpose of this study was to determine the relationship between possession of sufficient supplemental medical insurance (SMI) coverage and correct knowledge of the Military Health Service System's (MHSS) treatment policy by Medicare-eligible, military beneficiaries.

Sufficient SMI, the dependent variable, was defined as the possession of Medicare Part B (Y_{1a}) plus a commercial supplemental policy (Y_{1b}), to protect against "Medigap". The independent variable, correct knowledge of the MHSS treatment policy, was defined in terms of the individual's knowledge of comprehensive care limitations (X_{1a}) and knowledge of the priority system (X_{1b}).

Hypotheses

The following primary and supporting null hypotheses were tested at the .05 level of confidence.

Primary hypotheses

1. There is no significant difference between those with sufficient SMI and those without, in terms of their correct knowledge of the MHSS' treatment policy.

2. There is no significant difference between those possessing Medicare Part B and those without this supplement, in terms of their correct knowledge of the MHSS' treatment policy.

3. There is no significant difference between those with additional health insurance (excluding Medicare Part B) and those without these policies, in terms of their correct knowledge of the MHSS' treatment policy.

Supporting hypotheses

4. There is no significant difference between retired officers and retired noncommissioned officers (to include their spouses), in terms of participation in Medicare Part B.

5. There is no significant difference between retired officers and retired noncommissioned officers (to include their spouses), in terms of investment in sufficient SMI coverage.

6. There is no significant difference between retired officers and retired noncommissioned officers (to include their spouses), in terms of correct knowledge of the MHSS' treatment policy.

7. There is no significant difference between those with sufficient SMI and those without, in terms of their source of access into the military medical system: Pharmacy, Emergency Room, Inpatient Services, Outpatient Services, or Family Practice.

8. There is no significant difference between those with correct knowledge of the MHSS' treatment policy and those with incorrect knowledge, in terms of their source of access into the military medical system: Pharmacy, Emergency Room, Inpatient Services, Outpatient Services, or Family Practice.

Method and Procedures

Design

A survey sampling design was used for this project. The following inabilities prohibited an experimental strategy: the control of potentially relevant, confounding variables (e.g. fixed income level); and the random assignment of sample populations into groups. In addition, a comparative design was integrated to further analyze the collected data. The independent variable was not manipulated during the study. The population evaluated was military retirees and their spouses over 65 years of age, who utilize military sources for medical care.

Sample size considerations

Two biases were guarded against in this study: the retirees' branch of service and the point of access to care. First, the hospital affords the same level of care to all retirees, regardless of one's branch of service. There is no distinction between the services for priority of care. If medical services are eventually denied to retirees due to lack of resources, all retirees would be affected. Therefore, the sample population was not limited to Army retirees.

Secondly, identifying Medicare eligible individuals from various points of access ensured the reduction of bias in the sample set. In particular, Medicare "Part B" does not reimburse for medical prescription refills. A sample population drawn solely from the Outpatient Pharmacy area could possess a disproportionate number of individuals who see little use for Medicare "Part B".

The sample set was randomly selected from qualified candidates who presented to Womack's facility between August 1, 1989 and August 31, 1990. The sample size was set at 500. Qualified individuals were identified from five points of access: prescriptions received at both the Outpatient Pharmacy and the Satellite Pharmacy windows, the Inpatient Automated Quality of Care Evaluation Support System (AQCESS) census, the Emergency Room log, the Family Practice clinic's membership roster, and the Outpatient Central Appointment's log.

The Pharmacy did not have an automated data base capable of retrieving information on previously filled prescriptions. Therefore, a system had to be devised to capture a significant number of potential candidates from this source. During the required residency rotation through the Pharmacy such a system was initiated, with the support of the staff. Over 300 prescriptions for Medicare-eligible retirees were identified in the Pharmacy in August, 1990.

The initial Medicare-eligible rosters, from the other four points of access, supported the desire to obtain a large sample. The inpatient AQCESS data base identified over 1500 patients

qualifying for this study. The Emergency Room's Central Triage data base listed over 1300 eligible candidates. The Family Practice clinic had over 700 current members who qualified for Medicare reimbursements. Lastly, the Patient Appointment data base contained over 12,300 outpatient appointment names. Unfortunately, many of the names on this last roster were repeated due to multiple visits and appointments.

Once the initial rosters were received, the next step involved eliminating duplicated names. A system was developed to ensure mutually exclusive patient names from each source. Each source (e.g. ER, Family Medicine, Pharmacy, etc.) had 100 names identified. Once the name had been selected for the study it was excluded from other sources as a potential candidate.

The Pharmacy roster was the smallest (n=300), therefore the first one hundred candidates were drawn from this list. Every third name was selected for the survey. These names were placed on individual 3x5 index cards and arrayed in alphabetical order. Other pertinent information found on the rosters, such as addresses, were also placed on the individual cards at this time.

The next one hundred names came from the Family Practice roster, where every seventh name was identified. Before accepting the entry, each name was checked against the final 100 Pharmacy candidates. If the name was previously selected it was scratched from the Family Practice roster; the next available name was then

accepted. Again, the final one hundred names selected from this source were alphabetically integrated into the Pharmacy 3x5 index cards.

The Emergency Room log had every thirteenth name identified and cross-checked with the two previously discussed rosters. The inpatient AQCESS roster had every fifteenth name reviewed for acceptance. The final 100 names came from the outpatient Central Appointment's roster, where every twenty-third mutually exclusive name was annotated. As each roster review was completed, the selected names were alphabetized into the growing index card file.

The patient's name, complete address, age, rank, point of access, and survey form number were placed on each card. The cards were checked against the DEERS (Defense Eligibility Enrollment Reporting System) to verify longevity and Medicare status. Permission from the Outpatient Records section of the Patient Administration Division was obtained in support of this task. This review ensured accurate and expeditious delivery of survey forms.

Assumptions

The following assumptions were made concerning this study: 1) sample data collected would be representative of the population, 2) the senior retired population of Fort Bragg's surrounding area would participate in this study, 3) those identified to participate in the survey would accurately report their insurance status, 4) individuals would be equivalent in all confounding factors, 5) representative numbers of Medicare eligible, military beneficiaries would and would not possess supplemental medical

insurance (SMI), and 6) individuals with full commercial healthcare insurance were sufficiently covered; regardless of their Medicare Part B status.

Validity of the instrument

The data for the study was collected by administering a self-report questionnaire (see Appendix A). To ensure the content validity of the initial survey instrument, seven local healthcare management experts agreed to participate in a Delphi technique study. Individually, the team members scrutinized the appropriateness of each question to ensure the survey instrument was capable of measuring the proposed hypothesis. The true/false questions were reworded to avoid influencing the answers, as suggested by one member of the Delphi group.

In addition, members of the local Retired Officer's Association's Auxillary Club were recruited to participate in a pilot test of the instrument. Constructive criticism received from these sources were used to improve the final survey. For example, the Auxillary Club members suggested that the survey define "fixed income".

Construct validity was difficult to calculate because there were no true measurements of variables. The techniques of correlating variables with total scores and identifying common factor variance were used as methods of this validation.

Reliability

The reliability of the information received was difficult to measure. Assistance in completing the survey form was required by

some of the participants (due to vision or dexterity impairment). For example, several individuals called to ask if they were interpreting the questions properly. The only assistance offered to those who telephoned was a verbatim reading of the survey question. However, assistance from others (such as spouses) might have influenced the patient's answers.

The survey itself is simple and direct, in an attempt to reduce the amount of assistance required for completion (see Appendix A). The wording is bold and in upper case letters to assist those with impaired vision. The majority of the questions are closed, requiring only a check mark from the respondents.

An attempt to verify reliable answers concerning insurance status was made. The completed surveys initiated from the inpatient roster were compared to the information contained in the AQCESS data bank. Of the 57 inpatient surveys returned, 30 individuals stated they did indeed carry additional insurance. Of these 30, only 6 were verified on AQCESS.

Further investigation into AQCESS' insurance data base revealed that earlier versions of the software did not allow supplemental policy information to be entered. Of the remaining 24 inpatient surveys declaring possession of insurance, 22 were supplemental policies. Only two individuals declared full coverage that could not be confirmed by AQCESS data.

However, the reliability of the information found in the AQCESS data bank appears to be more questionable than the survey answers. Occasionally, patients feel unduly threatened to reveal

possession of additional insurance during the admitting process. They have expressed fear of incurring some unexpected, additional expense if this information is provided.

Hence, the insurance discrepancy between AQCESS and the inpatient surveys did not negate the reliability of the completed surveys. Marquis' study, discussed in the literature review, supports the reliability of the insurance information provided on the survey instruments. Investigation into the reliability of AQCESS insurance data could prove advantageous to military treatment facility administrators, as third party collection efforts are increased.

Control

Three control mechanisms were considered essential: matching completed surveys to their anonymous participants, ensuring the return of an acceptable rate of responses, and analyzing the effects of possible moderating variables. Names were not placed on the survey instruments in order to provide privacy to the participants in case a third party happened to see the information. The surveys were numbered, which in turn was annotated on the final mailing roster. This ensured identification of all participants and accountability of forms.

Pre-addressed, stamped envelopes were enclosed with each mailed survey. This hopefully encouraged participation and ensured all replies would have the same destination.

The control of other variables that might influence the dependent variable (Y) could not be achieved through the random

assignment of groups. Some control was achieved by analyzing the affect of confounding variables on the dependent variable. The Defense Eligibility Enrollment Reporting System (DEERS) was used to identify two of the confounding variables (the current age and rank at time of retirement) for each participant. This eliminated additional questions on the instrument; reducing the time requirement for completing the forms and possibly increasing the response rate.

Ethical considerations

The information received on the completed surveys was considered confidential and used only for the purposes of this project. A statement ensuring individual privacy of information was placed at the beginning of each survey instrument. Actual medical information on the sample patient population was not obtained in this study, and therefore did not require ethical consideration.

Cover letter

The importance of the cover letter could not be overlooked. Specific issues addressed in this document included: explaining the purpose and importance of the study; indicating the investigation is sponsored by a reputable institution; attempting to arouse interest in contributing accurate information; addressing confidentiality of information offered; informing respondents why they were chosen to participate; offering a summary of findings; and setting a definite date for the return of the questionnaire. These areas of concern were suggested by Dr.

Deobold Van Dalen in his book, Understanding Educational Research (1979). A copy of the cover letter (Appendix B) accompanied each mailed survey.

Expected rate of return

Final acceptance for completed surveys was set at January 15, 1991. This deadline was necessary because "first class" postage was to increase in February. A 10% return rate was initially identified as acceptable.

A total of 274 completed surveys were received prior to the set deadline. This converted to an overall return rate of 55% and negated the need to perform a secondary request for participation. Each area selected to provide representation met the expected rate of return. All areas, except for the Pharmacy, had a 50% or better return rate.

Data analysis techniques

Initial quantitative analysis consisted primarily of frequency distribution review of the nominal data. Further review via one-way analysis of variance (ANOVA) examined whether selected variables differed across any of the five participant-identification sources (e.g. family practice clinic, pharmacy, etc.) used in this study.

Next, Chi-square hypothesis tests distributions were performed on nominally coded data to determine the significance of the stated primary and supporting hypotheses. Tables 2 through 7 identify the mutually exclusive group assignments for each Chi-square analyzed. A correlation matrix of the associated

variables was then created to identify concomitant significant influences upon the dependent variable, Y = sufficient SMI.

Finally, full and restricted multiple linear regression analyses were completed to determine the total variance accounted for by the study variables, and to determine the relative strength of their relationships. The automated software package, Microstat (Version 4), was used to determine the descriptive and inferential statistics. Table 8 provides the coding used to translate the surveys' information.

Findings

Descriptive statistics

Demographics of survey respondents are given in Tables 9, 10, and 11. The break out of the survey respondents were as follows: spouses of retired enlisted (n = 66), enlisted retirees (n = 99), spouses of retired officers (n = 44), and retired officers (n = 68). The rank structure of the retirees ranged from E-3 to O-8. The majority of the enlisted retired as E7s (Sergeant First Class) and E8s (Master Sergeant). The majority of the officers retired as 05s (Lieutenant Colonel).

Table 9 illustrates the observed rank structure and service representation. Eighty seven percent of all respondents were members of the United States Army. However, there was participation from the Air Force (8%), the Navy (5%), and the Coast Guard (.01%).

Table 10 provides information on the age distribution of the respondents; which ranged from 65 to 92. Forty five percent of the

sample population were between the ages of 65 and 70 years old. This demonstrates that a large percentage of Fort Bragg's elderly beneficiaries have just begun to receive care under Medicare's restrictions.

There was no mean difference in age among the five sources of participant identification. The age span was evenly distributed between each point of access. The Outpatient point of access had the largest percentage of the 65<70 age group. This source also had the oldest participant.

A total of 244 respondents (89%) identified themselves as living on fixed incomes. The frequency distribution of income levels is found in Table 11. Income levels ranged from less than $10,000 to greater than $50,000.

The most frequent income level of the enlisted population was between $10,000 - $19,999. The most frequent income level for the officer population was between $20,000 - $29,999. The Pharmacy had the largest representation of the wealthy (greater than $50,000 incomes). The Emergency Department had no representation in the wealthiest category. Family Practice had the least respondents in the poverty category (less than $10,000).

The majority of the completed surveys, n = 214 (78%), identified the military treatment facility as the individual's primary source of healthcare. Only 42 (15%) of the respondents utilize the civilian healthcare system as their primary source of care. Surprisingly, 18 individuals (7%) identified the Veteran's Administration as their initial source for treatment.

In regards to the two components of the independent variable, correct knowledge of the MHSS, 62% (169 total) believed the military guarantees total comprehensive care. Ten percent (27 total) believed there was no priority of care policy. By combining these erroneous answers, 65% (177 total) of those participating in this survey had incorrect knowledge of the military's healthcare policies (35% had accurate knowledge).

Sixty one members (22%) of the total sample population stated they did not carry Medicare "Part B". Surveys initiated through the Inpatient and Outpatient rosters had the largest percentage of "Part B" denials (26% each). The Outpatient Pharmacy respondents had the best medical insurance coverage behavior, with only 13% denying possession of Medicare "Part B".

The survey instrument queried those without Medicare "Part B" as to their reasons for this practice. Twenty-five individuals identified no need for such coverage. Unsolicited comments concerning this lack of need were annotated on many of the returned surveys (Appendix C). Twenty-four respondents stated that "Part B" was too expensive.

Eleven participants claimed lack of knowledge of two parts to the Medicare health insurance program. Several of these individuals asked if it were too late to enroll in "Part B". Lastly, four surveys identified private, full coverage alternate insurance policies as the reason for lack of participation in this supplement. Three completed surveys marked more than one response.

One hundred and twenty (43%) of the sample population did not carry additional health insurance. These individuals are vulnerable to "Medigap" expenses. Of the 154 respondents that declared possession of additional insurance, only 38 were provided coverage through employment means. The other 116 individuals purchased their commercial coverages through private resources.

Of the participants identified as having additional health coverages (n = 154), 85% (n = 130) were supplements to Medicare. There were 24 participants who declared possession of full coverage healthcare policies. For the purposes of this study, it was assumed that individuals having full commercial coverage were proactively managing their insurance needs; regardless of their Part B status.

Combining the "Part B" and the "additional health insurance" information, 46% (127 total) of the sample population had insufficient healthcare coverage. Incorrect information concerning the military's obligation to provide healthcare was noted on 65% (178 total) of the surveys. Collectively, 37% (101 total) of the sample population was misinformed and lacking sufficient healthcare coverage. The influence that correct knowledge of the MHSS (the independent variable) has on the possession of sufficient SMI (the dependent variable) is the primary concern of this study.

Inferential statistics

Chi-square analyses were performed on mutually exclusive, categorically exhaustive, nominal data. Table 12 illustrates the

findings of the Chi-square testing of hypotheses one through six. Significant differences were calculated in all six cases.

Table 13 illustrates the analysis of variance results. The participant population identified from each of the five access sources did not demonstrate significant differences concerning their insurance practices or knowledge of the MHSS. The independent variable, correct knowledge of the MHSS, had a low grand mean (.354). This supports the descriptive summary stated above that more than half (65%) of the respondents have misinformation concerning treatment guarantees through the military.

The dependent variable, sufficient SMI, had a higher grand mean (.540). This demonstrates that slightly more than half of the sample population are proactively managing their health insurance interests. Participation in Medicare Part B (with a grand mean of .785) is better than participation in additional health insurance for "Medigap" protection (grand mean of .566).

Six additional variables (age, rank, fixed income status, level of income, employer sponsored health insurance, and knowledge of Medigap insurance policies) were examined as possible influences upon SMI. The dependent variable, SMI, was correlated with these additional determinants. Table 14 shows the results of these computations. Five out of six of the variables indicated significant influence over the sample population's possession of sufficient SMI. The critical value of +/.11853 (n=274, $p<.05$) only eliminated the variable of age.

Next, the significantly correlating variables were subsequently subjected to full and restricted multiple linear regression analyses. Table 15 exhibits the results of these computations. The predictor variables, as a group, accounted for 33% of the total variance (R^2_{full} = .3324) relating to sufficient health care coverage.

The effect of individual determinants was tested in comparison to the full model in an attempt to identify portions of the total variance. While found to be statistically significant in previous analyses (Tables 12 and 14), correct knowledge of the MHSS treatment policy only accounted for 2% (.3324 - .3117 = .0207) of the variance when other factors were controlled for in the prediction of SMI. Two variables, rank and possession of employer sponsored supplemental health policies, both demonstrated higher, and significant contributions to the overall variance (7% each) of SMI.

Discussion

Demographics

The majority of the patients surveyed were retired from the United States Army (Table 9). Further investigation of the other branches of the Armed Forces would be necessary to determine their insurance investment practices. The military health service system is a Department of Defense entitlement, and therefore future health policy agendas that may affect Army, elderly retirees should affect all elderly military retirees.

The large number of 65<70 participants in the survey (Table 10) indicates that the Medicare issue may be a relatively new issue for the military. Many of these individuals may still be in a CHAMPUS mind set. The reality of the Medicare restrictions may not have yet been challenged. The fact that the majority of the elderly are still relatively spry may enhance opportunities to educate them in consumer responsibilities towards healthcare.

The income levels of the enlisted and the officers found in Table 11 suggests as many as 24% of our elderly retiree population serviced by Fort Bragg may well live in poverty. This information suggests that possibly one out of every fourth "transfer out" from our facility to a civilian hospital might result in uncompensated care to the accepting facility.

It is interesting to note the Pharmacy supported all categories of wealth established in the survey. None of the Emergency Room respondents were identified as financially well off. Further environmental assessments in this area might reveal a more negative impact on the community's needy if Womack was to close its Emergency Department, than if it was forced to close down its Outpatient Pharmacy service.

On the other hand, the Family Practice Service demonstrated the least number of respondents in the poverty category (less than $10,000 annual income). Presently, financial considerations do not play a major role in identifying eligible enrollees. However, in the future economic considerations may play a larger role in identifying membership in such a program. Analysis of Family

Practice members' demographics compared to the community as a whole may ensure the military medical organization is meeting the needs of the community.

With 78% of the sample population declaring the military treatment facility as their primary source of healthcare, an environmental impact study might be in order. Can the surrounding community hospitals cope with a large influx of military elderly, if services are restricted on post? What are the critical care capabilities of the surrounding community hospitals? Can these facilities absorb an increase in uncompensated care, if the military referrals do not possess sufficient medical coverage? What impact would managed care options have on the elderly retiree?

Knowledge of the MHSS

This study supported, somewhat, the literature review concerning a general lack of important health related information. The 62% incorrect response involving guaranteed comprehensive care coincided with LaTour, Friedman, & Hughes' Illinois study. As depicted in their published report, the local respondents tended to overestimate the breadth of services. The descriptive statistics identified a need to enhance communications with the retired population concerning the military healthcare system's responsibilities, capabilities, and limitations.

Sufficient SMI

An educational emphasis should be focused on enhancing insurance information for the retirees who are about to transfer

from CHAMPUS to Medicare. A 22% overall lack of coverage in the Medicare "Part B" supplement (as found in the sample population) demonstrates a need to evaluate current transitional information. The Outpatient Pharmacy respondents' overwhelming support of this supplement (87% participation) was a surprise statistic. This finding negated the project's initial concern of a negatively biased result from this source.

This study identified 43% of its sample as not possessing additional health insurance coverage, beyond Medicare. This is in concert with the studies published by McCall et al., Cafferata, and Rice & Gabel. However, it is higher than the national statistic quoted by Benac of 30% lack of coverage. The fact that almost half of the survey respondents did not carry additional health insurance may be indicative of current military healthcare access capabilities.

Thirty eight of the one hundred and fifty four acknowledged carriers of supplemental insurance (25%) were sponsored by employment, compared to 36% in Davidson's report. This study's reduced percentage may be a result of the requirement for retirement from a second career, in order to obtain employer sponsored health coverage. Not all military retirees are able to accomplish this, either due to health or longevity in the service.

Factors influencing SMI

The Chi-square results allow the rejection of the first six null hypotheses. Correct knowledge of the MHSS does influence the investment practices of the elderly concerning sufficient SMI. Correct information influences increased participation in Medicare "Part B" and investment in additional health insurance coverage.

In addition, one's retirement status (officer versus enlisted) demonstrated a significant difference in medical insurance coverage practices (both in sufficient SMI and in Medicare "Part B" alone). This in turn may be influenced by the significant difference in correct knowledge of the MHSS treatment policy noted between the rank structure. The significance of rank over correct knowledge may imply differences in levels of formal education influencing knowledge of the medical system. Unfortunately, this parameter was not tested.

These results should provide the impetus needed to evaluate similar circumstances Army-wide (if not throughout the Department of Defense). If further research substantiates these findings, enhanced educational briefings should be integrated, at the minimum, in all retirement briefings and in patient education classes. Because the poorer (in wealth and in correct knowledge) are among the retired enlisted, they would seem the likely target for a demonstration project evaluating the effectiveness of the educational programs.

The pattern of results for factors influencing SMI were very similar when hypotheses were examined using correlation and

regression analyses. Rank showed the strongest, yet negative, correlation to the dependent variable (Y = sufficient SMI). This inverse relationship is interpreted to mean: as possession of sufficient SMI increases the coded rank of the sample population decreases. This in turn implies that in a large population of proactive senior citizens, retired officers and their spouses (code = Ø) would possess more health coverage than their enlisted counterparts. This supports the Chi-square analysis mentioned above.

Again, the strong negative value of the correlation matrix' code for rank suggests the enlisted ranks be targeted for enhanced public relation efforts to improve the retirees' overall health insurance status. Lower average income levels for these citizens, which may inhibit their investment in ample coverage, will challenge any effort to increase participation in insurance. However, the inferential statistics of this study have demonstrated individual awareness of the MHSS's capabilities and limitations influence increased insurance participation.

The exclusion of age as a significant contributor to one's possession of sufficient SMI supports the published findings of Garfinkel. Age is not a predictor of one's health insurance practices. Therefore, the age distribution by source of access (Table 9) should not be used to attempt to identify potential referral candidates most likely to result in uncompensated care.

The inclusion of one's income level as a significant correlation to possession of sufficient SMI is in contrast to

Garfinkel's study. This variable should be researched further. If this determinant proves reliable in future findings, perhaps information such as found in Table 10 (income distribution by source of access) could be used to identify potential referral candidates most likely to result in uncompensated care.

Representativeness

In regard to the question of representativeness, the one-way ANOVA (Table 12) demonstrated an unbiased sample population. It appears that a collection of surveys from any of the five sites would have been representative of the population under scrutiny. Again, the earlier concern of a biased Pharmacy population against purchasing Medicare "Part B" was unsubstantiated.

The low MHSS mean found at each access source indicates efforts to educate the patient population is needed through out the facility. The one-way ANOVA for this variable supports the eighth null hypothesis. There is no significant difference between those with correct knowledge of the MHSS' treatment policy and those with incorrect knowledge, in terms of their source of access into the military treatment facility: Pharmacy, Emergency Room, Inpatient Services, Outpatient Services, or Family Practice.

The one-way ANOVA also computed nonsignificance in regards to the SMI practices of the individual access sources. This finding supports the seventh null hypothesis. There is no significant difference between those with sufficient SMI and those without, in terms of their source of access into the military treatment facility.

The SMI mean scores for the Emergency Room and Outpatient Services access sources are the lowest (.460 and .483 respectively). In a civilian environment both points of access would require this coverage. These scores may demonstrate a strong reliance on the MHSS for complete healthcare. They may in turn predict individuals more likely to increase the amount of uncompensated care if forced to seek civilian medical treatment.

Multiple Prediction of SMI

While MHSS was shown to be significantly related to SMI, a multiple prediction approach was used to assess the MHSS effect while controlling for or holding constant other possible influences. The low variance demonstrated by the MHSS variable during the restricted linear regressions was disappointing. The fact that rank and employer sponsored health insurance both showed higher significant influences may be of interest to future military medical policy planners. There is little a post commander or hospital administrator can do about these two variables. Enhanced education and communication efforts are more likely to be influenced by local authority. This then should be where future endeavors are monitored and evaluated.

Conclusions

Sixty-two percent of the respondents believed the military guarantees comprehensive care. Ten percent of the participants believed there was priority of care, beyond medical emergency. It

appears the Medicare eligible, military beneficiary has a misconception of the health care resources available to them through the military health service system.

The sample population at Fort Bragg, North Carolina was found to have 22% of its members lacking Medicare "Part B". Forty-three percent of these retirees did not carry additional supplemental health insurance, to protect against Medigap expenses. It appears the Medicare eligible, military beneficiary does not possess sufficient medical insurance. Combining these statistics, 37% of all completed surveys (n = 274) identified misinformed patrons with insufficient coverage.

Correct knowledge of the military health service system was found to be significant in its influence over proactive management of health insurance needs for the elderly. In addition, a difference in investment practices between retired officers and retired enlisted members of the Armed Services also emerged. Finally, a difference in correct military health service system knowledge between retired officers and retired enlisted was observed.

Through linear regression analysis, two variables were determined to significantly influence the elderly's insurance practices to a greater degree than knowledge; retirement rank and possession of employer-sponsored health insurance. However, neither of these variables can be modified at the local military authority level. As a cluster, the following variables accounted for 33% of the total variance surrounding the sample

population's insurance practices: correct MHSS knowledge, rank at retirement, level of fixed income, employer sponsored supplemental insurance, and knowledge of available supplements.

In conclusion, all senior citizens residing in the Fort Bragg catchment area would benefit from an enhanced information delivery system concerning the limitations of the MHSS and of their Medicare policies. In general, dually eligible retirees residing through out this country need to ensure correct information concerning their health coverage investments and healthcare delivery systems are available and comprehensible; prior to a medical emergency. Determining who's responsibility it is to disseminate this information and the best mechanism to accomplish this task are questions that still need to be addressed.

Recommendations

The Department of Defense should sponsor more in-depth insurance information programs for its constituents. Policy approaches being considered to increase cost sharing should be accompanied by efforts to increase consumer sophistication. The availability of information concerning the MHSS limitations, capabilities, and priority of missions should be enhanced. Pre-retirement and pre-Medicare enrollment agendas should expand their awareness programs concerning insurance coverage and deficiencies.

Information from similar studies could enhance the military's managed care efforts. With the implementation of the "Gateway" project, any information that might help to reduce medical

expenditures should be evaluated. These findings could be used by hospital commanders in times of limited resources to evaluate the impact of medical service restrictions or closures.

Marketing departments of local civilian hospitals might be interested in this information to evaluate the pay practices of military referred elderly beneficiaries. Sharing this type of information with the medical staff might encourage more transfers to military medical centers, where care would cost the patient less. Most importantly, sharing the findings with the retired beneficiaries themselves might stimulate more aggressive investment in health insurance.

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Table 1

Priority of Care

Priority	Category	Degrees of Entitlement
1	Members of the uniformed services on active duty	Complete and unqualified
2	Dependents of active duty	Care must be provided when resources permit
3	Members of the Senior Reserve Officers' Training Corps (ROTC)	Care may be provided during training camps
4	Retired members of the uniformed services, and their dependents	Care may be provided when resources permit
5	Federal government civilian employees	Under limited circumstances, when resources permit
6	All others	Care may be provided when resources permit

summarized Table 2-1, Army Regulation 40-3.

Table 2

Chi-square Classifications and Observed Frequencies
(Primary Hypothesis)

Groups	Observed Count	Independent Variable (X)	Dependent Variable (Y)
A	(71)	Correct knowledge of MHSS treatment policy	Sufficient SMI
B	(77)	Incorrect knowledge of MHSS treatment policy	Sufficient SMI
C	(26)	Correct knowledge of MHSS treatment policy	Insufficient SMI
D	(100)	Incorrect knowledge of MHSS treatment policy	Insufficient SMI

SMI = Supplemental Medical Insurance (Medicare Part B and Medigap)
MHSS = Military Health Service System

Table 3

Chi-square Classifications and Observed Frequencies
(Hypothesis #2)

Groups	Observed Count	Independent Variable (X)	Dependent Variable (Y)
A	(86)	Correct knowledge of MHSS treatment policy	Possession of Medicare Part B
B	(127)	Incorrect knowledge of MHSS treatment policy	Possession of Medicare Part B
C	(11)	Correct knowledge of MHSS treatment policy	Lack of Medicare Part B
D	(50)	Incorrect knowledge of MHSS treatment policy	Lack of Medicare Part B

MHSS = Military Health Service System

Table 4

Chi-square Classifications and Observed Frequencies
(Hypothesis #3)

Groups	Observed Count	Independent Variable (X)	Dependent Variable (Y)
A	(73)	Correct knowledge of MHSS treatment policy	Possession of additional health insurance
B	(81)	Incorrect knowledge of MHSS treatment policy	Possession of additional health insurance
C	(24)	Correct knowledge of MHSS treatment policy	No additional health insurance
D	(96)	Incorrect knowledge of MHSS treatment policy	No additional health insurance

MHSS = Military Health Service System

Table 5

Chi-square Classifications and Observed Frequencies
(Hypothesis #4)

Groups	Observed Count	Independent Variable (X)	Dependent Variable (Y)
A	(113)	Retired enlisted	Possession of Medicare Part B
B	(100)	Retired officer	Possession of Medicare Part B
C	(50)	Retired enlisted	Lack of Medicare Part B
D	(11)	Retired officer	Lack of Medicare Part B

Table 6

Chi-square Classifications and Observed Frequencies
(Hypothesis #5)

Groups	Observed Count	Independent Variable (X)	Dependent Variable (Y)
A	(59)	Retired enlisted	Sufficient SMI
B	(88)	Retired officer	Sufficient SMI
C	(104)	Retired enlisted	Insufficient SMI
D	(23)	Retired officer	Insufficient SMI

SMI = Supplement Medical Insurance (Medicare Part B and Medigap)

Table 7

Chi-square Classifications and Observed Frequencies
(Hypothesis #6)

Groups	Observed Count	Independent Variable (X)	Dependent Variable (Y)
A	43	Retired enlisted	Correct knowledge of MHSS policy
B	54	Retired officer	Correct knowledge of MHSS policy
C	120	Retired enlisted	Incorrect knowledge of MHSS policy
D	57	Retired officer	Incorrect knowledge of MHSS policy

MHSS = Military Health Service System

Table 8

Dependent and Independent Variable Codes

VARIABLE/DEFINITION	CODE/DEFINITION
Dependent:	
Y_1 = possession of sufficient SMI	1 = yes Ø = otherwise
Y_{1a} = possession of Medicare Part B	1 = yes Ø = otherwise
Y_{1b} = possession of other health insurance	1 = yes Ø = otherwise
Independent:	
X_1 = correct knowledge the MHSS	1 = yes Ø = otherwise
X_{1a} = limits to comprehensive care	1 = if answered true Ø = otherwise
X_{1b} = priority of access policy	1 = if answered true Ø = otherwise
X_2 = type of additional insurance	Ø = none 1 = full coverage 2 = supplemental coverage
X_3 = employment sponsored SMI	1 = yes Ø = otherwise
X_4 = location of primary source of care	1 = Veteran's Administration 2 = military hospital 3 = civilian hospital

Table 8 cont'd

Dependent and Independent Variable Codes

VARIABLE/DEFINITION	CODE/DEFINITION
X_5 = familiarity with alternative policies	1 = yes 0 = otherwise
X_6 = fixed income	1 = yes 0 = otherwise
X_7 = income level	1 = < $10,000 2 = < $20,000 3 = < $30,000 4 = < $40,000 5 = < $50,000 6 = > $50,000
X_8 = current age of respondent	code in years only
X_9 = rank at time of retirement	1 = enlisted 0 = otherwise

Table 9

Demographics of the Sample Population
(n = 274)

---

1. Respondents' Patient Category:

	Total	%
Spouse of retired enlisted	66	24%
Retired enlisted member	99	36%
Spouse of retired officer	41	15%
Retired officer member	68	25%
	274	100%

2. Rank Structure:

Enlisted (n = 164)

rank	total	% enlisted
E3	2	1%
E4	2	1%
E5	10	6%
E6	31	19%
E7	55	34%
E8	55	34%
E9	9	5%

Officer (n = 110)

rank	total	% officer
CW2	4	4%
CW3	5	5%
CW4	11	10%
01	1	1%
02	4	4%
03	9	8%
04	19	17%
05	33	30%
06	22	20%
07	1	1%
08	1	1%

3. Service Representation:

Branch	Total	% Total
Army	239	87%
Air Force	21	8%
Navy	13	5%
Coast Guard	1	--

Table 10

Age Distribution of the Sample Population
(n = 274)

---

1. Age Distribution of Total Sample:

range:	total:	%
65 < 70	124	45%
71 < 75	88	32%
76 < 80	39	14%
81 < 85	19	7%
86 < 90	3	1%
91 < 95	1	--

2. Age Distribution by Source of Access:

source:	65<70	71<75	76<80	81<85	86<90	91<95	Total
Pharmacy	19	19	8	2	---	---	48
Emer Room	21	19	7	2	1	---	50
Inpatient	27	17	8	4	1	---	57
Outpatient	33	15	6	3	---	1	58
Fam Prac	24	18	10	8	1	---	61

Table 11

Income Distribution of the Sample Population
(n = 274)

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1. Income Level Distribution of Total Sample:

range: ($ 1,000s)	# of enlisted	# of officer	total
< 10K	56	10	66
10K < 19K	78	22	100
20K < 29K	22	33	55
30K < 39K	6	22	28
40K < 49K	3	12	15
> 50K	0	10	10

2. Income Distribution by Source of Access:

source:	<10K	10K<19K	20K<29K	30K<39K	40K<49K	>50K	total
Pharmacy	10	20	6	5	3	4	48
Emer Room	15	19	10	3	3	--	50
Inpatient	16	21	11	7	1	1	57
Outpatient	16	23	10	6	1	2	58
Fam Prac	9	17	18	7	7	3	61

Table 12

Chi-square (X^2) Results

(Y)	(X)	*df*	X^2
1. **SMI**	**MHSS**	1	22.242 *
2. Part B	MHSS	1	10.351 *
3. HI	MHSS	1	22.146 *
4. Part B	Rank	1	16.452 *
5. SMI	Rank	1	49.289 *
6. MHSS	Rank	1	14.318 *

* = significant, p<.005

SMI = **sufficient supplemental medical insurance**
(Medicare Part B and Medigap coverage)

MHSS = **correct knowledge of the Military Health Service System**

Part B = participation in Medicare Part B

HI = investment in additional health insurance supplements
(excluding Medicare Part B)

Rank = retired officer versus retired enlisted

Table 13

One-way Analysis of Variance

Source:	Selected Variables' Means:					
	MHSS	Comcare	Access	**SMI**	Part B	HI
Pharmacy	.375	.604	.896	.667	.875	.667
Emer Room	.300	.680	.900	.460	.760	.480
Inpatient	.281	.649	.860	.509	.737	.526
Outpatient	.345	.655	.931	.483	.741	.534
Fam Prac	.459	.508	.934	.590	.820	.623
Grand Means	.354	.617	.905	.540	.785	.566
Significance	ns	ns	ns	ns	ns	ns

Note:
MHSS = Correct knowledge of the Military Health Service System
(Comprehensive care and Access are components of this variable)
SMI = Sufficient supplemental medical insurance coverage
(Medicare Part B and additional Health Insurance are components of this variable)
ns = not significant

Table 14

Correlation Matrix Results

Variable	Name	Correlation
Y	SMI	1.0000
X_1	MHSS	.29017 *
X_2	Age	-.00621
X_3	Rank	-.42413 *
X_4	Fixed Income	-.16185 *
X_5	Income Level	.37509 *
X_6	Employer Insured	.30945 *
X_7	Insurance Options	.25461 *

* = significant, $p<.05$
Critical Value (2-tail) = +/- .11853
n = 274

Table 15

Full and Restricted Linear Regression Results

	R^2	*df*	F-ratio
Full Model	.3324	6, 267	22.154 **
Restricted Model:			
MHSS	.3117	1, 268	1.6620
Rank	.2640	1, 268	5.4917 *
Fixed Income	.3314	1, 268	0.0803
Income Level	.3234	1, 268	0.7226
Employer Insured	.2598	1, 268	5.8289 *
Insurance Options	.3171	1, 268	1.2284

* = significant, $p<.05$
** = significant, $p<.005$

Appendix A

WOMACK ARMY COMMUNITY HOSPITAL'S
MEDICAL INSURANCE STUDY

DIRECTIONS: PLEASE ANSWER ALL THE QUESTIONS BELOW. YOUR RESPONSES WILL REMAIN CONFIDENTIAL. A PRE-ADDRESSED ENVELOPE HAS BEEN PROVIDED TO MAIL COMPLETED FORMS BACK TO WOMACK. PLEASE RETURN THIS SURVEY WITHIN 14 DAYS OF RECEIPT. THANK YOU FOR YOUR TIME AND COOPERATION.

QUESTIONS **ANSWERS**

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1. DO YOU CARRY MEDICARE (PART B) KNOWN AS "MEDICAL INSURANCE" ? . ..... YES ____ NO ____

   (NOTE: THIS INFORMATION IS LOCATED ON YOUR MEDICARE CARD)

2. IF YOU CARRY ONLY MEDICARE (PART A); "HOSPITAL INSURANCE": WHY? ..... QUESTION DOES NOT APPLY ____
   NO NEED FOR MEDICARE (PART B) ____
   MEDICARE (PART B) TOO EXPENSIVE ____
   DID NOT REALIZE THERE WERE TWO PARTS ____
   OTHER REASON (LIST) _____

3. DO YOU CARRY ANY OTHER FORMS OF HEALTH INSURANCE; BESIDES MEDICARE? ..... YES ____ NO ____

   IF YES, IS YOUR ADDITIONAL INSURANCE A FULL OR SUPPLEMENTAL COVERAGE POLICY? ..... FULL ____ SUPPLEMENT ____

   IS THIS INSURANCE EMPLOYMENT SPONSORED OR PRIVATELY PURCHASED? ..... EMPLOYMENT ____ PRIVATE ____

4. **TRUE OR FALSE:**
   RETIREES AND THEIR SPOUSES ARE GUARANTEED FREE COMPREHENSIVE CARE THROUGH THE MILITARY MEDICAL SYSTEM. ..... TRUE ____ FALSE ____

(continued on back)

5. **TRUE OR FALSE:**
ACTIVE DUTY SOLDIERS AND THEIR FAMILIES HAVE PRIORITY (OVER RETIREES AND THEIR FAMILIES) TO MILITARY, NON-EMERGENT HEALTHCARE; PER ARMY REGULATIONS. ..... TRUE ____ FALSE ____

6. WHAT IS YOUR PRIMARY SOURCE OF HEALTH CARE? .....
VA FACILITY ____
MILITARY FACILITY ____
CIVILIAN FACILITY ____

7. ARE YOU AWARE OF THE HEALTH INSURANCE POLICIES AVAILABLE TO SUPPLEMENT YOUR PERSONAL "MEDICARE" COSTS FOR DEDUCTIBLES, AND/OR COPAYMENTS? .....
YES ____
NO ____

8. ARE YOU LIVING ON A FIXED INCOME? (FIXED INCOME AS DEFINED BY SOCIAL SECURITY AND RETIREMENT CHECKS ONLY) .....
YES ____
NO ____

9. WHAT IS YOUR ANNUAL INCOME? .....
LESS THAN $10,000 ____
$10,000 - $19,999 ____
$20,000 - $29,999 ____
$30,000 - $39,999 ____
$40,000 - $49,999 ____
MORE THAN $50,000 ____

FOR QUESTIONS CONCERNING THIS SURVEY PLEASE CONTACT CPT GAY LYNN PFAFF, ADMINISTRATIVE RESIDENT AT WOMACK ARMY COMMUNITY HOSPITAL: 432-2906 OR 432-6714. AGAIN, THANK YOU FOR YOUR TIME AND COOPERATION.

Appendix B

Dear Survey Participant and Extended Member of the Womack Family;

You have been selected to participate in a survey concerning the military medical resource requirements of the community served by Womack Army Community Hospital. The purpose of this survey is to identify the need (if any) to inform our beneficiaries of the role that health insurance plays in a military setting. This is an important aspect of the total healthcare mission because of insurance's impact on a family's budget and overall well-being.

This medical facility is not trying to sell anything through this survey. Individual identification is not requested and all information provided will remain confidential. Your help in answering these questions is needed in order to obtain a representative sample of the insurance practices of our community. A copy of the final assessment will be made available to all interested survey participants.

My successful completion of the graduate program in healthcare administration, sponsored by the US Army and Baylor University, depends in part on completion of this management project. Further, your answers may help to establish future healthcare policy that will benefit the extended military family. I have enclosed a pre-addressed stamped envelope for your convenience. Please return your completed survey forms as soon as possible, but no later than January 1, 1991.

Sincerely,

GAY LYNN PFAFF
Administrative Resident
Womack Army Community Hospital

Appendix C

Unsolicited comments found on completed surveys:

"From the many unsolicited mailings I have received requesting me to subscribe to hospital insurance, each was too expensive for me to consider. So, as in combat, I have taken my chances and so far so good!" (#154)

"For years I was unaware that I could not use CHAMPUS" (#143)

"Retirees should have priority over dependents!" (#105)

"Congress has passed laws since I retired that modified my guarantee to free comprehensive care - but a contract is a contract, and the USA has defaulted on my contract" (#122)

"The contract upon which my source of commission is based - over 20 years of active duty - state that I am to receive benefits. I do not recall the statement .... only when services are available to retirees!" (#100)

"When I joined the Navy in 1939, they promised me medical and dental care for the rest of my life; also my family. Now it is a damn joke." (#134)

"If any more changes are made for retirees that would cause more hardship - medical needs should be examined. I am coping but other Army wives are in for a big surprise." (#402)

"We older retirees have more or less been "brushed aside" - a benefit which is the most important in our lives - the use of military care." (#95)

"Some day a question will be raised concerning treatment of retired Regular Army and retired Reservists." (#219)

"At one time guaranteed free comprehensive care was propagated by the government." (#342)

"We've been told we have guaranteed free comprehensive care for approximately 50 years!" (#439)

"We were told while in the Army that a retiree and his spouse would be guaranteed free comprehensive care at an Army hospital once retired." (#272)

"I have been retired for 20 years and have depended solely on military facilities for healthcare." (#481)

Appendix C (cont'd)

"I was promised free comprehensive care while on active duty, but it was reneged on after retirement." (#63)

"When my husband joined the Army he was promised medical care for himself and his dependents for the rest of our lives." (#355, #329, & #328)

"Not guaranteed free comprehensive care, but promised verbally." (#111)

"Advised by Social Security Administration employee that Part B was not needed because of my eligibility for military retirement benefits." (#387)

"I had complete medical care offered to me if I would remain on active duty for twenty years or more. Keep this promise! Please save my medical benefits as the government promised; enough has been taken up to this point." (#184)