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ABSTRACT

This study addresses itself to the problem of what should be done to increase the civilian medical/health field utilization of men who have received medical training and experience while in military service. It was found that military men were influenced in their decision for or against a civilian health career by: military service branch, length of service, military status, knowledge of the labor market, and type of military work experience. Various programs are discussed that facilitate transference to civilian work. Policies and recommendations which would facilitate the transfer of manpower are discussed. A six-page bibliography is included. (BP)

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TRANSFERABILITY OF MILITARY-TRAINED MEDICAL PERSONNEL TO THE CIVILIAN SECTOR

PREPARED FOR THE

OFFICE OF MANPOWER RESEARCH
US DEPARTMENT OF LABOR

WASHINGTON, DC JULY 1970

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Prepared for the

Office of Manpower Research
US Department of Labor

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by

Robert R. Nathan Accociates, Inc.

July 1970

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SUMMARY

Introduction

The exploding demand for medical and health services and evolving changes in the systems for delivering them have been accompanied by widespread shortages of many kinds of personnel, professional and subprofessional. Estimates of the extent of present and prospective demands vary (according to definition and source of the estimates), but it appears that they are of the order of 2 to 3 million in 1966-75 and that the number of subprofessional or "paramedical" (other than physicians, dentists, and registered nurses) may run to 2 million for that decade. Whatever estimate is used, it appears that the numbers are well in excess of the supplies now in prospect.

In the face of this, there has been increasing interest in a large potential, but mainly untapped, source of supply: the veterans of the Armed Forces who received specialized medical training and experience while in service. In recent years, 30,000 to 40,000 enlisted men with various kinds of medical/health skills have been released annually by the Armed Forces. These men are experienced in a wide variety of medical and allied health occupations, and have functioned in many different types of military health facilities, most of which have close counterparts in the civilian medical/health system.

This report presents the findings of a study of this supply, undertaken to determine the labor market characteristics of the men who comprise the supply; the extent of their transferability and transfer to civilian medical/health employment after their release from the Armed Forces; the reasons why more of them did not transfer; and the conditions under which the transfer rates might be raised.

The study proceeds from the premise that there is a prima facie expectation that most military medical men released from the services would find it to their advantage to transfer to medical/health work, and that it would be to the advantage of the country if they did so. The expectation rests on a number of demonstrable propositions:

- There is a paralleling of functions and occupations between military and civilian medical/health services
- The quality of training and experience in military medical service equips men to perform the work of the civilian medical/health system
- The quality of the paramedical personnel currently released by the Armed Forces is at least as good as the quality of their counterparts in the civilian medical/health system
- The flow of military paramedical personnel being released by the services is a significant supply of labor, and the expansion of the civilian medical/health system is generating a strong demand
- Much of the supply and the demand emanates from the same points around the country, and thus facilitates exchange.

Though there are prima facie reasons why military paramedical men should transfer to civilian medical/health work after their release, there are certain preconditions to transfer on a large scale:

- There must be a system of market information and market mechanisms. Although there are widespread employment opportunities in occupations for which military paramedical service is qualifying, the men need to know where these jobs are and how to find them. By the same token, civilian employees need to know where the men are, what their military training and experience have been,

and what civilian occupations they are competent to fill.

- The specifications of the supply and the specifications of the demand must be matched. The capabilities of the men must be compared with the qualifications required for employment.

- To the extent that the supply does not meet the specifications of the demand with regard to formal qualifications, functional capabilties, or geographic availability, the supply/and/or demand may require modifications to maximize transfer.

- The supply price and the demand price must tend to converge. If the supply price is too high, prospective employers will find it more economic to tap alternative sources of supply even though training costs may be higher. If the demand price is too low, the men will find it profitable to seek alternative employment, even though they forfeit the advantages of their paramedical experience.

- Other conditions of employment must be met, notably those having to do with type of assignment, career prospects, training opportunities, status, hours of work, fringe benefits, and/or congeniality of work.

The Size of the Potential Supply

The U.S. military medical establishment is comprised of a vast complex of educational, research, and medical care institutions, operating through the medical departments of the Army, Navy, and Air Force. These three medical departments are responsible for meeting the health care needs of 10 million persons, of whom 3.5 million are servicemen on active military duty. The remainder are either dependents or retired veterans. In order to fulfill this mission, the three services have 239 hospitals, 467 dispensaries, and numerous aid stations. These facilities are found not only in

the United States, but in widely scattered locations in Europe, Southeast Asia, the Far East, the Middle East, and aboard ships at sea. The military medical organization also encompasses the largest and most comprehensive system for training medical manpower in the U.S. and one of the most extensive organizations conducting research on medical problems. In December 1968, professional and allied health staff manning military medical facilities numbered 158,000.

This study is limited to enlisted men who were assigned to paramedical jobs while in military service. On June 30, 1969, the enlisted strength of the Armed Forces medical departments was 111,036. The Army had the largest enlisted strength, with 49,596 "medics;" the Navy had 26,283 "corpsmen;" and the Air Force had 23,157 "med techs."

From July 1965 through June 1969, 131,847 enlisted persons returned to civilian life after medical service in the Armed Forces. In 1969, as in previous years, the Army veterans dominated this group, accounting for approximately two-thirds of those released. The Navy veterans, with approximately one-fifth of all separatees, outnumbered those who had separated from the Air Force. Assuming that the number of enlisted personnel in the medical departments will total 116,000 in 1970, and 102,000 in 1971, it is estimated that the number of separatees will total almost 34,000 in 1970, and 30,000 in 1971. These projections are consistent with the trend toward additions to enlisted strength in earlier years, and toward separations in recent years.

Study Hypotheses and Design

This study addresses itself to the problem of what should be done to increase the civilian medical/health field utilization of men who have received medical training and experience while in military service. The objective of the study is to identify the various factors that affect the crossover of military dischargees to civilian medical/health occupations. The study findings suggest policies and programs that might be followed by the military, the civilian medical/health service industry, and the Government to increase the transference of skills from the military to the civilian labor force.

A number of hypotheses were formulated:

- That differences among the services cause measurable differences in attitude that will affect interest in transference

- That there are significant differences among veterans, based on length of service (career vs. noncareer personnel)

- That there are significant differences among enlisted personnel dependent on their service status (whether still in service or several years out)

- That there is a substantial difference in willingness to transfer, based on exposure to the civilian medical/health labor market (e.g., moonlighting or preservice employment)

- That willingness to continue as a paramedical worker is influenced by the type of tour experienced as an enlisted man (geographic location, type of health facility, kind of work assigned).

These hypotheses formed the basis of the design of the study. An extensive questionnaire was used to collect information from the men themselves concerning their characteristics, preservice and service experience, the preferences and expectations of those still in service, and the postservice experience of those 2 or 3 years out of service. The information was obtained by telephone interviews (after a pilot survey to test differences between telephone and face-to-face interviewing) with 12 samples of approximately 100 each, drawn from lists provided by the services.

The men in our study are basically of two kinds: careerists retired after upwards of 18 years of service, and noncareerists separated after one term of service. The careerists represent a sizable corps (1,500-2,000 men a year) of highly trained and richly experienced paramedical personnel, turning 40, with a career investment in medical work including patient care and, often, capability in some medical specialty or in medical administration. The noncareerists are very much more numerous (nearly 30,000 a year), very

young (21 or 22 at time of separation), very well educated, but with less medical training and experience, and a wide choice of careers ahead of them.

Transfers

In 1968, only about two-fifths of the career military medical enlisted men, and only about one-fifth of the non-career men, separated 2 to 3 years earlier were engaged in medical or health activities. These proportions did not differ significantly among the three services. Considering the quality of the men and their training and the chronic shortage of paramedical personnel reported by civilian health agencies, the rate of transfer of military paramedical specialists is surprisingly low. This is especially true of men with careers of 18 years or more of military medical experience.

The frequency of transfer observed was distinctly lower than the frequency with which men about to be separated planned to engage in civilian medical/health activities. Given their perceptions of opportunities, prerequisites, work, and working conditions in civilian medical/health employment, three-fifths of the inservice careerists and just over half of the noncareerists responded that they planned to enter the civilian medical/health field after being separated from the service.

Considering that the inservice and out-of-service respondents were drawn from different populations (differing in age, circumstances of induction, and time of release), we have estimated the "loss" of potential transfers by comparing the observed transfer rate of out-of-service men with the attitudes and experiences of these men since their separation. Another estimate of the loss was calculated based on the numbers who considered entering the medical/health field but decided against doing so. It is not unreasonable to conclude that potential "loss" lies in the range of 600 to 800 for careerists and 8,000 to 13,000 for noncareerists.

Transfer rates (planned and observed) were lower among men whose primary military assignments had been in direct patient care than among those assigned to technical or supportive services. The men correctly perceived the difficulties of converting their military training and experience to satisfying and remunerative work in direct patient

care. They recognized the similarities of facilities and occupations between the military and civilian health services, especially hospitals and clinics in which they are primarily experienced. The careerists who transferred most often found paramedical work in hospitals, but the noncareerist transferees have had more difficulty meeting the formal qualifications and are more often found working in other facilities.

As a potential supply of medical/health manpower, the careerists who transferred did not differ very much from those who did not. They were a little better educated, rather more willing to move in search of their chosen work, and on the average rather more demanding in the earnings they would accept. But there is nothing in the study to suggest that the character or quality of the supply was responsible for the relatively low rates of transfer. On the contrary, as the men themselves perceived, the obstacles arise from the demand side.

The case of the noncareer men is quite different. On one hand, their medical capabilities are distinctly more limited; on the other hand, they are on the threshold of their careers and therefore vocationally more footloose. These characteristics do not diminish their long-term value as a potential supply of civilian medical/health manpower but, rather, suggest the terms on which they might be available. The severe attrition between considering and planning, and between planning and transferring, derives not so much from their (realistic) perception of formal requirements to be satisfied as from the recognition that the system does not provide the transitional mechanisms and the structured combinations of work, training, study, and advancement that make a career. Here again, it is not the interest, quality, or availability of the supply that is the constraining factor, but the limited flexibility of civilian medical/health demand in meeting the minimum conditions to attract more of these young men if it wants them.

Effects of Service Experience

All of the careerists, and some of the noncareerists, served in a variety of installations. Despite the chance for duty in small (or combat) medical units, the military paramedic was likely to have his greatest amount of experience in a military hospital in the United States. This means that the paramedical veteran has been exposed to a system organized and equipped for the delivery of medical care which is comparable to the civilian sector's.

For purposes of analysis, the various military medical occupational categories were collapsed into two groups: The first contained those men whose occupations centered around the direct care of patients; the second emphasized technical, laboratory, and other supportive skills. This second category had a much higher rate of transference to the civilian economy than did the direct care group.

Military paramedical personnel were generally contented with their service experience. Few reported any dislikes, and these few concerned the military, rather than medical, aspects of their position. Not surprisingly, this military medical experience was a major influence on the career plans of the veteran.

In addition to the training and experience received from the military, 15 percent of the sample had part-time experience in civilian medical/health ("moonlighting") jobs while on active duty. These men tended to have greater preservice interest and experience than the average paramedic.

Factors Affecting Transference

From the viewpoint of both inservice and out-of-service men, veterans face problems in finding civilian medical/health jobs. Evaluating the veteran's situation, the careerists cited pay levels as a major difficulty, but in the opinion of the younger men, aspects of civilian hiring standards, such as educational requirements and civilian acceptance of military training, were paramount.

Educational Requirements

Among the problems veterans perceived, educational requirements ranked first among noncareerists and was second only to low pay among careerists. To be readily accepted for employment in most paramedical jobs, an applicant must be a graduate of an accredited school or an approved program, or have civilian work experience. Nevertheless, by the time they return to civilian life, veterans have educational attainments equal in numbers of years to those required for many levels of allied medical/health positions. The difficulty that veterans face in meeting the educational requirements of civilian employers in the medical/health field is not that they are poorly educated but that they are not

precisely educated to the specifications of civilian job prerequisites.

Almost 90 percent of the out-of-service careerists in paramedical jobs felt that their service experience and training provided the necessary qualification for their civilian medical/health job. But younger veterans, who had only one tour of duty in the military, are overwhelmingly concerned with obtaining additional education. A significantly higher proportion of younger veterans in medical/health jobs enrolled in classes than out-of-service noncareerists who chose jobs in other fields.

Pay Levels

The men cited the pay levels in civilian medical/health services as a deterrent to transfer more frequently than any other barrier except the formal requirements of education and training.

As perceived by careerists about to be released, who had not made their living in civilian employment in about 20 years, there was a wide range of earnings expectations. But on the average, medical/health occupations appeared to offer more attractive earnings prospects to them than alternative employment possibilities. As it turned out, the expectations were not at all unrealistic: the average pay of all out-of-service careerists who entered medical/health work was $7,979, about 5 percent higher than expectations. Earnings in the range of $6,500-$8,000 are not at all inconsistent with the labor market of 1968. The sum of the earnings cited in the survey and retirement pay (say, $9,000-$12,000) would put them at about the third quartile of the earnings range, which is about what their lifestyle requires. Thus, it is doubtful that some of them would enter medical/health work at all if it were not for the retirement pay.

Median earnings were generally higher for career transferees than for men who entered or planned to enter other fields of employment. Inservice careerists planning to transfer expected to earn more (by about 10 percent) than those who did not plan to transfer; this difference was significant in all the services. Earnings realized by careerist transferees 2 or 3 years out of the service were higher on the average (by about 10 percent) than earnings of careerists employed in other fields, but not uniformly among the services. (The Army transferees actually earned less than nontransferees.)

Interservice differences in pay of transferees are correlated with differences in type of military medical experience and, for out-of-service men, with type of civilian job. Earnings, both prospective and actual, were lower for careerist transferees whose primary military assignments were in direct patient care than for those who were primarily assigned to indirect care.

The Army men, with their greater specialization and exposure to direct patient care, were more likely to take jobs in hospitals and in nursing occupations than Navy and Air Force personnel, who were more frequently found in technical and administrative positions, in industrial and community health, and in other indirect care occupations. It does not necessarily follow that the Navy or Air Force careerists are better equipped or more "valuable" than the Army men. It appears that they are more acceptable or more sought after in a variety of indirect care occupations because of their broader preparation, and that they are better paid. The obverse of this is that the Army experience leads more Army men to transfer to hospital work, and that they are less well paid. This suggests that it will require higher earning prospects, either through higher pay rates or through access to better jobs, to increase the incidence of transfer to direct patient care occupations, where shortages are most acute.

The earnings expectations of noncareerists about to be released in 1968 and 1969 reflect their youth (three-fourths under 25) and their high levels of education (three-fifths beyond high school). Their median earnings expectations were generally lower than those of careerists, and not unreasonable in the context of the 1968-69 labor market. Those who planned to enter the medical/health field expected 20 percent more than those who did not, and only a little less than the inservice careerist transferees.

The experience of the out-of-service men after 2 or 3 years in the labor market confirms the expectations in the main. On the average, the transferees reported higher earnings than the nontransferees.

Hiring Standards

Civilian hiring standards are a major hurdle for veterans, especially the first-termers. Civilian hiring standards typically specify levels of education, specialized work experience and professional standing as evidenced by

licensing or certification. The survey respondents recognized that the required education and work experience were obstacles to finding a civilian medical/health job, but very few of the men considered that licensing or certification stood in their way. This contrasts with the prevalent view that it is licensing and certification which operate to constrict the supply of allied medical/health manpower.

Civilian employers are not well informed about the military training, experience or caliber of medically trained veterans. Recent publicity calling attention to the number of corpsmen released annually, their employment in civilian institutions, and their inclusion in special allied medical/health manpower programs has made civilians more aware of the potential these veterans represent, but has left civilians still largely uninformed of their competence. For this reason, little has been done to adapt civilian hiring standards to take into account the special circumstances under which servicemen are qualified for paramedical jobs.

Licensing and Certification

Because most enlisted men in the Armed Forces medical departments are trained and utilized as auxiliary nursing personnel, civilian requirements for nursing positions are of major importance to them. The medical military course training received by enlisted men typically is not accepted as fulfilling the education in an approved school required for registered or licensed practical nurses. The respondents in the study frequently commented that civilians thought they were qualified only for jobs as orderlies, despite their training and years of experience.

Special Programs to Facilitate Transference

More than 90 percent of the men interviewed approved of the objectives of Project Remed, the Government program to use the U.S. Employment Service and other institutions to channel discharged military medical personnel into civilian medical/health jobs. But 80 percent or more of the respondents in each group had never heard of any Government program or legislation for training workers in the medical/health field, despite the fact that the Government is spending hundreds of millions of dollars in such activity. Only 5 percent of the inservice respondents reported that they planned to participate in such Government programs.

On the other hand, Duke University received 3,500 inquiries and 600 applications (mostly from veterans) for the 40 places in its Physician's Assistant Program. The emergence of a new medical/health professional, the physician's assistant, is one of the most promising developments yet in meeting the need for health manpower. Physician's assistant programs are mushrooming. In July 1969, there were at least 30 programs of this type in operation or in the planning stages throughout the country. There are considerable variations in the type of training provided, the size of the student body, course duration, and sponsoring agency. Some, like the Duke University and MEDEX programs, seek out former military medical personnel. A few, like the physician's assistant program at Wake Forest University, accept qualified applicants in general, but give as much as 2 years of college credit for training and experience in the military. Several programs are pilot projects.

The National Committee for Careers in Medical Technology has developed three levels of technologists, requiring progressively more education and experience. It also credits military training and experience to qualify at the first two levels.

Policy and Program Implications

Prerequisite to any successful effort to increase the rate of transfer is a mechanism for continuous communication and collaboration between the military, as the producer of the skills, and the various organizations representing the putative civilian employers -- the hospital associations; the medical, dental, and nursing associations; the Civil Service and Government employers; and the educators of paramedical personnel. Such a mechanism is necessary, in the first place, to inform the civilian organizations of the exact scope, content, and quality of military medical training and service; in the second place, to set in motion the various investigations and programs to facilitate the absorption of the paramedical personnel after separation; and, finally, to provide a means of keeping programs under review and evaluation.

We suggest that the Department of Labor and the Department of Health, Education, and Welfare jointly convene a continuing conference of interested organizations with the military, and that this conference map out the steps in a program and set up standing working parties to detail the plans and assignments for making programs operational.

Actions Proposed to the Military

. A public information program to acquaint civilian hiring authorities with the training and qualifications of military medical generalists and specialists

. A procedure for providing separating personnel with documents of their training, service, and capabilities

. Modifications of military medical training or requirements, where feasible, to satisfy civilian requirements

. Extension of the military career ladder to professional grades for which requirements do not exceed the baccalaureate degree

. Facilitating transition by disseminating very specific job information, and permitting direct dealings between the men and prospective employers.

Action Proposed to Civilian Government

. A review of civil service requirements for paramedical occupations in the light of training and qualifications for military medical occupations, to determine (1) the maximum extent to which military training and experience can be accepted, and (2) the maximum extent to which civil service positions' requirements can be modified

. Development of a highly organized, concentrated, and specialized placement service for (1) assembling and disseminating specifications on openings in medical/health occupations, (2) determining availability and qualifications of military medical personnel about to be separated, and (3) matching the offerings to the available and qualified applicants

. Consideration of legislation to authorize Federal certificates and licenses, valid throughout the United States, in recognition of education, advanced and specialized training, and satisfactorily completed experience in military medical service

. Programs for young veterans combining employment in hospitals or clinics with clinical training and formal college-level technical instruction, leading to progressive advancement up the medical occupational ladder. The costs of approved education and training should be borne by the Government. The Government should take the lead by introducing such programs into its own medical facilities and by support of pilot projects in civilian hospitals.

Action Proposed to Civilian Employers

. Reexamination of job structure in civilian hospitals and medical institutions, to create classes of jobs which will permit utilization of veterans to "extend" the skills and productivity of scarce civilian professional and technical manpower. In the restructuring, the subprofessional tasks must be organized into an hierarchy of occupations of the "technician" and "assistant" varieties, with their own titles, duties, requirements for entry, and lines of advancement. The initiative in this effort should come from the U.S. Public Health Service, in collaboration with professional associations.

. Systematic recruitment by employers, based on advance planning of manpower needs and tailoring of openings to meet the capabilities and requirements of veterans available for employment. These operations are probably most efficiently carried out by consortia of employers

. Pay scales that are competitive for the quality of veteran manpower and that offer opportunities for substantial advancement in earnings.

Action Proposed to Professional Organizations

. A close examination of the content of military training and experience, and a realistic evaluation of this training and experience in terms of the requirements of good medical practice

. An assessment of the value of military training and experience in terms of credits to be applied toward academic and clinical requirements for paramedical personnel in their several specialties, and encouraging acceptance of these credits by academic and medical institutions

. Taking the initiative, with the hospitals, in examination of civilian medical/health occupational structure, in order to formulate occupational work-training hierarchies for careers for former military paramedical personnel

. Entering actively into the design and execution of work-training-study programs to put former military paramedics in civilian medical/health jobs and to enable them to progress.

Indicated Further Research

. Comparison and "reconciliation" of military and civilian medical occupational structures

. Identification, description, and classification of a series of paramedical occupational classes to use efficiently in the civilian sector the capabilities acquired in the Armed Forces

. Studies of the demands of the civilian medical/health services, as they relate to the placement and utilization of veterans: requirements, openings, shortages, specifications -- currently and 5 and 10 years hence

. Studies of paramedical training and training costs: e.g., how best to train military men for civilian jobs; elements of military training suitable for civilian use; relative costs of converting military personnel and of training civilian personnel from scratch.

I. INTRODUCTION

Conditions in the Medical/Health Field

Medical care in the United States underwent drastic changes in the 1960s. It faces still more radical changes in the years ahead. Adjustments and innovations are urgently required to meet the greatly expanded demand for health services. Forces that have contributed to the burgeoning demands on the medical care system include:

- U.S. population growth and the changing age profile: Higher proportions of the enlarging population include the very young and the aged. These age groups require more medical care than others.

- The affluence of our society: The demand for medical care is highly "income-elastic." The elasticity of the demand is reinforced by the fact that more than 80 percent of the population is covered by some form of health insurance, and thus is financially able to command much more medical attention than previously.

- The national consensus that health care should be the right of everyone in our society -- young and old, rich and poor, black and white, urban and rural: This consensus has been articulated in Medicare, Medicaid, and other programs.

- Widely acclaimed scientific and technological advances: These have expanded the scope of medical practice.

In response to rising expectations for quality health care in the past decade, there has been some expansion of medical programs and facilities and some modifications made in the organization and administration of medical care. A serious limitation on the ability of the medical system to meet the increasing demands on it has been the short supply of medical manpower. A study of personnel needs in hospitals and nursing homes in 1966 revealed that at that time over 300,000 additional professionals, and technical and other auxiliary health workers, were needed in order to provide "optimum care" [1]. Another study, limited to allied health manpower, showed a gap of almost 200,000 persons between personnel supply and requirements in 1967 [2].

Awareness of the growing personnel shortage facing the health service industry has existed for some time. Task forces, study groups, national, state and local commissions, advisory councils, and a multitude of organizations and analysts have studied this question and other aspects of health service. The recent report of the National Advisory Commission on Health Manpower lists 14 major studies on this subject conducted between 1930 and 1965. Remedial action on different levels has been called for repeatedly. Fundamental major reforms, as well as temporary stopgap measures, have been urged upon the Government, the profession, and the public.

Some programs and improvements have been initiated, but we are now suffering the consequences of our inability -- or unwillingness -- to initiate far-reaching changes, and to implement even limited programs quickly enough. Since 1966, demands on the health care system have grown to such an extent that a crisis has developed.

Medical costs may be used as a fever chart of the system's malaise. A one-day hospital stay, costing an average of $44 in 1965, cost $61 in 1968 and $68 in 1969 -- a rise of over 50 percent in four years. This cost is expected to rise to almost $100 by 1973 [3]. Among other indicators of the inadequacy of the medical care system in the United States are the facts that the U.S. ranks 18th among the nations of the world in life expectancy of men, 11th in life expectancy of women, 13th in infant mortality rates and 12th in maternal mortality rates. An adequate supply of health manpower is not sufficient, but is necessary, to produce a health care system able to respond to the needs of all the American people. Unless drastic and immediate action is

taken on many fronts, especially in the supply and more efficient use of health manpower, adequate medical care may not be available to the public at any price.

Dimensions of the Manpower Shortage

Published data on health manpower supply and requirements vary considerably. Differences in definitions of the scope of the health function and of "medical manpower," as well as assumptions regarding the future, have a marked effect on the level of these estimates. For 1966, workers in "medical and other health services" were estimated at 2.2 million [4, p. 87; 5]. In this case, "workers" in the industry defined as "medical and other health services" included only payroll employees (not self-employed persons) working in privately owned hospitals, nursing homes, laboratories, and offices, but not in Government health facilities. Manpower estimates have also been prepared for the "health service industry," which is variously defined, usually to include wage and salary workers and self-employed persons in private and in Government-owned health facilities, but to exclude Government public health programs. Under this definition, 1966 employment for the "health service industry" was about 3.7 million [6, p. 187]. The most comprehensive coverage estimates that 4.1 million were engaged in 1966 in "all health-related activities," counting everyone "engaged in health-related paid activities, in all industries, including manufacturing, trade, scientific, and Government health-protective or patient-care activities" [4, p. 90]. Within this definition are workers in health occupations, as well as clerical, maintenance, supply, laundry, and other types of workers in all establishments involved in health activities. In addition, estimates are available for selected years for categories of health workers, as "medical and other health workers" and "experienced civilian labor force in health occupations," and for particular occupations.

Projected 1975 manpower requirements also vary considerably, ranging from 2.2 million to 5.9 million, reflecting widely different concepts and assumptions. The Department of Labor used certain underlying assumptions with regard to conditions in 1975 in preparing its estimates for the health service industry and all health-related activities. It was assumed that in 1975, the United States would be functioning under peacetime full-employment conditions, with the same rate of change in economic, social, and technological achievement as in 1956-65. The Department of Labor does not envision any revolutionary changes in the health industry,

and its projections are "estimates of the effective demand for workers rather than needs to meet some set standard of medical care" [7, p.3]. In 1966-75, it is anticipated that the health service industry will need 1.7 million additional workers, while the requirement for all health-related activities is 1.8 million additional workers. Each of these represents an increase of around 45 percent. In the following table, employment data for 1966 and 1975 are presented for several definitions of health industry and labor force.

Table 1. Estimated 1966 Employment and Projected 1975 Employment, by Definition of Health Industry and Labor Force

(in millions)

Definition	1966	1975
Medical and other health workers....	n.a.	2.2
Medical and other health services...	2.2	3.4
Experienced civilian labor force in health occupations.....	2.8	3.8
Health service industry.....	3.7	5.4
All health-related activities.....	4.1	5.9

In addition to manpower needed because of rising employment levels, requirement estimates must, of course, take into account needs for replacements for those workers who die, retire, or transfer to other occupations. These estimates must also include the number of workers who reenter the labor force in the health occupation field, or who shift into that field. Between 1966 and 1975 health manpower replacement needs are estimated at about 1 million for the health service industry and 1.1 million for health workers in all health-related activities [6].

Projected needs for health personnel are calculated by adding the number of personnel required for replacements to the number necessary for growth. Thus, within two broad definitions, projected health manpower requirements for 1965-75 range between 2.7 and 2.9 million persons, an average yearly demand of 280,000 entrants.

Narrowing the field to a consideration of future requirements for more than 125 categories of health occupations with which this study is primarily concerned presents problems. As recently as April 1969, a report presented by the Department of Health, Education, and Welfare to the President and the Congress cited the inadequacy of allied health manpower data, and indicated that "present available data cannot provide answers to these questions: How many persons are engaged in allied health occupations? How many employment opportunities exist for allied health personnel? How many opportunities for employment will be available next year and in succeeding years to persons preparing for allied health occupations?" [2]. Most data are prepared for selected occupations only, and cannot be added to obtain a comprehensive picture for the health manpower field. Frequently, estimates of projected need for all "allied health workers" are based only on anticipated growth patterns, neglecting the replacement factor. The very high rate of turnover in health occupations makes this a serious omission.

One authority, who considers both growth and net replacement factors, estimates the needs of the health service industry in 1966-75 to be an additional 2.1 million for personnel other than physicians, dentists, and registered nurses [8]. The anticipated industry growth for such personnel is calculated at about 1.3 million, and net personnel replacements at 0.8 million. Thus, the annual "allied health" manpower requirements in this period for growth and attrition is projected to average 210,000.

Another source, approaching the needs for allied health manpower from a different angle, concludes that the shortages of allied health manpower will be greater in 1975 than in 1967. In 1967, the deficit in the medical-allied health field (not counting the shortage of nursing personnel) was 110,000, and in dental-allied health manpower, 28,700. These deficiencies "represent the number of workers who could find employment without major changes in the health care system, in manpower utilization patterns, or in the economics of health care" [2]. A survey of hospital staffs and needs indicated that in April 1966, approximately 200,000 additional nurses and aides were needed in these facilities alone in order to fill budgeted vacancies and to provide optimum care [9]. The prospect of even greater health manpower deficits in the future is apparent if projections are made in terms of medical care needs, rather than in terms of employment opportunity.

Many of the estimates, especially those derived from the health professions themselves, implicitly project the present modes of organization and delivery of medical and health services. In view of the very large requirements thus derived and the various lags and inelasticities characteristic of the supply of health manpower, it is more reasonable to assume that in the face of explosive increases in demand, the organization and delivery of health services would be modified, with corresponding changes in occupational structure and occupational requirements. Some recent Department of Labor estimates have, to some extent, taken into account putative occupational changes implied by technological and other innovations that may reduce the proportions of professional personnel, and increase the proportions of technicians and other subprofessional employees. These estimates project a net growth of employment in medical and health services, rather narrowly defined, of 1.2 million workers between 1966 and 1975 [5]. (This includes some nonmedical supporting workers in maintenance and service occupations.)

The largest increases are expected in "nursing personnel," who account for about 45 percent of employment (excluding physicians and dentists), and whose numbers are expected to increase 500,000 between 1965 and 1975. The next largest group is "administrative and office," which is expected to add 100,000 to the nursing total. Together these groups will account for two-thirds of the increase in employment between 1965 and 1975. The fastest growing demands will be for X-ray technologists (73 percent), medical laboratory personnel (60 percent), and rehabilitative and other technicians (54 percent). Together, these will require nearly 150,000 more technically qualified people by 1975 than were employed in 1965 [4].

Whichever set of projections is used as a guide, it is clear that personnel requirements are very large, and that they will strain the capacity of most of the professions to attract and train the required numbers. It is not surprising, therefore, that there are increasing demands for subprofessional personnel to supplement ("extend") the supply of doctors and nurses. Thus the emphasis on such occupations as technicians, practical nurses, skilled medical technicians, and hospital administrators.

In order to meet the increasing need for health personnel, programs have been initiated (1) to interest and to train young people in health occupations; (2) to expand the

capacity of health educational institutions; and (3) to provide incentives for qualified but inactive personnel to reenter the field. "By 1967, Government expenditures to develop and train health manpower had run to an annual level of $600 million" [10]. It is difficult to determine how many more people are being encouraged to enter health occupations as a result of these efforts. However, one major program, begun in 1962 under the Manpower Development and Training Act, had enrolled about 45,000 trainees at a cost of about $69 million by the end of 1966 [11]. In 1965, graduates of educational programs for 14 allied health professions where acute shortages exist numbered 13,348 [1].

There has been growing interest in a potential source of supply largely untapped: the group of Armed Forces veterans who received specialized medical training and experience while in service. In recent years, 30,000-40,000 enlisted men with medical health skills have been released annually by the Armed Forces. These men are experienced in a wide variety of medical and allied health occupations, and have functioned in many different types of military health facilities. In the opinion of the Research Division of the Army Times Publishing Co., "The Military Medical Community offers a well-experienced, diversified and consistent source of prospective medical personnel who have completed their military obligations, who are in the process of forming their future plans and who are qualified and available to begin productive careers in a civilian medical community" [12, p. 11].

The Military Medical Universe as a Source of Supply

The U.S. military medical establishment comprises a vast complex of educational, research, and medical care institutions, operating through the medical departments of the Army, Navy, and Air Force. These three medical departments are responsible for meeting the health care needs of 10 million persons, of whom 3.5 million are servicemen on active military duty. The remainder are either dependents or retired veterans [13]. In order to fulfull this mission, the three services have 239 hospitals, 467 dispensaries, and numerous aid stations [14]. These facilities are found not only in the United States, but in widely scattered locations in Europe, Southeast Asia, the Far East, the Middle East, and aboard ships at sea. The military medical organization also encompasses the largest and most comprehensive system

for training medical manpower in the U.S. and one of the most extensive organizations conducting research on medical problems. In December 1968, professional and allied health staff manning military medical facilities numbered 158,000. In comparing military and civilian health resources, it has been concluded that "the military has about 5 percent of the nation's population as potential customers and about 5 percent of the nation's health-care resources" [13, p. 7].

Size of the Medical Departments, 1965-69

This study is limited to enlisted men who were assigned to paramedical jobs while in military service. On June 30, 1969, the enlisted strength of the Armed Forces medical departments was 111,036. The Army had the largest enlisted strength, with 49,596 "medics"; the Navy had 36,283 "corpsmen"; and the Air Force had 25,157 "med techs."

Table 2. Number of Enlisted Personnel Assigned to Armed Forces Medical Departments, 1965-69[a]

(as of June 30 of each year)

Year	Total	Army	Navy	Air Force
1965.....	98,577	45,620	27,595	25,362
1966.....	105,067	48,257	31,193	25,617
1967.....	122,306	60,760	34,273	27,273
1968.....	119,435	56,864	35,083	27,488
1969.....	111,036	49,596	36,283	25,157

a/ For a listing of the occupations covered, see appendix II.

Source: [15].

During 1965-69, the size of the enlisted medical staff began at less than 100,000, peaked at 122,000 in 1967, and then declined to the current 111,000. The 1969 level represents a 7 percent decrease from the previous year, and a 9 percent drop from 1967, largely reflecting the 18 percent decline in Army enlisted medical personnel over the 2-year period.

While the Air Force enlisted medical staff also declined in 1969, the Navy continued to add personnel to its department. Over the years, the Army has generally had almost half of all enlisted medical men, the Navy somewhat more than a fourth of the total, and the Air Force slightly less than a fourth.

The size and the pattern of change in the number of enlisted personnel in the three medical departments reflect variations in the total number of enlisted men in each of the services. (See table I-1. This table, and those which follow with roman numeral prefixes, may be found in corresponding appendices.) There is a relatively constant relationship between the number of enlisted men assigned to the medical departments, and the total number of enlisted personnel on active duty. For the past 5 years, the Armed Forces medical departments have been able to command the services of almost 4.0 percent of all enlisted personnel. The Army has utilized a higher proportion of its manpower in the medical service (4.4 percent) than has either the Navy or Air Force (3.6 percent).

Table 3. Enlisted Strength of Military Medical Departments as a Percentage of Total Active Duty Enlisted Personnel, 1965-69

(as of June 30 of each year)

Year	Total	Army	Navy	Air Force
1965.....	4.3	5.3	3.6	3.7
1966.....	3.8	4.5	3.4	3.4
1967.....	4.1	4.7	3.7	3.6
1968.....	3.8	4.0	3.6	3.6
1969.....	3.7	3.7	3.7	3.5
Average...	3.9	4.4	3.6	3.6

Separations from the Medical Departments, 1965-69

A high rate of turnover is a characteristic among military medical personnel. Substantial numbers of men working in military medical departments leave their jobs and enter the civilian labor market every year. Very few draftees

elect to extend their service after the obligatory 2 years. Of those men who enlisted voluntarily, and were assigned to the medical departments, only 13 percent in the Army, and 15 percent in the Navy and Air Force, elected to reenlist for a second tour of duty in fiscal 1969. Therefore, a very high proportion (about 85 percent) of those added to the military medical departments' staffs in recent years will be returning to civilian life when their 2 to 4 years of service are over. As a result of this turnover, the number of medically trained and experienced workers separated from the Armed Forces runs to tens of thousands annually.

Table 4. Separations of Enlisted Personnel From Military Medical Departments, FY 1965-69[a]

Year	Total	Army	Navy	Air Force
1965...	n.a.	n.a.	5,604	3,352
1966...	27,301	18,368	5,425	3,508
1967...	28,011	17,334	6,938	3,739
1968...	35,025	23,654	7,146	4,225
1969...	41,510	28,606	7,018	5,886

a/ For data on military medical separations by occupational specialty, see appendix II.

Source: [15].

The total number of men with medical training released annually has increased each year, from 27,301 in 1966 to 41,510 in 1969. From July 1965 through June 1969, 131,847 enlisted persons returned to civilian life after medical service in the Armed Forces. In 1969, as in previous years, the Army veterans dominated this group, accounting for approximately two-thirds of those released. Navy veterans, approximately one-fifth of all separatees, outnumbered those who had separated from the Air Force.

Service differences are evident in the distribution of separatees relative to medical department sizes. For example, the Army releases about two-thirds of all the separatees, but the Army medical department has less than half of all the enlisted medical men. These differences

are explained, in large part, by the type of military mission and by the varying period of obligated service involved (2 or 3 years for Army personnel, 4 years for Air Force and Navy men). A concomitant factor is the date of induction which, with the length of obligated service, determines the timing of separation. The number of young men joining each of the military services in the past decade is given in table I-2.

As there is a fairly constant relationship between the number of enlisted men in the medical departments and the total in the Armed Forces, so there is a close relationship between the number of separations from the medical departments and total separations. In table I-3 an estimate of separations from each of the three services and the Department of Defense is given for fiscal 1960-69. A comparison of enlisted separatees from the medical departments and from the Armed Forces reveals that between 1966 and 1969, 4.7 percent of all enlisted separatees were men from the medical departments. The proportion has declined from 5.2 percent in 1966 to 4.3 percent in 1969.

Table 5. Enlisted Separations From Military Medical Departments as a Percentage of Estimated Losses to Enlisted Strength, FY 1965-69

Year	Total	Army	Navy	Air Force
1965....	n.a.	n.a.	3.4	2.8
1966....	5.2	6.8	3.7	3.3
1967....	4.7	6.2	3.5	3.2
1968....	4.4	5.2	3.1	3.8
1969....	4.3	5.4	2.6	3.6
Average.	4.7	5.7	3.2	3.5

Service differences again appear. The Army, with a higher proportion of its enlisted men assigned to medical service, has a higher proportion of medical separations in relation to all enlisted separations.

The annual rate of separation in all services was higher in 1966 because many men with 18 or more years of service, who normally would have elected to reenlist and

continue their military careers, decided to leave the services in the face of the Vietnam buildup. U.S. troop strength in Vietnam, which was only 21,500 in 1964, rose to 200,000 in 1965, and jumped to 400,000 in 1966 [16]. Faced with the strong probability that they would have to serve in an area of military conflict, some career men chose to exercise their option to retire. Thus, the buildup of military strength begun in 1965 substantially increased the number of careerists discharged about that time. The higher draft quotas and heavier recruitment begun in 1966 (see table I-2) will influence the number released from 1968 through the early 1970s; its impact on the rate of separations will depend on the force level maintained in that period.

Separations in the Near Future

It is difficult to estimate the number of men with medical training and experience who will be released in the near future. Department of Defense policy with regard to the total size of the Armed Forces, the dependence on the draft for recruiting personnel, and the discharge policy for men in the service is in a state of flux. However, guidelines for determining the probable level of separations can be obtained by reviewing historical data.

An examination of the military strength of the Armed Forces shows that throughout the first half of the 1960s, the number of enlisted personnel on active duty hovered around 2.3 million -- almost 90 percent of total personnel. Not until 1966, when troop strength in Vietnam doubled in one year and reached 400,000, did the total number of military personnel climb over the 3 million mark, and the number of enlisted men to 2.7 million (see tables I-4 and I-1). At this level of activity, the total enlisted staff of the three military medical departments was 105,067. 1968 appears to be a peak year, with total Armed Forces strength at 3.54 million, and enlisted strength at 3.1 million. As of June 30, 1968, the medical departments had 119,435 enlisted personnel. More recently (June 1969), total personnel numbered 3.46 million, enlisted strength was 3.0 million, and the medical departments had 111,036 enlisted men.

Pentagon officials are reportedly planning to reduce the size of the Armed Forces to 3.3 million by mid-1970, and to 2.9 million by mid-1971 -- the lowest level since spring 1966 [17]. It is reasonable to assume that when the level of military personnel on active duty declines, the size of

the military medical establishment will be affected. However, manpower allocations are determined on the merits of competing demands within each service. The requests of one department may be met at the expense of another department. Despite these internal pressures, the proportion of total enlisted personnel allocated to the medical departments in recent years has fluctuated within a limited range, which may make it possible to use recent experiences as a guide for the near future. The Pentagon's announced plans for 1970 would bring the overall manpower level down to one comparable to 1967's. The further decline envisioned for 1971 would reduce armed strength to approximately the 1966 level. Enlisted personnel in the medical departments numbered 105,067 in 1966, and 122,306 in 1967. However, the military situation in 1966-67 was markedly different from the one anticipated for the 1970s. In the earlier period, the Armed Forces was gearing up for enlarged conflict; in the future, plans are to scale down participation in active military operations. It seems probable that this will decrease the size of medical department staffs. Forecasting on the basis of our information with regard to the relationship between total active duty personnel, total enlisted personnel and medical department size, we estimate that the military medical establishment will have a staff of approximately 116,000 in 1970, and 102,000 in 1971. (These estimates were based on the assumption that total enlisted personnel will comprise 88 percent of total active duty personnel, and that the medical departments will consist of 4 percent of total enlisted personnel.)

It is the turnover within staffs of the medical departments that determines the number of men entering civilian life. The turnover rate in the Army is more than twice that in the Navy or Air Force because of the Army's shorter tour of duty. However, 1968 and 1969 saw many more men released than did previous years. This increase is only partly explained by the larger draft call and volunteer enlistments in 1966 (by which the Navy was least affected). Many of the separations occurred as a result of the early discharge policy initiated by the Department of Defense in the second half of 1968. At that time, the Armed Forces drastically altered their release policy "granting early releases to more than 250,000 enlisted men with up to a year of active duty remaining," in addition to men leaving the service because they had finished their tour of duty and did not choose to reenlist. On the basis of the early-release policy alone, during FY 1969 the Navy released 30,000 men; the Marine Corps, 26,000; and the Air Force, 57,000 [18]. From July 1968 through February 1969, 155,153 men left the Army as early releasees. (The Air Force plans to raise the number of early releases to 62,000 in FY 1970.)

Typically, the impact of "military gains from civilian life" (from the draft and enlistments) upon separations from military service is delayed 2 to 4 years. Thus the fact that additions to enlisted Army personnel more than doubled in 1966, and continued at that higher level through 1969, would lead inevitably to a significant increase in Army separations beginning with 1968. Similarly the Navy and Air Force expansion, which almost doubled enlisted gains beginning in 1966, would normally result in proportionately larger numbers of men coming out of these services in 1970 and for several years thereafter. What happened, in fact, was that these expectations were exceeded in FY 1969, due to the early release of 250,000 men with up to a year of active duty remaining. The total number of separatees jumped from about 800,000 in 1968 to 960,000 in 1969, an increase of 20 percent. Clearly, 1969 separation figures are higher than could have been anticipated. On the basis of enlisted gains in 1968-69, we can look forward to continued high levels of separation into the 1970s, especially if the planned troop withdrawals from Vietnam are accomplished and the early-release policy is in effect.

There are constraints on the number of enlisted medical personnel to be separated in the next few years. First, for them to function effectively, there is a limit to the rate of turnover in the medical departments. In 1968-69 the turnover rate rose dramatically, especially in the Army's medical department. There is strong feeling that a 58 percent turnover rate is inordinately high for efficient operation and such a rate should be avoided, if possible, in the future.

Table 6. Annual Turnover Rate in Military Medical Departments, 1966-69

Year	Total	Army	Navy	Air Force
1966....	26.0	38.1	17.4	13.7
1967....	22.9	28.5	20.2	13.7
1968....	29.3	41.6	20.4	15.4
1969....	37.4	57.7	19.3	23.4
Average.	28.9	41.5	19.3	16.6

Even 1969's 23 percent Air Force turnover rate gave rise to serious staffing problems for some hospitals.

Second, the Department of Defense reduced by 72,500 men the size of the draft call for November-December 1969 and January 1970. The Secretary of Defense has announced that the progressive withdrawal of U.S. troops from Vietnam would result in draft call reductions. In 1969, almost 290,000 men were drafted; estimates of the draft call in 1970 vary from 150,000 to 180,000. Such reductions could be expected to influence separations from 1971 onward.

How many enlisted men are likely to be released by the medical departments in 1970-71? Assuming that the number of enlisted personnel in the medical departments will total 116,000 in 1970, and 102,000 in 1971 -- as estimated earlier -- on the basis of a 29 percent overall turnover rate, the number of separatees will total almost 34,000 in 1970, and 30,000 in 1971. These projections are consistent with the trend toward additions to enlisted strength in earlier years, and toward separations in recent years.

Study Hypotheses

This study addresses itself to the problem of what should be done to increase the civilian medical/health field utilization of men who have received medical training and experience while in military service. The objective of the study is to identify the various factors that affect the crossover of military dischargees to civilian medical/health occupations. The study findings will suggest policies and programs that might be followed by the military, the civilian medical/health service industry, and the Government to increase the transference of skills from the military to the civilian labor force.

A number of hypotheses were formulated:

- That interservice variances cause measurable differences in attitude that will affect interest in transference
- That there are significant differences among veterans, based on length of service (career vs. noncareer personnel)
- That there are valid differences between enlisted personnel dependent on their military status (inservice vs. out-of-service)

- That there is a substantial difference in willingness to transfer, based on exposure to the civilian medical/health labor market (e.g., moonlighting or preservice employment)

- That willingness to continue as a paramedical worker is influenced by the type of tour experienced as an enlisted man (geographic location, type of health facility, kind of work assigned).

Summary

In short, it was supposed that the medically trained enlisted man is influenced in his decision in favor of or against a civilian health career by: military service branch; length of service; military status; knowledge of the labor market; and type of military work experience. With an understanding of how these factors influence veterans' occupational decisions, policies and programs could be designed to optimize the number choosing civilian employment in medical/health occupations.

II. MILITARY PARAMEDICAL JOB STRUCTURE AND TRAINING

Introduction

In order to understand the problems and potentials of enlisted paramedical veterans, it is necessary to understand the job structures and training procedures of the medical branches of the Armed Forces. In the civilian health field, there is a dichotomy between professional and nonprofessional health personnel. In the military medical fields, this is paralleled by the officer/enlisted man dichotomy. This study of enlisted personnel encompasses those who provide medical or health care primarily as an adjunct to the physician or dentist. This includes the nursing staff (except RNs), various therapists, medical and laboratory technicians, and paraprofessional dental personnel.

Just as the civilian health field has developed various procedures for supplying personnel, the Armed Forces has developed training programs and job functions to meet this component of their demand for medical manpower. Each of the three services uses a different method of classifying and structuring the duties of enlisted health personnel, each service modifying the traditional doctor/nonprofessional arrangement to meet demands for its medical services.

Because of evolving medical technology and changes in military medical emphasis from peace to wartime, not all of the individuals in a given service have passed through the same training programs or served in the same occupational structure [19]. This chapter discusses the jobs and training currently offered by each of the three services. (Appendices III, IV and V present more detailed training descriptions.) Some interservice differences are highlighted, and the significance of the military job structure for occupational transference to the civilian health field is explored.

Interservice Training Differences

The Armed Forces have developed systems for the training and utilization of their enlisted personnel through which comparable medical systems have evolved. This paralleling of functions is noted in the Department of Defense Occupational Conversion Table [20], which groups all of the Army Military Occupational Specialties (MOS's), Navy Enlisted Classifications (NEC's) and Air Force Specialty Codes (AFSC's) into 12 three-digit occupational subgroups on the basis of duties performed (see table II-6, appendix II).

Although the Department of Defense based this grouping on a careful analysis of the duties of each specialty, it is important to note that similarly grouped jobs are not necessarily identical. Interservice differences in training, equipment, duties, and degrees of supervision do exist in paramedical specialties, and must be taken into account in considering the extent of transference to the civilian medical/health sector. Interservice differences in the training and duties of enlisted paramedical personnel can be attributed to: (1) differences in missions; (2) modes of medical service; (3) the length of service obligation; (4) the size and type of medical installations; (5) the degree of professional care and supervision; and (6) the need for personnel flexibility.

The Army Medical Service

The military manpower procurement system -- combining draftees, draft-induced enlistees, and genuine volunteers -- has as a side effect a very low first-term reenlistment rate, and consequently a high proportion of one-termers. The complications this causes for the Army Medical Service, which takes 2-year draftees and 3-year enlistees, dictate to an extent the structure of training programs. Given a relatively short term of service, with a low probability of reenlistment, internal efficiency requires a short (though intensive) training period for medical specialists. A longer period of schooling not only increases the cost per corpsman, but also shortens the period in which the acquired skills can be utilized. We observe, therefore, that although many military occupational specialties (MOS's) exist, the vast majority of Army paramedical personnel serve as general "medics" (MOS 91B).

However, the needs of modern medicine dictate that more specialized nonprofessional personnel be supplied. In

order to reconcile these needs with efficiency criteria, the requirements for training in other, more technical MOS's almost invariably include a term of obligated military service upon completion of the training period. This is also a requirement for training in specialized Navy enlisted classifications. In fact, the amount of obligated service for Navy training usually exceeds that required by the Army.

The Navy Medical Corps

Most Navy medical personnel are merely classified as hospital corpsman (HM 8400 or 0000), indicating the downgrading of highly specialized paramedical skills or training. The Navy operates medical services under highly varying conditions: The installation to which a corpsman is assigned may be a hospital, Marine combat unit, clinic, laboratory, or ship at sea with or without a physician aboard. Furthermore, naval personnel policies require the scheduled rotation of manpower among these various duty stations.

The Navy Medical Service Corps has developed a training program which meets the requirements dictated by such personnel assignments. All enlisted personnel are provided broad-based medical training, which provides the basis for ongoing training at whatever assignment the corpsman receives. Specialization -- with the concomitant obligated service -- occurs, but the ability to perform various paramedical duties is maintained by all personnel.

The Air Force Medical Service

The Air Force Medical Service meets a different demand for medical services. With the exception of some isolated radar sites and a few clinics overseas, most airmen are stationed at bases in the United States. These are generally sizable installations which provide medical and dental care for Air Force personnel and their dependents. Personnel flexibility like the Navy's is not generally required by the Air Force, which has the further advantage of 4-year enlistments.

Following a brief introductory course, formal training is given to new airmen in a variety of specialized paramedical occupations. These courses are generally not as long or intensive as comparable Navy courses, and a period of obligated service is not required. The Air Force uses graduates of these courses under the supervision of professional staff. The largest number are trained as medical

service specialists (AFSC 902X0), not because of a need for generalists per se, but because experience in this AFSC serves as a background for more specialized surgical/medical duties.

To meet the need for more highly skilled personnel, the Air Force offers to those who serve beyond their initial obligation the opportunity to attend advanced courses in their specialty. This training emphasizes the ability to perform not only more difficult tasks but under less professional supervision.

Summary

The degree of specialization and the placement of the enlisted paramedic varies among the services. The difference between civilian and military medical structures is probably greater than interservice differences in the structuring and training of their enlisted personnel. A recent study by the National Academy of Sciences noted that in the military, commissioned officers -- physicians, dentists, medical service officers, and registered nurses -- comprise 21 percent of the medical personnel. In the civilian sector, these same categories account for 31 percent of all medical manpower. Thus, the military places a greater reliance on nonprofessional health personnel than does the civilian sector. However, the National Academy of Sciences study states that "institutional and out-patient care by the military is as skillful as that furnished in nonmilitary medical institutions and clinics with full-time closed staffs" [21, p. 3].

Paramedical Personnel in the U.S. Army

Military Occupational Specialties (MOS's)

The U.S. Army has a highly complex structure oriented toward technical skills. At the turn of the century, 90 percent of all enlisted personnel were classified as general combat soldiers. Today's Army needs highly trained specialists in most of its positions.

The medical services of the Army reflect the need for specialization in a most technically advanced field. To meet this need and to aid in personnel planning, training, and assignment, enlisted military medical specialists are classified

by military occupational specialties (MOS's) requiring common basic skills, knowledge, and abilities. The MOS was a three-digit code until June 1965. At that time, partly because of the ever-increasing skill complexity of the service, it became a five-digit code. In general, the first two numbers, followed by a letter, show a particular career group and occupational specialty, while the last two numbers indicate a skill or pay level, and special qualifications.

A serviceman is assigned an MOS designation on the basis of civilian and military education and experience, and/or his actual duty in a particular field. Unit commanders and manpower planners in the Army are able to allocate manpower solely by reference to MOS, obviating the need for delving into the backgrounds of each serviceman involved. Structuring by MOS allows rather clear-cut occupational ladders, or MOS "feeder" patterns. The MOS structure allows the designation of training courses in accordance with the skill level for which students are being trained. In some instances, however, an individual may not carry an MOS even after he has completed the requisite course. Some enlisted personnel may have multiple MOS's due to on-the-job training or parallel course work. In such cases, the individual has both a primary and secondary MOS skill designation, allowing for substitutions, and therefore flexibility, within a unit.

Each MOS represents a unique job description. There are proficiency criteria which must be met to attain an MOS, and these are periodically reexamined to maintain it. This method of structuring allows definition of the Army survey population by MOS.

MOS's Surveyed

For the medical manpower survey, Army paramedical workers were defined as military personnel working under a medical specialist (e.g., nurse, doctor, dentist), technically trained and able to supply services necessary for patient care. (Those MOS's included are listed in appendix III.) One MOS (91Z) bears comment. MOS 91Z is granted to qualified specialists of any medical MOS category. It comprises only the top three NCO grades and, although it emphasizes administrative and supervisory duties, represents the "capper" for Army medical enlisted personnel.

All MOS's that did not require medical corpsman training did not fit our definition of paramedical workers; two

exceptions were MOS 42E (optical laboratory technician) and MOS 91Q (pharmacy technician). One additional MOS (91A10) was also excluded; this MOS is held by those who are attending, or have been recently released from, 10-week basic medical corpsman school. Failure to attain an advanced MOS can be taken as prima facie evidence the individual did not gain sufficient medical knowledge or experience.

Army Training

Shortly after a man is inducted into the Army, he is given a battery of tests to determine both his aptitude and the level of achievement he has attained in specific fields. In order to be considered for Army medical service, a man must be emotionally stable and score at least the median grade on his tests. Assignments to the medical service are based not only on the man's test scores, but on his previous experience, his job preference, and the needs of the medical service.

Following a basic military course, all medic-recruits are enrolled in a medical corpsman course given at the U.S. Army Medical Training Center, Fort Sam Houston, Texas. After the first 2 weeks of medical orientation, some students are channeled into training programs for which only these 2 weeks are prerequisites. The majority of students complete the basic 10-week course. The purpose of the basic course is "...to train qualified enlisted personnel to perform routine patient care and treatment duties in combat areas, hospital units, dispensaries, clinics and other medical facilities." The course includes:

> Basic anatomy and physiology; emergency medical care and treatment, including control of hemorrhage, prevention and treatment of shock, artificial resuscitation, dressing and bandaging of wounds, splinting of fractures, field medicine and surgery; transportation of sick and wounded by ground, air and water means; medical service tentage; preparation and use of individual medical records; use of common drugs; [and] basic nursing procedures [22, section 5-30-1].

After completing the 10-week course, the men are either assigned to jobs in medical units or designated to attend other medical specialty courses (see table III-1). Those placed in medical units are given on-the-job training

to make them proficient in the positions they are holding, and usually in a few months they are advanced to the medical corpsman classification (MOS 91B), which contains the largest number of "medics" in the Army. Men in this group are assigned as ward orderlies in hospitals, litter bearers in the field, medical aidmen in aid stations, dispensary attendants, members of ambulance units, etc.

The competence of a large proportion of Army medical corpsmen is primarily based on what they have learned in their course of study, supplemented by skills acquired in particular jobs.

Informal, on-the-job training is given medical corpsmen after their initial 10-week training period. The extent of instruction a man receives depends on the unit to which he is assigned: If he is sent to Vietnam as part of an infantry division, he receives on-the-job training as a company aidman for a platoon of 45-50 men; on-the-job training for an assignment within a hospital depends on whether he is assigned to the emergency room, intensive care unit, clinic, or hospital ward. On-the-job training also varies between hospitals.

Approximately one-third of the enlisted men are siphoned off to receive further formal training in medical specialties. Opportunities for specialized studies may be open to the men immediately upon completion of all or part of the basic course or, more likely, after a period of work experience. Selection for participation in further training depends upon the individual's aptitude and job performance, his desire for additional training, recommendations from superiors, and the needs of the Army. There are a few highly technical occupations that have an elementary and advanced training course [23]. Requisites for participation in the advanced course are completion of the elementary course, plus a year of work experience.

The Army offers specialized training in occupations embracing the spectrum of medical care. Appendix III includes lists of paramedical courses offered to enlisted personnel since 1955. Some courses included are no longer offered, but were listed because they might have been taken by careerists included in our survey.

Formal on-the-job training differs from the type of instruction received upon being assigned to a new job; it is a program of study controlled by the hospital command. Such training is offered for the few specialties where the number to be trained is so small that a centrally administered service school course is not warranted (for example, only 16 men a year are registered in the electroencephalograph [EEG] category for on-the-job training offered at Brooke General Hospital). Since formal on-the-job training is structured according to the guidelines of the Army's subject schedule, and since only selected hospitals train all the personnel in these specialties, such training is standardized throughout the service. Just as Brooke General Hospital trains EEG specialists, Fitzsimmons General Hospital provides the formal on-the-job training for occupational and physical therapy specialists.

In order to participate in a specialty course of study, every enrollee must agree to serve a specified minimum length of time after completing training. During this period of obligated service, it may be presumed that he is employed in the occupation for which he has been trained. Therefore, the length of time listed for obligatory service, varying from 9 to 24 months, may be considered as the minimum amount of specialized experience that the Army enlisted man in his particular MOS may offer a civilian employer (see table III-1).

Annual proficiency tests at each skill level are given for particular occupational specialties and are used as part of an evaluation and incentive system. The test includes a written portion and a job performance rating by a superior. The objective of the test is to elevate quality of performance. Proficiency pay, ranging from $30 to $100 monthly, is given those who make outstanding scores, both to reward superior job performance and to encourage the retention of highly qualified personnel in particular specialties.

Summary

Training of enlisted men in the Army Medical Service is "designed to provide paramedical skills and knowledge necessary to support the physician in his military health care mission" [24]. Schooling and on-the-job training are used to develop understanding and competence. Those men who demonstrate particular aptitude and ability have the opportunity to take advanced studies to qualify for positions in medical specialties. Testing programs, job evaluations,

and incentive pay systems are designed to foster a high level of competence.

Paramedical Personnel in the U.S. Navy

Navy Enlisted Rating Structure

The manpower needs of the U.S. Navy require that each enlisted man's individual skills be identified so that proper assignments to billets can be made. To accomplish this, an enlisted rating structure and the more sophisticated Navy enlisted classification code (NEC) have been developed. All Navy enlisted ratings are organized into 12 occupational groups, two of which -- medical and dental -- include all enlisted personnel in the Navy Medical Service Corps.

The rating structure encompasses skill levels as well as pay grades (see table 7). Pay grades E1 to E3 are apprenticeships which provide paths for advancement to the petty officer grades.

Apprentice or entry-level NEC's (series 8400 for hospitalmen; series 8700 for dentalmen) indicate that the individual has the aptitude, training, or experience directly related to a specific occupational field. Within a given rating, "rating series" or specialty NEC's may be assigned. Since these codes indicate particular training and competence not inherent in the rate, they serve to identify the personnel as well as the job requirements. All hospital corps and dental corps NEC's are assigned by the Chief of the Bureau of Medicine and Surgery. No specific priorities are attached within these NEC's; a particular code may be primary or secondary. Only hospital and dental corps personnel may hold these NEC's, and with only one exception [26] these personnel may hold only 8400 and 8700 series codes respectively.

In order to qualify a hospital corpsman for advancement in rating, his commanding officer must approve him for a professional examination. These examinations become broader in scope and more comprehensive with each successive rating.

Hospital corpsmen generally serve under the supervision of medical department officers (MDs). Corpsmen

Table 7. Rating Structure for Navy Paramedical Personnel

Pay grade	Hospital corpsmen	Dentalmen
E-1.....	HR, Hospitalman recruit	DR, Dentalman recruit
E-2.....	HA, Hospitalman apprentice	DA, Dentalman apprentice
E-3.....	HN, Hospitalman	DN, Dentalman
E-4.....	HM3, Hospital corpsman, 3rd class	DT3, Dental technician, 3rd class
E-5.....	HM2, Hospital corpsman, 2nd class	DT2, Dental technician, 2nd class
E-6.....	HM1, Hospital corpsman, 1st class	DT1, Dental technician, 1st class
E-7.....	HMC, Chief hospital corpsman	DTC, Chief dental technician
E-8.....	HMCS, Senior chief hospital corpsman	DTCS, Senior chief dental technician
E-9.....	HMCM, Master chief hospital corpsman	DTCM, Master chief dental technician

Source: [25]

function in such broad fields as first aid, preventive medicine, tentative diagnosis and emergency treatment, nursing care and definitive treatment, and administrative procedures.

Men may at any time be called on to perform the general duties of their rate. Furthermore, most specialists can also be expected to serve on "independent duty," which requires a qualified hospital corpsman to perform all duties of a medical nature on small ships, shore stations, and with Marine units when no medical officer is attached. On such duty, the corpsman performs all administrative work and, to the extent that he is qualified, the professional duties prescribed for medical officers of ships or stations.

Every corpsman HM1 and above is considered qualified for independent duty. Because of this, technicians must maintain the same competence in all areas as general duty corpsmen. It is for this reason that the same professional examinations are administered to all corpsmen, regardless of NEC.

NEC's Surveyed

Selection for the survey was based on job titles and descriptions contained in the Handbook of Navy Enlisted Classifications, as well as an examination of the coursework required, as described by the Department of the Navy and the Hospital Corps. In addition to the basic hospital corpsman category, 39 NEC's were selected which fall within the scope of the study (see appendix IV).

Certain NEC's which are part of the medical or dental ratings (8400 and 8700 series) were excluded from the survey. These NEC's and their job titles are:

NEC	Title
HM 8432	Preventive medicine technician
HM 8472	Photography technician
HM 8497	Medical illustrating technician
HM 8498	Medical repair mechanic
DT 8732	Dental repair technician
HM 8496	Embalming technician
DT 8714	Dental technical research assistant

The reason for excluding these occupational specialties was that the specialized training received is quite removed from medical care. Not only is this training largely nonmedical, but the relationship with the patient is indirect. In general, the work skills acquired are easily transferable to positions in nonmedical fields.

Navy Training

Navy enlistments are voluntary, and new recruits may opt to serve in the Navy Hospital Corps. However, volunteers for the Hospital Corps are carefully screened and only accepted if they have received a passing grade in a battery of tests, are high school graduates, and have at least two years to serve [27]. Following a period of military training, Navy enlisted men classified as hospital apprentices or hospitalmen are enrolled in the basic 16-week course offered at the U.S. Naval Hospital Corps School in Great Lakes, Illinois, or San Diego, California. The goal of the course is to give instruction in the basic principles and techniques of direct patient care and first aid procedures, preparing personnel for duties as general service hospital corpsmen in the lower pay grades. In the course, 75 hours of classroom instruction is given in anatomy and physiology; 240 hours in principles and techniques of patient care; 70 hours in first aid and minor surgery; 33 hours in hygiene and sanitation; 60 hours in materia medica and toxiocology; 25 hours in metrology; and 45 hours in atomic, biological, and chemical warfare defense and military requirements. In addition, 92 hours are spent in practical, on-the-job instruction. Men enrolled in the course are exposed to a total of 640 hours of full-time study [28]. Each week of the course, 5 full 8-hour days are spent in classroom instruction or supervised, practical experience.

Every Navy hospital apprentice (E2) and hospitalman (E3) is enrolled in this 16-week basic course. Upon completion of the course, a period of on-the-job training follows during which the men, not yet fully qualified as hospital corpsmen 3rd class, perform such duties as applying bandages and dressings, checking temperature, pulse, and respiration; collecting specimens; administering medication; performing routine ward care of patients; keeping medical department equipment and spaces clean and sanitary; and performing routine clerical duties of the ward [29]. Typically, a hospitalman has 6 months' experience in his first permanent duty station before he advances to the next level.

To advance to the hospital corpsman 3rd class rating (E4), the hospitalman must qualify in the areas of first aid, hygiene and sanitation, patient care, anatomy and physiology, and administration. Advancement in rating from E4 to E9 is based upon indepth knowledge and ability in these same areas and, in addition, in the fields of pharmacy; pharmacology and toxicology; preventive medicine; chemical, biological, and radiological warfare; clinical laboratory; clerical forms and procedures; and medical administration and organization [30].

Advancement in the Navy Hospital Corps depends upon knowledge and performance in the general areas described above, not upon the requirements and quality of work in a particular assignment. The men are prepared for advancement by the mandatory minimum of 2 hours a week of training offered on the job, with doctors, nurses or senior corpsmen as instructors, and following a basic curriculum guideline prepared by the Bureau of Medicine and Instruction. The Navy publishes the Handbook of the Corps, a basic reference book that is used as a text. Training may be given in a group session, in a classroom, or through practical demonstrations on the job. Correspondence courses are also supplied by the Navy, which can be used to help prepare for the advancement exams.

Specialty medical courses for enlisted personnel are given in numerous naval hospitals and medical centers located throughout the United States. The Navy distinguishes between advanced schools (Class B), which provide instruction emphasizing skills required for assignment to independent duty, and medical technical schools (Class C), in which training focuses on the administrative and medical technical specialties needed to maintain medical facilities [28].

The number of weeks of formal specialty training offered hospital corpsmen and dentalmen ranges from 4 to 60. Appendix IV presents a description of the Navy's paramedical courses for enlisted personnel. This listing includes courses offered since 1955 because they were available at the time careerists in the survey (with 18 years or more of service) were in training.

Prerequisites for the courses vary. Some require a certain pay grade level, from E2 through E7. In addition, a number of years of high school or its equivalent may be mandatory. Several courses stipulate that the registrants

must have a general aptitude score of 100. A few are open only to candidates who have completed other courses and have had job experience. Table IV-1 gives the training and obligatory service requirements for each Navy selected paramedical occupation.

Formal school courses have been established for every paramedical occupation, with the exception of the orthopedic cast room technician. In this case, on-the-job training is offered. A Navy Hospital Corps School course combines didactic teaching and practical application. The proportion of time spent in the different types of learning situations vary with the course. In the basic 16-week course, 548 hours are spent in formal instruction, and only 92 hours are devoted to on-the-job experience. However, the course on cardiopulmonary technique is divided so that 324 hours are lecture and 1,236 hours are spent in a work situation practicing and perfecting skills. Almost 90 percent of the 60-week clinical laboratory technician's course is devoted to practical application.

One of the prerequisites for each specialty course is a period of obligated military service. The number of months that a man must serve in the Navy after completing his specialty training is shown in table IV-1. This shows the minimum amount of time spent in the Navy occupational classification. While many men serve longer than this obligated service, it is a measure of the amount of experience naval personnel bring to civilian medical/health employment.

Summary

Navy hospital and dental corpsmen are selected with care and trained to perform in the general area of medical care. Approximately one-third are also qualified in a specialty field of medicine for which formal courses are offered. Because of the rotation of sea and shore duty, all Navy enlisted paramedical personnel are prepared to function in a variety of jobs. Their general competence, not their specialized skills, is the basis for advancement. Navy hospital corpsmen and dentalmen are generalists, first and foremost.

Paramedical Personnel in the U.S. Air Force

Air Force Specialties (AFS's)

The U.S. Air Force personnel classification system is based on the functional grouping of positions which require common knowledge, education, training, experience, or other abilities. Functional grouping places positions related to one another in an Air Force specialty (AFS) designation, and it groups related AFS's into career fields. A particular AFS contains within it all jobs which require essentially the same abilities. No person is expected to perform all of the duties of the AFS at any one time, although individuals are prepared to assume all of the AFS responsibilities at different times. This AFS arrangement facilitates personnel management by serving as a framework within which both specialized and broadly experienced personnel may be developed [31].

The Air Force specialty codes (AFSC's) which denote the particular AFS are five-digit numerical codes for enlisted airmen. The paramedical AFS's with which we are concerned are grouped into two major career fields: medical (AFS's 90 and 91) and dental (AFS 98). The first two digits of an AFSC indicate the career field; the third, the career field subdivision; the fourth, the skill level of the AFS; while the fifth denotes the specific AFS. For example:

AFSC	Designation
90	Career field: medical
904	Career field subdivision: medical laboratory
904$\underline{3}$	Skill level: semiskilled
9043$\underline{0}$	Specific AFS: apprentice medical laboratory specialist

Personnel in the medical and dental career fields, as other Air Force enlisted personnel, enter the service with a 4-year obligation. Although some have served in other branches of the Armed Forces, the majority are airmen without previous service who volunteered for the Air Force. Along with all other new entrants, their first assignment is to basic military training at Lackland Air Force Base, Texas. All personnel take the Airman Qualifying Examination; in order to be considered for the medical or dental career fields, the airman must score above the 60th percentile on the General Aptitude Index. Most of those selected for medical career fields are high school graduates, and many have a number of college courses to their credit.

After basic military training airmen destined for either medical or dental specialty fields are transferred to the U.S. Air Force Medical Service School, Sheppard Air Force Base, Texas for basic medical training. During this training, each airman is carefully tested, counseled, and evaluated to determine the specialty to which he will be assigned. After the "medical helper" course, he may be assigned to one of the apprentice/specialist-level formal courses, or to on-the-job training at a permanent duty station.

Whether the airman receives formal or on-the-job training, he is taught essentially the same subjects and methods to use in performing his job. The requisites for any given AFS are broken down into five areas: knowledge, education, experience, training, and "other factors." For each AFS, some qualifications are mandatory. Others are not mandatory, but desirable, and serve to increase an airman's chance of career success. They also tend to indicate future areas of specialization and job development.

All medical and dental AFS's have specific knowledge requirements. In general, these are met by passing an appropriate specialty knowledge test. There are several medical AFS's which have no specialty knowledge tests because of the technical nature of the duties, or the relatively few individuals involved. In such cases, a classification board, composed of medical officers and advanced airmen in the AFS, meets to determine if the airman possesses the requisite knowledge.

No medical or dental AFS's have mandatory education requirements. Completion of high school is desirable, and most airmen who qualify are high school graduates. In all cases, completion of high school or college-level courses in general science, biology, chemistry, and/or anatomy and physiology is desirable.

At the discretion of classification boards, civilian experience may be substituted for that gained in an AFS. In all other cases, experience in the lower level of the AFS is mandatory for career advancement. For entry into some medical AFSC's at the semiskilled 3 level, prior experience in another AFSC at the specialist and/or technician level is mandatory. For example, all histopathology technicians (AFSC 90431) must have qualified as a medical laboratory specialist (AFSC 90450) prior to cross-training for their new AFSC.

Training requirements for an AFS are generally fulfilled by the specialist's completion of the advanced medical service course appropriate to that career field. Completion of such courses is seldom mandatory, since on-the-job training may be substituted. For advancement to the supervisory levels in medical or dental AFS's, completion of a management course, usually conducted at the base, is desirable.

The extent to which the airman meets the standards of knowledge, education, experience, and training determines his skill level. There are up to five skill levels for each AFSC. Skill level 1 is assigned to medical helpers (AFSC 90010) and dental helpers (AFSC 98010) after the completion of the basic medical helper course, and prior to their receiving any formal or on-the-job training. This skill level is held only for a short time, unless the airman fails to develop his paramedical skills. (AFSC's 90010 and 98010 were excluded from our sample.) Skill level 3, or the apprentice level, is attained upon completion of a formal course or special training; upon qualification as a bypass specialist (on the basis of prior military or civilian experience); or upon the receipt of a passing grade on a specialty knowledge test by those airmen receiving cross-training with experience in another 3- or 5-level AFSC. Skill level 5 is awarded after the airman has accumulated a minimum of 6 months' experience serving in the 5-level AFSC, after he has passed the appropriate specialty knowledge test, and after he has been given his supervisor's recommendation [32]. Skill level 7 is awarded only to those with a minimum of one year's experience serving at that level, the fulfillment of all requirements, and the passing of the appropriate specialty knowledge test. Skill level 9 is restricted to those in or selected for promotion to pay grades E8 or E9. These must possess the 7-level AFSC which is appropriate to the 9 level, have a minimum of one year's experience at the 9 level, be recommended by his supervisor, and be approved by a classification board [31]. There are few AFSC's at the 9 level, reflecting the broader supervisory nature of these positions. For example, AFSC 91370 (physical therapy technician) and AFSC 91372 (orthopedic applicance technician) are all normal prerequisites to AFSC 91392 (physical medicine superintendent). Similarly, the dental career field includes only one 9-level AFSC, 98290 (dental superintendent).

AFSC's Surveyed

Because of our definition of paramedical worker and our primary concern with the utilization of these individuals

in the civilian health field, several AFSC's in the medical career field were excluded from our sample. The criteria for the selection of AFSC's for the study were based on Volume II of the Airman Classification Manual [33], where each AFSC's duties and requirements are enumerated. The medical AFSC's which we excluded are:

AFSC	Title
90010	Medical helper
98010	Dental helper
907X0	Preventive medicine specialist/technician
908X0	Veterinary specialist/technician
908X1	Laboratory animal specialist/technician
911X0	Physiological training specialist/supervisor
915X0	Medical materiel specialist/supervisor

AFSC's excluded may have been held by individuals in our sample, but generally were not. Appendix V gives a description of the AFSC's included in our study.

Air Force Training

Upon completion of basic military training, all airmen selected for medical or dental career fields -- primarily volunteers -- are sent to the U.S. Air Force Medical Service School. Here they embark upon the 4-week medical helper course, a prerequisite for all airmen entering the medical or dental career fields. The primary objective of this course is not to provide skills used in medical care, but to orient airmen to the U.S. Air Force Medical Service. Training includes career progression, mission, function, and history of the Medical Service as well as paramedical subjects (e.g., field casualty care, emergency medical treatment, disaster medicine, basic nursing procedures, anatomy, physiology, and medical terminology).

For some of the airmen chosen to serve as apprentice dental specialists, apprentice administrative specialists, or apprentice medical service specialists assigned to hospital wards, this course concludes formal coursework. They are given direct duty assignments where their training is accomplished on the job. For the majority of the graduates of the medical helper course, the next step is attendance at one of the 14 basic or specialist-level courses conducted at the Medical Service School. (Table V-1 lists the training requirements for Air Force paramedical occupations.) These formal courses, covering from 6 to 50 weeks, are designed to provide the airman with the knowledge and skills

necessary at the semiskilled level of his AFS. These courses are primarily didactic in nature, emphasizing a knowledge of the basic functions which the airman will perform. Only two of the courses, psychiatric ward specialist and laboratory specialist, conclude with a practical phase.

Upon completion of a specialist-level course, the airman is awarded the 3-level AFSC in which he trained. His first duty assignment is usually to a hospital or large infirmary, where the new paramedical personnel function under close supervision. Individuals with prior civilian or military medical experience may be awarded the semiskilled AFSC as bypass specialists, without formal school attendance. In such cases, on-the-job training is conducted to ensure that the airman possesses a knowledge of all material covered in the formal course.

The progression from the semiskilled 3 level to the specialist 5 level comes through experience and on-the-job training in the more technical aspects of the AFSC. The airman must demonstrate to his supervisors his competence in the duties in his AFSC description.

Before advancement to a 7-level AFSC, most airmen are required to attend one of the advanced, or technician-level, courses. The function of these courses is to provide the medical service with fully qualified, noncommissioned paramedical personnel. These advanced courses, rarely open to first-term airmen, equip the graduate to perform medical duties requiring high levels of technical and supervisory skills. They range from 8 to 17 weeks for the medical and 6 to 11 weeks for the dental career fields. Part of the class time in each course is devoted to administrative or supervisory subjects, but the major thrust is medical or dental skills. Emphasis is placed on special techniques and procedures needed by nonprofessional paramedical personnel in order to work with greater competence and independence from medical or dental officers. On-the-job training may be substituted for completion of an advanced course as a requirement for a 7-level AFSC, but the basic knowledge requirements remain the same. Thus, fulfilling the requirements for an AFSC indicates a level of required performance as well as a level of training.

A complete list of all Air Force medical and dental courses, showing course objective and content, is included in appendix V.

Summary

The Air Force has developed a system of training and utilizing paramedical workers to provide medical care to U.S. Air Force personnel and their dependents. Formal courses at both the introductory and advanced levels are coupled with on-the-job training to ensure the availability of both specialized and broadly experienced medical manpower. The AFS system then permits the efficient utilization of this manpower at various types of medical installations throughout the world.

III. TRANSFERENCE TO CIVILIAN MEDICAL/HEALTH WORK

The Prima Facie Case For Transference

This study has proceeded from the premise that there is a prima facie expectation that most military medical men released from the services would find it to their advantage to transfer to medical/health work, and that it would be to the advantage of the country if they did so. The expectation rests on a number of demonstrable propositions:

- There is a close paralleling of functions, occupations, and conditions between military and civilian medical/health services

- The quality of training and experience in military medical service equips men to perform the work of the civilian medical/health system

- The quality of the paramedical personnel currently released by the Armed Forces is at least as good as the quality of their counterparts in the civilian medical/health system

- The flow of military paramedical personnel being released by the services is a significant supply of labor, and the expansion of the civilian medical/health system is generating a strong demand

- Much of the supply and the demand emanates from the same points around the country, and thus facilitates exchange.

The Conditions Prerequisite to Transfer

Though there are prima facie reasons why military paramedical men should transfer to civilian medical/health work after their release, there are certain preconditions to transfer on a large scale.

- There must be a system of market information and market mechanisms. Although there are widespread employment opportunities in occupations for which military paramedical service is qualifying, the men need to know where these jobs are and how to find them. By the same token, civilian employees need to know where the men are, what their military training and experience have been, and what civilian occupations they are competent to fill.

- The specifications of the supply and the specifications of the demand must be matched. The capabilities of the men must be compared with the qualifications required for employment.

- To the extent that the supply does not meet the specifications of the demand with regard to formal qualifications, functional capabilities, or geographic availability, the supply and/or demand may require modifications to maximize transfer.

- The supply price and the demand price must tend to converge. If the supply price is too high, prospective employers will find it more economic to tap alternative sources of supply even though training costs may be higher. If the demand price is too low, the men will find it profitable to seek alternative employment, even though they forfeit the advantages of their paramedical experience.

- Other conditions of employment must be met, notably those having to do with type of assignment, career prospects, training opportunities, status, hours of work, fringe benefits, and/or congeniality of work.

The Survey

Enlisted men with military medical occupational specialties were surveyed during the latter half of 1968 and the first part of 1969. Army, Navy and Air Force men located within the continental United States were interviewed by telephone. Among the 1,238 respondents were men on active duty due to be released shortly, as well as men who had been discharged 2 to 3 years earlier. Within the groups of inservice and out-of-service men, a further distinction was made between men with only one tour of duty, noncareerists, and men with 18 or more years' service, careerists. Thus, 12 subsamples, containing approximately 100 men, were included in the survey [34].

A precoded, open-ended questionnaire was designed after extensive pretesting. Among the subject areas included were preservice career interests and employment, military experience, civilian labor force participation and career plans, educational goals and achievements, and attitudes toward medical/health work and the barriers to transfer to civilian medical/health jobs.

Responses to several questions provided the basis for classifying respondents as transferees or nontransferees. Men still in service were asked:

- What are your plans, that is, what is the first thing you plan to do after your discharge...do you plan to work, return to school, or study or what?
- In what kind of business, industry, or profession do you plan to work (immediately after discharge or after you complete your schooling)?
- Will you work for someone or be self-employed?
- Where do you think you will work after your discharge...will it be in a hospital, a clinic, a pharmacy, a nursing home, a private laboratory, an industrial plant, a private office, or what?
- What do you think your job role will be?

- As far as you know now, do you think you will make this job your career or not?

- What are your plans for your career?

A comparable series of questions were asked of men who were out of service. In addition to questions about their present job or studies, information about other jobs and schooling since their discharge was obtained.

For purposes of this study, men are considered transferees if they (1) work or plan to work in the medical/health field, (2) are full-time students or plan to be full-time students in the medical/health field, or (3) are indefinite about immediate future plans, but know that their careers will be in the medical/health field.

All other respondents are classified as nontransferees. This group includes all men working in jobs outside of the medical health field as well as full-time students in nonmedical subject areas.

For the small number who are working in one field but crossing over to study in another area, the decision factor is their role in the labor force: if their work is in medical/health, they are transferees; if their work is not in medical/health, they are nontransferees.

Transfer Expectations and Experience

Only about two-fifths of the career military medical enlisted men and only about one-fifth of the noncareer men separated 2 to 3 years earlier were engaged in medical or health activities (see table 8). These proportions did not differ significantly among the three services. Considering the quality of the men and their training and the chronic shortage of paramedical personnel reported by civilian health agencies, the rate of transfer of military paramedical specialists is surprisingly low. This is especially true of men with careers of 18 years or more of military medical experience.

Table 8. Distribution of Inservice and Out-of-Service Respondents, by Career Status, Military Service and Transference, 1968-69

(in percent)

Career status and military service	Total	Transference	
		Transferee[a]	Nontransferee[b]
Inservice			
All careerists[c]	100.0	60.0	40.0
Army	100.0	57.8	42.2
Navy	100.0	60.9	39.1
Air Force	100.0	61.0	39.0
All noncareerists[c]	100.0	51.9	48.1
Army	100.0	50.5	49.5
Navy	100.0	59.0	41.0
Air Force	100.0	53.0	47.0
Out-of-service			
All careerists[c]	100.0	40.4	59.6
Army	100.0	42.2	57.8
Navy	100.0	43.8	56.2
Air Force	100.0	36.0	64.0
All noncareerists[c]	100.0	22.9	77.1
Army	100.0	22.0	78.0
Navy	100.0	22.6	77.4
Air Force	100.0	28.0	72.0

a/ Transferees are out-of-service men working, or inservice men planning to work, part time or full time in the medical/health field. This category also includes men who are studying or planning to study full time in the medical/health field.
b/ Nontransferees are those working or planning to work in jobs outside the medical/health field. Full-time students or those planning to study full time in subject areas other than medical/health are nontransferees.
c/ Weighted by number separated by the respective service, and by number of respondents in each sample subgroup. See appendix VI.

The frequency of transfer observed was distinctly lower than the frequency with which men about to be separated planned to engage in civilian medical/health activities. Given their perceptions of opportunities, prerequisites, work, and working conditions in civilian medical/health employment, three-fifths of the careerists and just over half of the noncareerists responded that they planned to enter the civilian medical/health field after being separated from the service. The difference between the frequency of those who planned to transfer and those who did, when projected onto the estimated numbers of annual separations (in the neighborhood of 30,000), implies that something like 8,500 men who are experienced in medical/health work and look forward to pursuing it in civilian life are somehow lost between the intent and the fact. This is a serious loss, considering the shortages in civilian health occupations. On the basis of our sampled population, we can infer that perhaps 600 of these would be men who had served 6 years or more (most of them more) and who, with a minimum of training, would presumably be able to qualify to perform fairly high-level subprofessional work. Something under 8,000 men would have served single terms of 2, 3, or 4 years, and could qualify for lower level work-cum-training for careers in the medical/health field.

Differences among the services in recruitment, training and deployment of medical personnel notwithstanding, no significant interservice differences in the frequency of transfer or plans to transfer to the civilian medical/health field were observed.

Inferences drawn from differing responses of out-of-service and inservice personnel must take account of the fact that they are not drawn from the same or even exactly comparable populations. The out-of-service men were separated from the services in 1965-66; the inservice men were scheduled for release in 1968 or 1969. Changes in the rates and modes of recruitment and release to which they were subject are reflected in differences in the characteristics of the two cohorts, especially among the noncareerists. The inservice men were about 4 years younger than the out-of-service men, with median ages of 40 for careerists and 22 for noncareerists, compared to out-of-service medians of 44 and 26. The inservice men were also better educated: 37 percent of careerists and 61 percent of noncareerists were educated beyond the high school level, compared to 29 percent and 45 percent in the out-of-service group. Among the careerists, 61 percent of the inservice men recorded primary military assignments in direct patient care, compared

to 54 percent for out-of-service men; among noncareer men, the difference was 69 percent compared to 82 percent.

Not only was the "supply" of men leaving the service somewhat different between the 1965-66 and 1968-69 periods, but demand in the civilian medical/health field also had changed. The shortage had become, if not more acute, more clamorous, and in some instances hiring requirements were modified in ways that might make it easier for newly discharged veterans to qualify. Where men in service could not be induced to reenlist, transfer to civilian medical/health work was encouraged and facilitated. Other things being equal, the rate of transfer among men separated in the late 1960s and early 1970s could be expected to be higher than it was among the men separated in the mid-1960s, but we have no data on the out-of-service experience of these men.

In view of the limitations on comparability of inservice and out-of-service men, we have estimated the "loss" of potential transfers alternatively by comparing the observed transfer rate of out-of-service men with the attitudes and experiences of these men since their separation. More than 80 percent of the career men separated in 1965-66 had considered entering the medical/health field, and more than 50 percent actually worked in the field at some time after being separated. We may surmise that, given the demand in those years, the proportion who considered transfer is a measure of the maximum number that would be available under conditions in which they could use their capabilities fully and be compensated competitively with other employments. This suggests that the maximum transfer rate would be of the order of 80 percent of careerists, or the equivalent of perhaps 1,500 men annually in the early 1970s. This is about twice the rate of actual transfers, and implies a loss of about 800. By the same reckoning, a maximum transfer rate of just over two-thirds of the noncareerists, applied to the expected separations in the next several years, would yield about 19,000 transfers a year of men with basic military medical training and one term of military medical service. This is about three times the rate of observed noncareerist transfers, implying a "loss" of about 13,000.

Both the planned and observed rates of transfer were distinctly lower among men whose primary military medical/dental assignments had been in direct patient care than among those whose military assignments had been predominantly in indirect care, that is, technical work in laboratories

or supportive services. About two-thirds of inservice men primarily experienced in indirect care planned to enter the civilian medical/health field, compared to about a half of those whose primary assignments were in direct patient care. Among out-of-service personnel, the differences were even greater: the transfer rate was about 45 percent for out-of-service careerists and noncareerists experienced primarily in indirect care, but about 33 percent among careerists and less than 20 percent of noncareerists experienced primarily in direct care. The noncareerist-direct care classification was by far the largest cohort in the military medical/dental population, and the low rate of transfer among them is reflected in the low rate among noncareerists generally. We may surmise that the kinds of civilian jobs in direct patient care available to men with comparatively brief medical experience are often not attractive to well-educated young men in a labor market which offers many alternatives. The careerists, on the other hand, are not only more experienced and better equipped for a wider choice of civilian medical occupations, but being older and less well educated, may have fewer options in other fields.

Comparison of the occupational choices of inservice men who planned to transfer to civilian medical/health work with the occupations reported by out-of-service men who did reveals a good deal of realistic planning (see table 9). Among the inservice careerists planning to transfer, a third looked forward to working in paramedical occupations (e.g., as technicians, laboratory assistants, and other occupations in indirect patient care), and nearly half of the out-of-service men who transferred were found to be working in such occupations. Fewer than a fifth planned to work in nursing occupations, and fewer than a fifth did so. About a fifth planned to work in administrative jobs; about a tenth did so. Among the noncareerists, paramedical occupations other than nursing were the choice of about three-fifths of both inservice men planning to transfer and the out-of-service men who were working or studying in medical/health fields. Very few either planned to enter nursing or did so. A few inservice personnel planned to pursue professional careers as physicians or dentists, and a few out-of-service personnel reported that they were doing so.

Almost all (80 to 95 percent) of men who transferred (or planned to transfer) to civilian medical/health work believed that there were civilian jobs similar to those in which they had worked. Two-thirds or more of the men who pursued other employment also recognized these similarities,

Table 9. Occupation Choice of Military Medical Personnel Transferring to the Civilian Medical/Health Field[a]

(in percent)

Occupation choice	Inservice				Out-of-service			
	Total	Army	Navy	Air Force	Total	Army	Navy	Air Force
Careerists.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Professional.....	--	--	--	--	--	--	--	--
Nursing.....	16.9	32.7	7.1	14.8	19.4	30.2	11.3	22.2
Paramedical.....	31.5	38.5	21.4	37.6	45.4	46.5	43.4	47.3
Administrative....	19.7	7.7	28.6	19.7	10.2	7.0	11.3	11.1
Industrial/community health....	4.4	3.8	7.1	1.6	8.1	2.3	13.2	5.6
Other.....	13.7	5.8	20.0	11.4	16.9	13.9	20.8	14.0
Don't know.....	13.7	11.5	14.3	14.7	--	--	--	--
Noncareerists.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Professional.....	5.0	2.0	12.9	15.1	2.9	--	12.5	3.6
Nursing.....	11.5	8.0	25.8	15.1	6.8	4.5	--	25.0
Paramedical.....	56.9	62.0	38.7	47.2	64.5	63.6	70.8	60.7
Administrative....	2.1	2.0	1.6	3.8	6.5	9.1	--	3.6
Industrial/community health....	1.7	2.0	1.6	--	4.3	4.5	4.2	3.6
Other.....	10.1	10.0	8.1	13.3	11.1	13.6	8.3	3.6
Don't know.....	12.7	14.0	11.3	5.7	3.8	4.5	4.2	--

a/ By civilian occupation or field of full-time studies of out-of-service men; by planned civilian occupation or planned field of full-time studies of inservice men about to be separated.

but the transfer rates for all classes were higher among those who recognized the similarities than among those who did not (see table 10).

The perception of similarities extended over a wide range of civilian facilities (hospitals, pharmacies, nursing homes, laboratories, doctors' and dentists' offices, etc.), influenced, of course, by the specialization of the men themselves. But overwhelmingly, the most frequently recognized similarities were those between the military hospital and clinic and their civilian counterparts. There also are areas where the civilian paramedical manpower shortages are most felt, and where most veterans of services' medical departments would be expected to flow. As we shall see, the careerists who transfer do in fact most often work in hospitals, but the noncareerists, who have more difficulty meeting the formal qualifications, more often end up working in private facilities.

Thus both careerists and noncareerists contemplating civilian medical/health work tended to think primarily of hospitals as places of employment. This was less true of Navy than of Army and Air Force men, but even among Navy men half of those in the service and planning to enter civilian medical/health work expected to work in hospitals or clinics. Among Army and Air Force men in service, the proportion ranged from two-thirds to three-quarters. No other prospective places of employment entered into the plans of more than a tenth of the inservice men.

Table 11 is included to suggest the range of possible employment, even though the small numbers do not permit detailed comparisons of plans of men in the service with the experience of men after 2 or 3 years in the labor market. Nevertheless, several conclusions seem possible. The Army and Air Force careerists did find employment predominantly in hospitals, to an extent even greater than they contemplated, reflecting their long training and rich experience, and the voracious manpower demands of hospitals. (This was also true of out-of-service noncareerists from the Air Force, but not from the Army.) Navy men out of the service, both careerists and noncareerists, were found scattered more widely through a variety of jobs, with almost as many in private laboratories as in hospitals and clinics. Whether this represents a difference between the Navy and the other services in the quality or variety of experience, employers' preferences or recruitment efforts, or special placement efforts, we do not know; hence, we can infer nothing about its possible application to the other services.

Table 10. Respondents Who Perceived Similarities Between Military Medical Assignments and Civilian Jobs

(in percent)

Respondents	Inservice				Out-of-service			
	Total	Army	Navy	Air Force	Total	Army	Navy	Air Force
Careerists.....	76.4	73.3	80.9	74.0	77.2	79.4	81.0	72.0
Transferees.....	82.0	80.8	84.2	80.3	86.7	93.0	90.6	77.8
Nontransferees.....	68.0	63.2	75.6	64.1	70.7	69.5	73.5	68.8
Noncareerists.....	78.7	77.8	81.9	81.0	73.4	71.0	80.2	76.0
Transferees.....	88.7	90.0	83.9	86.8	89.9	90.9	95.8	78.6
Nontransferees.....	67.8	65.3	79.1	74.5	68.5	65.4	75.6	75.0

Table 11. Place of Civilian Medical/Health Employment[a/] of Military Medical Personnel Transferring to the Civilian Medical/Health Field

(in percent)

Place of employment	Inservice				Out-of-service			
	Total	Army	Navy	Air Force	Total	Army	Navy	Air Force
Careerists.....	100	100	100	100	100	100	100	100
Hospital or clinic.	58	69	46	62	54	77	28	69
Nursing home.....	2	2	3	--	2	2	--	3
Pharmacy.....	3	2	4	2	4	--	4	6
Private laboratory.	7	10	6	5	15	14	24	3
Industry.....	4	4	6	3	3	2	6	--
Private office.....	2	2	1	3	6	--	8	8
Medical supply house.....	2	--	--	5	6	--	11	3
Community health organization.....	3	--	--	8	6	--	9	6
Other.....	10	11	20	12	5	5	9	2
Don't know.....	9	--	14	--	1	--	--	--
Noncareerists.....	100	100	100	100	100	100	100	100
Hospital or clinic.	71	74	55	68	35	23	38	75
Nursing home.....	b/	--	--	2	1	--	4	--
Pharmacy.....	8	8	8	8	8	9	8	--
Private laboratory.	3	4	2	2	24	27	25	11
Industry.....	2	2	2	2	7	9	4	--
Private office.....	4	2	10	8	10	9	12	11
Medical supply house.....	b/	--	--	2	--	--	--	--
Community health organization.....	b/	--	--	2	7	9	--	4
Other.....	3	10	6	6	10	14	8	--
Don't know.....	9	--	18	--	--	--	--	--

a/ By place of employment for out-of-service men; by planned place of employment for inservice men about to be separated.

b/ Less than 0.5 percent.

Characteristics of Transferees and Nontransferees

The median age of the men who transferred did not differ meaningfully from the age of those who did not. The inservice careerists were about 40; out-of-service careerists were, of course, a few years older. The inservice noncareerists were in their early 20s; out-of-service noncareerists were in their late 20s.

Table 12. Median Age of Military Medical Personnel

Respondents	Careerists		Noncareerists	
	Inservice	Out-of-service	Inservice	Out-of-service
Transferees...	40.8	43.7	22.2	27.8
Nontransferees.	39.2	43.9	21.1	26.8

Neither were there significant differences with respect to expected labor market behavior between transferees and nontransferees on the basis of numbers of dependents. The (younger) noncareerists had almost none. The careerists had two or three -- the inservice men more than those out of the service.

Table 13. Median Number of Dependents of Separated Military Medical Personnel

Respondents	Inservice			Out-of-service		
	Army	Navy	Air Force	Army	Navy	Air Force
Careerists						
Transferees....	3.2	2.9	2.8	2.2	2.7	2.7
Nontransferees.	3.0	3.3	2.5	2.2	2.6	2.6
Noncareerists						
Transferees....	a/	a/	a/	0.5	0.2	0.6
Nontransferees.	a/	a/	a/	0.2	0.4	0.5

a/ More than 50 percent with no dependents.

With regard to the years of education completed at the time of separation, the proportion of those college-trained was somewhat higher among out-of-service careerists who had transferred, and among inservice careerists who planned to transfer to medical/health occupations, than among those who did not (table 14). Among noncareerists, the differences were much more marked. Of men still in the service, more than half were college-trained (with 13 to 16 years of education), and a sixth of those who planned to transfer to medical/health fields had post-graduate training. Of those out of the service, nearly 60 percent of those who had transferred were college-trained and 7 percent had post-graduate training, compared to 39 percent college-trained and none with postgraduate training among those who had entered other fields. The high transferee levels of education mainly reflected the characteristics of the Army noncareerists conscripted after student deferments, especially after the mid-1960s, who by selection or choice entered medical occupational specialties. These represent an unusually rich source of civilian medical/health personnel if they can be induced to enter the field and if they can be provided opportunities for training, employment, and advancement commensurate with their education.

A majority of men wishing to pursue civilian medical/health occupations indicated a willingness to move to another geographical area if necessary to find employment in this field. This was true of careerists and noncareerist, those in service and those already separated, in all three services -- except for Army out-of-service careerists. In almost every category, the transferees indicated a greater degree of mobility, by a substantial margin, than those who planned to follow careers in fields other than medicine or health. Among inservice noncareerists, upwards of 66 percent of those planning to enter medical/health employment said they were willing to move in search of it. For the other groups of prospective or actual transferees, the average was nearly 60 percent. The willingness to move among those who planned or entered employment in other fields averaged about 30 percent (see table 15).

Noncareerists, especially those from the Army, tended toward return to their preservice communities for employment. The tendency was less marked among those who transferred to medical/health work or planned to -- another indication of their mobility in pursuit of their chosen field. On the other hand, careerists, because of their greater length of service, were very much less attached to their preservice

Table 14. Level of Education of Military Medical Personnel at Time of Separation

(in percent)

Respondents	Total	Grammar school	High school		College		
			Less than 4 years	Graduate	Less than 4 years	Graduate	Post-graduate
Careerists:							
Inservice.....	100.0	1.0	11.1	51.1	34.8	0.3	1.6
Transferees....	100.0	--	10.4	50.8	36.6	0.5	1.6
Nontransferees.	100.0	2.5	12.3	51.6	32.0	--	1.6
Out-of-service...	100.0	4.1	13.4	53.8	24.7	2.6	1.4
Transferees....	100.0	1.9	12.9	51.9	27.9	4.6	0.8
Nontransferees.	100.0	5.6	13.6	55.1	22.8	1.2	1.7
Noncareerists:							
Inservice.....	100.0	--	6.7	32.2	38.6	13.7	8.8
Transferees....	100.0	--	7.2	25.6	30.8	14.0	15.5
Nontransferees.	100.0	--	6.1	39.3	39.6	13.3	1.6
Out-of-service...	100.0	--	4.9	50.3	40.6	2.8	1.5
Transferees....	100.0	--	--	35.5	50.6	7.1	6.8
Nontransferees.	100.0	--	6.2	54.7	37.6	1.5	--

Table 15. Willingness of Military Medical Personnel to Move to Get a Job

(in percent)

Respondents	Inservice	Out-of-service
Careerists.....	47.8	40.2
Transferees.....	58.3	57.9
Nontransferees....	31.5	28.1
Noncareerists.....	63.8	39.5
Transferees.....	73.6	58.2
Nontransferees....	53.1	34.0

communities, either in prospect or in fact. Not much more than a third of them expressed such an attachment, indicating a very high degree of mobility. The differences between careerists and noncareerists are also consistent with their common declared preferences for locations in metropolitan areas, since men in service 18 years or more are less likely than one-termers to have metropolitan origins.

Table 16. Preferences of Military Medical Personnel for Preservice Location

(in percent)

Respondents	Inservice	Out-of-service
Careerists.....	28.3	35.5
Transferees.....	31.0	33.4
Nontransferees....	24.1	36.9
Noncareerists.....	67.7	67.7
Transferees.....	63.4	54.1
Nontransferees....	72.4	71.7

As it happens, all classes expressed a strong preference for civilian job locations in metropolitan areas. The preferences ranged from 60 to 78 percent: the rate was higher for men who had entered or planned to enter civilian medical/health work than those in other fields, and generally higher among men out of the service than among men in the service. Interservice differences were not consistent, except that

the preference for metropolitan location seemed somewhat less pronounced among Air Force respondents.

Table 17. Preference of Military Medical Personnel for Metropolitan Job Locations

(in percent)

Respondents	Inservice	Out-of-service
Careerists.....	65.6	70.9
Transferees.....	69.0	77.1
Nontransferees.....	60.2	66.8
Noncareerists.....	73.5	70.4
Transferees.....	72.7	78.2
Nontransferees.....	74.3	68.1

In their regional choices of location, the careerists demonstrated the well-known preference of retired servicemen for the South, with more than 40 percent -- both inservice and out-of-service -- indicating that they preferred to locate there. For the Army and Navy men this meant mainly the South Atlantic region (which includes Florida), but a sizable proportion of career Air Force men preferred the West South Central region (which includes Texas). The differences between careerists pursuing medical/health employment and those in other fields were not very marked, except that among the men already out of service the transferees showed a greater preference for the South, and the nontransferees a greater preference for the North (see table 18).

Among noncareerists, the regional choices represented more nearly the pattern of population (and presumably, origins), with about half preferring locations in the North and 20 to 25 percent, locations in the South.

The West was the choice of about 20 percent of the men (the rate was somewhat higher for the Navy) -- the careerists because of its attraction for retirement, the noncareerists because so many come from there and because of the West's growing opportunities.

Table 18. Regional Preferences in Job Location of Separated Military Medical Personnel

(in percent)

Respondents	Inservice			Out-of-service		
	N[a]	S[b]	W[c]	N[a]	S[b]	W[c]
Careerists.....	25.4	42.4	21.0	32.3	42.5	22.8
2 Transferees.....	26.2	41.1	20.2	27.6	51.6	20.8
Nontransferees..	24.0	44.4	22.2	35.4	36.4	24.1
Noncareerists.....	50.6	23.7	18.3	51.7	22.1	20.5
Transferees.....	46.7	25.9	18.3	49.3	18.1	24.5
Nontransferees..	54.8	21.2	18.4	52.5	23.3	19.4

a/ New England, Middle Atlantic, East North Central, West North Central.
b/ South Atlantic, East South Central, West South Central.
c/ Mountain, Pacific.

Medical/Health Careers ... or Not

The gap between potential and actual conversion of military medical personnel to civilian medical/health activities is reflected in the difference between the frequency with which conversion was considered by men about to leave the service, and the frequency with which it was pursued (see table 19). Among careerists in the sample, five out of six reported that they had considered the possibility of the transfer; about three out of five of those still in the service planned to transfer; about two out of five of those two or three years out of the service had actually done so. It is not surprising that so large a proportion of career men should have considered the possibility, since their careers had centered on this kind of work for 18 years or more, and it represented their principal (perhaps sole) area of vocational competence. What, then, explains the drop-off of about half between transfer in contemplation and transfer in fact?

As seen through the eyes of the men themselves, the principal barriers to their transference derive from difficulties in meeting the formal standards of hiring in civilian

Table 19. Difference Between Proportion of Military Medical Personnel Who Considered Medical/Health Work and Who Did or Plan to Transfer

(in percent)

Respondents	Inservice	Out-of-service
Careerists:		
Considered.....	86.9	82.7
Transfer.....	60.0	40.4
Noncareerists:		
Considered.....	81.6	68.9
Transfer.....	51.9	22.9

medical/health employment (see table 20). Although these are men with extensive training and 18 years or more of experience, and who were measuring themselves against requirements for subprofessional occupations, many of those both still in the service and several years out saw themselves unable to meet the educational requirements and other formal requirements of employment suitable to their age, experience, and capabilities. The next most important barrier was what they considered low pay. To the inservice careerists who planned to transfer, the hiring standards seemed more formidable; but the out-of-service careerists, after testing the labor market, complained more about the low pay. Of course, both kinds of barriers were cited much more frequently by men who did not transfer, and had no plans to transfer, than by those who did. Many other obstacles to transference that might be hypothesized (e.g., working conditions, difficulties in locating jobs, the predominance of women in nursing occupations) appear to have been perceived as relatively minor problems by these careerists.

The attitudes and perceptions of the noncareerists are quite different. Among noncareerists in service, as many as four in five men considered the prospect of a civilian job in the medical/health field, but only one in two continued to plan to enter the field as they neared military separation. Somewhat fewer noncareerists who had been out of service several years -- seven out of ten -- reported considering medical/health work, but the number who actually were working in the health service industry dropped to less than one in four. Why did so many

Table 20. Personal Problems Perceived by Military Medical Personnel in Entering the Civilian/Medical Health Field[a]

(in percent)

Problem	Careerists				Noncareerists			
	Inservice		Out-of-service		Inservice		Out-of-service	
	Transferees	Nontransferees	Transferees	Nontransferees	Transferees	Nontransferees	Transferees	Nontransferees
Hiring standards:								
Educational requirements/costs	18	23	12	26	24	38	33	40
Military training/experience unacceptable	13	11	11	18	11	26	21	23
Licensing/certification	8	8	3	7	10	--	23	5
Conditions of employment:								
Pay too low	13	30	18	32	12	11	14	31
Little chance to advance	2	2	1	3	1	1	--	2
Other	1	2	2	3	3	8	--	4
Finding a job:								
Problems in locating	8	6	2	9	4	9	1	4
Lack of knowledge of available jobs	11	7	4	1	10	12	4	3
Difference between military and civilian jobs	2	6	2	4	2	1	1	1
Other problems	9	7	2	8	1	--	1	--

a/ Number of respondents equals 100 percent. Some respondents gave more than one answer to the question: "What problems do you think you personally would face in finding a civilian job in the medical/health field?"

noncareerists reconsider and alter their plans concerning civilian medical/health work?

With their limited experience, they (correctly) see hiring standards as a major barrier, affecting half of them or more. It is not surprising that, on the average, fewer noncareerists than their careerist counterparts considered pursuing civilian medical/health work or planned to enter it, and only about half as many, proportionately, did. The problems cited by those out of the service who entered the field validated the perceptions of inservice men with respect to the effects of hiring standards, which seem to be quite as formidable in fact as in prospect. In spite of their higher educational attainments, they saw the education requirements for medical/health work (and the costs of overcoming them) as an even greater barrier than did the career men -- perhaps because they had less experience to offer as an offset -- and of course, felt more keenly the limitations of their military medical experience. On the other hand, being younger and having fewer dependents, they were somewhat less discouraged by the pay levels. (Note, however, that the out-of-service noncareerists who had not transferred, and who presumably were employed in fields other than medical/health, cited low pay as a reason for not entering medical/health work more than twice as often as those in the service or out of the service working in medical/health employment.)

Only a small minority of the men in any class cited the lack of knowledge of where medical/health jobs were available as a barrier, but the frequency was three or more times as high among men in the service as among men who were already out.

Once having decided that the obstacles to transfer could be overcome, the men who transferred or planned to transfer were more committed to their choices than men who chose other fields of employment (see table 21). Among the men in the service planning to transfer to medical/health work, about 90 percent planned medical/health careers; nontransferee commitment to other careers was of the order of 75 to 80 percent. (In addition, an appreciable proportion of men planning to work or working in other fields indicated that they had decided on medical/health careers.) Among the out-of-service transferees, the frequency of commitment was equally high, and the differences between transferees and those in other fields equally marked.

Table 21. Career Plans of Medical Military Personnel

(in percent)

Career plans	Inservice[a]				Out-of-service[b]			
	Total	Army	Navy	Air Force	Total	Army	Navy	Air Force
Careerists:								
Transferees.....	100	100	100	100	100	100	100	100
Medical/health career.....	94	94	94	93	92	86	92	94
Other fields.....	2	2	3	2	2	7	--	--
Don't know and no response.....	4	4	3	5	7	7	8	6
Nontransferees.....	100	100	100	100	100	100	100	100
Medical/health career.....	3	3	4	3	9	8	6	11
Other.....	75	68	76	80	77	75	82	73
Don't know and no response.....	22	29	20	18	15	17	12	16
Noncareerists:								
Transferees.....	100	100	100	100	100	100	100	100
Medical/health career.....	87	88	86	81	86	91	83	68
Other.....	9	8	10	11	11	99	4	25
Don't know and no response.....	5	4	5	8	4	--	13	--
Nontransferees....	100	100	100	100	100	100	100	100
Medical/health career.....	13	12	19	8	6	4	8	14
Other.....	80	82	67	83	80	82	80	64
Don't know and no response.....	7	6	14	9	15	14	11	22

a/ About to be separated.
b/ Out of the service 2 to 3 years.

Similar attachments are shown in the work history of out-of-service medical military men. Two-thirds of the careerists who were engaged in the medical/health field at the time of the interview (2 to 3 years after separation) had held no other job, and an additional 14 percent had held other medical/health jobs; only 20 percent had worked in other fields. On the other hand, only 10 percent of the men who were not in the medical/health field at the time of interview had worked in medical/health employment and then left it. Of noncareerist transferees, nearly half had held no other jobs and two-thirds had worked only in medical/health employment. Only 8 percent of noncareerist nontransferees had previously tried medical/health work and switched to something else.

Table 22. Types of Civilian Jobs[a] Held by Out-of-Service Medical Military Personnel Since Their Separation

(in percent)

Respondents	Total	Transferees[b]	Nontransferees[c]
Careerists.....	100.0	100.0	100.0
Had other jobs...	42.4	33.9	48.2
Medical/health field.....	12.0	14.2	10.5
Other fields....	3[illegible].4	19.7	37.7
Had no other job.	57.6	66.1	51.8
Noncareerists.....	100.0	100.0	100.0
Had other jobs...	55.5	53.4	56.1
Medical/health field.....	11.1	21.5	8.0
Other field.....	44.3	31.8	48.0
Had no other job.	44.5	46.6	43.9

a/ Other than current job.
b/ Transferees were employed in medical/health job at time of interview.
c/ Nontransferees were employed in other than medical/health job at time of interview.

Moreover, considering that they were only 2 or 3 years out of the service, the transferees changed jobs at a lower rate than would have been expected of men newly entered into the civilian labor force. More than three-fourths of the careerists who were working at medical/health

jobs at the time of the interview had held the same job for more than a year. More surprising, the job duration was almost as high among the younger noncareerists, though men in these circumstances would normally experience a good deal of turnover.

Table 23. Length of Time Employed in Present Medical/Health Job by Out-of-Service Medical Military Personnel

(in percent)

Respondents	Total	Army	Navy	Air Force
Careerists:				
All respondents....	100.0	100.0	100.0	100.0
Less than 6 months.	7.0	7.1	7.7	6.1
6 months to 1 year.	15.9	16.7	11.5	21.2
More than 1 year...	77.0	76.2	80.8	72.7
Noncareerists:				
All respondents....	100.0	100.0	100.0	100.0
Less than 6 months.	14.8	10.5	28.6	16.0
6 months to 1 year.	14.9	15.8	14.3	12.0
More than 1 year...	70.3	73.7	57.1	72.0

The Potential Supply

This is basically a study of the potential supply of civilian medical/health personnel which might accrue from the separation of trained paramedical specialists from the Armed Forces. The men in our study are basically of two kinds: careerists retired after upwards of 18 years of service, and noncareerists separated after one term of service [35]. The careerists represent a sizable corps (1,500-2,000 men a year) of highly trained and richly experienced paramedical personnel, turning 40, with a career investment in medical work including patient care, and often, capability in some medical specialty or in medical administration. The noncareerists are very much more numerous (nearly 30,000 a year), young (21 or 22 at time of separation), and well educated, but have less medical training and experience, and a wide choice of careers ahead of them.

Careerists

Given the growing needs of the civilian medical/health services and the widespread shortages reported, there would be a prima facie expectation that most of the careerists would enter medical/health work in capacities similar to those in which they served in the military. The demand is strong and widespread, and the careerists have, if anything, superior capabilities derived from long training and experience in medical service of high standards. They have an expressed mobility, a willingness to acquire additional education and training, and an (almost unanimous) interest in medical/health work. At the point of separation three-fifths of them expressed their interest in plans to enter this work, but of those several years out of service, only two-fifths actually did transfer. Moreover, the rates of transfer were lower among those whose primary military experience was in direct patient care (in which the civilian needs are acute) than among those experienced in technical or supporting services, and nearly half of those who transferred entered these services.

As a potential supply of medical/health manpower, the careerists who transferred did not differ very much from those who did not. They were a little better educated, rather more willing to move in search of their chosen work, and on the average rather more demanding in the earnings they would accept. But there is nothing in the study to suggest that the character or quality of the supply was responsible for the relatively low rates of transfer. On the contrary, as the men themselves perceived, the obstacles arise from the demand side, mainly the formal education and training requirements, the minimal credit for military training and experience given by civilian authorities, and the relatively low pay.

Noncareerists

The case of the noncareer men is quite different. On one hand, their medical capabilities are distinctly more limited; on the other hand, they are on the threshold of their careers and therefore vocationally more footloose. These characteristics do not diminish their long-term value as a potential supply of civilian medical/health manpower but, rather, suggest the terms on which they might be available. Their exceptionally high levels of education and willingness to acquire additional schooling (especially higher among those who transferred) should make them attractive to the medical/health system. Their interest in transferring (expressed in their "consideration" of medical/health

work) is high at the point of separation. The severe attrition between considering and planning, and between planning and transferring, derives not so much from their (realistic) perception of formal requirements to be satisfied as from the recognition that the system does not provide the transitional mechanisms and the structured combinations of work, training, study, and advancement that make a career. Here again, it is not the interest, quality, or availability of the supply that is the constraining factor, but the limited flexibility of civilian medical/health demand in meeting the minimum conditions to attract more of these young men if it wants them.

IV. SERVICE EXPERIENCE

Introduction

The men interviewed varied according to service branch, length of service, specific military occupation, type of duty tour, and other factors determined by their experience in the military. As already noted, the actual rate of transference for the out-of-service groups is lower than the planned rate of transference for those still in the service. This led to an examination of military paramedical duty in order to determine the factors causing this discrepancy.

The Career Decision

Whether conscripted, enlisted, or induced to enlist by the threat of conscription, every man who enters the service has the option of either continuing in the military after his initial obligation has been fulfilled, or returning to civilian life. The initial term of obligated service varies from 2 years for Army draftees, to 4 years for Navy and Air Force recruits. The serviceman may elect to "re-up" for another term any time during this period. He also has the option to "extend" his tour for a shorter period -- for example, to meet the minimum obligated service requirements for a particular course. The military services, for reasons of internal efficiency, offer inducements to the servicemen in order to get them to reenlist. Among these inducements is the Variable Reenlistment Bonus, most often given to those who hold skill classifications which are in short supply.

The noncareerists in the sample obviously felt that the alternatives available in civilian life were preferable to the prospect of continuing in the military [36]. The

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overwhelming majority said they had never considered the military as a career, viewing their initial tour as merely a break in civilian life (see table I-5, appendix I). The proportion of those either in or out of the service who considered a military career was highest in the Air Force (which stresses career potential in its recruiting). Of those, regardless of service branch, who did consider a military career, most decided against it more than 6 months prior to their date of discharge [37].

A surprisingly small percentage of the careerists had decided upon a military career prior to their initial enlistment. Most entered the service uncertain about their career plans, and reached their decision only after considerable exposure to military medicine (see table I-6). This decision is important because it involved a commitment not only to a military career, but to a paramedical career. In both the inservice and out-of-service groups, one out of three did not make this career decision until after the initial obligated tour was completed. The careerists in the survey have thus opted for 18 years or more of paramedical duty after initial training and work in the field.

The Primary Military Assignment

Each individual in the sample was questioned with regard to as many as three possible duty assignments: his last assignment (current, for the inservice samples), and the two prior to that. For many of the noncareerists, only one or two jobs had been held [38]. All the careerists had served in three (or more) duty assignments.

In order to assess the attitudes and experiences of the servicemen accurately, it was necessary to develop a procedure for analyzing the multitude of responses which would result from survey interviews. Military rotation procedures dictate that a man usually serves in various locations at home and abroad and, depending upon his occupational specialty, in various types of units. Careerists, especially, were likely to have a great deal of exposure to different systems of medical care delivery. This problem was especially acute among the Navy careerists, who faced constant ship-to-shore rotation. It was therefore decided to concentrate the analysis upon a "primary" duty assignment for each individual.

For the noncareerists, the last (or current) duty assignment was designated as the most important. For these men with short military tours, the last job held was most likely to emphasize the utilization, not the acquisition, of paramedical skills. For the careerists, the assignment which had been held the longest was designated as the primary one [39]. This maximized the individual's exposure to the particular skills and techniques employed on a job, while shorter tours were most likely to be served outside a serviceman's specialty. If two or more tours had the same duration, the most recent was designated as primary.

None of the careerists held primary assignments less than a year; the average was approximately 4 years. The noncareerists, with less total experience, show a shorter duration of duty on any particular assignment [40]. This is true for the inservice as well as the out-of-service groups, with the Navy having the shortest and Air Force the longest average duration of primary duty (see table I-7).

As a result of the method used in choosing the primary assignment, this analysis centers on jobs held within the United States. Furthermore, when the distinction as to type of assignment is made between (1) large medical units (where division of labor under professional supervision predominates); (2) smaller medical units (where medical care is supplied individually or with little chance for specialization); (3) indirect units (which include laboratories, clinical research); and (4) nonmedical units (which are primarily administrative), we see that our observations tend to concentrate in the larger medical units (see table I-8). This concentration occurs because the majority of all military personnel are assigned continental duty. Most of the tours of duty outside the United States are of a relatively short duration; this is especially true of "hardship" duty, such as isolated tours (radar sites) or combat duty. (The normal Vietnam assignment is 12 months.)

Approximately half of those in the sample were assigned to hospitals as their primary duty. There is some interservice variation, with the Air Force having an above-average number at hospitals and the Navy having less concentration, but the pattern is clear. The implication of this is that most paramedical veterans have their longest experience in facilities which are essentially the same in the military and civilian medical systems (see table I-9).

With respect to the specific occupational categories of the veterans, it was necessary to construct a classification system of 10 occupational groups which would accommodate the different methods of classification employed by the three services [41]. The distribution of the primary duty assignments, which may deviate from the official ratings, that some interservice variation does exist (see table I-10). For the out-of-service careerists, the Army has relatively more in the direct medical care category. The Air Force inservice noncareerists are the most likely to be dental personnel [42]. Noncareerists in both the inservice and out-of-service groups tended to be more involved in nursing care than technical or laboratory skills. At the same time, many more careerists than noncareerists fell into the supportive and administrative category.

However, the interesting aspect of the occupational distribution, for purposes of this study, involved the differences between those who transferred to civilian medical/health jobs and those who did not. Because the 10-category classification spread the sample too thin for an adequate analysis of this difference, some of the cells were collapsed to yield a four-part division of the sample:

- Direct (nursing and therapy) medical care
- Technical, laboratory and supportive medical care
- Direct dental care
- Dental laboratory supportive services.

This grouping was based on the occupational code of the primary military assignment for each individual, and is shown in table 24. To explore the relationship between occupational skills and rate of transference, the percentage rates of transference for each of the four occupational groups are shown in table 25.

We hypothesized that those with direct medical care skills would encounter more barriers to transference than those in the laboratory fields, and thus would have a lower rate of transference. This is marginally true for the out-of-service careerists in medical care (36 percent vs. 43 percent), and significantly so for all other groups. Unfortunately, small sample size precludes any definite statement concerning the two dental groups, though apparently the dental laboratory specialists have a greater rate of transference. The size of the dental groups necessitated a further

Table 24. Major occupational Groups
(in percent)

Group	All personnel				Medical/health field				Other civilian fields			
	Weighted total	Army	Navy	Air Force	Weighted total	Army	Navy	Air Force	Weighted total	Army	Navy	Air Force
Inservice Personnel:												
Careerists.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Direct medical.....	56.6	76.7	44.3	53.0	50.3	69.3	37.1	49.2	66.4	86.8	55.6	59.0
Technical/laboratory.	29.2	10.0	42.6	31.0	33.3	11.5	48.6	34.4	23.0	7.9	33.3	25.6
Direct dental.....	4.3	--	1.7	11.0	3.8	--	1.4	9.8	4.9	--	2.2	12.8
Dental laboratory....	3.3	5.6	1.7	3.0	4.9	9.6	1.4	4.9	.8	--	2.2	--
Not classified.....	6.6	7.7	9.7	--	7.7	9.6	11.5	1.7	4.9	5.3	6.7	2.6
Noncareerists.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Direct medical.....	65.1	68.7	67.6	35.0	58.1	58.0	72.6	37.7	72.6	79.6	60.5	31.9
Technical/laboratory.	30.9	31.3	25.7	35.0	39.2	42.0	22.6	43.4	22.1	20.4	30.2	25.5
Direct dental.....	3.6	--	5.7	27.0	2.1	--	3.2	15.1	5.1	--	9.3	40.4
Dental laboratory....	.4	--	1.0	3.0	6.0	--	1.6	3.8	.2	--	--	2.2
Out-of-service Personnel:												
Careerists.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Direct medical.....	49.0	69.6	43.8	43.0	43.1	55.1	30.2	44.4	53.3	72.9	54.4	42.2
Technical/laboratory.	35.8	19.6	29.8	51.0	37.7	18.6	35.8	52.8	34.4	20.3	25.0	50.0
Direct dental.....	4.5	2.9	5.8	4.0	3.1	2.3	3.8	2.8	5.4	3.4	7.4	4.7
Dental laboratory....	4.5	5.9	8.3	--	9.9	11.7	17.0	--	.9	1.7	1.5	--
Not classified.....	6.2	1.0	12.3	2.0	6.2	2.3	13.2	--	6.0	1.7	11.7	3.1
Noncareerists.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Direct medical.....	73.6	75.0	84.0	50.0	57.9	54.5	79.2	46.4	78.2	80.8	85.4	51.4
Technical/laboratory.	16.7	17.0	5.7	32.0	27.4	27.3	12.5	46.4	13.5	14.1	3.7	26.4
Direct dental.....	8.2	6.0	10.3	17.0	8.1	9.1	8.3	3.6	8.3	5.1	10.9	22.2
Dental laboratory....	1.5	2.0	--	1.0	6.6	9.1	--	3.6	--	--	--	--

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Table 25. Transferees by Military Occupational Group
in percent.

Group	Inservice personnel				Out-of-service personnel			
	Weighted total	Army	Navy	Air Force	Weighted total	Army	Navy	Air Force
Careerists:								
Direct medical care.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Transferees.....	53.2	52.2	51.0	56.6	35.5	39.4	30.2	37.2
Nontransferees.....	46.8	47.8	49.0	43.4	64.5	60.6	69.8	62.8
Technical/laboratory.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Transferees.....	68.5	66.7	69.4	67.7	42.6	40.0	52.8	37.3
Nontransferees.....	31.5	33.3	30.6	32.3	57.4	60.0	47.2	62.7
Direct dental.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Transferees.....	53.8	--	50.0	54.5	28.0	33.3	28.6	25.0
Nontransferees.....	46.2	--	50.0	45.5	72.0	66.7	71.4	75.0
Dental laboratory.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Transferees.....	90.0	100.0	50.0	100.0	88.1	83.3	90.0	--
Nontransferees.....	10.0	--	50.0	--	11.9	16.7	10.0	--
Not classified.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Noncareerists:								
Direct medical care.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Transferees.....	46.4	42.6	63.4	57.1	18.0	16.0	21.3	26.0
Nontransferees.....	53.6	57.4	36.6	42.9	82.0	84.0	78.7	74.0
Technical/laboratory.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Transferees.....	55.7	67.7	51.9	65.7	37.5	35.3	50.0	40.6
Nontransferees.....	34.3	32.3	48.1	34.3	62.5	64.7	50.0	59.4
Direct dental.....	100.0	--	100.0	100.0	100.0	100.0	100.0	100.0
Transferees.....	30.4	--	33.3	29.6	22.5	33.3	18.2	5.9
Nontransferees.....	69.6	--	66.7	70.4	77.5	66.7	81.8	94.1
Dental laboratory.....	100.0	--	100.0	100.0	100.0	100.0	--	100.0
Transferees.....	76.5	--	100.0	66.7	100.0	100.0	--	100.0
Nontransferees.....	23.5	--	--	33.3	--	--	--	--

collapsing of our four-way classification into two occupational groups: Direct care (parts 1 and 3), and technical/laboratory support (parts 2 and 4).

This method of division was validated by breaking down the problems the men cited as hindering transference and the changes in both civilian and military procedures they suggested to facilitate crossover. The two direct care categories behaved much more alike than did those of other possible (i.e., all dental) combinations. For this reason, further analysis of service experience was conducted using the two-way classification, even though combining medical and dental personnel within one occupational group is not traditionally done.

Attitudes and Experiences of the Military Paramedic

The first question which we analyzed using our two-way occupational breakdown was, "What did you like about your (primary) assignment?" (see table I-11). Two responses in particular -- "Skills needed/type of work" and "Interesting work" -- are predominant. First, as might be expected, more transferees than nontransferees gave these responses. More interestingly, those in the technical/laboratory occupational group cited these more than all other groups. This tendency was most pronounced among both inservice and out-of-service careerist transferees, which may provide a clue to the difference in transference between the direct and indirect care personnel. It is often noted that nursing care jobs have little room for career advancement. Skills, once acquired, are applied with little variation. In the technical and laboratory fields this is apparently not so. These military paramedics liked the challenge of applying their skills even after 18 or more years in the field, and were apparently willing to continue after discharge. Among all the nontransferees the technical/laboratory men often gave these two responses "type of work" and "interesting work" though the difference over the direct care personnel is not as great. Direct care personnel, especially transferees, often responded that they "Liked helping sick people." And more noncareerists than careerists, particularly the transferees, indicated that acquiring a skill and learning a trade was, in their view, one of the favorable aspects of their military assignment.

Although the analysis of the likes of paramedical personnel shows that it is the challenging technical nature of certain jobs which relates to transference, little can be inferred from their dislikes. Most often, the response was "Nothing disliked" when asked what they disliked about their duties. About two-thirds of the careerists had no unfavorable comments to make about their military assignment (see table I-12). The noncareerists were generally less satisfied with their assignments while one-third of this group were uncritical. Slightly over a fourth of those both in the service and out cited a dislike for the military aspects of their job. About 10 percent of inservice noncareerists, and 18 percent of out-of-service noncareerists, also cited a dislike of the working conditions (hours/shifts).

In general, those dislikes which were cited by both careerists and noncareerists followed no discernible pattern. Transferees disliked the same aspects as nontransferees, and no pattern of differences emerged between those with direct care skills and their technical/laboratory counterparts.

The respondents cited many more likes than dislikes of their primary duties. Only 1 or 2 percent said they disliked everything about their duties. Thus, the respondents generally had no great distaste for paramedical work. In fact, it appears that many more came to enjoy certain aspects of this field because of their exposure to it in the military. If this is so, then work experience as a military paramedic should affect the veteran's plans for post-discharge careers.

The respondents were asked whether the military did influence their plans, but the answers were somewhat ambiguous (see table 26). There were no differences between comparable inservice and out-of-service groups, and only the expected differences between careerists and noncareerists, and transferees and nontransferees, with more careerists and transferees saying the service influenced their plans. The nontransferees' response that the military did influence their career plans implies a negative affect since they did not choose to continue in the medical/health field after discharge.

For those who do transfer to the civilian medical/health field, the timing of the decision to do so is illuminating. Only 8 percent of the careerists had a commitment to a medical/health career prior to enlistment. However,

Table 26. Respondents' Evaluation of the Influence of Military Work Experience Upon Career Plans After Discharge

(in percent)

Respondents	Total	Yes	No	Don't know	No response
Careerists:					
Inservice.....	100.0	58.0	34.4	7.2	0.4
Transferees.....	100.0	81.4	10.4	7.7	0.5
Nontransferees...	100.0	23.0	70.5	6.5	--
Out-of-service.....	100.0	56.4	42.2	0.4	2.0
Transferees.....	100.0	87.0	12.2	--	0.8
Nontransferees...	100.0	35.7	62.6	0.7	3.0
Noncareerists:					
Inservice.....	100.0	37.5	46.3	7.1	9.1
Transferees.....	100.0	57.0	27.1	6.8	9.1
Nontransferees...	100.0	16.4	67.1	7.4	9.1
Out-of-service.....	100.0	33.0	66.3	0.7	--
Transferees.....	100.0	73.5	26.5	--	--
Nontransferees...	100.0	21.0	78.6	1.0	--

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half of the inservice noncareerists, and almost a third of the out-of-service noncareerists, responded that they had decided upon a health career before entering the military. The remainder chose medical/health occupations only after exposure to this field in the military.

Table 27. Timing of the Decision In Favor of a Medical/ Health Career

(in percent)

Timing	Inservice		Out-of-service	
	Careerists	Noncareerists	Careerists	Noncareerists
All transferees...	100.0	100.0	100.0	100.0
Before service..	8.2	50.2	7.1	32.4
While in service.....	91.8	49.8	66.8	29.2
After discharge.	--	--	26.1	35.4

The value of military paramedical training is underlined by the experiences of those out-of-service personnel who took medical/health jobs. These men were asked whether their service experience alone qualified them for their jobs, or whether they needed to go to school, have on-the-job training, or take other measures to become qualified:

Table 28. Respondents Qualified for Employment by Service Experience

(in percent)

Respondents	Direct care	Technical/laboratory
Careerists.....	91.6	93.1
Noncareerists.....	55.8	70.4

While indicating the benefits which the veteran receives from his paramedical training, these figures also point up one of the problems involved in transferring veterans to the civilian medical/health industry. The

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careerists in this survey have already completed at least 18 years of service. Their average age is over 40. They have family responsibilities. A second career after the military must be based on the abilities they have already acquired. Over 90 percent of those who found medical/health employment were accepted "as is." Only 10 percent of those now employed undertook a period of schooling or on-the-job training (usually at lower pay). What about those who could not or would not undertake such a period? It is of men such as these that the careerist nontransferee group is comprised.

The noncareerists have less to offer an employer in the civilian medical/health industry, but they are more disposed to augment their abilities. Given the existing shortage of nursing personnel, it is somewhat surprising that 45 percent of the direct care noncareerists were in fact required to undertake additional training. Two-thirds of this group received formal education, while the remainder became fully qualified after a period of on-the-job training. More of the technical/laboratory personnel were accepted "as is" from the military, a fact which partially explains the higher rate of transference of this group. Those who sought a means to qualify for employment in the civilian medical/health field tended to do so almost exclusively through formal education.

Despite the differences in training and experience tween the direct care and technical/laboratory groups, they both perceive approximately the same problems in transferring to civilian medical/health jobs [43]. This is probably because they both perceive the same demand for their services, regardless of military specialty. The only significant difference was that more direct care noncareerists felt they were inadequately trained than did those with technical/laboratory specialties. This was especially so among the nontransferees, who probably coupled this reaction with the licensure ban on nursing careers.

Attitudes and Experiences of the Moonlighting Paramedical Veterans

While on active duty, some of the men in the survey held part-time jobs in the civilian medical or health field. This "moonlighting" by a military paramedical worker is doubly significant: First, it gives an exposure to the civilian medical/health manpower market which would not otherwise occur until after discharge (if at all). The military personnel

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who moonlight in medical/health jobs have occasion to work in civilian institutions, under civilian supervision, and in compliance with all the technical and structural aspects of the nonmilitary delivery of medical care. Second, moonlighting in such cases is actually a form of occupational transference. In civilian work, the military men utilize the training received and skills acquired from the military. The civilian sector is the recipient of spillover from the military's supply of medical manpower.

Moonlighting in civilian medical/health work was reported by almost 15 percent of the respondents. The relative number of moonlighters varies among groups. Approximately 20 percent of all Air Force respondents reported a part-time medical/health job, while only 3 percent of the out-of-service Army noncareerists had this experience.

Table 29. Proportion of Medical/Health Moonlighters in Survey by Branch of Service

Respondents	Weighted total	Army	Navy	Air Force
Careerists:				
Inservice.....	14.4	10.0	12.2	20.0
Out-of-service.....	14.5	9.0	19.0	15.0
Noncareerists:				
Inservice.....	18.7	14.1	20.0	22.0
Out-of-service.....	11.1	3.0	8.5	22.0

There are several explanations for this variance. First, since the crisis in health manpower is growing, it is to be expected that the inservice groups, reporting experiences 3-4 years after the out-of-service respondents, would face an increased demand for their skills. This is reinforced in the noncareer groups by the fact that the inservice respondents were older, with a presumably greater need for supplemental income, and thus more likely to supply their skills. Other factors influencing the rate of moonlighting include the commanding officer's attitude toward such activity and, most important, the availability of such part-time jobs at various duty stations.

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The small absolute number of observations (182) on these medical/health moonlighters precludes any analysis by branch of service. However, merging the samples for the three services, while retaining the distinction between those in the service and out of the service and between careerists and noncareerists, permits examination of the experiences of those who did moonlight while in the military [44]. This four-way grouping shows the rates of moonlighting for each group, as well as among transferees and nontransferees.

Table 30. Proportion of Medical/Health Moonlighters in Survey, by Military Status, Career Status and Transference

Respondents	Total	Civilian medical/health field	Other civilian fields
Careerists:			
Inservice.....	14.4	16.4	11.5
Out-of-service.....	14.6	22.0	9.4
Noncareerists:			
Inservice.....	18.8	26.7	9.4
Out-of-service.....	11.1	17.6	9.1

Moonlighting and postservice transference to the civilian medical/health field are positively correlated. In absolute terms, more moonlighters are transferees than nontransferees for all categories except the out-of-service noncareerists. Even in this group, however, the evidence shows moonlighting and occupational transference to be positively related: only 9 percent of the noncareer out-of-service men who were nontransferees had held part-time civilian medical/health jobs while on active duty, but almost 18 percent of those who did transfer had held such jobs. The relationship between moonlighting and transference can also be seen by comparing the rate of transference for the sample as a whole with the rates for those who did and did not moonlight in the medical/health field.

Those who moonlight at medical/health jobs while in the service are more often found to transfer than their counterparts who either do not have part-time jobs or else moonlight in some other (nonmedical) field. Are those who

Table 31. Respondents Who Transferred

(in percent)

Respondents	Inservice		Out-of-service	
	Careerists	Noncareerists	Careerists	Noncareerists
All respondents[a/]..	60.0	51.9	40.4	22.9
Medical/health moonlighters....	68.2	77.2	61.7	38.2
All others.....	58.6	49.0	37.3	22.4

a/ Weighted to adjust for differences in population and sample size among the three military services.

moonlight better prepared because of that experience to complete transference upon discharge, or are those who intend to transfer more disposed to moonlight while in the service?

Some clues can be gained by analyzing the preservice interests and experiences of the medical moonlighters. Appendix table I-13 shows the career interests of the respondents prior to their entry into active duty. For those moonlighters still in the service -- both careerists and noncareerists -- interest in a medical/health career prior to their entry into active duty was higher among those who intend to transfer than among nontransferees. This pattern is reversed for the out-of-service groups, but here a comparison of the moonlighters with the sample as a whole shows moonlighters with a much greater interest in medical/health careers than the average respondent (21.3 percent vs. 12.3 percent for careerists, 35.3 percent vs. 19.4 percent for noncareerists). Thus it is suspected that it is those who wish to continue in the medical/health field who moonlight, rather than there being a "moonlighting-causes-transfer" relationship.

This opinion is strengthened by an analysis of preservice employment (see table I-14). Whether or not the respondent had been employed prior to military service -- and, if so, whether that employment was in the civilian medical/health field -- is germane. The tendency is for more of the

transferees than nontransferees to have had prior medical experience, again indicating a career commitment to the medical/health field, be it military or civilian. Also, when the data concerning preservice employment and postservice activity among moonlighters are compared to those for the entire sample, it is found that in every group the moonlighters had greater prior civilian experience in the field than the average military paramedic.

However, concluding that it is career interest which leads to moonlighting does not diminish interest in these individuals. Many more completed transfer after the service than had a prior interest in a medical/health career. Conversely, several with prior experience and/or interest, or who transferred via moonlighting while in the service, did not (or do not plan to) follow a civilian medical/health career.

An examination of the attitudes and experiences of medical moonlighters sheds some light on these questions.

There are no marked differences between the type of installation at which the moonlighters were stationed during their primary military assignment and the sample as a whole (see table I-15). The majority of moonlighters served their longest (for noncareerists, most recent) tour of duty in a military hospital. This type of assignment in a large medical facility allows the same division of labor and specialization of function in the military as is common in most civilian health care facilities. Few (from 3 to 10 percent, depending upon the group) served their primary tour of duty aboard ship or with a medical company, the military facilities least akin to civilian facilities. The advantages of being stationed at a military hospital include the probability that the facility will be located in urban America. An urban location is likely to offer the serviceman better opportunities for part-time work in general, and more particularly, access to civilian health care facilities. No matter how desirous the serviceman is of part-time employment, he must first find a facility which will offer him employment opportunities.

Most of those who did find a moonlighting job were employed in hospitals (see table I-16). This is a reflection of the concentration of civilian allied health personnel in hospitals generally, and also of the location of the

servicemen. The type of facility at which these men were employed does not differ significantly between transferees and nontransferees. There is some indication, though the small samples preclude any conclusion, that those with part-time employment in laboratories are more likely to transfer.

The correlation between technical/laboratory skills and transference has previously been discussed. For the entire sample, it was observed that relatively fewer transferees had direct care military specialties. When the distribution of the primary medical duties of the moonlighters are examined, two trends emerge. First, fewer moonlighters have direct care specialties while on active duty than the total sample. Second, the transferee moonlighters have a markedly lower proportion of direct care personnel than do nontransferee moonlighters.

Table 32. Proportion of Respondents with Direct Care Specialties

Respondents	All respondents	M/H moonlighters	Trans. moonlighters	Nontrans. moonlighters
Careerists				
Inservice.....	60.9	52.2	43.3	71.4
Out-of-service..	53.5	46.9	37.9	61.1
Noncareerists				
Inservice.....	68.7	54.3	52.2	61.5
Out-of-service..	81.8	50.0	30.8	61.9

This evidence indicates that not only are those veterans with technical/laboratory skills more easily assimilated into the civilian medical/health field upon discharge, but also that men with these skills are more likely to find moonlighting opportunities while in the service. The sample of moonlighters is rather small for any complete examination of this conclusion. However, the conclusion is supported by the moonlighters' descriptions of their part-time job duties. Those who transferred were less likely to have direct patient care experience in part-time jobs than those who did not transfer upon discharge (see table 33).

Table 33. Part-Time Job Duties of Medical/Health Moonlighters

(in percent)

Duties	Total	Medical/health field	Other civilian fields
Inservice personnel:			
Careerists.....	100.0	100.0	100.0
Direct patient care.	54.6	43.3	78.6
Other duties.....	45.4	56.7	21.4
Noncareerists.....	100.0	100.0	100.0
Direct patient care.	57.8	50.0	84.6
Other duties.....	40.4	47.7	15.4
No response.....	1.8	2.3	--
Out-of-service personnel:			
Careerists.....	100.0	100.0	100.0
Direct patient care.	44.7	34.5	61.1
Other duties.....	55.3	65.5	38.9
Noncareerists.....	100.0	100.0	100.0
Direct patient care.	64.7	61.5	66.7
Other duties.....	35.3	38.5	33.3
No response.....	--	--	--

Usually, when a man elects to undertake an extra job, it is to earn more income. When the men were asked what they liked about their moonlighting job it is not surprising that the most common response was "the pay." However, the earlier observation that moonlighters appeared to have an interest in the medical field is supported by their comments about favorable aspects of their moonlighting jobs. Answers such as "skills used," "helping sick people," or "interesting work" were given by an appreciable number of men in all categories, including the nontransferees. In fact, when the question was asked, "What did you dislike about your duties?", from 50 to 70 percent of each group replied that there was nothing they disliked about their part-time job. The only dislikes consistently cited were the hours or shifts (working conditions) required, an obvious reflection of the nature of most moonlighting jobs.

To determine the extent of occupational transference which occurred as a direct result of moonlighting, the respondents were asked whether their part-time job was similar to what they had in the service at that time.

Table 34. Proportion of Medical/Health Moonlighters Perceiving Part-Time Job as Similar to Military Job

Respondents	Inservice	Out-of-service
Careerists.....	47.7	66.0
Noncareerists.....	66.7	79.4

It would appear that the noncareerists generally practiced their military specialties in the civilian sector when they moonlighted. The careerists, with considerably more expertise and breadth of medical experience, were probably better able to obtain jobs in the civilian health field which were not in their specialty.

When asked the differences between their military and part-time civilian jobs [45], the only one the respondents cited consistently was the type of work, or skills used. Several noncareerists also felt that a difference existed in the extent of responsibility they were given or the degree of supervision under which they worked.

It appears that those men who moonlight are primarily those who feel that a congruence exists between the military and civilian delivery of medical care. Feeling this, they take the opportunity to use the training which they have received from the military to earn extra income by moonlighting while on active duty. That the civilian health sector, currently facing a manpower shortage of critical dimensions, does not more fully utilize these men upon their release can only be viewed as a loss for all concerned.

Suggested Changes in the Military

If the utilization of paramedical veterans in the civilian economy is to be increased, changes can be made either in the institutions which demand these veterans' services, or in the system which produces them. With regard to the latter, each respondent was asked what changes he thought could be made in the military medical/health field so that more veterans would choose this field after discharge. The responses to this question (shown in table I-17) reflect not only the veterans' evaluations of their military experience, but how well the military meets civilian standards.

Over 20 percent of the careerists, and twice as many noncareerists, felt the military should provide more and/or better training. Judging from the respondents' comments, the frequency of this response does not indicate that the men felt themselves ill equipped to perform their jobs, but ill prepared to face civilian hiring standards.

To the careerists, more and better training often meant training which would confer a degree or certificate. This response, coupled with the response categories of upgrading the military status and informing civilians of veterans' capabilities, centered upon the inability of the career veteran to present his qualifications to employers. One Army veteran, frustrated by his delay in getting Federal employment after discharge, commented: "When a person applies for retirement, give them their qualification and status report. He'd just take the status report to Civil Service and they'd know his qualifications." An Air Force careerist, about to be released commented: "The military should have a way of certifying the men." One often-made comment on training was that the military failed to offer the possibility of enlisted men becoming RNs. The thought here was not that the careerist could qualify as an RN upon

discharge, but rather that he should be able to become an RN while on active duty.

Noncareerists, while also wishing for a certificate or degree after their training, tended more to emphasize the content of their courses, although there were conflicting points of view. Some men, particularly in the Army, suggested that broader exposure, rather than strict specialization, would be beneficial. More prevalent was the comment that the military could do most by offering the noncareerists advanced specialist training. A noncareer Army veteran's comment is indicative: "Give specialized training in X-ray and lab -- that's where the jobs are."

The need to coordinate military and civilian practices was cited by one out of five careerists, whether in the service or out. In this respect, a plan such as Project Transition was given high praise. Inservice noncareerists also felt the need for a method to enable adaptation to different techniques and arrangements in the civilian medical/health industry.

That servicemen need to be informed of civilian jobs was mentioned by 10 percent of those out of the service and 20 percent of those about to be released. These inservice personnel, especially the careerists, professed ignorance of the civilian labor market for paramedical workers. The current state of the art was aptly evaluated by a career Army veteran: "They just hand you your papers and say goodbye." Interestingly, more of those with technical/laboratory primary skills than those with direct patient care skills cited being informed of civilian jobs as a method of increasing transference. The technical/laboratory men felt that there were jobs in the civilian economy for which they were qualified; all they needed to know is where they were.

Summary

This chapter has analyzed the experiences of both careerist and noncareerist veterans. The careerists decided upon the military paramedical field some time after they entered the service. Few of the noncareerists had ever considered a military career, and most of those decided against such a career more than 6 months before their first tour had ended.

All of the careerists, and some of the noncareerists, served in a variety of installations. Despite the chance for duty in small (or combat) medical units, the military paramedic was likely to have his greatest amount of experience in a military hospital in the United States. This means that the paramedical veteran has been exposed to a system organized and equipped for the delivery of medical care which is much the same as the civilian sector's.

For purposes of analysis, the various military medical occupational categories were collapsed into two groups: The first contained those men whose occupations centered around the direct care of patients; the second emphasized technical, laboratory, and other supportive skills. It was shown that this second category had a much higher rate of transference to the civilian economy than did the direct care group. This higher rate of transfer may reflect a liking for the challenge presented by these jobs, in addition to greater civilian acceptance and demand for these skills.

Military paramedical personnel were generally contented with their service experience. Few reported any dislikes, and these few concerned the military, rather than medical, aspects of their position. Not surprisingly, this military medical experience was a major influence on the career plans of the veteran, and in the case of most of the careerists who accepted civilian medical/health employment, provided all of the necessary qualifications for employment.

Many noncareerists needed schooling or training before taking civilian medical/health employment. This is partly due to the fact that their duties in civilian jobs, which were largely in the indirect care area, did not correspond exactly to their military occupations.

In addition to the training and experience received from the military, 15 percent of the sample had part-time experience in civilian medical/health jobs while on active duty. These men tended to have greater preservice interest and experience than the average paramedic. Most moonlighters did not work in direct patient care, and this exposure to the technical/laboratory areas of medicine worked to reinforce a higher rate of transference.

The problems encountered in finding civilian employment did not appear to vary by military occupation. The

respondents cited several changes in the military which would alleviate these problems, with most of the suggested changes centering around either the quality or quantity of training received or on the need for better information systems.

ERIC

V. FACTORS AFFECTING TRANSFERENCE

Introduction

Most military paramedical occupations bear titles or job descriptions similar to those of civilian allied medical/health occupations (see table II-6, appendix II). It is possible to group both civilian and military paramedical occupations into broad categories within medical and dental care. For example, medical and allied health occupations may be grouped into surgical/medical, neuropsychiatry, therapy, technical, and laboratory classifications. Dental paramedical occupations may be divided between those that provide direct patient care and those that supply indirect patient care. There are a few military paramedical occupations for which there are no civilian equivalents (e.g., submarine medicine technician), but such positions are unusual, and very few men are trained for them. Even in these unique instances, much of the training and skill acquired is relevant to civilian medical/health care. While terms like "aeromedical evacuation teams" or "Special Forces" are used only in the military, comparable job functions are performed by emergency and ambulance personnel in civilian situations.

The military medical system does differ from civilian medical organizations in size, functioning units, and type of patient care required, especially in a war zone. The centralized planning and control by military medical departments result in more uniform standards, procedures, and services than are found in civilian medical institutions. While organizational structure differs, the functions of medically trained enlisted personnel and civilian allied medical/health workers are alike.

One significant difference between the two systems is that the military use proportionately fewer professional personnel in relation to paramedical personnel on their medical

staffs than do civilian institutions. Partly as a result of this, military enlisted personnel are given more responsibility for patient care and operate more independently than they would in a comparable civilian position: e.g., as civilians, they would not be allowed to give injections and dispense drugs as they do in the services. The few respondents who mentioned the difference between military and civilian methods as causing a problem in finding a civilian medical/health job usually referred to the degree of responsibility they are permitted: "In the military, you're allowed to do many things that you can't do in civilian life," and "There are legal complications; we can only be an orderly, assisting a doctor or a nurse in civilian life, while in the military we did everything," are comments made by men who are acutely aware of the differences in the degree of responsibility in the two sectors. A recent newspaper story tells about two ex-medics -- one from the Air Force, the other from the Navy -- working in a civilian hospital in the newly created position of "emergency room technician." One of the veterans reported that in the military, "the corpsmen often gave treatment normally restricted in civilian life to physicians." Both medics had performed minor surgery while in service, but as civilians were "restricted to assisting doctors and nurses in soaking and dressing wounds, taking blood pressure and temperature, walking patients and maintaining intravenous feedings" [46].

Awareness of the Possibility of Transference

Servicemen are aware that their military assignments are relevant to civilian medical/health jobs. Three-fourths or more of the respondents in every group surveyed believed that there was a civilian job similar to the one they had in the service; the proportion was even higher among the men who had found or were planning to find civilian medical/health jobs. A smaller proportion of those crossing over to nonmedical fields saw such similarities (see table 35).

The men who believed that a comparable civilian position existed were asked (1) whether they thought that the duties and equipment in such a job would be the same or different from the military, and (2) where they felt such a job would be found. More than half of all the respondents (more transferees than nontransferees) indicated that their duties and the equipment they would handle in a civilian job would be the same as in their military position. A majority of

Table 35. Proportion of Respondents Reporting Civilian Jobs Similar to Military Assignment

Respondents	Total	Medical/health field	Other civilian fields
Careerists:			
Inservice.....	76.4	82.0	68.0
Out-of-service.	77.2	86.7	70.7
Noncareerists:			
Inservice.....	78.7	88.7	67.8
Out-of-service.	73.4	89.9	68.5

the respondents believed that jobs similar to the ones they held in the service would be found in civilian hospitals. A greater proportion of first-termers than careerists, and a greater proportion of men attached to the civilian medical/health field than those in other fields, thought of the hospital as the locus of comparable positions. Clinics and private laboratories were the only other facilities mentioned by an appreciable number of respondents, and these were proposed only by younger, less experienced men still in the service -- one in five suggested clinics and one in ten, private laboratories. Few respondents mentioned any other health care facilities.

Table 36. Proportion of Respondents Reporting Civilian Jobs In Hospitals Similar to Military Assignments

Respondents	Total	Medical/health field	Other civilian fields
Careerists:			
Inservice.....	51.5	53.6	48.4
Out-of-service..	53.5	57.7	50.6
Noncareerists:			
Inservice.....	61.6	71.4	50.9
Out-of-service..	73.4	89.9	68.5

Finding a Civilian Medical/Health Job

From the viewpoint of inservice and out-of-service men, veterans face problems in finding civilian medical/health jobs. Evaluating the veteran's situation, the careerists cited pay levels as a major difficulty, but in the opinion of the younger men, aspects of civilian hiring standards, such as educational requirements and civilian acceptance of military training, were paramount (see table 37). Some men believed that veterans would have no difficulty in finding jobs, but most recognized that they generally had to overcome serious obstacles in order to do so.

Civilian Hiring Standards

Civilian hiring standards are a major hurdle for veterans, especially the first-termers. Civilian hiring standards typically specify levels of education, specialized work experience, and professional standing as evidenced by licensing or certification. The survey respondents recognized that the required education and work experience were obstacles to finding a civilian medical/health job, but very few of the men considered that licensing or certification stood in their way. This contrasts with the prevalent view that it is licensing and certification which operate to constrict the supply of allied medical/health manpower.

Except for the Civil Service, there are no nationwide hiring standards for paramedical occupations. There is a spread of acceptable education and experience, varying according to locality and type of facility. (There are sub rosa adjustments brought about by the pressures of the demand for medical care in relation to the supply of medical/health manpower.) Illustrative of the variability in civilian hiring standards is the difference in personnel qualifications required to meet licensure standards for the same occupation: in one state, the minimum educational requirement for a laboratory director may be met by high school graduation; in other states, requirements range from a bachelor's to a doctoral degree. Another example is the minimum age necessary to obtain a license as a practical nurse, which varies from 17 to 20.

Because most of the servicemen in the Armed Forces medical departments are trained and employed as auxiliary nursing personnel, civilian requirements for nursing

Table 37. Problems Veterans in General Face in Securing a Civilian Medical/Health Job

(in percent)

Problem	Careerists		Noncareerists	
	Inservice	Out-of-service	Inservice	Out-of-service
All responses.....	100.0	100.0	100.0	100.0
Hiring standards.....	41.4	40.2	54.1	61.2
Educational requirements/costs.....	13.9	15.8	23.8	24.1
Don't accept military training/experience...	16.3	13.6	20.6	23.0
Not properly trained...	2.8	2.8	6.1	4.5
Licensing/certification.....	8.4	8.0	3.6	9.6
Pay level.....	18.2	19.6	9.5	13.6
Locating job.....	9.0	6.6	6.4	3.4
Conditions of employment.	3.9	3.5	2.4	1.8
Other problems.....	9.6	5.4	5.2	1.7
No problems.....	6.6	12.5	5.4	6.1
It depends/don't know....	11.3	12.2	17.0	12.3

positions are of major importance to them. Civilian requirements dictate that a registered nurse must have 2, 3, or 4 years in an approved nursing school after high school graduation, and be licensed by the state. A licensed practical nurse must be a graduate from a school approved by the state board of nursing, and usually has completed a one-year course. Some schools of practical nursing require applicants to be high school graduates; others do not. Practical nurses are also trained in programs of shorter duration that do not meet the requirements for licensure. Nurse orderlies and aides receive on-the-job training, formal or informal, varying in length from as little as 1 week to as much as 1 year. The medical military course training received by enlisted men typically is not accepted as fulfilling civilian requirements of education in an approved school. (Among the exceptions is the Army's advanced formal course, preparing men for MOS 91C, clinical specialist. In several states, successful completion of the clinical specialist course is accepted to meet the eligibility requirements for becoming a licensed practical nurse.) The respondents frequently commented that civilians thought they were only qualified for jobs as orderlies, despite the training and years of experience they had had.

Education Requirements

Among the problems veterans perceived, educational requirements ranked first among noncareerists and was second only to low pay among careerists. To be readily accepted for employment in most paramedical jobs, an applicant must be a graduate of an accredited school or an approved program, or have civilian work experience. Schools or programs are accredited by state departments of education or other state agencies, by national professional organizations, or by regional associations of schools and colleges. To date, very few of the military medical training programs for enlisted personnel have been approved by the appropriate accrediting agency. Among them are several laboratory technician, clinical specialist (practical nurse) and X-ray technician courses.

It was the unusual respondent who joined the service with a medical/health career commitment and with academic credits in an approved allied health program. Nevertheless, by the time they return to civilian life, veterans have educational attainments equal in numbers of years to those required for many levels of allied medical/health positions. The difficulty that veterans face in meeting the educational

requirements of civilian employers in the medical/health field is not that they are poorly educated but that they are not precisely educated to the specifications of civilian job prerequisites.

Educational Attainment in the Service

Schooling, other than that given in training programs, is available to servicemen while in the military, and the men are encouraged to avail themselves of the opportunity to continue their education. There is an extensive system of correspondence courses at every school level, administered through the United States Armed Forces Institute. By means of an arrangement with colleges and universities located throughout the United States, the serviceman may chose among thousands of college-level courses and many high school and vocational courses. Health is one of the major fields in which courses are offered. Many thousands of servicemen enroll in such courses each year. In addition, financial aid is granted to men participating in off-duty education programs available on military bases or at nearby educational institutions throughout the world. Assistance is given to servicemen who wish to qualify for high school equivalency certificates. For men who are making a career in the military, there are programs which permit them to study full time, with education expenses paid, and on full salary.

The impact of the military's educational efforts are seen in the pronounced rise in educational levels of careerists during their years of active duty. Two-thirds of the careerists in the survey took advantage of the opportunities to seek further education while in the service. Some came in with less than a high school education and left the service as college graduates. A third of the noncareerists continued to study during their few years in service, but the bulk of the younger men considered this period a hiatus in their educational efforts.

Education After Military Service

Many men indicated their willingness to acquire additional education. Even among the careerists, 60 percent of those about to be released and planning to enter civilian medical/health work indicated their intention to pursue further education (mostly in combination with work, as might be expected of men of their age with family responsibilities). Actually, only about 30 percent of those 2 to

3 years out of service were found to have attended school full time or in combination with a job. In both groups, relatively more transferees than nontransferees indicated their interest in more education.

More than 95 percent of inservice noncareerists planning to enter the civilian medical/health field indicated that they planned to continue their schooling; and 72 percent of those who actually transferred reported having so continued. Many of the men pursuing other kinds of employment also reported having resumed schooling, but the frequency was higher among transferees.

Recognizing the importance of the proper academic credentials, most inservice respondents plan to attend school after their military service is ended. Almost every one of the younger men, and half of the older men, in the survey indicated that they would be taking classes when they became civilians. Their choice of civilian occupation did not appear to affect plans for postservice education, as many inservice transferees and nontransferees plan to go to school.

Actual schooling among out-of-service men after discharge was about half as frequent: a fourth of the careerists and half of the noncareerists who had been out of the service for 2 to 3 years reported that they had taken classes since becoming civilians. The marked difference between inservice and out-of-service respondents with regard to school attendance after discharge is in part a reflection of different times and different populations, and in part the adjustment of plans to reality.

Table 38. Proportion of Respondents Acquiring Additional Education After Discharge

Respondents	Total	Transferees	Nontransferees
Careerists:			
Inservice[a]	56.7	59.6	52.5
Out-of-service[b] ..	25.3	27.5	23.8
Noncareerists:			
Inservice[a]	94.2	96.4	91.8
Out-of-service[b] ..	57.8	72.4	53.6

a/ Plan to acquire additional schooling after release.
b/ Did acquire additional schooling after release.

Fewer of the older veterans pursue further education when they become civilians. Their long years of military experience and the cushion of pension and retirement benefits enable them to find acceptable employment with relatively little additional education. Almost 90 percent of the out-of-service careerists in paramedical jobs felt that their service experience and training provided the necessary qualifications for their civilian medical/health job.

Younger veterans, who had only one tour of duty in the military, are overwhelmingly concerned with obtaining additional education. Their decision to continue in the medical/health field or to go into another type of civilian work seems to have had an impact upon their resolve to attend school. A significantly higher proportion of younger veterans in medical/health jobs enrolled in classes than out-of-service noncareerists who chose jobs in other fields. Of the 23 percent of out-of-service first-termers who obtained medical/health jobs, two-fifths found that their service experience did not adequately qualify them for their positions, and that they needed to go to school or take a correspondence course to compensate for their deficiencies.

Most of the younger veterans returned to school to get a degree, while most of the older veterans were interested in additional training. This was especially true if they had decided in favor of the medical/health field. Nontransferees, on the other hand, were more diverse in the purpose of their schooling and the objective of entering a new field was also important to them -- especially to the careerists -- as well as degrees and additional training (see table 39).

The majority of the noncareerists plan to or did attend school full time, while most careerists were planning or had undertaken part-time studies (see table 40). No significant difference appeared between out-of-service transferees and nontransferees with regard to this aspect of education. However, more inservice careerist transferees expect to study part time, and more inservice noncareerist transferees expect to study full time, than their inservice nontransferee counterparts -- despite the fact that approximately equal proportions of transferees and nontransferees intended to go to school.

Most inservice personnel (more than 60 percent) believe that the GI Bill will pay for most of their educational

Table 39. Primary Purpose of Postservice Civilian Schooling
(in percent)

Respondents	Total	To finish school/ get a degree	To get additional training	To enter a new field	To obtain a license/ certification	Other	Don't know
All respondents:							
Careerists							
Inservice.....	100.0	21.8	45.4	21.8	7.5	3.4	2.3
Out-of-service.	100.0	13.6	46.4	24.3	12.4	3.7	--
Noncareerists							
Inservice.....	100.0	44.4	25.0	20.9	5.2	4.5	1.8
Out-of-service.	100.0	44.1	24.4	23.8	4.3	3.4	--
Transferees:							
Careerists							
Inservice.....	100.0	24.8	49.5	11.0	11.0	--	3.7
Out-of-service.	100.0	21.1	50.0	16.1	7.0	5.8	--
Noncareerists							
Inservice.....	100.0	52.0	18.7	15.9	6.5	6.9	1.8
Out-of-service.	100.0	59.7	24.3	5.1	6.0	4.9	--
Nontransferees:							
Careerists							
Inservice.....	100.0	16.9	38.5	40.0	1.5	3.1	--
Out-of-service.	100.0	7.6	43.5	30.7	16.6	1.5	--
Noncareerists							
Inservice.....	100.0	35.8	32.2	26.5	3.7	1.7	1.7
Out-of-service.	100.0	37.9	24.5	31.3	3.6	2.7	--

Table 40. Full-Time or Part-Time Students After Military Separation[a]

(in percent)

Respondents	Total	Full-time students	Part-time[b] students	Don't know
All respondents:				
Careerists				
Inservice.....	100.0	33.5	64.1	2.4
Out-of-service.....	100.0	32.7	67.3	---
Noncareerists				
Inservice.....	100.0	57.3	42.1	0.6
Out-of-service.....	100.0	53.4	46.6	---
Transferees				
Careerists				
Inservice.....	100.0	26.4	70.8	2.8
Out-of-service.....	100.0	29.1	69.9	---
Noncareerists				
Inservice.....	100.0	65.7	33.7	0.6
Out-of-service.....	100.0	54.0	46.0	---
Nontransferees				
Careerists				
Inservice.....	100.0	45.9	52.5	1.6
Out-of-service.....	100.0	35.5	64.5	---
Noncareerists				
Inservice.....	100.0	47.7	51.8	0.5
Out-of-service.....	100.0	53.2	46.8	---

a/ Includes those who plan to or did attend classes.
b/ Includes correspondence courses.

expenses (see table 41). As the out-of-service respondents indicated, only a third relied mainly on the GI Bill; others resorted to self-financing and to aid from employers, frequently using GI benefits as a supplement. In the 1960s, rising tuition and living costs made GI benefits inadequate for most people. "Men who flocked to colleges in the 1940s got full tuition, books and incidental expenses plus $75.00 a month living expenses." At the present time, a veteran receives "a flat $130 a month if he's single; $155 if he's married; $175 for a wife and child and $10 a month more for each additional child" [47, p. 9]. GI benefits at the present level would only cover the major part of full-time educational expenses in schools with minimal tuition fees. This fact is known to out-of-service respondents, but not, evidently, to men still in the service.

Acceptance of Military Training

Civilian employers are not well informed about the military training, experience or caliber of medically trained veterans. Recent publicity calling attention to the number of corpsmen released annually, their employment in civilian institutions, and their inclusion in special allied medical/health manpower programs has made civilians more aware of the potential these veterans represent, but has left civilians still largely uninformed of their competence. For this reason, little has been done to adapt civilian hiring standards to take into account the special circumstances under which servicemen are qualified for paramedical jobs.

Vocational guidance publications, such as the Health Career Guidebook of the U.S. Department of Labor, suggest desiderata for career preparation at the uppermost levels of civilian hiring standards. Among these recommended paths of medical/health career development, there are suggested some alternative routes of education. Outside of the Federal Civil Service, it is rare indeed to have work experience and training in the Armed Forces recognized as an appropriate or acceptable course to follow in preparing for a medical/health career [48].

A recent study of hospitals in the greater Boston area shows that for most of the 21 paramedical occupations surveyed, hiring standards in the institutions that responded had been in effect over 10 years, despite the fact that workers were in short supply and the job content of a number of occupations had changed. The researchers recommended

Table 41. Source of Financing for Major Part of Postservice Educational Expense

Source	Careerists		Noncareerists	
	Inservice	Out-of-service	Inservice	Out-of-service
Total[a/].....	100.0	100.0	100.0	100.0
Self/wife....	19.8	26.6	28.4	39.3
Relative.....	--	1.7	1.2	2.0
Employer.....	5.4	23.8	0.3	11.9
GI Bill.....	65.9	33.1	61.1	33.7
Loan:				
Government.		--	0.2	--
Private....		--	--	--
Scholarship:				
Government.		1.5	2.7	8.5
Private....		--	1.0	--
Other.....		2.6	1.0	1.5
Don't know...	9.0	10.7	4.3	3.2

a/ Includes only those respondents who are planning to attend or have attended school after military separation.

that "hospitals should reexamine their whole paramedical occupational structure, to determine the job requirements of each occupation" and "should establish hiring-in standards that are relevant to the functions to be performed by the occupation" [49]. Since servicemen view hospitals as the most likely places to find jobs for which they are qualified by their military experience, a revision of hospital hiring standards based on job functions could result in a substantial increase in the number of veterans finding civilian medical/health jobs.

The Federal Civil Service, spearheading the movement to provide employment opportunities for veterans, does recognize some Armed Forces training and experience. To qualify for a paramedical job in the Civil Service, an applicant has to fulfill certain requirements for "general experience" and "specialized experience." General experience for paramedical occupations is usually medical-related work that would give experience in hospital, clinical or laboratory procedures and equipment. Jobs as nursing aides or assistants, and laboratory aides or technicians, are often cited as providing suitable experience. Specialized experience is generally defined as work in the occupation at a particular grade level. For example, a medical radiology technician at the GS-5 level is required to have a year of general experience and 2 years of specialized experience. The general experience for this occupation is defined as training and experience as a practical nurse, nurse's aide, medical technician, etc., and the specialized experience as the operation of diagnostic and/or therapeutic radiographic equipment under the direction of radiologists. The amount of general or specialized experience required varies according to occupation, and increases with grade level within any occupation. Of course, the nature of the general or specialized experience required also varies according to occupational group.

For all of the 12 occupational groups studied but one (the dental hygienist category, for which professional licensing is a prerequisite), either certain military training courses or military service in a related medical specialty can be substituted for part of the general or specialized requirements. Actual recognition of military training and experience ranges from the substitution of specific types of courses or the acceptance of military service for the general or specialized experience requirements, to a general commitment to give "appropriate credit" for Armed Forces education and training (see table 42).

Table 42. Federal Civil Service Qualification Standards for Selected Allied Medical/Health Occupations, 1969: Reference to Military Medical Training and Experience

Civil Service Classification	Reference to military training/experience							
GS number/title	Give appropriate credit	Accept military courses for		Accept military service for		No reference	GS grade range	Salary range[a] (in dollars)
		General experience	Specialized experience	General experience	Specialized experience			
621/Nursing assistant.....					X		2/5	4,360-8,030
636/Rehabilitation therapy assistant.....	X			X			1/6	3,889-8,943
645/Medical technician occupations.....	X						1/12	3,889-17,403
646/Pathology technician occupations.....	X						1/12	3,889-17,403
647/Medical radiology technician occupations...		X	X	X			2/9	4,360-12,119
649/Medical machine technician occupations...	X						1-9	3,889-12,119
661/Pharmacy assistant.....		X	X				2-5	4,360-8,030
667/Orthotist and prosthetist occupations.....				X			3-9	4,917-12,119
681/Dental assistant.....	X						1-5	3,889-8,030
682/Dental hygienist.....						X	4-6	5,522-8,943
683/Dental laboratory technician.....			X				2-9	4,360 12,119
699/Health aid and technician occupations...	X						1-9	3,889-12,119

a/ As of July 1969.

Most paramedical occupations can be entered at the GS-1 level without any experience of any kind. It is not until the GS-2 level that general experience is required, and the GS-4 level that specialized experience in the occupation is required. Nursing assistant positions begin at the GS-2 level with a 6-month general experience requirement. Generally a written examination on the occupation is required at the lower grades.

With the exception of the dental hygienist, education requirements per se are not specified for an occupation. However, education or training can be substituted for all or part of the general and/or specialized experience requirements in most occupations, so that, by implication, the level of education or training necessary at a given grade level is indicated. For example, high school graduation can be substituted for the 6 months' general experience requirement at the GS-2 level in a number of occupations, enabling a graduate without any other experience to enter one grade higher than those who have not graduated. Similarly, college study in related subjects or training courses can be substituted for the general -- and often the specialized -- requirements at certain grade levels of an occupation. The college attended must be accredited, and the training course generally must be approved by the AMA, ADA, or a related professional organization. For example, an AMA-approved course in radiology can be substituted for up to 2 years of specialized experience, the GS-5 requirement for a radiology technician. By contrast, someone with only 6 months' general experience in medical-related work and no specialized experience as a radiology technician would enter at the GS-2 level.

Rating for a grade level in any occupation is primarily based on an evaluation of the education and experience of each individual. Armed Forces training and experience are taken into account in the qualification standards of 12 Civil Service health occupation groups in two ways: either certain military training courses can be substituted for part of the experience requirements of an occupation, or service in a related medical specialty can be so substituted.

On paper, any serviceman has at least a chance of being considered for Federal employment. The crucial factor is whether or not his paramedical experience in the military will be evaluated as a specialized experience for a Civil Service job. The general experience requirements

for Civil Service jobs can usually be fulfilled without difficulty by servicemen who were assigned to the military medical departments. The key to determining the grade level at which a serviceman is hired is the amount of specialized experience he is considered to have. Only in one case do the standards indicate specifically that specialized experience may have been acquired by servicemen on active duty in the Armed Forces.

The qualification standards of six occupational groups indicate that "appropriate credit" will be given for Armed Forces training and experience depending on its "applicability and extent." A wide range of occupations is incorporated into these groups (except for the dental assistant category), each of which requires highly specialized training. However, no attempt has been made to match the Armed Forces training courses and occupational specialties with the relevant Civil Service occupations.

The standards for only one occupation -- nursing assistant -- indicate that specialized experience may have been acquired while the serviceman was on active duty in the Armed Forces. The standards for two occupations -- orthotist/prosthetist, and radiologist technician -- include a statement that general experience requirements may have been gained on active military duty. Another -- rehabilitation therapy assistant -- refers to experience as a medical or hospital corpsman as meeting the general requirements of these positions.

Of the 12 paramedical occupations that are closely related to military occupational specialties for enlisted personnel, the qualification standards of only three -- the radiology technician, the dental laboratory technician and the pharmacy assistant -- contain references to specific Armed Forces courses which may be substituted for the specialized experience requirement. In addition, only two occupations contain references to Armed Forces training which may be substituted for the general experience requirement: the physical therapy aide, and the radiology technician. In contrast, most qualification standards contain quite specific information on the substitution of civilian education. High school courses, courses at accredited colleges, and training programs that can be substituted at the various grade levels are listed for the majority of occupation groups.

Even if it is not stated in the qualification standards, there is, of course, nothing to indicate that military service in a relevant occupation would not be acceptable as specialized or general experience. Nevertheless, the absence of any reference to military service. particularly in relation to specialized requirements, leaves whether it is generally considered suitable experience in doubt.

Licensing and Certification

As the respondents perceive the situation, licensing and certification are not major barriers to obtaining civilian medical/health jobs. Very few consider it a problem either for themselves personally or for veterans in general. A close examination of licensing and certification regulations for medical/health occupations supports this view. It is the servicemen's failure to meet the eligibility requirements for licensure or certification that is the real problem: if they had the approved education and if their work experience in the military were accredited, licensing and certification regulations would be an easily surmountable barrier.

Pay Levels

The men cited the pay levels in civilian medical/health services as a deterrent to transfer more frequently than any other barrier except the formal requirements of education and training. The validity of this perception, in a market sense, depends on the extent to which the pay in medical/health work is less than the men can earn in alternative work available to them, taking into account such nonmonetary satisfactions as interest in medical work, location, status and opportunity for advancement.

In the following sections, the earnings expected by inservice men and the earnings realized by out-of-service men are analyzed in relation to their service assignments and postservice plans and experience.

Careerists

It should be expected that careerists retiring from military service in their late 30s or early 40s, after 18 years or more of experience in medical occupational specialties, would find it to their advantage to pursue careers in

which they could capitalize on their medical experience. Moreover, it should be expected that those who transferred to medical/health occupations in civilian employment would, by virtue of their military medical experience, earn more than those who chose to enter other civilian employment for which they had no obvious preexisting qualifications.

To the extent that the first hypothesis is not supported by experience, it suggests that in some ways that terms of transfer are not favorable. To the extent that the second hypothesis is not supported, it suggests that the civilian medical/health opportunities open to these veterans are not as well paid as other occupations open to them, and that the incidence of transfer might be increased if earnings opportunities were more favorable. Analysis of the responses of men released from military medical occupational specialties suggests that in some degree both conditions may exist. It has been shown that under half of these men do, in fact, transfer to civilian medical/health employment. In this section the evidence on earnings, actual and anticipated, of these men is examined in relation to the second hypothesis.

As perceived by careerists about to be released, who had not made their living in civilian employment in about 20 years, there was a wide range of earnings expectations. But on the average, medical/health occupations appeared to offer more attractive earnings prospects to them than alternative employment possibilities (see table 43). This was true of men from all three services. The Army men, on the average, expected (median) earnings of about $6,260; the Navy men, $7,820; the Air Force men, $7,166. For those anticipating transfer to civilian medical/health work, the (median) expectations were higher: about $6,500, $8,000, and $7,300, respectively. As it turned out, the expectations were not at all unrealistic: the average pay of all out-of-service careerists who entered medical/health work was $7,979, about 5 percent higher than expectations. The out-of-service Navy careerists earned about 15 percent more than their expectations, and the Army men a little more and the Air Force men a little less than expectations.

Earnings in the range of $6,500-$8,000 are not at all inconsistent with the labor market of 1968. In 1968, the average earning per employee of all employment covered by Social Security was a little under $6,000 [50], but this

Table 43. Median Annual Earnings of Careerists in Civilian Employment

(in dollars)

Careerists	Total	Army	Navy	Air Force
All inservice careerists[a].....	7,269	6,260	7,820	7,166
Transferees.....	7,565	6,500	8,038	7,333
Nontransferees....	6,723	6,000	7,334	6,900
All out-of-service careerists[b].....	7,514	6,961	8,333	7,000
Transferees.....	7,979	6,600	9,333	7,000
Nontransferees....	7,233	7,230	7,533	7,000

a/ Expected earnings, 1968-69.
b/ Realized earnings, 1967-68.

includes part-time and full-time employees at all skill levels and at all ages. We would expect their earnings to be well above the average. Neither the expectations nor the reported earnings of these careerists appear at all implausible.

There may be a tendency of retired service personnel to lower their supply price by virtue of their receiving retirement pay from the services. Depending on length of service involved and the grades at which the men retired, retirement pay would be 50 percent or more of $5,000-$8,500 a year. These men are also entitled to medical care, commissary privileges, and other perquisites. (Some of the men complained that employers try to hire them more cheaply on this account, but this may be due to the fact that the men were not prepared to find pay scales as low as those in the medical/health industry.) The sum of the earnings cited in the survey and retirement pay (say, $9,000-$12,000) would put them at about the third quartile of the earnings range, which is about what their lifestyle requires. Thus, it is doubtful that some of them would enter medical/health work at all if it were not for the retirement pay.

Median earnings were generally higher for career transferees than for men who entered or planned to enter other fields of employment. Inservice careerists planning to transfer expected to earn more (by about 10 percent) than those who did not plan to transfer; this difference was significant in all the services. Earnings realized by careerist transferees 2 or 3 years out of the service were higher on the average (by about 10 percent) than earnings of careerists employed in other fields, but not uniformly among the services. The Army transferees actually earned less than nontransferees.

Two other conspicuous differences between transferees and nontransferees might be related to the differences in their earnings: (1) although about half of all groups were high school graduates, the transferee group had relatively fewer with less than 12 years of schooling, and relatively more with 2 years or more of college; and (2) relatively more transferees than nontransferees reported primary military assignments in indirect patient care.

Moreover, the transferees were rather quicker in seeing similarities between their military experience and civilian opportunities, rather more mobile in search of

medical/health opportunities, and rather less conscious of obstacles. These differences suggest that perhaps the transferees were more interested, more highly motivated, and rather more determined in seeking out medical/health jobs that were consistent both with their capabilities and with their earnings requirements.

Among careerist transferees, Army men recorded the lowest median earnings expectations while they were still in the service and the lowest earnings after they were out; Navy men recorded the highest in both instances. The median expectations of Navy inservice men exceeded those of the Army men by 25 percent, and those of the Air Force men by 10 percent. The median realized earnings of Navy men out of the service exceeded those of the Army by 40 percent, and those of the Air Force by 33 percent. Were it not for the relatively high earnings of Navy transferees, the earnings of transferees would have been lower than those of nontransferees. Yet the rate of transfer was about the same among Army men as among Navy men, and, if anything, lower among the Air Force men.

Although careerist transferees as a group are both better educated and better paid than nontransferees, interservice differences in education do not explain differences in earnings, either in prospect or in fact. The Navy inservice transferees, with the highest earnings expectations, were no better educated than the Army transferees, with the lowest. The Air Force inservice transferees had a proportion of men with 14 years of schooling (28 percent), twice as high as either of the other services. Among out-of-service transferees, the Navy men were barely better educated than the Army men, whose earnings averaged only 70 percent as much; and again, in educational attainment the Air Force men far surpassed either.

However, interservice differences in pay of transferees are correlated inversely with differences in type of military medical experience and, for out-of-service men, with type of civilian job. From table 44 it would appear that earnings, both prospective and actual, were lower for careerist transferees whose primary military assignments were in direct patient care than for those who were primarily assigned to indirect care.

This inference is supported by the differences among the services in the place of employment of out-of-service careerist transferees. Of the Army men, 72 percent were

Table 44. Careerist Transferees in Direct Care

Service branch	Inservice		Out-of-service		
	Median earnings	Percent in direct care	Median earnings	Percent in direct care	
				Military	Civilian
Army.....	$6,500	69	$6,600	67	48
Navy.....	8,038	38	9,333	34	19
Air Force..	7,333	59	7,000	47	37

working in hospitals and 14 percent in private laboratories. Of the Navy men, only 21 percent were working in hospitals, but 24 percent worked in private laboratories, 11 percent for medical supply houses, and 9 percent in community health. Of the Air Force men, 66 percent worked in hospitals, with the remainder scattered in a variety of jobs.

Thus it would appear that Army careerists, when they transferred, entered predominantly into hospital service for which their rather specialized military experience in patient care equipped them. But hospitals pay poorly, and surgical/medical occupations in hospitals are those in which formal requirements limit the opportunities for veterans of the military. Thus the Army careerist transferees earned less not only than their Navy and Air Force counterparts, but less than their fellow Army medical careerists who did not transfer to the civilian medical/health field.

The Navy careerist medical men, on the other hand, took advantage of their more generalized medical training and experience, including administrative experience, to enter to a greater extent civilian medical/health fields in which formal requirements were less of a barrier to the pursuit of a career, and where pay levels were higher. The Navy careerists who transferred earned more than any other group in the survey.

The same distinctions are evident in the choice of civilian medical/health occupations. The Army men, with their greater specialization and exposure to direct patient

care, were more likely to take jobs in nursing occupations than Navy and Air Force personnel, who were more frequently found in technical and administrative positions, in industrial and community health, and in other indirect care occupations.

It does not necessarily follow that the Navy or Air Force careerists are better equipped or more "valuable" than the Army men. It appears that they are more acceptable or more sought after in a variety of indirect care occupations because of their broader preparation, and that they are better paid. The obverse of this is that the Army experience leads more Army men to transfer to hospital work, and that they are less well paid. This suggests that it will require higher earning prospects, either through higher pay rates or through access to better jobs, to increase the incidence of transfer to direct patient care occupations, where shortages are most acute.

Noncareerists

With respect to the noncareerists, the hypotheses are different. These men are young, and their one-term medical experience does not establish a presumption of career competence or the earnings such competence commands. Thus they have less motivation to pursue a medical career. At the same time, being younger than their career counterparts, they are better educated and better able to pursue further education. Consequently, they have a wider range of occupational options, and medical/health occupations must be relatively more attractive to compete for them than to compete for careerists.

The earnings expectations of men about to be released in 1968 and 1969 reflect their youth (three-fourths under 25) and their high levels of education (three-fifths beyond high school). Their median earnings expectations were generally lower than those of careerists, and not unreasonable in the context of the 1968-69 labor market (see table 45). Those who planned to enter the medical/health field expected 20 percent more than those who did not, and only a little less than the inservice careerist transferees. Their expectations were about equal to grade GS-7 in the Federal Civil Service at that time (for which, incidentally, most of these men could not qualify). The expectations of nontransferees were about equal to the average factory wages then prevailing.

Table 45. Median Annual Earnings of Noncareerists in Civilian Employment

(in dollars)

Noncareerists	Total	Army	Navy	Air Force
All inservice noncareerists[a/]	6,726	6,840	5,850	6,749
Transferees.....	7,435	7,666	5,750	7,000
Nontransferees....	6,196	6,176	6,000	6,538
All out-of-service noncareerists[b/]	6,010	6,100	5,743	5,769
Transferees.....	6,506	7,167	4,875	5,667
Nontransferees....	5,911	5,912	5,964	5,800

a/ Expected earnings, 1968-69.
b/ Realized earnings, 1967-68.

The difference in earnings expectations between transferees and nontransferees is almost entirely the result of the very wide difference between the Army men who planned to enter the civilian medical/health field and those planning other employment -- a gap of $1,500, or about 25 percent. The Air Force transferees expected only a little more than the nontransferees; and among the Navy men, the expectations of the nontransferees were a little higher.

The experience of the out-of-service men after 2 or 3 years in the labor market confirms the expectations in the main. On the average, the transferees reported higher earnings than the nontransferees, the difference being greatest among Army men. The Navy transferees did in fact earn less than the nontransferees, by a considerable margin. The difference between transferees and nontransferees from the Air Force was small, and favored the latter.

The relatively high earnings (both prospective and actual) of the Army noncareerist transferees is the result of a number of circumstances which tell us a good deal about the factors underlying the transfer of noncareerists to civilian medical/health employment. This particular cohort of Army personnel, mostly conscripts (or volunteers facing conscription) after the Vietnam buildup, are extraordinarily well educated (many after student deferments) and therefore a little older; for first-termers, they include an unusually high proportion of men experienced in indirect patient care; their training and experience, though not extensive, is specialized; they transferred predominantly to employment other than in hospitals and to occupations other than nursing. The elements of the relatively high earnings of Army noncareerist transferees can be inferred from the profile of transfer (see table 46).

Relatively high pay combined with a high educational level, a preponderance of employment in places other than hospitals and in occupations other than nursing, and a relatively low rate of transfer, suggests that those few Army noncareerists who were able to find medical/health jobs commensurate with their abilities were able to command relatively high pay. This was possible only because most of them found employment outside of hospitals, and in indirect care.

The earnings realized by the out-of-service Army transferees was only 7 percent below the expectations of the in-service men, but only 22 percent of them actually did transfer.

Table 46. Profile of Noncareerist Transfer
(in percent)

Characteristic	Transferees			Nontransferees		
	Army	Navy	Air Force	Army	Navy	Air Force
Inservice noncareerists:						
Over 25 years old.....	34	16	21	16	14	17
With 2 or more years of college....	60	13	36	32	14	23
In indirect care in the military...	42	24	47	20	30	28
Transferred to other than hospitals	34	53	42	n.a.	n.a.	n.a.
Transferred to other than nursing..	92	74	85	n.a.	n.a.	n.a.
Transfer.....	50	59	53	n.a.	n.a.	n.a.
Out-of-service noncareerists:						
Over 25 years old.....	77	46	68	70	34	47
With 2 or more years of college....	32	25	29	15	18	21
In indirect care in the military...	36	12	50	14	4	26
Transferred to other than hospitals	77	71	29	n.a.	n.a.	n.a.
Transferred to other than nursing..	95	100	75	n.a.	n.a.	n.a.
Transfer.....	22	23	28	n.a.	n.a.	n.a.

In other words, civilian medical/health employment was able to attract a few of the ablest, on their own terms, in better paying jobs not directly involving care of patients. The relatively high earnings reported by these few men suggest not how well but how poorly medical/health employment as a whole competes in the market for these extraordinarily well-endowed young veterans.

The responses and experiences of these cohorts of Army men point up rather vividly the inability of the civilian medical/health system to adapt its requirements and practices to attract unusually good men with a demonstrated interest and excellent (if rather brief) training and experience. But these cohorts are the product of the unusual circumstances of the Vietnam war; and with the change in Selective Service practices, men like these will not be coming out of the Army much after 1973 or 1974. The Navy and Air Force men in the sample are perhaps more typical of the potential supplv after a few years, and these did not fare so well. The Navy transferees, in particular, reported earnings rather low by standards of the current market. They were not as well educated as the Army transferees; their training was more general, and their experience more in direct patient care. Like the Army men, they tended to avoid hospitals and nursing occupations, and found work mainly as laboratory aides and technicians. Apparently, their education and military training restricted them largely to entry jobs. The Air Force transferees, on the other hand, while they earned more than Navy men, more often found work in hospitals and in nursing occupations.

The general level of expectations and the general "supply price" can be inferred from the responses of the much more numerous nontransferees. These are highly uniform: a little above $6,000 for inservice expectations and a little under $6,000 for out-of-service experience. Leaving aside the unusual Army cohorts, the nontransferees' earnings were generally higher than those of the transferees. The distributions are very similar among the services, tending toward normal (see table 47).

Transferee sample sizes do not permit detailed comparisons by service, industry and occupation. The concentration of a relatively small number of Army transferees above $7,000 is apparent. But considering that the rates of transfer are about the same for the Army, above the general supply price; Air Force, at the supply price; and

Table 47. Percent Distribution of Civilian Earnings of Out-of-Service Noncareerists

Earnings	Nontransferees			Transferees
	Army	Navy	Air Force	All services
Under $3,000..	11	8	16	13
$3,000-$4,999.	17	20	18	11
$5,000-$6,999.	48	45	40	35
$7,000-$8,999.	16	20	20	27
Over $9,000...	8	6	6	15

Navy, well below it, it does not appear that pay alone is either sufficient incentive to overcome the many obstacles to transfer or a sufficient deterrent to account for the low transfer rates. It appears that to increase the flow of noncareerists into civilian medical/health employment, we must look to pay in combination with easier entry to suitable jobs and opportunities for advancement.

The noncareerists in this population (and, indeed, in every cohort of medical occupational specialist to be released in the foreseeable future) greatly outnumber the careerists. They represent a more significant source of personnel in civilian medical/health occupations. Their medical capabilities are much less developed, but the obverse of this is that they have a priori less reason to pursue civilian medical/health work unless it can compete with the other possibilities for which their youth and superior education qualify them. Thus we would expect the salary scales to be more a deterrent to transfer among noncareerists than among careerist veterans. To attract the former, not only earnings but prospects for advancement must be more favorable.

Other Problems

All other problems appeared to be of negligible importance to the men interviewed. Locating a job was of concern to some, particularly the careerists still in the service, but was not considered a serious obstacle for veterans in general. Conditions of employment, other than pay, were mentioned infrequently. Neither the female image of medical/health workers nor dislike for a woman boss seemed significant to our respondents.

The problems most often discussed by all groups were three: (1) failure of civilian employers to accept veterans' military training or experience, (2) education requirements, and (3) low pay levels. In order to overcome the difficulties facing veterans, the men suggested that both civilian institutions and the military modify their practices.

Changes in the Civilian Medical/Health Field

Respondents were asked what they believed could be done in the civilian sector to make medical and health jobs more attractive to veterans. The changes most frequently mentioned relate to pay, the acceptance of military training and experience, and the flow of information about civilian job opportunities. The men's recommendations are largely designed to remedy what they perceive to be the major hurdles they face. However, they go beyond this to make suggestions that would not only eliminate barriers, but facilitate transference from military to civilian medical/health work.

About half of the men interviewed believed that higher pay scales would attract more veterans into civilian medical/health jobs. When they referred to pay, they had in mind fringe benefits as well as salary. Some men specified vacation pay, sick leave, medical and insurance coverage, or retirement plans. Others referred to them generally as "the same benefits as in industry" or "the same benefits as union jobs which pay so much more." Receiving the benefits they were accustomed to getting in the military was strong inducement.

Several careerist respondents thought that the salaries should be "standardized." One said, talking of civilian employers, "They only give the difference between the pension and the scale paid for the title; they will not pay the same to a retired service man as a non-service man." Another proposed that his Army experience count toward seniority and be reflected in the amount of his pay and his fringe benefits; a like-minded Air Force careerist thought that he should be able to begin at his military skill level and not have to start at the bottom and work his way up again.

One Air Force physical therapy technician expanded on the importance of higher pay by explaining, "If a discharged career man is not living near a military base, he cannot

avail himself of the medical services and the buying facilities. Therefore, they ought to be compensated for this.... Men with families stay near the bases. I have a job offered me right now -- but it is too far from a military base. We're trying to work out a basic plan-salary for myself as well as for those who will follow me. If I agree to work for a too low salary, it will affect all the men in this field who come after me. The hospitals aren't willing to pay for our knowledge; they want degrees and registration for better pay."

Respondents in all three services, in and out of the military, first-termers and careerists, and those who had decided in favor of a civilian medical/health job as well as those who had chosen other civilian fields, said that higher pay would influence more veterans to accept civilian medical/health jobs.

In discussing other changes that would encourage more veterans to work in civilian medical/health jobs, approximately a fourth of the respondents referred to civilian acceptance of military training and experience. The men indicated that civilians don't understand the extent of their military medical training and experience, nor do employers appreciate or recognize the skills acquired in military service: "Someone should tell them how well qualified veterans are." As one aspect of an information program for civilians, some men suggested that the services provide each separatee a resume with details of his job qualifications." "A corpsman should be able to have," said a Navy veteran in a civilian health job, "a record of achievement to bring with him when he applies for a job, and a list of qualifications. Agencies should be set up to verify corpsmen's qualifications. Thus, corpsmen would be more accepted in hospital employment."

While urging more general acceptance of servicemen's qualifications, respondents stressed that on-the-job training should be offered in the areas in which their military training had been inadequate. "Further training by civilian employers," explained one respondent, "would encourage more to enter the medical field. This way they could learn the trade while working and not have to take time out to go to school." Another said, "Hospitals should have on-the-job training and the government should subsidize it." In the opinion of one man, "There ought to be continuous on-the-job training at the place of employment."

Several careerists referred to Project Transition as a means by which enlisted men could learn to adapt their military medical experiences to the needs of civilian employers. Said one, "Under Project Transition, a man can apply for a job while he's in service and he's trained for this job. GM is doing this and so is Montgomery Ward." The opportunity to be trained for a civilian job was especially attractive. As one man viewed the situation, "It would be advantageous to have something like Project Transition where you can get on-the-job training in a civilian job for a couple of months to see if you can handle the job."

Wider civilian acceptance was especially urged by veterans who had had only one tour of active duty. Men who had 20 years or more of service but took non-medical/health jobs as civilians also stressed the need for such a change. In three out of the four groups surveyed, Navy and Air Force men seemed more emphatic than Army men that changes be made to expand civilian recognition of their military job experience. The one exception was out-of-service noncareerists, where more Army men suggested changes in civilian acceptance than did Navy or Air Force men.

One in four first-termers who were still in the service suggested that there be programs for veterans informing them of civilian job opportunities and publicizing civilian jobs. Among the careerists, about one in six respondents considered such information programs likely to increase the number of veterans who transfer to civilian medical/health jobs. What the men had in mind was a source of information they could use before they left the service as well as after their discharge. One young serviceman suggested having "an agency to keep servicemen informed of jobs -- even a year before discharge -- and to get hospitals to list the type of work available." Another first-termer who entered the service as a registered pharmacist thought that "Uncle Sam should let civilian agencies recruit men for companies just as the Service does. Let them come to the bases and present what's available."

Career respondents express their frustration about their lack of knowledge of the civilian sector, commenting that "after 26 years in service, I'm scared of getting out. I thought there were jobs to be had, but it's not so." This remark was made by a man who was a chief social worker specialist in the Army and hoped to find a civilian job in mental health. Another veteran plaintively explained that

he would probably have stayed in the medical field, if he had had some help in finding a job when he got out [51].

A small group of respondents considered that modification of licensing and certification requirements would result in more veterans working in the medical/health field. Concern was expressed over the variation in requirements between states. "[I] don't know," said one Air Force careerist, "what state would take us on our military training and let us take the necessary tests to get a job; state regulations vary so." One respondent specifically called for uniform state laws, "so we would be acceptable in any state." An Army inservice careerist interested in a civilian career in environmental health commented on the need for the states to coordinate their requirements. "Some states," he said, "will recognize our experience, like New Jersey. But in my state, Pennsylvania, you need four years of college for this Public Health Service work. All states should give a man a chance to work in public health, especially with as much experience as I have."

Another careerist thought that the men should be allowed "to take state boards without going to additional schooling if they're already qualified by service training." Another suggested that the states appraise the military training and determine if "it's sufficient for licensing." A careerist who was an operating room technician while in the Navy and is teaching in grammar school in Portland, Oregon, volunteered the idea that there be a 6-month trial period on the job, and then, "if the men work out, they should be certified."

Despite the fact that educational requirements were a personal hurdle mentioned by significant numbers of men, relatively few thought that these education requirements should be changed. Several proposed that the colleges grant academic credit for the training received while on active duty. More urged that the military improve their training so that the colleges would grant transfer credits for inservice coursework. One man, an inservice first-termer, thinking along the lines of vocational education programs, offered the proposal that there be a "school after service to further learning in one trade, one skill, specific rather than all the different courses you'd need for a degree."

The men approached the difficulty of meeting education requirements, proposing alternative routes that might be

opened to them. Improved military training that would meet civilian standards was frequently mentioned when they recommended changes in the military system. That "no military schools provided credits or diplomas to offer civilian employers" caused a problem. And in the civilian sector, some men suggested combining schooling and work. "Offer education and part-time jobs so that the men will be able to work while they're getting the required education."

Less than 10 percent of our respondents considered that changes in the job content or the type of work would expand the number of transferees. Comments were made about the limited responsibility in civilian life. The men felt that rules should be changed so that they could assist the doctor as they do in the military "without legal complications." The men urged changes be instituted so that they would have more options than jobs as aides or orderlies. "Give them a title," says one man, "something higher than someone with no experience." Another urges, "Get rid of the term, aide or orderly, which is associated with no education. Call them medical technicians, like in service." Suggestions for changes in the type of work frequently overlap recommendations for changes in other areas, but they focus on the need for job status and responsibility to attract men into civilian medical/health work.

Summary

An analysis of job descriptions reveals that civilian and military paramedical positions are similar. Although veterans are aware that comparable positions exist in the civilian sector, especially in hospitals, civilian employers are apparently not well informed of the valuable potential supply of manpower that enlisted personnel represent. The major difficulties encountered by veterans in transferring to civilian medical/health jobs are low pay scales and hiring standards, especially with regard to educational requirements and lack of recognition of military training and experience. An analysis of actual and expected earnings reveals that it is not pay alone, but pay combined with other factors -- e.g., the type of work, the congruity of the job with the person's qualifications, and the possibilities for career advancement -- that is closely associated with transference. Licensing and certification were not viewed as a problem *per se*, but as another aspect of education and experience requirements. To facilitate transference, respondents also suggested that more information be provided to veterans about civilian job opportunities and to civilians about veterans' qualifications.

In fact, programs have been initiated that are designed to accomplish some of the changes recommended by the men interviewed.

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VI. PROGRAMS DESIGNED TO FACILITATE TRANSFERENCE

Introduction

In the past decade, concern over the growing shortage of medical manpower has manifested itself in many new programs designed to attract entrants into the civilian medical/health field. A few of these programs are directed specifically at medically trained veterans, but most are oriented toward young people selecting a career, or toward qualified retired persons considering reentry into the labor market.

The interests and values of the veteran parallel those of his peers in the society as a whole. The appeals aimed at other groups extolling careers in the medical/health service industry also influence the veteran. All efforts that make a career in a medical/health occupation more widely known, more attainable, or more attractive have a salutary effect on transference.

Preservice Career Interest

Relatively few of our respondents had a preservice career interest in the medical/health field. However, if a man joins the service with a career interest in medicine, he is more likely to transfer as a civilian to a medical/health job. Preservice career interests for the careerist who has spent 20 or more years in the military have a negligible, though positive, influence on his choice of a civilian career. But for the younger respondents, with only 4 years or less in the military, the decision to work as a veteran in a civilian medical/health job is highly correlated with his interest in such a career before he joined the service (see table 48).

Table 48. Preservice Career Interest and its Impact on Transference

(in percent)

Preservice interest	Careerists		Noncareerists	
	Inservice	Out-of-service	Inservice	Out-of-service
Particular career:				
All respondents...	25.2	22.5	56.0	41.0
Transferees.....	25.1	25.4	63.1	51.0
Nontransferees...	25.4	20.5	48.3	38.1
Civilian medical/ health field:				
All respondents...	13.4	12.3	29.1	19.4
Transferees.....	18.0	15.3	48.0	42.3
Nontransferees...	6.6	10.4	8.7	12.7
Other civilian fields:				
All respondents...	11.8	10.1	26.8	21.6
Transferees.....	7.1	10.1	15.1	8.7
Nontransferees...	18.8	10.1	39.5	25.4

Interest in medical/health careers is greater among young people assigned to military medical departments today than it was 20 years ago. The preservice career choice of substantially more than half of the respondents who expressed a choice was determined by a general interest in the field. Clearly, then, counseling services and vocational information provided by high schools, medical societies, professional associations, and Government agencies do have an important role to play in the transference of the younger veterans.

Project Remed

Project Remed is a Federal Government program that focuses on assisting the veteran in transferring the medical/health skills he acquired in the military to a civilian job [52]. Initiated in 1967, its name is an acronym for "recruit, retrain or reemploy medics." Housed in the Department of Health, Education and Welfare, Project Remed operates through the cooperation of the Department of Labor, the Department of Defense, and the Veterans Administration. As part of his exit papers at a separation center, a medically trained military man fills out a form giving his military occupation and experience. This form is sent to the United States Employment Service office nearest his civilian address. It is intended that the man contact his local USES office when he returns home. USES is charged with the responsibility of providing vocational guidance -- either referring the veteran to job openings or informing him of educational opportunities [53]. State and local educational institutions, professional organizations, hospitals, and other institutions employing paramedical personnel have been urged to inform USES about job vacancies and course offerings. The Veterans Administration is both a source of information on the GI Bill and other benefits, and a source of employment in VA hospitals.

Since the out-of-service respondents in the medical manpower survey were separated from active duty in 1965, 1966 and 1967, the initial period of job adjustment had passed for most of them before Project Remed began. Still, overwhelming numbers of the men interviewed -- more than 90 percent -- thought the objectives of Project Remed were worthwhile. Not all of them were personally interested in participating in such a program; about one in eight indicated some ambivalence. But the majority of respondents still in the service, especially those with plans to enter the civilian medical/health field, indicated strong interest. And

a substantial proportion of those out of the service thought they would be interested in participating.

Table 49. Respondents Interested in Participating in Project Remed

(in percent)

Respondents	Total	Transferees	Nontransferees
Inservice:			
Careerists.....	66.2	78.7	47.5
Noncareerists.....	53.5	65.6	40.5
Out-of-service:			
Careerists.....	54.7	60.9	50.5
Noncareerists.....	38.5	42.3	37.3

About 40 to 50 percent of those who decided against a job in the civilian medical/health field said that they were interested in Project Remed. This indicates that there are potentially additional men who might be attracted to medical/health occupations.

Eighty percent or more of the respondents in each group had never heard of any Government program or legislation for training workers in the medical/health field, despite the fact that the Government is spending hundreds of millions of dollars in such activity. Only 5 percent of the inservice respondents reported that they planned to participate in such Government programs.

The Duke University Physician's Assistant Program

In recent years, there has been a proliferation of innovative career programs, some especially designed to attract medically trained veterans into civilian medical/health careers. A variety of experimental efforts has the common goal of alleviating the shortage of doctors by extending their productivity through the use of qualified assistants.

One such effort is the Duke University Physician's Assistant Program, a 2-year course of study, which deliberately selected veterans because of their previous experience in the medical/health field while in the service. Interest was so keen when the program began in 1965 that 600 men applied the first year, although the first class was limited to four students. This year, when only 40 were selected, Duke received 3,500 inquiries and 600 applications. To be accepted, applicants are required to be high school graduates with a minimum of two science courses, and at least one year of work experience in direct patient care. Although a few applicants with only civilian health experience are accepted, medically trained servicemen comprise about 80 percent of the student body.

In the 5 years the program has been in operation, all aspects of it have been studied and evaluated, and revisions have been made. Selection procedures and criteria have been altered, and curriculum changes have been made to provide greater depth in the program's didactic phase and wider scope to clinical experience. The job functions of the physician's assistant are carefully circumscribed so that the assistant learns to work under the immediate supervision of an employing physician.

Upon completion of their 2 years of study, graduates are certified by the Duke University Medical Center. Neither Duke University itself nor the medical profession have recognized the physician's assistant by granting him a degree or professional certification. To date, there has been no problem in placing the small number of graduates; however, plans are under way to widen the scope of the Physician's Assistant Program to include various medical specialties, and to boost the number of participants to 100 by 1971. The expanded program, to be fully effective, must achieve academic accreditation and professional and public acceptance of the new career as a profession.

The MEDEX Demonstration Project

One interesting variant of the "physician's assistant" type of new career programs is the MEDEX demonstration project, sponsored jointly by the School of Medicine of the University of Washington and the Washington State Medical Association. Supported by funds provided by the U.S. Public Health Service, the specific objective of this new program

is to use former military medical personnel to increase the productivity of the doctor and thus to help alleviate the shortage of physicians in the State of Washington, particularly in rural counties. The Washington State Medical Association, the Washington State Medical Education and Research Foundation and a host of rural doctors have endorsed the program. In 1969, 15 veterans with considerable medical experience in the military were carefully selected to undergo an 11-week university training course, followed by a year of individualized instruction in a physician's office. Interest was keen among veterans, and 80 applications were received for the 15 openings.

It is intended that the physician-preceptor hire the MEDEX at the completion of the year's training. Monthly seminars held during the period of on-the-job training are designed to supplement the learning acquired by the MEDEX. The questions of legal status and insurance coverage, important to health practitioners because of malpractice suits, are still under consideration. The program is too new to be evaluated: the first MEDEX group will not complete the preceptorship phase until September 1970.

Orthopedic Assistant Pilot Project

Another pilot project, begun at the Pacific Medical Center of San Francisco, California in August 1966, is designed to train individuals who have had training as orthopedic technicians in the service as assistants to orthopedic surgeons.

Originally, a training program of 4 months was planned, with two students enrolled each semester at the start. The objective was to round out the intensive training and experience the men had received in the military. Early in the course of the project, it became evident that more careful candidate selection criteria had to be formulated, and that there were difficulties in integrating the servicemen into the civilian hospital situation. Among the changes instituted in 1967 was a lengthening of the training period to 8 months, which permitted a curriculum of greater depth and scope.

In evaluating the program and explaining the revisions made, the Pacific Medical Center's Dr. Richard Schneider

indicated that "the type of program that we were running was not turning out a satisfactory assistant or what we had envisioned as being a satisfactory member of the allied health profession. This was partially based on our inability to adequately select men for the program and also [on] the rather fragmentary curriculum in a private hospital where all members of the faculty were primarily engaged in doing something else and only secondarily engaged in training the students" [54]. At the conclusion of the pilot phase in June 1968, the project was redesigned into a 2-year program affiliated with the California State Junior College System. The composition of the student body is no longer limited to experienced ex-servicemen.

The emergence of a new medical/health professional, the physician's assistant, is one of the most promising developments yet in meeting the need for health manpower. Physician's assistant programs are mushrooming. In July 1969, there were at least 30 programs of this type, in operation or in the planning stages, throughout the country. There are considerable variations in the type of training provided, the size of the student body, course duration, and sponsoring agency. Some, like the Duke University and MEDEX programs already described, seek out former military medical personnel. A few, like the physician's assistant program at Wake Forest University, accept qualified applicants in general, but give as much as 2 years of college credit for training and experience in the military. Several programs are pilot projects. Some will surely fall by the wayside, while others will be altered considerably. Programs of this type which recruit ex-servicemen are described in table 50.

Other Approaches

Other approaches offer more immediate returns in increasing the transference of veterans to civilian medical/health careers. The involvement of local medical societies in recruiting veterans can bring quick results because of their close contact with hospitals and other medical facilities. The Santa Clara County (California) Medical Society is acting as a clearinghouse in evaluating veterans' abilities, facilitating job training and assisting the men in locating jobs. A group of Philadelphia hospitals and colleges is sending recruiters to military installations in the area to attract servicemen into paramedical careers.

Table 50. Selected Physician Assistant and Related Programs, July 1969

Sponsor	Program	Specialty	No. per class	Duration	Status
Alderson-Broadus Col., Philippi, W. Va.	Physician assistant	General practice	25-36	4 years, B.S.	Started 9/68
Bowman Gray School of Medicine, Winston-Salem, N.C.	Physician assistant	Pediatrics, neurology, ob.-gyn., family practice, surgery	Unknown	2 years, B.S.	Starts 9/70
Cleveland Clinic Hospital, Ohio	Corpsman	Hospital and institutional organizations	10-15	1 year	In operation 6 months
Duke U., Durham, N.C.	Physician assistant	General practice and institutional	15	2 years, P.A. certificate	5 years
Emory U., Grady Memorial Hospital, Atlanta, Georgia	Medical specialist	Anesthesiology	6	2 years of on-the-job training	Started 7/68
Federal Prisons Program, Springfield, Mo.	Medical technical assistant, Bureau of Prisons	General practice	10-15	1 year	Introduced in 1930; formal since 7/68
Marshfield Clinic, Marshfield, Wisc.	Physician assistant	Clinical in: diabetes, oncology, gastroenterology, pediatrics, opthamology, neurosurgery	1	Unknown	Starts 1970
Marshfield Clinic, Marshfield, Wisc.	Physician assistant surgical	Surgery	1	1 year	2 years
Massachusetts General Hospital	Surgical assistant	Surgery	Unknown	Unknown	In operation 1 year
PHS Hospital, Staten Island, N.Y.	Orthopedic assistant	Orthopedics	30-60	A.A.S. degree from Community College	Starts 1970
Santa Clara Medical Society - Given at Foothill Jr. Col.	Orthopedic assistant	Orthopedics	15	2-year course for AA cert.	Starts fall, 1970
Santa Clara Medical Society	Pediatric assistant	Pediatrics	15*	2-year course for AA cert.	Starts fall, 1970

continued--

Table 50. Selected Physician Assistant and Related Programs, July 1969 continued--

Sponsor	Program	Specialty	No. per class	Duration	Status
U. of Seattle, Seattle, Washington	MEDEX	General practice or specialty	10	3-month training, 12-month preceptorship	First class completed training September 1969
Washington Hospital Center, Washington, D.C.	Cardiovascular technician	Cardiology	6	4 months	Unkown

Source: [55]

The Medical Laboratory Technician Program

To attract veterans to medical/health careers, opportunities must be made available both for jobs above the entry level and for career advancement. The National Committee for Careers in Medical Technology (under the auspices of the American Society of Medical Technologists, the American Society of Clinical Pathologists and the College of American Pathologists), with support from the Public Health Service, has developed the new position of medical laboratory technician.

With this new job level, the field of medical technology has a career ladder with three steps: (1) certified laboratory assistant, requiring high school graduation plus a year of training; (2) medical laboratory technician with 2 years of post-high school training -- i.e., an associate degree or its equivalent; and (3) registered medical technologist, with 3 years of college-level education, including science courses and a year of clinical training; in 1971, a baccalaureate degree will be added to the requirements. The American Society for Clinical Pathologists has worked with the American Association of Junior Colleges to develop a 2-year course of study to prepare medical technicians.

Besides making a career in medical technology more attractive by extending vertical job mobility, the National Committee on Careers in Medical Technology has facilitated veteran transference to civilian laboratories by crediting their military training and experience. Beginning in November 1969, veterans who had had at least 12 months of military medical laboratory training and 2 years of college were eligible for the certification exam as a laboratory technician. Prior to that, men who had completed the advanced medical laboratory courses in the military could qualify only for the entry level, certified laboratory assistant (CLA).

Another significant proposal by the National Committee for Careers in Medical Technology is the development of an equivalency examination. It is proposed that the equivalency examination be used by experienced military men to meet the educational requirements for the new level of laboratory technicians. In effect, the value of their military training and experience would be accredited to qualify them as medical laboratory technicians if they passed the equivalency exam.

Action by State Licensing Agencies

A few state licensing agencies have also taken action to increase the crossover of medically trained enlisted servicemen. In 1968, the New York State Board of Nursing Examiners ruled that "graduates of four Military Corpsmen Schools located outside of New York State and non-accredited by either their domicile state or New York State will be permitted to take the R.N. examination without further study" [56, p. 5]. In California, too, the legislature has changed the Nursing Act so that certain ex-servicemen with military medical/health training, by virtue of their experience or education, are eligible to take the State Nursing Licensing Examination. Such changes in licensure laws, especially in the field of nursing, can considerably increase the number of veterans who transfer to civilian medical/health careers in the immediate future.

The Role of the Military

The military also has taken steps to assist the veteran in qualifying for civilian medical/health employment. Some military training courses are acknowledged to be excellent, and graduates are eligible to take qualifying examinations for licenses or certification.

As was mentioned earlier, graduates of the advanced medical laboratory course in the Army, Navy, and Air Force are qualified as Certified Laboratory Assistants by the American Society of Clinical Pathologists without further examination. In addition, each service offers at least one ASCP approved medical technology course to enlisted men with college backgrounds. Successful completion of such a course is credited toward meeting the eligibility requirements for the ASCP medical technologist registry examination.

The Army offers several advanced medical specialist courses at different Army hospitals to train enlisted personnel for the 91C military occupational specialty. Graduates of eight such courses are recognized by the states in which they are offered as meeting the educational requirements to take the state licensing examination for the practical nurse. To the extent that reciprocity exists, men who pass the licensing examination are qualified as LPN in a number of states.

Summary

There are several types of programs now in effect to facilitate the transference of medically trained enlisted men to civilian medical/health jobs. Information, counseling activities, new career developments, changes in legal and professional standards, and improved military training play an important role in these efforts. Actions by civilian medical organizations, educational institutions, Government agencies and the military are influencing servicemen to decide in favor of civilian medical/health careers.

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VII. POLICY AND PROGRAM RECOMMENDATIONS

Introduction

The results of the survey point to a variety of policies and programs for the military and civilian authorities, public and private employers, the education system, and professional organizations designed to increase the frequency with which veterans of the military medical services elect to enter civilian medical/health employment, and the degree to which they are able to utilize their full capabilities.

The public interest in using these men in a civilian capacity is clear. They represent a supply of human capital which will be lost if it is not used. The careerists represent a highly cultivated resource; the noncareerists, a less cultivated but far larger one. There is embedded in them a sizable public investment in skills which are much in demand to meet acute civilian manpower shortages. Tens of millions of public and private dollars are spent training civilians in these same skills, and even so, the supply does not keep pace with the demand. To the extent that "ready-made" skills can be captured, accepted, converted, and amplified for civilian use, much can be saved in time and money, and medical care can be improved. These considerations, of course, are in addition to the public obligation to help veterans of the Armed Forces to find appropriate and profitable careers.

In formulating recommendations for such policies and programs, we are mindful that this has been a study of transference viewed largely from the supply side. The analysis of the operative factors in transference, and even of the barriers impeding it, has been based on the characteristics, behavior, and perceptions of the men who comprise the potential supply. Moreover, the study deals with only one aspect of the supply of civilian paramedical personnel and, up to now, a

minor one; the diffuse system of paramedical education and training in the civilian sector could not be covered.

Information on the characteristics of the demand has been mainly inferred from some of the factors affecting transference. The terms of reference did not extend to a study of demand per se. Consequently, some of the recommendations may suggest practices already being followed in some places or institutions (unknown to the veterans interviewed), or may require validation or elaboration by equally intensive studies of demand factors. Nevertheless, the conclusions (indeed, even the hypotheses) of the study are premised on certain well-known characteristics of the demand: that it is ubiquitous; that it has been growing rapidly and in new directions; and that in many places and many occupations, it is unsatisfied.

For some time -- and in many paramedical occupations -- the demand price has been considered below the level of the market for comparable occupations in other fields. On the other hand, many of the demand specifications of education, training, experience, and capabilities are established and enforced by professional organizations who are not themselves employers, but who effectively control employers' hiring standards by institutional force or by force of law. Professional organizations, generally, have been rather slow to accept expanded use of paramedical personnel or to assign them expanded functions.

The policy and program conclusions also proceed from the proposition that it is the function of the military to train their paramedical personnel primarily to perform the medical missions of the Armed Forces -- the care of members of the Forces and the dependents of some of them -- and that the quality of this care generally is as good as that generally available to the civilian population. It cannot be assumed, therefore, that the training and capabilities of military medical personnel as a whole are at all inferior to those of their civilian counterparts, or that the modes of use of paramedical personnel by the military result in inferior care. Indeed, the burden of proof must be borne by any who contend the contrary.

It does not follow that, occupation by occupation, military and civilian training and capabilities are identical. The military missions include some functions which have

no civilian counterparts, and vice versa. In some occupations, differences in the organization and delivery of medical and health services may result in differences in the scope and content of training and experience which impose substantive (as opposed to institutional) barriers to transference. We would expect these cases to be the exception, not the rule. Where this is established by comparison of the objective content of paramedical training and experience, and where it is found that, as a result, the capability of military paramedical personnel does not coincide with the functional requirements for civilian medical/health service, it should be the responsibility of the civilian sector to provide the additional training necessary to make use of separated military personnel. The training obligations of the military do not extend beyond what is necessary for efficient performance of their medical mission. On the other hand, where the organization and delivery of medical/health services in the military have demanded training and experience of paramedical personnel in some occupations beyond the civilian standards for comparable occupations, it affords the opportunity for the civilian sector to examine and, where necessary, to modify its practices to permit the utilization of scarce and needed skills.

The more common situation may be that in which the occupational capabilities of men trained in the military coincide with the requirements of the corresponding civilian occupation, but in which the modes of occupational preparation, and thus the formal requirements (e.g., formal education), may be different. It is assumed here that in such situations the military and civilian authorities have a joint responsibility for reviewing paramedical capabilities developed in the occupation as it occurs in the military, and determining their application to the occupation as it occurs in civilian practice.

Policies and Programs

The *prima facie* case for transfer and some of the important preconditions to transfer have already been noted. The barriers to transfer, as inferred from the analysis of the responses and behavior of the men themselves, have also been examined in some detail. Their suggestions for making transfer easier and more attractive have been noted. Observations and recommendations drawn from the preceding analysis are presented in the sections that follow. These are addressed to the "agent" (military, civilian government, civilian

employers, etc.) presumably able to take the action indicated. The recommendations cover policies and actions both before the men are separated and after. The distinction between careerists and noncareerists is observed where appropriate.

Requisite to any successful effort to increase the rate of transfer is a mechanism for continuous communication and collaboration between the military, as the producer of the skills, and the various organizations representing the putative civilian employers -- the hospital associations; the medical, dental, and nursing associations; the Civil Service and Government employers; and the educators of paramedical personnel. Such a mechanism is necessary, in the first place, to inform the civilian organizations of the exact scope, content, and quality of military medical training and service; in the second place, to set in motion the various investigations and programs to facilitate the absorption of the paramedical personnel after separation; and, finally, to provide a means of keeping programs under review and evaluation.

We suggest that the Department of Labor and the Department of Health, Education, and Welfare jointly convene a continuing conference of interested organizations with the military, and that this conference map out the steps in a program and set up standing working parties to detail the plans and assignments for making programs operational. The conference and its working parties should constitute a permanent mechanism for communication and for solving problems as they arise in the operation of the several programs.

The Military

It seems that, considering the quality of the military medical training and of the military medical services, the military authorities are justified in taking a strong initiative in obtaining from civilian employers recognition of the functional capabilities of military medical personnel, to make it possible to overcome the formal barriers that stand in the way of their employment in civilian medical/health work.

Public Information Program

The military could enhance civilian recognition of the capabilities of military personnel by a continuous public information campaign to acquaint the relevant civilian hiring

authorities, medical organizations, and institutions with (1) the details of military medical training for generalists and specialists at all grades; and (2) the requirements which paramedical personnel must fulfill as they qualify in their respective grades and specialties. This would build appreciation of the quality of military paramedical personnel and facilitate comparisons of military and civilian requirements, for a realistic (as opposed to formalistic) appraisal of veterans' capabilities for employment at their highest skill level.

Evidences of Capability

It is repeatedly observed that civilian authorities and prospective employers of discharged military paramedical personnel lack sufficient information about their military training and experience. To a great extent, this information gap could be bridged if the personnel were provided written evidence which would inform prospective employers precisely of their paramedical capabilities. The evidence might take a number of forms. For example:

- A certificate of diploma specifying the training successfully completed, examinations passed, and occupational titles earned.
- A detailed transcript of content and extent of courses completed and clinical training.
- Job descriptions and durations of principal assignments, with performance ratings and references by professional (commissioned) supervisors.

Satisfying Civilian Requirements

The assumption that military medical training and experience qualify men for civilian employment rests on the similarities of military and civilian medical/health services. These similarities suggest the usefulness of continuing consultation and collaboration between military and civilian medical authorities to examine in detail the training and experience underlying the several classes, grades, and specialties in the military medical departments. The objective would be to arrive at civilian equivalents of the several military classifications, thereby establishing a basis for acceptance of the military qualifications as

evidence of eligibility for employment or for taking qualifying examinations [57]. This is particularly important in cases of men with long service whose skills are highly developed, but whose formal education may have been substantially completed at a time when education standards were lower.

If it is found that in specific classes relatively minor modifications of military medical training or qualifying requirements would satisfy the civilian requirements, and if such modifications were judged by the military to be beneficial to their service or not unduly burdensome, military practices could be adjusted accordingly.

Where it appears that career service in the military medical departments will not fulfill certain formal education requirements that would permit the men to utilize their highest skills in civilian medical/health work after separation, the military should offer the necessary courses through established inservice education facilities, such as the U.S. Armed Forces Institute, or by arrangement with accredited civilian facilities.

The Military Career Ladder

More than any other U.S. medical system, the Armed Forces medical departments rely on a career service to supply them with the higher grades of personnel up to, but not including, the professional (commissioned officer) level. Enlisted personnel can attain the rank of registered nurse while on active duty by being assigned to complete a standard 3- to 4-year course in a recognized civilian school of nursing. If it were readily possible for enlisted personnel to rise through the ranks to a commissioned professional grade, the career service would be strengthened in two ways: (1) by providing an internal source, it would ease the recruitment difficulties in some of the higher grades (e.g., RN); and (2) by making careers more attractive, it would encourage reenlistments of the better personnel. By the same token, it would benefit the civilian medical/health system. If the military trained more of its professional personnel, it would reduce by that much its drain on the civilian supply. Moreover, as these personnel reached retirement, they would become available to the civilian supply with a prospect of 15 or 20 years of useful service.

We recommend that the military consider extending their career ladder to include professional occupations for which the requirements do not exceed the baccalaureate degree. Presumably, this would include not only an extension of inservice courses and clinical training, but also some formal academic training, which could be provided through USAFI or by arrangement with accredited institutions. The degree conferred by the military would thus enjoy a standing equal to any other, especially if it entitled its holder to a commission in the Armed Forces. The effort would be worth making, both to enhance the capabilities of men in the services, and to capture for the civilian medical/health system those enriched capabilities and experience of the career professional men.

The Transition

An efficient use of military manpower requires concentrated effort to retain trained medical personnel, by inducements to reenlistment and by service obligations as a condition of advanced training. In the long run, however, the prospect of rewarding civilian employment as a consequence of more training and experience may act as a significant inducement to longer service and benefit the military as well as the men.

In any event, at least as long as conscription is (directly or indirectly) a major source of recruitment, it seems inescapable that a large majority of military medical personnel will elect to return to civilian life as soon as their service obligation has been fulfilled. Once it becomes clear that a man, whatever his length of service, is not going to reenlist, it is in his interest and the country's that the military authorities cooperate in every feasible way to encourage and facilitate his transfer to civilian medical/health work. This means, in addition to providing credentials of his capabilities, as outlined above, cooperating in providing maximum exposure to the medical/health employment opportunities appropriate to his capabilities. Project Remed was aimed at doing this, but as we have noted, it has not worked as well as was hoped. (Not primarily, it must be said, because of lack of cooperation of the military.) Another approach is through Project Transition, which requires more extensive cooperation of the military in permitting men still in the service to take advantage of (nonmilitary) counseling, education, and training opportunities in the last months of service.

Basic to the success of any transitional program are two steps in which the active cooperation of the military is essential in (1) disseminating very specific job information to the men; and (2) directing dealings between men about to be separated with authorized representatives of prospective employers. These steps will be possible -- and effective -- only to the extent that the military facilitate the extension of the civilian placement process into military establishments well before the time of discharge. This will require, at a minimum, the designation and instruction of officers with primary responsibility for making the system work, and the designation of facilities where counseling and referral activities can be conducted.

Practices Conducive to Transfer

Military practice in the selection and use of paramedical personnel can affect three characteristics which the study found related to transfer rates:

- Transfer rates were found to be higher among men who reported preservice interest in medical/health work. To the extent that it is feasible for the military to select such men into the medical departments, their likelihood of transfer to civilian medical/health work after service would be greater.

- Experience in moonlighting is positively correlated with transference. It broadens the serviceman's experience, and fills a civilian need. It would seem generally beneficial if the military would establish working relationships with civilian hospitals near military medical installations to facilitate and systematize arrangements for moonlighting.

- Many of the respondents indicated their dislike of housekeeping duties, and this colored their attitude toward medical/health work. Employing nonmedical personnel for such duties or contracting it out, as is done by some Air Force installations, would be consistent with the efficient utilization of military paramedical personnel as well as with attitudes favorable to transfer.

Action Recommended to Government

In its capacity as provider, consumer, and financial intermediary of medical care, and as representative of the public interest, government at all levels has a unique and overriding responsibility for medical manpower. The present cycle of growing shortages and rising costs is in large part the consequence of belated government decisions to bring medical care within reach of many who previously could not afford it, combined with even more belated moves to expand the supply of manpower to provide it. To put it in economic terms, by financing the medical care of millions of people, government has altered the demand function, which is relatively elastic to changes in income and price, without taking steps necessary to expand the supply, which is relatively inelastic. The result has been both a shortage of supply and an inflation of price. The national commitment to enlarge the availability of medical care to encompass all who need it implies a commitment to enlarge the supply of resources, including manpower. Recognition of this by executive and legislative branches of government, and in all government activities affecting the supply of medical resources and their use, is a prerequisite for successful programs of transference. Without this commitment, it is doubtful that any of the mechanisms proposed will work.

Civilian government can play a dual role in facilitating the utilization of discharged military medical personnel in civilian medical/health services. On one hand, government (Federal, state, and local) is the largest civilian employer of medical/health personnel, and in this capacity has a primary interest in the supply of medical manpower. On the other hand, government is in many respects uniquely able to provide the framework and many of the services necessary to facilitate transfer.

Government as an Employer

To a greater extent than private employers, government as an employer of medical manpower is able to prescribe and standardize specifications and requirements for employment in medical/health services. In this respect, government is in a position somewhere between military and private services: it cannot create its own occupational structure and assign functions in a largely self-contained system, like the military; but it is not subject to all the constraints -- legal and institutional -- that govern private medical/health service. It can prescribe its own job specifications and the

requirements for eligibility for employment. It can place its own assessment on military medical training and experience and the degree to which they may supplement or substitute for formal educational requirements. Technically at least, it is bound by (other than Federal) standards of licensure and certification only to the extent that it chooses to be; it could, in fact, grant its own licenses and certificates. It is not liable at law in the same way as private purveyors, or constrained by requirements for insurance. In sum, subject to the canons of good medical/health practice, it can experiment with the use of military medical personnel in civilian facilities.

As noted, the Federal Civil Service, at least, has taken some steps in this direction. Faced with the need to recruit for Federal medical/health services, it permits, to some extent, the substitution of military training and experience for general or special education in a number of specialties, based on an evaluation of the individual candidate.

The Civil Service, the Public Health Service, and the Veterans Administration, acting jointly with military and civilian professional organizations, should systematically review the content of both the training and experience of all classes of medical military occupations and the job specifications and requirements of Civil Service medical/health positions. The purposes of this review would be (1) to determine specifically the maximum extent to which military training and experience can be accepted toward meeting Civil Service requirements; and (2) the maximum extent (consistent with good practice) to which the Civil Service position requirements can be modified to permit military men to qualify more readily on the basis of their demonstrated capabilities.

The Federal Civil Service should accept certificates of capability issued by the military (suggested earlier) as evidence of "accredited" education, training, and experience. Where such documentation attests to competence in a specified occupation, it should be accepted as such for purposes of Civil Service qualifications.

After this determination has been made and agreed to by the Federal agencies, the Civil Service should circulate to all paramedical personnel who have decided to leave the

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service a "catalogue" of Civil Service openings for which the several military classes can qualify on the basis of their military service alone or with a minimal amount of additional education or training. This should be the basis of an intensive recruiting, examining, and referral procedure to expedite the transfer of men to specific openings upon their separation.

There are two persuasive reasons for making this effort. The jobs for which noncareer veterans qualify under present Civil Service specifications are very often so low in grade that they can neither attract these young men nor use their capabilities. Access to higher grades would raise the rates of transference. Moreover, modifications of current practices, to permit greater use of military manpower, could proceed faster in civil service than in private employment because there are fewer constraints. If this were done, it could pave the way to modifications in state and local governments and among private employers.

Government employment could also provide an opportunity for restructuring of the Federal paramedical occupational hierarchy and for the construction of a career system, combining work with on-the-job and off-the-job training. The importance of career prospects in attracting young veterans to medical/health work were noted earlier. Public health and VA facilities, with standardized pay rates and tenure, offer opportunities for structured work training programs that could lead to professional rank below the rank of physicians and dentists. To permit career veterans to take advantage of these, it would be necessary to exempt them from the pay restrictions on Federal employment of retired personnel.

Government Programs to Facilitate Transition

The vicissitudes of Project Remed and Project Transition have already been noted. It seems clear that changes are required in the Federal Government's programs to capture more fully the investment in military medical manpower to alleviate the civilian shortages. It seems to us that experience with a variety of jobs and training programs suggests that the likelihood of success -- defined as high rates of placement and a high degree of utilization of capabilities -- is increased accordingly as the recruiting and training are more specifically related to the capabilities of individual applicants and the availability of particular job openings.

It is one thing to announce that military paramedical specialists of a certain class and grade can qualify for certain civilian hospital occupations (or training programs); it is another thing to tell a medic or corpsman a few months before separation that he will be hired in this or that opening in a particular hospital (or training program) under specified terms, with specified opportunities for advancement under specified conditions. It is our view that a remodeled Project Remed or the application of Project Transition to paramedical personnel must contain these elements.

A successful transition procedure rests on an information program for making known available job openings and candidates able and willing to fill them. An essential element in such a program is a roster of job openings suitable for men with military paramedical training. The compilation of such a roster requires a nationwide effort to inform major employers (mostly hospitals) categorically of the capabilities of paramedical personnel, and to solicit particulars of openings in employment or employment-cum-training. Whether done by the U.S. Employment Service or by the U.S. Public Health Service, it requires a specialized system, using personnel thoroughly familiar with the operation of medical/health facilities and with their occupations, as well as the table of equivalences of military and civilian paramedical occupations mentioned above.

Matching the offerings with the capabilities, earnings requirements, career plans, location preferences, timing, and other individual stipulations of applicants is the other principal component of the program. This presupposes a detailed classification system, capable (by computerization) of translating the specifications of the offerings into the corresponding specifications of education, training, and experience of the men. By these means, the men can be informed of the range of offerings for which it is useful for them to apply. Those who apply for one or more openings will then have to be interviewed at continental military bases and preselected for consideration by prospective employers. This interviewing also requires a thorough knowledge of both military and civilian medical occupations and their requirements. The procedure would be the same whether the openings were for employment, training, or a combination of both.

The final stage brings the applicant into direct communication with the offerers (by interview, if practicable) to permit exchange of details and credentials sufficient so

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that offers could be made firmly, and firmly accepted. In many cases, this might be done well in advance of separation, and might be conditional on completion of some additional unit of education or experience. In other cases, the arrangement might await the applicant's separation.

In suggesting this kind of operation, we are well aware that it would be complex and costly. Even if it were operated through the facilities of the U.S. Employment Service, it would require a separate system, not a byproduct operation, with trained, specialized personnel. But if the costs were great, the benefits might be greater. If the transfer rate could be raised from an at 30 percent to as much as 40 percent, this would add 5,000 or 6,000 men annually to the medical manpower supply and recoup a large investment in their training and experience. It is unlikely that a comparable supply could be obtained through conventional recruitment and training, except at substantially greater cost.

What has been said above has been directed mainly to the 90-odd percent of the separated military medical personnel who are one-termers, with the qualities and capabilities characteristic of them. The career men, though far less numerous, represent a very much higher order of capabilities, which ought to be assimilated into the civilian medical/health system more readily, and at a higher level. Because of the relatively small numbers of these men, the records of all of them should be circulated nationwide through the placement agency to prospective employers well before their retirement, to generate offers of employment. Every one of them should be interviewed against suitable openings. Efforts should be made to put them in direct communication with prospective employers as early as possible.

We recommend that consideration be given to legislation to authorize Federal certificates and licenses in recognition of education, advanced and specialized training, and satisfactorily completed experience in military medical service. These credentials would be the equivalents of those conferred by civilian authorities, and would be valid throughout the United States. For this purpose, an examining board, with specialized panels, could be established jointly by the military and the U.S. Public Health Service to formulate the training and experience requirements for certification and licensure, and to pass on applications for licensure or certification. In this connection, veterans' education benefits should be available to men while they complete education, training, or clinical experience to satisfy requirements.

Civilian Education and Training Programs

Noncareerists. The need for additional education and training to qualify for promising civilian medical/health jobs was one of the barriers most frequently cited, especially by noncareerists. Even if civilian requirements were totally realistic and gave full credit for capabilities acquired in the military, the younger men, particularly, would need to be able to pursue education and training to fashion careers commensurate with their ambitions as well as their abilities.

There are various ways in which they can do this, as we have noted earlier, but most of these entail problems that make transfer more difficult. If they enter conventional education institutions, they face a long period of little or no income except the rather meager GI benefits; moreover, they will be required to complete academic work only remotely (if at all) related to the pursuit of their medical/health careers. If, on the other hand, they take medical/health jobs such as they are able to get, for the sake of earning and experience, they may find it difficult to acquire the more advanced education and technical training required for progressive advancement. In a few pilot projects, Public Health Service grants have made substantial stipends to trainees possible, but the enrollments of these are limited.

The responses of the men surveyed and the review of a number of programs both suggest that, generally, the most promising type of program is that which couples employment and on-the-job (clinical) training with technical instruction, to enlarge the employee's capabilities for performance and advancement. Experience suggests that to be successful these programs must offer not only a supervised work situation but a structured, phased program that includes both instruction in progressively advanced clinical work under didactic supervision and a classroom curriculum of technical studies, with periodic examinations as the basis for advancement. Such work-training programs need to be administered through teaching institutions, normally hospitals with established capabilities for training medical and paramedical personnel and an association with an accredited university or college science curriculum. Experience indicates that without these the training programs tend to be sporadic and haphazard, and advancement too slow and uncertain to develop the needed capabilities and to hold the most promising young trainees.

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In a program of this kind, the employee-trainee should be able to be at least self-supporting from his earnings plus training stipend or partial GI benefits. The earnings records of the young men in the survey suggest incomes in these programs need to average about $500 to $600 a month (on a 1968 basis) to equal their "supply price," or opportunity cost. The ladder of advancement should be such that most can expect to earn twice as much ultimately, and the best can expect much more.

Programs such as those described, designed to build on the acquired medical capabilities of veterans, are few. To expand the opportunities to accommodate a substantially larger number of transferees will require a vigorous effort by the hospitals and the medical profession, with Government encouragement and support. While the hospitals can be expected to pay fully for the services performed by the trainees, the costs of approved training and education should be borne by the Government, as in other manpower development programs. We recommend that the Department of Labor and the Public Health Service draw up such a program in collaboration with the hospital and medical associations, and seek authorizing legislation (if necessary) and funding.

For noncareerists wishing to pursue advanced paramedical education, there exists an increasing variety of post-secondary curricula leading to associate or bachelor degrees in paramedical specialties. Some of these are said to be successful in the sense that the participants acquire additional knowledge and skills, and their graduates find employment in the specialty for which they were trained. These courses can enlarge the capabilities of young noncareer veteran medics, but (as already noted) they give him little or no credit for what he has learned in his military medical service. In this respect they are perceived as a barrier rather than an aid to transfer, until the medical professions and the educators give credit for capabilities already acquired.

Some of these courses are given on so small a scale as hardly to be economic (except as pilot projects). Here it would seem the civilian training could profit from the example of the military in pooling training at fewer points. We believe consideration should be given to arrangements between the Department of Health, Education, and Welfare and organizations of medical and dental specialists for contracting training of designated paramedical specialists at

designated points under cooperative arrangements with hospitals or hospital associations. The area served by such pools might vary from a metropolitan area to a state or region, depending on the numbers of specialists required.

Careerists. For the careerists, the situation is rather different. It is here that there is both the greatest opportunity and the greatest need to structure new occupations to capture and utilize the very considerable skills already acquired. These men are generally too experienced to be treated as trainees and too old to enter on a protracted period of higher education. There are many substantial jobs for which they ought to qualify with a minimum of additional training or education, if any is necessary to fill some specific gap in their qualifications. They are variously qualified to enter general patient care, a range of specialties in direct and indirect care, and medical administration in hospitals, outpatient clinics, laboratories, etc. Training, for them, must be thought of in terms o on-the-job orientation to work situations for which they are already largely qualified, or in terms of mastery of certain techniques or subject matter specific to the work.

The responsibility of the Government. From what we have been able to learn of the demand for veterans in paramedical employment, it will take a good deal of encouragement, prodding, and support from the Departments of Labor and HEW to bring into operation the kinds of placement and training programs sketched here. There is, of course, a widespread unsatisfied demand for paramedical personnel of many kinds, but absorbing large numbers of young men who have been trained in a different system may require more adjustment than many institutions are willing to make. Rather than employ and retrain these men, or complete their training, institutions may prefer to take degree graduates from colleges and universities whose courses have been tailored to fit the medical institution's specifications. This tendency may be reinforced by the disinclination of financially burdened medical institutions to incur the costs of training and to adjust practices and pay levels to make use of veterans.

The Government has already taken some steps to encourage transfer by grants to support pilot projects. More such projects will be required in a variety of forms and specialties to demonstrate to the medical professions and institutions what can be done, and how. Since the demonstration will encounter much inertia and many delays, the process

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should be prosecuted vigorously. One way of speeding it would be through installation of employment and training in Government facilities, and we recommend that this be done.

The usefulness of these men has been proven not only in the military, but in civilian situations where they have been used in a variety of paramedical and administrative capacities; in medical/surgical care, in paramedical specialties, in technological specialties, in hospital and clinical management, in emergency and ambulance service, etc. The conversion of these skills through specially designed jobs and spot training will yield a quick payout in meeting current shortages, and should have a high priority among civilian medical training programs of the Government, the training institutions, the hospitals, and the medical and dental professions.

Action Recommended to Civilian Employment

Though government can initiate, demonstrate, facilitate, and support a variety of programs for transfer of military paramedical personnel, and can use its own facilities as models, a significant increase in the assimilation of these men into the civilian medical/health services depends on the ability of private facilities -- notably hospitals -- to absorb them. As we have noted, this may present difficulties and will require determined efforts and ingenuity on the part of medical administrators and staffs.

Utilization of Military Paramedical Manpower

Successful assimilation presupposes a job structure which will permit efficient utilization of the capabilities acquired through training and experience in the Armed Forces. Trying to fit men released from the military medical services into the existing structure on the basis of customary requirements may result in underutilizing their capabilities and leading them into subprofessional dead ends, thus discouraging their transfer to civilian medical/health work, especially patient care. It will therefore be necessary to create classes of jobs which can be filled by men from the military on the basis of their full capabilities, however acquired, with career opportunities on the basis of further training and experience.

This will require a detailed analysis of the hierarchy of functions in the various branches of medicine, dentistry, and public health to identify those that can be assigned to subprofessional personnel, and the functional prerequisites for performing these jobs. This is already being done in some specialties (e.g., orthopedics, anesthesiology, rural medicine) with Public Health Service support, preparatory to defining the functions of subprofessional assistants and the qualifications required of them. The same approach can be used in other branches of inpatient and outpatient care. The possibilities in community health service, followup home care, and emergency service would seem particularly interesting. However, to meet the most urgent needs, suitable (and acceptable) occupations would have to be identified in direct medical and surgical patient care in hospitals and clinics.

In designing occupations to be filled by former military paramedical personnel, two criteria are governing: (1) the jobs should relieve the shortage of civilian professional and technical personnel as far as the capabilities of the former military personnel permit; and (2) the jobs must use these capabilities and offer attractive prospects to the former military personnel. The two criteria are interacting: only insofar as the use of these personnel "extends" the skills of scarce civilian professional and technical manpower, and thus makes them more productive (i.e., able to serve more patients better), will the employing institutions be able to offer pay and other inducements to recruit personnel being separated from the military. Purely from the point of view of the civilian economy (leaving aside the obligation to further the well-being of the veterans), there is little benefit (and perhaps a net cost) in attempting to place military paramedical personnel in entry jobs with limited prospects. Indeed, the costs of placing and training unskilled workers from the civilian labor force may be lower. The value to the country derives from converting the military training and experience to its equivalent in the ability to perform the tasks of civilian medical/health work in which the demand for manpower exceeds the supply.

Thus, the basic and most numerous military medical class (the Army medical specialist and its Navy and Air Force equivalents) is at least as well trained and usually more experienced than the graduate of the licensed practical nurse training course, and many are equal or superior to advanced grades of licensed practical nursing. Depending on the experience of the individual, they are capable of performing many tasks in support of doctors and nurses. Such tasks

need to be organized into a hierarchy of occupations -- based on civilian needs and military capabilities -- of the "technician" and "assistant" varieties, with their own titles, duties, requirements for entry and lines of advancement. If this can be done in military medical service, there are prime facie reasons for assuming it can be done in civilian medical/health services, even where it has not been done in the past.

Even strictly by economic criteria, it would seem to be worth doing. According to the Public Health Service, it costs more than $4,000 (exclusive of facility and equipment costs) to train an LPN, and about $1,600 more for the additional advanced training [58]. Faced with training costs like these and a shortage of training facilities and personnel, there are clear advantages in utilization of skills ready-made by the military. A similar case can be made for laboratory technicians.

At the other end of the scale are the careerists, with histories of several training courses and varied experience. The creation of an occupational class to fit the broad capabilities of these men is illustrated by the "purser-pharmacist mate" of the Public Health Service, who is neither LPN nor RN, but apparently an assistant doctor [58]. The duties attributed to this title clearly presuppose a great deal of clinical experience in patient care as prerequisite to the 9-month training course, which apparently costs about $2,000 and can be combined with work [59].

This kind of systematic job planning requires resources beyond the ability of a single institution. If a framework were available, large institutions or regional associations could adapt it to their specific purposes. We recommend that the Public Health Service, with the assistance and support of the several national professional associations representing the branches of medicine and dentistry and the hospitals, undertake as quickly as possible to construct a series of occupational hierarchies of paramedical personnel tailored to the capabilities of the several classes and grades of men being released by the Armed Forces, as a basis for both recruitment and utilization of these men.

Planned Recruitment

To participate in the recruitment system proposed earlier in this chapter and to avail themselves of its

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benefits, private employers of paramedical manpower will have to determine their requirements well in advance and in some detail. They will have to examine their pay rates and other terms of employment in relation to the market for the kind of men they are trying to recruit. And they will have to be prepared to make firm offers several months in advance of employment. These operations are probably most efficiently carried out by consortia of employers with similar specifications, and it is suggested the organizations of general and specialized facilities undertake to perform this role: state and metropolitan associations of hospitals, clinics, extended care facilities, or medical and dental specialists.

Competitive Pay

As we have noted, the analysis of earnings expectations and earnings experiences of men released in the late 1960s suggests that those who were able to find suitable jobs in medical/health work were able to earn somewhat more (on the average) than those who took jobs in other fields -- amounts not greatly different from their preseparation expectations. But most of the men -- 80 percent of noncareerists and 60 percent of careerists -- were deterred from transfer by a variety of factors, of which the most conspicuous was their inability to obtain the recognition for their training and experience that would make them eligible for a suitable job. This was most notably the case with jobs in direct patient care, which attracted relatively few transfers.

We have evidence that for most of the men the jobs available to them were not attractive for a complex of reasons, of which pay was one. We have no evidence that pay in civilian paramedical occupations was decisive in encouraging or deterring transfer. What appears to have been decisive is the ability or inability to qualify for those jobs that were suitable in a number of respects, pay included. Equally important, especially for the younger men, appears to be the prospect for advancement in pay and status. It is this aspect of medical/health employment that should be made more competitive.

The careerist transferees are not very well paid, considering their capabilities and age; the average earnings of those who transferred was only about 20 percent higher than the average of the noncareerist transferees 15 years their junior . It appears there is some justice in their complaint that because they are drawing retirement pay at the same

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time, they are underpaid for their work. (This discrimination is apparently not confined to those who transferred; the differential in earnings between careerists and noncareerists out of the service was no greater among those who did not transfer.) We have little doubt that significantly higher transfer rates could be achieved, particularly in direct patient care, by structuring suitable jobs for these men and paying for them without regard to retirement pay.

Action Recommended to Professional Organizations

Such changes as these, be made in the civilian organization and utilization of medical/health manpower to permit increased use of military men will have to be effected by individual and institutional (including governmental) purveyors of medical and health services -- hospitals, clinics, physicians and dentists, and nursing homes. Indeed, if the use of such men offers prospects of easing manpower shortages, these agents may be both receptive and inventive. The limits to which such changes are effected more likely will be determined by the professional bodies which, by rule or by law, assume responsibility for the quality standards of the services delivered: e.g., general and specialized associations of physicians, dentists, and nurses; associations of subprofessional medical and dental personnel; and hospital associations.

It is noteworthy that many of the innovations in the extended use of paramedical personnel, as well as many of the objections to it, have originated with these associations. For every doctor who feels that he has served his patients well by "extending" himself and his skills by increasing use of supporting personnel, there is one who says, "When I am sick, I want to be seen by a doctor." Actually, given the inelasticities in the supply of doctors, dentists, and nurses, and the exploding demand, the average patient's chances of seeing a doctor when he is sick are much better if the doctor is supported by a staff of well-qualified paramedical personnel to organize, expedite, and follow up the doctor's services. This is done in the Armed Forces without sacrificing quality of care, and it can be done in the civilian medical/health system.

The professional bodies hold the key to breakthroughs to increase transfers from the military to the civilian system. It is they who must systematically inform themselves of the capabilities of the several military medical

occupational specialists and their civilian equivalents. It is they who must translate military training and experience into credits against requirements of education, training, and experience for civilian jobs. It is they, above all, who by accepting changes in organization and utilization of personnel, can bring about changes in custom, regulation, and law which will facilitate the conversion of military experience to civilian uses.

We recommend that the responsibilities of these bodies in this respect be made explicit, and that their active collaboration be invoked to bring about the necessary changes. What the changes might be, and the responsibilities of the professions for bringing them about, has been discussed above. These include:

- A close examination of the content of military training and experience and a realistic evaluation of them in terms of the requirements of good medical practice.

- An assessment of the value of military training and experience in terms of credits to be applied toward academic and clinical requirements for paramedical personnel in their several specialties, and encouraging acceptance of these credits by academic and medical institutions.

- Taking the initiative, with the hospitals, in examination of civilian medical/health occupational structure, in order to formulate occupational work-training hierarchies for careers for former military paramedical personnel.

- Entering actively into the design and execution of work-training-study programs to put former military paramedics in civilian medical/health jobs and to enable them to progress.

It is certainly in the interests of the professions to do this. While we have made no explicit assessment of the current and prospective demand for medical and paramedical manpower, the evidence from all sources points to an explosive increase in the effective demand for medical care and for manpower to provide it. The professions at all levels are coming under increasing pressure. The supply is

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relatively inelastic, and the capacity of professional training is increasing only slowly, and with a considerable lag. The public and private costs are rising steeply. Irritation and dissatisfaction with the costs of medical care and with the manner of delivery are widespread. Physicians are plagued by the inadequacies of nursing assistance, and nurses are both overworked and underutilized. There is an evident need for drastic changes in the medical manpower system to permit more efficient use of professional skills in new delivery systems to provide better patient care. An annual potential of some 30,000 personnel trained and experienced in a superior medical/health system is a resource that cannot be ignored.

Indicated Further Research

This study has yielded extensive information on the characteristics, behavior, and attitudes of men in, or recently released from, the Armed Forces as a component of putative supply of civilian medical/health manpower. To make the best use of this supply, some additional research is desirable.

The military and civilian occupational structures. The review and matching of military and civilian occupational structures suggested earlier in this chapter will require extensive occupational research and analysis by analysts knowledgeable both in medical practice and occupational research. It is doubtful if this research will be done promptly and efficiently unless it is assigned to research personnel working on specific projects under professional supervision with Government support. We recommend that the Departments of Labor and HEW sponsor such a research project.

Occupations for veterans. The comparative analysis of military and civilian medical/health occupations would provide a basis for formulating a series of paramedical occupational classes in the civilian medical/health sector which would utilize efficiently the capabilities acquired by the various classes and grades of paramedical specialists in the Armed Forces. Identification, description, and classification of these, together with the qualifying requirements, should be the subject of another Federally sponsored and supported research program.

Demand for paramedical manpower. A great deal more needs to be known about the demand aspects of transference

of military paramedical personnel to civilian medical/health activities: e.g., the kinds of jobs that are open and hard to fill; the specifications, terms, and conditions of employment; and sources, recruitment, training, and employment experience. Better estimates are needed of the size, distribution, and content of the demand 5 and 10 years hence, in the light of the prospective demands for medical/health care and the emerging changes in the delivery systems. We recommend that such a study be done.

Training and training costs. The systems for training civilian paramedical personnel, including both educational and clinical elements, should be studied in relation to the prospective demands and requirements for paramedical personnel and costs of training. These studies should include comparison with the military training system and with the various programs for converting former military men to civilian employment. The objectives of these studies would be to determine: (1) how best to train military men for civilian jobs; (2) elements of military training suitable for civilian use; and (3) the relative costs of converting military paramedical personnel and of training civilian personnel from scratch.

BIBLIOGRAPHY

1. U.S. Department of Health, Education and Welfare. Education for the Allied Health Professions and Services (Report of the Allied Health Professions Education Subcommittee of the National Advisory Health Council), Public Health Service Publication No. 1600.

2. U.S. Department of Health, Education, and Welfare. The Allied Health Professions Personnel Training Act of 1966 (amended). Report to the President and the Congress, 1969.

3. U.S. Department of Health, Education, and Welfare. Statement by Robert H. Finch, and Roger O. Egeberg: "A Report on the Nation's Health Care System." July 10, 1969; Schmeck, Harold M. "Gardner Urges Localities to Reform Health Care." The New York Times, October 29, 1969.

4. For definition -- U.S. Department of Labor. Technology and Manpower in the Health Service Industry, 1965-75. Manpower Research Bulletin No. 14.

5. For estimate -- U.S. Department of Labor. Tomorrow's Manpower Needs: National Trends and Outlook, Industry Employment and Occupational Structure. Bulletin No. 1606, Vol. II.

6. U.S. Department of Labor. Manpower Report of the President and a Report on Manpower Requirements, Resources, Utilization and Training. April 1967.

7. Rosenthal, Neal H. "The Health Manpower Gap: A High Hurdle." Occupational Outlook Quarterly, Vol. II, No. 1.

8. Rosenthal, op. cit. The statistic of 2.1 million "other health workers" was derived by deducting the

growth and net replacements data for the physicians, dentists and professional nurses (given in table 5) from the totals given for health industry workers, p. 3.

9. Manpower Resources in Hospitals - 1966: Summary Report of a Survey Conducted by the Bureau of Health Manpower Public Health Service, U.S. Department of Health, Education and Welfare and the American Hospital Association.

10. National Advisory Commission on Health Facilities. A Report to the President. December 1968.

11. U.S. Department of Health, Education and Welfare. Health Manpower Perspective: 1967. Public Health Service Publication No. 1667.

12. Army Times Publishing Company, Research Division. "The Military Medical Community." Washington, D.C., August 1966.

13. National Academy of Sciences. "Allied Health Personnel." Washington, D.C., 1969.

14. U.S. Department of Defense, Office of Public Affairs. "Remarks by the Honorable Melvin R. Laird, Secretary of Defense, at the Statesman in Medicine Award Dinner, Airlie Foundation, Warrenton, Virginia, September 17, 1969." News Release No. 764-69.

15. Personal communication from the Office of the Deputy Assistant Secretary of Defense (Health Affairs), November 14, 1969.

16. "Chronology of Stepup in GI's Sent to Vietnam." Washington Post, June 10, 1969.

17. "U.S. To Trim Armed Force by 70,300." Washington Post, September 23, 1969. "Armed Forces strength totaled 3,255,000 men at the end of January, down from an average of 3,370,000 in the fourth quarter of last year and 3,457,000 in the third." U.S. Department of Commerce, Survey of Current Business, March 1970, no. 3, p. 2.

18. "Services Freed 250,000 Early in Budget Move." Washington Post, June 21, 1969.

19. Examples: In 1965, the Army changed from a three-digit numeric to a five-digit alpha-numeric occupational coding system; since 1964, the Air Force has added seven new occupational classifications.

20. U.S. Department of Defense, Office of the Assistant Secretary of Defense (Manpower and Reserve Affairs). Occupational Conversion Table. DOD 1312.1-E, March 1969.

21. National Academy of Sciences. "Allied Health Personnel." Washington, D.C., 1969.

22. U.S. Army. Formal Schools Catalog. Department of the Army Pamphlet 350-10, May 1968.

23. This group includes the medical laboratory technician, dental specialist, and dental laboratory technician.

24. U.S. Army. Office of the Surgeon General. Enlisted Medical Occupational Specialty Training.

25. U.S Navy. Handbook of the Hospital Corps.

26. Hospitalmen with nuclear power training may be assigned the special series NEC 9901. (U.S. Navy, Personnel Administration, NAVPERS 10848-C, p. 67.)

27. In exceptional cases, individuals who are not high school graduates but are able to demonstrate equivalent ability are accepted.

28. U.S. Navy. Catalog of Hospital Corps Schools and Courses. BUMEDINST 1510.9A, November 1968.

29. U.S. Navy. "Career Pattern for Hospitalmen (HN)." Manual of Navy Enlisted Classifications. NAVPERS 15105.

30. U.S. Navy. "Career Pattern for Hospital Corpsmen (HM)." Manual of Navy Enlisted Classifactions. NAVPERS 15105.

31. U.S. Air Force. Military Personnel Classification Policy Manual. AFM 35-1.

32. If the airman was cross-trained from an awarded AFSC at the five level or above, the six months' experience is not required.

33. U.S. Air Force. Airman Classification Manual. AFM 39-1.

34. For detailed description of methodology and statistical adequacy of the survey, see appendix VI. The number of respondents in each subsample is given in table VI-5 of appendix VI.

35. These two classes do not include all of those separated but the reenlistment rates are high among men who have served more than one term; thus the career men in this study tend to be representative of most men who serve more than one term.

36. If an inservice noncareerist responded that he planned to make the military a career, he was excluded from the sample.

37. This has implications for service policy, which places greatest emphasis on reenlistment inducements shortly before discharge.

38. Responses giving school attendance as a duty assignment were not coded.

39. If the serviceman had served longest in a nonmedical field (some of the high-ranking NCO's had served as company sergeant-majors or had headed recruit depots), the longest held medical or dental job was chosen.

40. Note that the number of nonrespondents was greater on the section of the questionnaire dealing with military duties than elsewhere. Either to specific questions, or to the entire section, several men refused comment. When pressed, they responded that their assignments were "classified."

41. The MOS's, NEC's, and AFSC's in each category are discussed in chapter II and shown in appendices III, IV, and V.

42. See appendix VI.

43. For a complete discussion of veterans' problems and suggested solutions, see chapter V.

44. For a justification of this technique, see appendix VI.

45. Even those who stated that their jobs were similar were asked to cite differences.

46. Auerbach, Stewart. "Ex-Medics Now Aides at Hospital." Washington Post, April 13, 1969.

47. Northwestern Reports, Fall 1969.

48. See discussion of special programs designed to facilitate transference in chapter VI.

49. Horowitz, Morris A. and Goldstein, Harold M. "Hiring Standards for Paramedical Manpower." U.S. Department of Labor, Manpower Administration, September 1968.

50. This total covered payrolls in the first quarter of 1967, divided by the number of covered employees, x 4 to convert to an annual basis, x 1.05 to allow for the estimated increase between 1967 and 1968. (U.S. Department of Commerce, Bureau of the Census. County Business Patterns, 1967, Table 1.) The resulting figure is $5,880.

51. A program of the United States Employment Service, in cooperation with the Department of Defense and designed to assist recently separated career veterans in making suitable vocational adjustments, has been in operation since 1967.

52. In 1970, HEW initiated a new program with the Department of Defense to facilitate the transference of medical corps veterans into the civilian medical/health field. The new program is called Operation MEDIHC (Military Experience Directed Into Health Careers).

53. Changes in the operation of Project Remed are under consideration. A pilot study is being conducted testing the use of regional Public Health Service offices in place of state employment offices, in cooperation with the Project Transition program.

54. Schneider, F. Richard, M.D. "The Orthopedic Assistant-A Specialty Program." Conference on Current Status and Development of Physician's Assistant Program, Durham, North Carolina.

55. U.S. Public Health Service (Health Services and Mental Health Administration).

56. Interim Report of the Joint Legislative Committee on the Problems of Public Health, Medicare, Medical and Compulsory Health and Hospital Insurance. State of New York, December 15, 1968.

57. Apparently, some work has been supported by the U.S. Public Health Service on the question of equivalence.

58. U.S. Public Health Service. Training the Auxiliary Health Worker. Publication No. 1817, 1968. The costs per trainee cited are exclusive of equipment and facility costs.

59. The figures given for training costs in [58] appear to be in error in attributing the aggregate trainee costs to each trainee.

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