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November 1979

PATIENT ACCEPTANCE OF THE AIR FORCE PHYSICIAN ASSISTANT

David J. Armor

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prepared for the
United States Air Force

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David J. Armor

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PREFACE

This Note reports on work conducted at Rand on "Air Force Health Delivery Systems." The research, done under Project AIR FORCE, represents one facet of an analysis of the role that physician assistants might play in Air Force outpatient clinics--patient attitudes towards physician assistants.

This Note presents an analysis of data collected in 1974, reported in briefing form to the Air Force in 1976, and documented in an unpublished working paper in 1978. It provided background for understanding the analysis of a more extensive data collection effort carried out in 1977. A more recent and detailed report, dealing in greater depth with the same issue, is forthcoming under the title "Physician's Extenders in Air Force Primary Medicine Clinics: Patient Attitudes."

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SUMMARY

Shortfalls in physician manning have led the Air Force to experiment with physician extenders such as Physician Assistants and Nurse Practitioners. These new health professionals extend physician manpower by performing a wide variety of diagnostic and treatment services under the supervision of a physician. One important question is the extent to which patients will accept such medical services from these new types of practitioners. This study investigates patient acceptance of Physician Assistants and Nurse Practitioners.

Based on an analysis of both usage rates and attitudes, the study finds wide patient acceptance of these extender programs and high quality of care ratings. On the other hand, a small minority of patients, about one-sixth or one-fifth, are opposed to PAs and NPs even after some contact with them. The opposition appears to be confined to specific functions of the extender, such as physical exams or treating more serious internal problems.

It is concluded that substitution of Physician Assistant and Nurse Practitioner services for certain traditional physician services should be successful from the standpoint of patient acceptance. However, some allowance should be made in manning ratios for the small minority of patients who are strongly opposed to receiving certain types of care from extenders.

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I. INTRODUCTION

Among the many manpower issues raised by the transition to a voluntary armed force, few have been more troublesome than the problem of physician supply. While the advantages of salary and working conditions in the civilian sector have always caused difficulties in recruiting and retaining military physicians, the elimination of conscription compounded the problem. In spite of new incentive programs, such as the Armed Forces Health Professions Scholarship Program and variable incentive pay, the Air Force continues to show a shortfall in physician strength.

These prospects, added to normal retention problems among primary care physicians, led to early Air Force interest in the physician assistant (PA) concept. The PA concept was first developed and implemented in the civilian sector, most notably by Duke University which opened a PA training program in 1965. As envisaged by the Duke program, the PA is a new health professional who performs a variety of diagnostic and treatment tasks under the supervision of a physician. Special clinical training beyond that received by nurses or medical technicians enables the PA to handle some problems formally handled only by a physician.

The Air Force PA program began with the opening of a PA training program at Shepard Air Force Base in 1971. Patterned after the Duke concept, the Air Force PA is a former medical corpsman, generally a male with at least three years of military experience, who receives two additional years of special training. This special training includes a year of classroom instruction in traditional medical school topics and a year of clinical internship. The Air Force PA has been utilized primarily in out-patient clinics under the general supervision of a physician. In practice, the PA performs both a screening function, exercising judgment as to which cases require attention by a physician, and a treatment function for those routine problems within his sphere of competence. As such, the Air Force PA extends physician manpower by offering services formerly handled only by regular physicians.

Clearly, the addition of this new professional to the primary care team as a partial replacement of physician manpower raises a host of economic, medical, and social issues. Taking into account increased training costs, will a substitution of PA services for physician services keep health manpower costs from rising as physician supply dwindles? Can such a substitution be made without a sacrifice in the quality of care? And, finally, will this new role be accepted by patients, especially for those functions and tasks formerly handled only by physicians?

The present report is concerned with this third issue; namely, patient acceptance of the PA and other physician extenders in the Air Force. In addressing the issue of patient acceptance we are not dealing simply with a public relations problem. The effective functioning of any professional group rests ultimately on confidence and trust by the consuming public, a point underscored recently by the civilian malpractice insurance crisis. While the malpractice issue may be irrelevant in military medicine, a loss of confidence in medical care can have other consequences. The health package is viewed as a primary benefit by Air Force personnel, and major changes might have long-range consequences for recruitment and retention rates. At a more immediate level, a failure to accept the PA and other physician extenders might lead to patient "end runs" around the system, perhaps in the form of inappropriate use of available specialists or increased use of CHAMPUS. Such unintended responses to increased PA utilization might reduce the economic benefits which justify PA substitution in the first place.

Policy and Research Issues

The assessment of patient acceptance of the PA is guided by two major policy questions. First, will patients endorse the PA program and accept services from PAs formerly given only by physicians? Second, assuming that acceptance is not unanimous within existing patient populations, are there ways to organize PA utilization so as to maximize PA acceptance?

The first question raises a number of issues regarding the definition of patient acceptance. Do we mean positive attitudes toward the PA program or do we mean actual utilization of the PA for various medical services, or some combination thereof? Clearly, one of the first tasks

will be to define and operationalize those patient response variables which can serve as criteria for evaluating patient acceptance.

One possible outcome is that a majority of patients accept the PA, while a significant minority do not. Given this result, the key research issue then becomes whether such opposition is general or whether it can be traced to specific factors involved in the patient-PA interaction. For example, the opposition might be found mostly among certain patient groups, or it might be aimed at certain PA functions. If such factors can be identified, then opposition can be minimized by taking these factors into account when defining PA responsibilities.

Although our primary focus is the PA, we will also investigate patient response to the Nurse Practitioner (NP). The NP resembles the PA in function, although there are some professional role differences. The NP is generally a Registered Nurse who received additional special training in direct patient care; moreover, most NPs tend to specialize in the areas of pediatric or OB/GYN medicine. The Air Force utilizes both specialized NPs as well as Primary Care Nurse Practitioners (PCNP) who, like the PAs, assist in the primary medicine clinics.

Other Studies

As might be expected for a new health role, few studies have systematically investigated PA acceptance. The largest study to date is a representative public opinion survey conducted in California (California Board of Medical Examiners, 1973), in which respondents were asked about their general attitudes toward PAs and about their willingness to be treated by PAs for certain medical problems. But, like another attitude study in two Southern California outpatient clinics (Strunk, 1972), the conclusions are limited by the fact that most respondents have had little experience with PAs, so their answers are necessarily based on hypothetical situations. Some fairly limited studies have been conducted among patients in practices using PAs (Nelson, Jacobs, and Johnson, 1974; Ford, 1975), but the studies are conducted only on groups who remain as patients after the PA is introduced. While these studies show substantial support for the PA concept, the possibility that patients who oppose the PA change to other practices or clinics has not been investigated.

The unique aspect of Air Force and military medicine is that the patient population is more or less captive, since the use of alternative civilian services are limited by CHAMPUS regulations and the ability and willingness of individuals to pay for them. Hence this study has the advantage of studying PA acceptance by patients who have been exposed to the PA and who must remain as users of the medical facility regardless of their initial reactions.

II. STUDY DESIGN

While the basic idea of PA acceptance is itself fairly straightforward, rigorous demonstration of PA acceptance using systematic data and procedures is another matter. Decisions must be made about the type of evidence needed to evaluate acceptance, and procedures must be developed to collect such evidence. This section presents the rationale for these decisions and a description of the research procedures used to gather data on patient acceptance.

Acceptance Criteria

At the most general level, patient acceptance of the PA should mean that patients are willing to use the PA for certain services formerly delivered only by physicians, and that they are at least as satisfied with PA treatment as they are with physician treatment for the same problem. This definition embodies two distinct dimensions of acceptance. One dimension is behavioral, which involves the actual utilization of the PA. The second dimension is attitudinal, which includes two components; willingness to be treated by a PA and satisfaction with that treatment. While it might be argued by some that the behavioral criterion of utilization is the most objective and most relevant criterion, it is maintained here that the attitudinal component is equally important, particularly in military medical settings.

Utilization Criteria. Where the choice of a medical practice is largely voluntary, as it usually is in the civilian sector, perhaps the ultimate criterion of patient acceptance of the PA is the extent to which a medical practice maintains (or increases) its patient load or utilization rates after introduction of the PA. In a military setting, however, patient choices are heavily constrained by the fact that military medical services are free. Hence short-term utilization rates of military facilities are not likely to shift measurably after introduction of the PA even if patient opposition is substantial. Serious

negative effects are more likely to show up in long-term recruitment and reenlistment rates, although separation of PA effects from other job satisfaction factors would be very difficult. But, obviously, such long-term and complex study designs would not produce a timely evaluation of PA policies.

Although changes in facility utilization rates are not viable criteria in this study, it is possible to assess PA utilization per se, that is, whether and to what extent patients have been treated by a PA during visits to a base outpatient clinic. While this information is valuable, it cannot be used as final evidence of patient acceptance since patients do not have complete control over whether or not they see a PA. Moreover, PA staffing levels in most of the hospitals studied was fairly low, so that non-usage of the PA due to non-acceptance is confounded to some extent with non-usage due to higher availability of physicians.

PA utilization rates will nonetheless play an important role in this evaluation. First, they will provide a general idea of the extent to which PA-patient contact has taken place. Since much of this evaluation depends upon patient attitudes, it is important to demonstrate the degree to which these attitudes are based on actual patient experience with the PA. Second, there are certain attitudinal responses that can be assessed only among patients who have been treated by a PA for some medical problem. An example is patients' evaluation of the adequacy of treatment offered by the PA.

Finally, variations in PA utilization patterns may offer clues about patient acceptance not available in other measures. For example, to the extent that contact with a PA or a physician reflects patient preference, significant variations in usage rates for different medical problems might indicate differential acceptance of PA services according to type of medical problem.

Attitudes. While utilization rates are important in evaluating patient acceptance of the PA, they are not alone sufficient to decide upon acceptance. Utilization says nothing about a patient's opinions or deeper feeling about this new role. Patients might utilize the PA

out of convenience, curiosity, or necessity; it implies neither endorsement of the concept nor satisfaction with the care received. Strong negative feelings among a substantial portion of the patient population could portend long-term utilization problems, especially if the feelings do not change after experience with the PA. Therefore, in this study attitudes will be a prominent criterion for evaluating patient acceptance.

There are two kinds of attitudes relevant to patient acceptance. One is patient approval or disapproval of the PA. This type of assessment can be extended to patient approval or disapproval of various PA functions, such as screening, treatment of specific illnesses, physical exams, and so forth. The validity of such general ratings depends to some extent upon existing awareness of the PA concept and knowledge of his specific responsibilities.

A second type of attitude concerns the patient's satisfaction with PA services, given some patient contact with the PA. Satisfaction can be assessed in an absolute sense, or a relative comparison of satisfaction with PA versus physician care. Ratings of satisfaction with PA services are, in effect, an assessment of the quality of care from the patient's viewpoint.

Attitude measures can also be examined for variability. It is possible, for example, that endorsement varies according to the type of problem treated by the PA, or that certain types of patients--according to rank, sex, or some other factor--will be more favorable towards the PA than others. This information might be used to suggest optional utilization of PA services within outpatient clinics.

Combined Criteria. Behavioral and attitudinal measures of PA acceptance are not independent; over the long run they should covary to a considerable extent. Hence more reliable measures of long-term success of the PA program might be combinations of utilization and attitude measures.

For example, endorsement of the PA program can be examined for those using versus those not using PA services. If attitudes are more positive among users, this could indicate that negative attitudes are more

a function of unfamiliarity with the role rather than dissatisfaction with the quality of PA care. Of course, the causal relationship is complex since PA users might be self-selected from those patients with positive attitudes to begin with. Some emphasis will be placed on analysing the cause-and-effect relationship between usage and attitudes, with the goal of determining whether failure to use PA services stems from opposition or opportunity.

The Study Setting

By the summer of 1974 the Air Force had 76 PAs assigned to outpatient clinics at its bases through the country. Since it was not feasible to conduct studies at all of these bases, the study focused on the patient populations at seven Air Force bases.

The seven bases selected for the study are listed in Table 1 along with the PA staffing levels in June 1974.¹ Note that the 27 PAs at these facilities account for more than one-third of Air Force PAs at that time. We also show the number of Primary Care Nurse Practitioners² (PCNPs) and what will be termed "primary medicine" physicians, which include General Practitioners, Family Practitioners,³ Internists, and Flight Surgeons. The number of PAs differs from base to base, with Homestead having the largest concentration of PAs (compared to MDs) and Keesler the lowest. The large number of PAs at Homestead and the consequent likelihood of more extensive patient experience with PAs make this base a major target for evaluation.

Proper interpretation of our results requires an understanding of the way in which PAs are utilized at these hospitals. While the PA role has evolved primarily for delivering outpatient care, and in fact this is the only way in which PAs are used throughout the Air Force, there are some important differences from base to base.

¹Two other bases, Mountain Home (Idaho) and Dyess (Texas), were included in our larger study of Air Force outpatient care, but neither had PAs on their staff at this time.

²The PCNPs are former Registered Nurses who have received additional training in direct patient care. They are similar to Nurse Practitioners except they assist in primary medicine clinics.

³Family Practitioners are not to be confused with General Practitioners who normally have no residency training in a specialty. Family Practitioners are specialists who have combined residencies in internal medicine, pediatrics and OB/GYN.

Table 1
 AIR FORCE BASES IN THE PA STUDY AND
 PRIMARY MEDICINE STAFFING AS OF JUNE 1974

Air Force Base	Number of PAs	Number of PCNPs ^a	Number of Primary Medicine MDs ^b	MD/PA Ratio
Homestead (Fla.)	14	0	25	1.8
Keesler (Miss.)	3	1	31	10.3
March (Calif.)	2	2	11	5.5
Nellis (Nev.)	2	0	10	5.0
Peterson (Colo.)	2	0	10	5.0
Robins (Ga.)	2	0	8	4.0
Williams (Ariz.)	2	3	8	4.0

^aPrimary Care Nurse Practitioners (see text footnote 2).

^bGeneral Practitioners, Family Practitioners, Internists, and Flight Surgeons (see text footnote 3).

At all bases except Homestead the PAs were located in the General Therapy Clinic, the clinic which provides the bulk of outpatient services for the Air Force (including sick call). At all bases except Homestead and Williams, PA supervision was handled by General Medical Officers (GMOs), nearly all of whom were General Practitioners. In a few clinics the supervision was one-on-one, but at the time of our study most clinics had more GMOs than PAs, so that a given PA might work with more than one physician. In some clinics the PA was utilized much like a GMO, with separate appointments made by a triage person (usually a nurse or corpsman) for those problems deemed treatable by a PA. At Williams the two PAs are utilized in a similar fashion, except that the supervision is provided by a single internist.

Homestead provides a contrasting pattern of utilization. In 1973 the General Therapy Clinic was replaced by a Family Practice Clinic, whereby all active duty personnel and their families were organized into panels. Each panel was assigned to a single Family Practice physician and his team. By 1974 the team included a PA and a corpsman, so that

PA supervision was available from a Family Practitioner on a one-to-one basis. The PAs had separate appointment schedules, with triage handled by a corpsman or an appointment telephone operator. Patients could choose an appointment with either their PA or their physician, although generally a physician appointment required a considerably longer waiting time, perhaps up to a week or more.

Study Methodology

The study utilized several methods for assessing patient response to the PA. The major method consisted of cross-sectional mail surveys of patient population samples at the seven bases in the summer and fall of 1974.

The time of the surveys, the number of households responding, and household response rates are shown in Table 2. Samples were drawn from both active duty and retiree populations using name and address rosters. The retiree population was defined as all retiree families living within a radius of 50 to 100 miles of each base; sample sizes were generally 10 to 15 percent of the total retiree populations.⁴ The response rates shown are based on the total number of households with usable addresses. Both the active duty and retiree rosters were frequently six months to one year out of date; it seems reasonable to exclude those households who had moved or with bad addresses when calculating response rates. These net response rates are quite high, ranging from 70 to 84 percent. Accordingly, there is little reason to expect any appreciable sample bias due to nonresponse.

The survey questionnaires covered a number of medical care issues, including outpatient usage rates by problem, satisfaction with various aspects of the delivery system, use of and attitudes toward physician extenders, and personal background characteristics. For those respondents who had not heard of the PA program, the questionnaire also included a brief description of PA functions. Separate but identical questionnaires were filled out by spouses of military persons (whether

⁴The retiree area surveyed depended on the characteristics of the location; in more isolated areas a larger radius was used. Because the samples had to be drawn by zip code, the exact boundaries also depend upon local zip code structure.

Table 2

SURVEY CHARACTERISTICS

Hospital	Time of Survey	Households Responding	Response Rate ^a
<u>HOMESTEAD</u>			
Active Duty	Fall, 1974	586	72%
Retirees	Same	730	75%
<u>KEESLER</u>			
Active Duty	Fall, 1974	758	84%
Retirees	Same	1423	70%
<u>MARCH</u>			
Active Duty	Spring, 1974	335	71%
Retirees	Summer, 1974	764	73%
<u>NELLIS</u>			
Active Duty	Fall, 1974	313	82%
Retirees	Same	808	84%
<u>PETERSON</u>			
Active Duty	Fall, 1974	274	73%
Retirees	Same	804	80%
<u>ROBINS</u>			
Active Duty	Summer, 1974	641	70%
Retirees	Fall, 1974	811	73%
<u>WILLIAMS</u>			
Active Duty	Summer, 1974	335	83%
Retirees	Fall, 1974	772	78%

^aProportion of households responding out of total sample with usable addresses, excluding households who have moved, with bad addresses, etc.

active or retired), so that the number of persons actually surveyed is about 50 percent larger than the household numbers reported in Table 2. A copy of the questionnaire is reproduced in an Appendix.

The second method of the study was a longitudinal mail survey conducted at Homestead using the same panel of respondents. Random samples of active duty and retiree households were surveyed in the Fall of 1973 prior to the full utilization of PAs in the Family Practice Clinic. The same group was resurveyed in the Fall of 1974 to discover whether PA acceptance increased or declined as a result of continued experience with the program. In addition, a new sample of households was surveyed at this time (as reported in Table 2). The longitudinal panel and the cross-sectional sample of Fall, 1974 comprised two independent random samples.

Finally, the heavy utilization of PAs at Homestead led us to choose this base for intensive face-to-face interviews with patients, PAs, and physicians regarding the impact of the PA program. The aims of the patient interviews were to help validate the mail survey results, to provide a more intensive assessment of reasons for support of or opposition to the PA program and to investigate organizational issues that might help maximize PA utilization and acceptance.

III. AWARENESS AND UTILIZATION OF THE PA

The first two issues to be considered are awareness and utilization of the PA at the seven bases in the survey. Both of these factors establish the extent to which the attitudinal evaluations considered in the next section are based on actual knowledge and experiences of the patients, rather than on an unfamiliar concept described in a questionnaire.

Awareness

Awareness of the PA program was assessed using a simple yes-no question from the survey asking whether the respondent had heard of the PA program. The percentage of "yes" responses is shown in Table 3.⁵ It is clear that PA awareness is substantial among active duty and retiree patients at most bases, with between two-thirds to three-quarters of the various samples indicating they have heard of the Physician Assistant concept. But Keesler and Nellis are important exceptions. The low level of awareness at Keesler, averaging about 40 percent, can probably be explained by a low exposure rate due to the very small number of PAs compared to physicians (see Table 1). On the other hand, the low level of awareness at Nellis, about 50 percent, can best be explained by unusually low utilization of the General Therapy Clinic. Our studies reveal that at most bases about half of all patient visits take place in General Therapy, but at Nellis the rate is only 35 percent.

We conclude that awareness of the PA is sufficiently high at most bases to enable an evaluation of PA acceptance based on patients' own knowledge of the program rather than information provided in the questionnaire. The lower awareness rates at Keesler and Nellis make them less reliable samples for this purpose. Of course, this information criterion can be used in later analyses to distinguish differences in PA acceptance between informed and uninformed respondents.

⁵The number of cases are not shown in this and other tables when they are over 100 and resemble the household Ns shown in Table 2. The number of active military respondents generally equal the number of households, while the number of spouses is one-half to two-thirds lower. The number of retiree users of the hospital in question is generally one-half that of total retiree households responding.

Table 3

PERCENT AWARE OF THE PA PROGRAM^a

Hospital	Active Duty Persons		Retiree Users of Hospital	
	Military	Spouse	Military	Spouse
HOMESTEAD	68%	81%	61%	65%
KEESLER	39%	46%	47%	43%
MARCH	76%	68%	68%	76%
NELLIS	52%	53%	56%	56%
PETERSON	77%	74%	70%	70%
ROBINS	70%	69%	74%	73%
WILLIAMS	60%	59%	65%	66%

^aSee text footnote 5.

Utilization

PA utilization not only helps establish the validity of patient evaluations, it is valuable in its own right as an acceptance criterion. Some of the attitudinal ratings to be investigated later are only meaningful for PA users, while variations in PA usage across type of medical problem or type of patient can be helpful in locating potential problem areas for PA acceptance.

One type of utilization is assessed by the survey question, "To your knowledge, have you visited or consulted with a Physician's Assistant within the last year"; the affirmative responses are tabulated in Table 4. With the exception of Homestead, utilization rates are substantially lower than awareness rates, averaging between 20 and 40 percent for most groups of respondents. As might be expected from our earlier observations, Keesler and Nellis have the lowest rates. The high rate of utilization for Homestead, approaching 70 percent for active duty spouses, reflects the large number of PAs in the Family Practice Clinic. The low usage rate among retirees at Homestead--relative to active duty rates--reflects the fact that, at the time of our survey, most retiree families were not assigned to Family Practice panels.

Table 4

PERCENT SEEING A PA DURING THE PAST YEAR

Hospital	Active Duty Persons		Retiree Users of Hospital	
	Military	Spouse	Military	Spouse
HOMESTEAD	62%	69%	20%	30%
KESLER	22%	19%	9%	9%
MARCH	35%	41%	24%	31%
NELLIS	20%	16%	16%	22%
PETERSON	33%	41%	23%	21%
ROBINS	35%	40%	24%	33%
WILLIAMS	24%	28%	29%	28%

A second assessment of total usage rates is based on a survey question asking for the kind of medical person seen on the patient's last outpatient visit to the base facility in question. About 20 percent of Homestead active duty persons report they saw a PA on their last visit, compared to about 65 percent who saw a physician. This compares to 2 and 9 percent for Nellis and Keesler and between 10 to 15 percent for the remaining bases who saw a PA on their last visit. Again, Homestead retirees reported much lower rates than active duty persons (about 5 percent).

It appears that the fairly high concentration of PAs at Homestead does not guarantee extensive patient contact with PAs, and the lower PA concentrations at other bases yields even less experience. Nonetheless, the PA experience at all bases except Nellis and Keesler is certainly more substantial than for most civilian studies of PA acceptance. The relatively higher rate of exposure at Homestead underscores its importance for this evaluation.

Variation in Utilization

Two kinds of variations in utilization rates are of primary importance. First, lower than expected utilization rates for certain medical problems may indirectly indicate patient rejection of PA services for those problems. For example, we would expect PA contact to be relatively high for routine problems, such as upper respiratory ailments, and fairly low for certain internal problems such as chest or stomach pain. Second, considering various patient background or health care demand characteristics, any special patient group with low utilization rates may well signal a potentially troublesome group for PA acceptance.

Due to the problem of small numbers of persons seeing PAs on their last outpatient visit, we must confine this analysis to Homestead and Robins.⁶ Our more intensive analyses suggest that these two bases are quite representative of the remaining bases.

Usage Variation by Type of Visit. The survey asked respondents to indicate the general nature of their medical problem on their last visit to the base hospital. For the purpose of analysis we combined these problem areas into five fairly broad categories: upper respiratory illness; skin/eye/ear problems; muscles or joints, including accidental injury; internal problems, including circulatory, urinary, and endocrine conditions; and physical examinations. Finer breakdowns were prohibited by small number of cases. The percentages of respondents seeing a PA or a physician for each category is shown in Table 5.

For active military persons at both bases the chance of seeing a PA is quite uniform for acute medical problems regardless of severity; PA use rates are significantly lower only for physical exams. Thus at

⁶Robins has no higher usage rates than March, Peterson, or Williams, but its active duty sample size is twice as large.

Table 5

MEDICAL PERSON GIVING TREATMENT ON LAST VISIT, ACCORDING TO TYPE OF PROBLEM

Problem and Who Saw	Homestead Active Duty		Robins Active Duty	
	Military Person	Spouse	Military Person	Spouse
<u>Upper Respiratory</u>				
Treated by PA	27%	22%	18%	18%
Treated by MD	64%	74%	56%	82%
Other ^a	9%	4%	25%	--
(N)	(79)	(34)	(84)	(32)
<u>Skin/Eye/Ear</u>				
Treated by PA	19%	31%	18%	26%
Treated by MD	63%	44%	68%	64%
Other	18%	25%	14%	10%
(N)	(66)	(27)	(124)	(51)
<u>Muscles/Joints/ Accidents</u>				
Treated by PA	26%	21%	15%	18%
Treated by MD	47%	64%	61%	59%
Other	27%	15%	24%	23%
(N)	(35)	(23)	(56)	(38)
<u>Internal Problems^b</u>				
Treated by PA	26%	9% *	18%	8% *
Treated by MD	65%	82%	70%	75%
Other	9%	9%	12%	17%
(N)	(66)	(29)	(98)	(29)
<u>Examinations</u>				
Treated by PA	8% *	7% *	4% *	1% *
Treated by MD	64%	91%	67%	77% ^a
Other	28%	2%	29%	22%
(N)	(65)	(98)	(64)	(116)

* Rates are significantly lower ($p < .05$) than the average of the remaining non-starred rates in the same column

^a Corpsman in almost all cases, except for spouse exams at Robins, where most "others" are Nurse Practitioners.

^b Including urinary, circulatory, endocrine, and nervous conditions.

Homestead 27 percent of the upper respiratory problems for military persons were treated by the PA, compared to 26 percent of the more serious internal problems. The figures are 18 percent in both categories at Robins. One is not struck so much by the substantial PA use rates for internal problems--since some of these problems are within the scope of PA expertise--but by the fact that the upper respiratory rate is no higher. It seems fairly clear that at these bases the PA is utilized in more or less the same way as physicians in the scheduling of acute outpatient visits for active duty persons, so that the odds of seeing a PA are affected mainly by the staffing ratios and not by severity of the problem.

The pattern for spouses, however, is different. Their PA use rate is significantly lower for internal problems than for the other three acute problem areas. It is also noted that at Robins there is more extensive use of a pediatric and OB/GYN Nurse Practitioner than the PA for exams (indicated by "other").

These variations in utilization rates suggest that both military persons and their spouses are less inclined to accept PA substitution for exams, and that spouses are less inclined to accept PA substitution for more serious internal problems. On the other hand Robins spouses appear to accept NP substitution for exams at about the same rate that spouses at both bases accept PA substitution in the less serious problem categories. Of course, we cannot definitely interpret these rates as indicating PA acceptance without confirmation supplied by attitudinal measures considered in the next section.

Usage Variation by Type of Patient. Investigating the effect of patient background variables is confounded by the high intercorrelations of such variables as age, rank, marital status, and so forth. Accordingly, a number of preliminary multiple regression analyses were undertaken to sort out possible independent affects of background variables. The dependant criterion was seeing the PA at least once last year (versus not at all), and the independant variables included rank, education, ethnicity, career status, reenlistment intentions, length of time at the base, family and marital status, and total outpatient visits last year.

The only truly strong predictor of seeing a PA last year was total outpatient visits last year. This is to be expected, since the probability of seeing a PA at least once must increase as contact with the medical facility increases. Also, significant positive effects were found for having children (compared to being childless), controlling for number of visits and other background factors. This finding is borne out by other analyses of the last visit, where 30 percent of the child visits were treated by PA compared to 20 percent of the adult visits. Most of these child visits were for colds or ear problems.

The fact that other background factors were not strongly related to PA usage is an important finding. This means that utilization of the PA is relatively uniform throughout the patient population, with major variations being affected for the most part by type of visit. This is clearly the way the PA concept is intended to work in practice.

IV. PATIENT ACCEPTANCE

The central question of this study is to what extent patients are willing to accept the PA as part of the primary care team. We have shown that patients have received treatment from PAs, with especially high utilization rates at Homestead. But, given the fact that the patient population is largely a captive one, this utilization does not necessarily imply endorsement, nor does nonutilization for certain problem areas establish rejection. We must evaluate the attitudes of patients toward the PA in order to provide a complete assessment of PA acceptance.

We will first address the question of overall acceptance using attitude items from the cross-sectional surveys. This will be followed by more detailed investigations of sources of variation in acceptance according to utilization factors, personal background factors, and specific reasons for acceptance or nonacceptance. The longitudinal and interview data gathered at Homestead will be introduced to aid this analysis. Special attention will be given to combining both current utilization and attitudinal factors to provide the best judgment about the future success of the PA program.

Overall Acceptance

The surveys included several questions for assessing attitudes toward extenders, some of which are tied to patient contact (or last contact) with a PA or NP. Perhaps the best overall indicator of PA program support is the question, "Are you favorable or unfavorable to receiving treatment from a Physician's Assistant [Nurse Practitioner] as described above?"⁷

The responses to the PA question, tabulated in Table 7 for the five bases with the highest levels of knowledge and utilization of PAs, show that support for the PA is substantial. Over 50 percent of most groups indicate a favorable evaluation of the PA, while about one-third claim neutrality. But acceptance is by no means unanimous. Nearly 20 percent of the active duty persons are unfavorable, with spouses tending to be somewhat more unfavorable than military persons. Support for the program is slightly

⁷ A brief description of PA and NP functions was given prior to the question; see the Appendix.

Table 7

PATIENT SUPPORT OF THE PA PROGRAM^a

Hospital	Active Duty Persons		Retiree Users of Hospital	
	Military	Spouse	Military	Spouse
<u>HOMESTEAD</u>				
Favorable	50%	52%	60%	52%
Neutral	32%	28%	27%	34%
Unfavorable	19%	20%	13%	14%
<u>MARCH</u>				
Favorable	47%	46%	58%	58%
Neutral	35%	32%	34%	32%
Unfavorable	18%	23%	8%	11%
<u>PETERSON</u>				
Favorable	54%	47%	55%	48%
Neutral	32%	35%	37%	42%
Unfavorable	14%	18%	8%	10%
<u>ROBINS</u>				
Favorable	52%	55%	59%	53%
Neutral	35%	34%	32%	37%
Unfavorable	14%	12%	9%	11%
<u>WILLIAMS</u>				
Favorable	46%	41%	58%	56%
Neutral	37%	41%	29%	28%
Unfavorable	17%	18%	13%	1%

^aPercentage distribution of responses to the question, "Are you favorable or unfavorable to receiving treatment from a Physician's Assistant?"

higher among retirees, although this may not be attributable to the PA program per se. We have found that retiree users of base facilities tend to give more positive ratings of many different dimensions of the health care system.

It is especially interesting that at Homestead, where PA utilization and familiarity with the program are highest, the pattern of support and opposition resembles patterns at the other bases where experience is more limited. It is possible that PA acceptance is not as dependent upon experience as one might expect. If so, these figures may well be good indicators of future acceptance at these bases as PA staffing levels increase, at least up to the levels reached at Homestead.

A second aspect of overall PA acceptance involves evaluations of the quality of care by those persons having received medical services from PAs. For persons reporting a visit with a PA within the last year the survey requested two evaluations: degree of satisfaction or dissatisfaction with the PAs' handling of their problem, and whether, in the patients' opinion, PAs handled the problem better, worse, or about the same as physicians at the base in question. Again, due to small numbers, we must confine these analyses to Homestead and Robins.

The ratings shown in Table 8 make it clear that satisfaction with PA treatment is quite substantial, being near 75 percent for most groups. Moreover, over 85 percent of Homestead respondents feel that the PA handled their problem as well or better than a physician, and over 90 percent feel this way at Robins. Significantly, at Robins the percent saying the PA was better than an MD exceeds the percent saying the PA is worse.

While these figures attest to the adequacy of PA treatment in the eyes of users, we cannot necessarily use these figures to pronounce the PA program a total success. First, we still have a minority who are unfavorable to the program; second, contact with a PA is still a voluntary decision for each patient. Patients who do not wish to see a PA, whatever their reasons, can generally see a physician if they wish to do so. Therefore, PA users are to some extent a self-selected population, and to this extent they may be expected to give favorable evaluations of the quality of care.

Table 8

RATINGS OF PA SERVICES FOR PERSONS SEEING PA IN PAST YEAR

Base and Rating	Military Persons	Spouses
<u>HOMESTEAD</u>		
Percent satisfied	71%	75%
Percent neutral	13%	12%
Percent dissatisfied	16%	13%
PA better than MD	15%	15%
PA same as MD	71%	71%
PA worse than MD	14%	14%
<u>ROBINS</u>		
Percent satisfied	76%	86%
Percent neutral	16%	6%
Percent dissatisfied	8%	7%
PA better than MD	21%	34%
PA same as MD	71%	61%
PA worse than MD	9%	5%

Experience Factors

It might be fairly argued that persons who have had no experience with a PA--the situation for a majority of respondents at all bases except Homestead--cannot make an informed judgment about the PA program. And, given the high importance accorded health care by most persons, uninformed persons might be more likely to disapprove of the PA role as a matter of principle. We can test this possibility by examining PA acceptance according to respondents' experience with PAs. We will use Homestead and Robins active duty persons only; retirees and groups at other bases show very similar patterns.

As can be seen from the percentages in Table 9, respondents who have seen a PA within the last year are more favorable to the PA program than those who have not, although the difference for military persons is not very large. It is noted, however, that the difference exists only between the favorable and the neutral groups. Having had experience with a PA increases favorability and reduces neutrality; but it makes almost no difference for the proportion disapproving of the PA program. In other words, opposition to the PA program appears to be unaffected by experience with PAs over a one-year period.

It is not quite accurate to describe the differences in Table 9 as changes, since we are really examining different groups of persons at the same time. Therefore, these figures do not in fact tell us that persons who had contact with a PA changed to become more favorable towards the PA program. For this type of inference we must use the Homestead longitudinal panel study which surveyed the same group of persons in both 1973 and 1974.

In 1973 the PA program was new to Homestead and prior experience with it was nearly nonexistent; but by 1974, as we have seen, a large majority of the respondents had seen a PA at least once. Thus we can trace actual change in PA acceptance for the same group of persons over a one-year period.

Changes in PA acceptance at Homestead are shown in Table 10. While the number of cases is small for some groups, the pattern is clear. For persons who have seen a PA there is a definite reduction in neutrality and an increase in favorability--although the increase is quite small for spouses. But there is only a small decrease in unfavorable attitudes among military persons, and a modest increase for spouses. For persons *not* seeing a PA, there is a definite increase in the proportion

Table 9

PA ACCEPTANCE FOR PA USERS AND NONUSERS

	Military Persons		Spouses	
	Saw PA Last Year	Have Not Seen PA	Saw PA Last Year	Have Not Seen PA
<u>HOMESTEAD</u>				
Favorable	57%	44%	60%	40%
Neutral	22%	37%	22%	38%
Unfavorable	20%	19%	18%	21%
<u>ROBINS</u>				
Favorable	59%	52%	71%	43%
Neutral	28%	36%	18%	45%
Unfavorable	14%	13%	11%	12%

Table 10

CHANGE IN PA ACCEPTANCE FROM 1973 TO 1974 FOR HOMESTEAD ACTIVE DUTY PERSONS^a

PA Acceptance	Military Persons			Spouses		
	1973	1974	Change	1973	1974	Change
<u>Saw PA in past year (1974)</u>						
Favorable	45%	63%	+18%	53%	55%	+ 2%
Neutral	35%	21%	-14%	36%	27%	- 9%
Unfavorable	20%	16%	- 4%	11%	18%	+ 7%
	(N)	(84)		(73)		
<u>Did Not See PA (1974)</u>						
Favorable	50%	39%	-11%	27%	41%	+14%
Neutral	30%	32%	+ 2%	50%	23%	- 2%
Unfavorable	20%	30%	+10%	23%	36%	+13%
	(N)	(44)		(22)		

^aBased on the same group of persons surveyed in 1973 and 1974.

disapproving of the PA program, and military persons show an actual decline in favorability.

The patterns in Table 10 are fairly complex, and it is difficult to summarize them according to a single trend. But one suggestion is clear: Experience with the PA over a one-year period at Homestead--whether by direct contact or not--does little to diminish the minority opposition to the program, and in fact it might have increased it to some extent among spouses.

Combined Usage and Attitude Criteria

So far we know that most patients, regardless of usage, either endorse the PA program or are neutral to it, and that PA users are generally quite satisfied with the PAs' treatment. But we are still left with a minority who oppose the program, and this proportion remains constant even for those who have used a PA. For the purpose of long-term projections it is important to understand whether this opposition is a matter of principle or has some basis in actual experience with the PA. Further, will this opposition fade away with continued experience or, rather, will it lead to reduced PA utilization for this group? In order to answer these questions we need a more detailed examination of the relations between PA usage, PA program support, and specific evaluations of PA satisfaction.

The information supplied in Table 11 helps to untangle some of the cause and effect relationship between attitudes and usages. First, among PA users, those who oppose the PA program give very different ratings of PA satisfaction than those who support the program. While 96 percent of the favorable users were satisfied with the PAs' handling of their problem, 61 percent of the unfavorable users (14 percent of military and 19 percent of spouses) are satisfied with the PA care received. Thus opposition to the PA program, when expressed by persons having had contact with a PA, is strongly related to dissatisfaction with the way the PA handled their problem. Of course, we still do not know whether the anti-PA patients are predisposed to give dissatisfied ratings, given their general opinion of the PA program; but this may not make much difference if their opposition leads them to avoid PA services.

The second set of figures in Table 11 strongly suggest that those opposed to the PA program will, in fact, seek to avoid PA contact. Only 12 percent of the anti-PA military persons and 6 percent of anti-PA

Table 11

RELATION BETWEEN PA ATTITUDES AND PA UTILIZATION AT HOMESTEAD^a

	PA Support By Military Persons			PA Support By Spouses		
	Favorable	Neutral	Unfavorable	Favorable	Neutral	Unfavorable
<u>PA Satisfaction Rating Among PA Users Last Year</u> (%)						
Satisfied	96%*	60%	14%*	96%*	62%	19%*
Neutral	3%	24%	25%	4%	28%	19%
Dissatisfied	1%	16%	61%	--	10%	61%
(N)	(144)	(74)	(51)	(106)	(39)	(31)
<u>Who Treated on Last Visit (%)^b</u>						
MD	53%	54%	69%	69%	75%	83%
PA	26%**	20%	12%**	24%**	15%	6%**
Corpsman	17%	17%	12%	6%	4%	6%
(N)	(198)	(123)	(68)	(131)	(67)	(48)

* Favorable-unfavorable difference significant at $p < .001$.

** Favorable-unfavorable difference significant at $p < .05$.

^a Homestead cross-sectional survey, 1974.

^b Percentages exclude a small number of other persons/seen on last visit.

spouses saw a PA on their last visit to Homestead, compared to 26 and 24 percent of pro-PA persons, respectively. These differences are statistically significant. It appears that the minority of patients who disapprove of the PA program are doing so in spite of experience (and perhaps because of experience), so that the opposition is not simply based on dislike of a hypothetical concept.

Table 11 also provides some insight about the "neutral" group, whose size is a matter of concern for projections of future PA acceptance. We note that 60 percent of the PA users who are neutral to the program are satisfied with PA treatment and only 16 percent are dissatisfied, although their PA utilization rate is intermediate between the pro-PA and anti-PA groups. On the other hand, if they did see a PA on their last visit, the percent dissatisfied is low and, while not shown in the table, over 50 percent report satisfaction with the PAs' ability to handle their problem. Therefore, neutral patients may be somewhat less likely to use the PA, but when they do, a majority express satisfaction and only a small fraction report dissatisfaction with their visit.

The results of this analysis are consistent with results presented in previous sections. That is to say, while support for and use of the PA program (where available) is substantial, the minority of about 20 percent who are opposed to the program are likely to remain opposed and, given the opportunity, will try to avoid PA treatment.

Patient Background Factors

Given the relationships documented earlier between patient background and PA usage rates, and given the relation between usage and attitudes, it is important to assess the relationship between background and PA acceptance. We undertook several multiple regression analyses using a number of independent variables including PA awareness, PA use, health care demand, and the patient background characteristics described earlier for the usage rate regressions.

The results can be summarized without a table. Basically, using opposition to the PA program as the dependent variable,⁸ none of the regression coefficients were large or statistically significant for either military

⁸ Scored as 1 for those opposed to the program and 0 otherwise.

persons or spouses. We tested another model using pro-PA versus others as the criterion; the only significant coefficient for military persons is awareness of the PA program, with more knowledgeable persons being more pro-PA (and less neutral, but not less anti-PA) than less knowledgeable persons. For spouses, the only significant coefficient occurred for PA contact, with results similar to those presented already in Table 9. In short, patient background has little or no impact on PA attitudes.

Three of the bivariate relationships for PA acceptance are shown in Table 12. Generally, the higher demand groups show somewhat higher acceptance of the PA (not statistically significant), but the difference is made up from the neutral group and not the anti-PA group. We note that there is no important difference in anti-PA attitudes between officer and enlisted spouses.

Satisfaction with the Health Care System

Acceptance or nonacceptance of the PA takes place in a larger evaluative environment involving the total health care system. Accordingly, it is reasonable to postulate that some of the unfavorable attitudes towards the PA may stem from a patient's satisfaction with aspects of health care other than the PA program. This section undertakes an examination of these relationships using the Homestead survey data.

One of the problems confronting such an analysis concerns the proper causal relationship between more general satisfaction with the health care system and more specific attitudes toward the PA. Does dissatisfaction with the system lead to dissatisfaction with PAs, or vice versa? Actually, the reality may be that both happen at once. Again, to help clarify the nature of the causal relationships, a series of preliminary multiple regression analyses were performed. These results are not taken as final models, but rather as suggestive of the proper relationship between PA program support and general satisfaction with medical services.

The first regression model used an overall rating of satisfaction with health facilities as the dependent variable; independent variables included patient background, patient acceptance of PAs, health care demand, and specific rating of many different aspects and components of the health care system (see the questionnaire in the Appendix). PA attitudes had very small and statistically insignificant coefficients for both military persons and

Table 12

PA ACCEPTANCE AND PATIENT BACKGROUND CHARACTERISTICS^a

Status and PA Acceptance (%)	Rank		Term of Service		Family Status		
	Enlisted	Officer	First Term	Career	Single	Married, No Children	Married, Children
<u>Military</u>							
Favorable	48%	56%	45%	55%	46%	49%	53%
Neutral	34%	25%	36%	27%	36%	32%	30%
Unfavorable	18%	19%	18%	18%	18%	19%	17%
<u>Spouses</u>							
Favorable	48%	57%	43%	53%	--	46%	52%
Neutral	32%	19%	29%	27%	--	32%	27%
Unfavorable	20%	24%	28%	20%	--	21%	21%

^a Homestead survey.

spouses. On the other hand, the only three significant coefficients consistent for both groups were (in order of strength) satisfaction with the Family Practice program; satisfaction with the quality of physicians; and satisfaction with accessibility of the system (appointment waiting time, office wait, etc.).⁹

The second set of regression models used anti-PA and pro-PA attitudes as dependent variables; the independent variables were the same set of patient background variables and the general satisfaction rating (but not the specific component ratings). For this model we did find a significant coefficient for overall satisfaction with both criteria; all other coefficients except those reported in the previous section were nonsignificant.

The bivariate relationship between general satisfaction and PA acceptance is summarized in Table 13. Note that favorability increases while unfavorability decreases as general satisfaction improves. But it is interesting that for spouses even the satisfied group still shows 16 percent not favoring use of the PA. This is not very different from the total sample rate of 20 percent for spouses.

It seems clear that, while PA disapproval is related to dissatisfaction with the whole health care system, such dissatisfaction explains only a small portion of the variance in PA approval. On the other hand, it is important to stress that general satisfaction with health care is dominated by factors other than approval of the PA programs, most notably by favorable attitudes toward the Family Practice Clinic. We will make use of this finding in a subsequent discussion of maximizing PA acceptance.

Reasons for Acceptance and Rejection

To this point we have analyzed general attitudes toward the PA program or PA services taken as a whole and factors associated with variations in these attitudes. To complete the analysis we must address the issue of whether these attitudes apply to all PA activities or to some more restricted set. More specifically, we need to know the reasons for opposing the PA program and whether these reasons can be ascribed to particular functions of the PA role. Identification of such reasons may offer further insights into methods for maximizing PA acceptance.

⁹The latter two variables are factor-analytically derived scales made up of Question 24 d and 3 (for MD quality) and Questions 8n, 8o, 24b, and 24c (for accessibility); see Appendix for question wordings.

Table 13

GENERAL SATISFACTION WITH HEALTH CARE AND PA ACCEPTANCE AT HOMESTEAD

PA Acceptance (%)	General Satisfaction of Military Persons			General Satisfaction of Spouses		
	Satisfied	Neutral	Dissatisfied	Satisfied	Neutral	Dissatisfied
Favorable	75%	22%	27%	61%	36%	32%
Neutral	24%	51%	29%	23%	41%	28%
Unfavorable	11%	27%	44%	16%	23%	40%
(N)	(305)	(88)	(48)	(131)	(44)	(25)
Product-moment Correlation		.37			.32	

We have shown that PA rejection is not greatly affected by a number of patient characteristics except general dissatisfaction with the health care system, and even this factor can account for only a small portion of the variation in rejection attitudes, particularly for spouses. On the other hand, we have shown that all patients have lower usage rates for physical exams, and spouses tend to have lower PA usage rates for more serious internal problems. Do the lower usage rates reflect conscious rejection of the PA services for these problem areas?

Unfortunately, we cannot answer this question with our survey data. The problem-specific usage rates cannot be further broken down by pro- and anti-PA attitudes (there are only 8 military persons and 3 spouses who are opposed to the PA program and who saw a PA on their last visit). Moreover, our survey did not include attitudinal measures of PA acceptance or rejection for specific types of medical problems. Therefore, we must rely on our Homestead interviews for an assessment of reasons.

Semi-structured personal interviews were conducted with 12 patients at Homestead during the summer of 1975; most were tape recorded and transcribed. About half of these persons were active duty spouses selected specifically for their unfavorable rating of the PA program. The remaining interviewees were selected more or less arbitrarily from among patients in the waiting room of the Family Practice Clinic.

First, among interviewees not selected for anti-PA attitudes, support for the PA was generally high, thereby confirming the survey results showing a majority of patients favoring the PA program. The reasons for the support generally reflected an understanding of the need for assistants, awareness of the special training of the PA, and a trust in the physician's supervisory role. The following quotation from a spouse typifies the favorable views from the pro-PA group:¹⁰

- Q. Based on your experience, how would you evaluate the care given to you by Sgt. ___ [a PA] as opposed to the care you would get from the physician?
- A. Really, it made no difference to me whether I saw Sgt. ___ or Dr. ___, because I knew if there was something Sgt. ___ couldn't answer Dr. ___ was right there. I have no objection at all. I think PA is a beautiful system and I hope they continue with it.
- Q. Would there be some kinds of problems that you would hesitate to see the PA for?

¹⁰

Minor editorial changes were made for grammatical clarity.

- A. No, because I know the doctor is always there. These PAs are quite well-trained and can consult with the doctor if there is any doubt in their minds. In fact, I have seen Sgt. ___ do that. He would go and speak to Dr. ___ or maybe Dr. ___ would come in and take a look.

Note that this respondent believes the PAs have adequate training for their job and expresses considerable confidence and trust in the teamwork principle whereby the PA and the physician work together with referral or consultation on an as-needed basis.

While the favorable PA attitudes tended to reflect a general trust in the system, the anti-PA group seemed to express more specific reasons for their disapproval. The following quotations from two active duty spouses are representative of the unfavorable attitudes expressed towards the PA program.

First Interviewee:

Q. Are there things that you feel a PA should not handle?

- A. I do not feel that they should be able to examine a female patient should she, for instance, come in bleeding. I've seen this done. I think the patient herself feels very uneasy, even though the PA is supposed to be able to handle this. I don't think women especially have accepted that, that a PA can do this, where a doctor can...

As far as physical examinations are concerned, let me say I'm not sold on the PA. I can see where it's going to lighten the burden for the doctor for little aches and pains and ear-aches, and that's all right, but when it comes to physical exams and things like that I'm all for the doctor doing it.

Second Interviewee:

Q. Do you have any feelings about what kinds of things you would want to see Dr. ___ about that Sgt. ___ could take care of?

- A. Things that I would prefer Dr. ___ for rather than a PA? Yes--Gyn problems. Now that sounds dumb, but I think that is where I would back off a little and I would prefer to see Dr. ___ for these.

Q. What other types of things would you feel uncomfortable about with a PA, either for yourself or for your children?

- A. Anything that would get into problems that in my mind would be beyond his capabilities. Now I know he can take a swab for strep throat, that he can look at and read an infected

ear; with these things I'm comfortable. Maybe he can do even more, I don't know. But if it were a serious thing like a heart murmur or some problem with the bladder or liver, I eventually would press to see a doctor.

Note that both respondents mention gynecological problems as primary reason for not using the PA. In fact, all but one of the anti-PA respondents interviewed said they would not want to see a PA for gynecological problems. The second most frequently mentioned area was physical exams, and the third was more serious or complex internal problems of one sort or another. On the other hand, note that both of these interviewees emphasize that they had no objection to the PA handling less serious problems, especially common colds or ear problems for children. All but one of our interviews confirmed this viewpoint.

It seems quite clear, then, that even among persons unfavorable to the PA program, the opposition is not total. For spouses the objection appears to involve gynecological care as well as problem areas where more expertise would be required, such as physical exams and serious internal problems. Therefore, one would not predict a total avoidance of PA services among anti-PA group, but only for certain types of medical problems. As such, the interviews tend to suggest that the low PA usage rates for physical exams and for spouse's internal problems are indicative of less acceptance of the PA for these types of problems.

Acceptance of the Nurse Practitioner

One difficulty in evaluating reasons for PA nonacceptance concerns the extent to which unfavorable attitudes stem from the general difference in expertise between the PA and the physician or, rather specific characteristics of the PA role--such as the fact that most PAs are male, are former corpsmen, and, in the Air Force, are noncommissioned officers. Given the slightly greater objections to the PA by spouses as compared to military persons, and given the uneasiness expressed by some of the interviewed spouses about PAs handling even routine gynecological care, it is possible that status issues are part of the reason for opposition.

Examination of NP acceptance might clarify these alternative explanations to some extent. While the NP resembles the PA in training and function, there are considerable status differences: NPs are mostly female, former nurses, and, in the military, commissioned officers. In

addition, most NPs in the Air Force specialize in pediatric or OB Gyn areas and work in these clinics. Therefore, to the extent that objections to the PA for gynecological problems rest on status issues rather than expertise, one might find different patterns of usage and support for the specialized NP.

Usage and acceptance of the NP is shown in Table 14 for those bases with the largest concentration of NPs. Since most NPs practice in specialized clinics, the usage rates for military persons is considerably lower than for spouses. But spouses do appear to have had about the same amount of contact with NPs at these bases as with PAs, and at Williams the NP contact is even greater.

The results show that the rate of acceptance of the NP is substantial and relatively uniform across bases. The acceptance rate for NPs is somewhat higher among spouses than it is for PAs (see Table 7), especially at Peterson and Williams, although the differences are not large. It is possible, then, that some of the support to the extender role is tied to status issues. But the fact that minority opposition to the NP remains at only a slightly lower level than for the PA suggests that expertise issues are at least as important as status issues.

The results for the NP are essentially the same as the PA results. The overwhelming majority of patients are either favorable or neutral towards the NP program, but there is a small minority who may remain opposed to the NP concept and who may not accept services from them.

Table 14

USAGE RATES AND SUPPORT FOR THE NURSE PRACTITIONER

Hospital	Active Duty Military		Active Duty Spouses	
	Saw NP in Last Year	Support	Saw NP in Last Year	Support
<u>KEESLER</u>	10%		29%	
Favorable		59%		55%
Neutral		36%		35%
Unfavorable		5%		13%
<u>NELLIS</u>	6%		22%	
Favorable		50%		47%
Neutral		40%		41%
Unfavorable		11%		13%
<u>PETERSON</u>	16%		36%	
Favorable		49%		51%
Neutral		39%		36%
Unfavorable		12%		13%
<u>ROBINS</u>	5%		25%	
Favorable		52%		54%
Neutral		35%		34%
Unfavorable		13%		12%
<u>WILLIAMS</u>	27%		51%	
Favorable		46%		48%
Neutral		37%		37%
Unfavorable		17%		15%

V. CONCLUSIONS

In Section I we raised two primary policy questions: Will Air Force patients accept services from physician extenders, and, given variations in that acceptance, how can acceptance be maximized? The data presented and analyzed in the previous sections provide the basis for preliminary answers to both questions.

There is little question that, at bases using physician extenders, patient acceptance has been substantial. Awareness of the PA and NP programs is high, utilization rates are about what one would expect given the concentration of extenders compared to physicians, and a majority of the patients consciously endorse the programs. Among patients exposed to PA services ratings of the quality of care are uniformly high. While those patients expressing a neutral opinion towards the program have somewhat lower utilization rates, their satisfaction ratings are high when they do see a PA.

While the acceptance of the PA is substantial there is a small minority of patients--about one-fifth--that have not accepted the program. These patients have lower utilization rates and, when treated by a PA, they express general dissatisfaction with the visit. The size of this proportion tends to hold up regardless of contact with the PA and regardless of the duration of the program--at least up to the one and one-half year period covered by the Homestead surveys. Therefore, there is a good chance that this minority opposition will remain at least for some period of time after PA programs get under way. On the other hand, there is no evidence suggesting that the opposition will grow as time passes and as PA concentrations increase at least up to levels used at Homestead. The results are essentially the same for the NP, but the minority opposition drops to about one-sixth of the patient groups.

While support for the PA and the NP programs outweighs its opposition, the opposition is not so small as to be safely ignored, especially given its apparent resistance to change. One-fifth or one-sixth of any of these patient populations represents many persons and many hospital visits; it certainly constitutes a large enough group to interfere with the smooth functioning of any system that does not take into

account its preferences. Therefore, in designing a successful system of PA services one must consider the reasons why these patients oppose the PA program.

Fortunately, the rejection of PA care by this group appears confined to a limited number of problem areas; in particular, physical exams and, for spouses, gynecological care and serious internal medicine problems. The opposition does not extend to minor problems such as upper respiratory illness and less serious child illnesses. There is a suggestion that some of the opposition for gynecological problems is based on the status of the PA rather than his expertise, and that the specialized OB/Gyn NP may be somewhat more accepted for these services. However, our data are not definitive on this point.

Given these reasons for opposition, it is likely that the most successful system will allow those patients who feel strongly about seeing a physician the opportunity to do so. Depending on the size of the anti-PA group and the demand for physical exams and gynecological care, this might mean about 15 to 20 percent more physician manpower than might be justified on medical grounds alone.

Other mechanisms for maximizing PA acceptance might take advantage of the success of the Family Practice program established at Homestead. A key feature of this program was the organization of all active duty families into "panels" assigned to a single physician-PA team. In contrast to the traditional Air Force General Therapy Clinic, where an outpatient sees the first available physician, Homestead patients were guaranteed long-term services from the same team, either a PA or a physician depending on the nature of the problem. Our patient interviews revealed that this system was very popular, primarily because of the continuity of care provided to all members of a family by the same team. The satisfaction with increased continuity of care might serve to temper whatever misgivings patients have about the PA. Indeed, we found that when a team physician was transferred, some patients actually preferred an appointment with the PA, who knew their history, rather than with the new physician who would be less familiar with their case.

This finding has led to implementation of the panel concept in the Rand demonstration project underway at four Air Force bases.

There is one important caveat for these projections of PA success. All of our surveys were conducted at bases where primary physician manpower exceeds extender manpower by a substantial margin, even at Homestead (counting all primary medicine clinics), making it likely that most patients can see a physician if they wish without an unduly long wait. A system which proposes substantially higher concentration of PAs compared to physicians may present new circumstances to which the present findings cannot be generalized. Fortunately, future surveys being conducted as part of the Rand demonstration will be able to answer this question.

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This study investigates patient acceptance of Physician Assistants and Nurse Practitioners. Shortfalls in physician manning have led the Air Force to experiment with physician extenders such as Physician Assistants and Nurse Practitioners. These new health professionals extend physician manpower by performing a wide variety of diagnostic and treatment services under the supervision of a physician. Based on an analysis of both usage rates and attitudes, the study finds wide patient acceptance of these extender programs and high ratings of the quality of care by extenders. On the other hand, a small minority of patients, about one-sixth or one-fifth, are opposed to PAs and NPs even after some contact with them. The opposition appears to be confined to specific functions of the extender, such as physician exams or treating more serious internal programs. It is concluded that substitution of Physician and Nurse Practitioner services for certain traditional physician services should be successful from the standpoint of patient acceptance. (Author)