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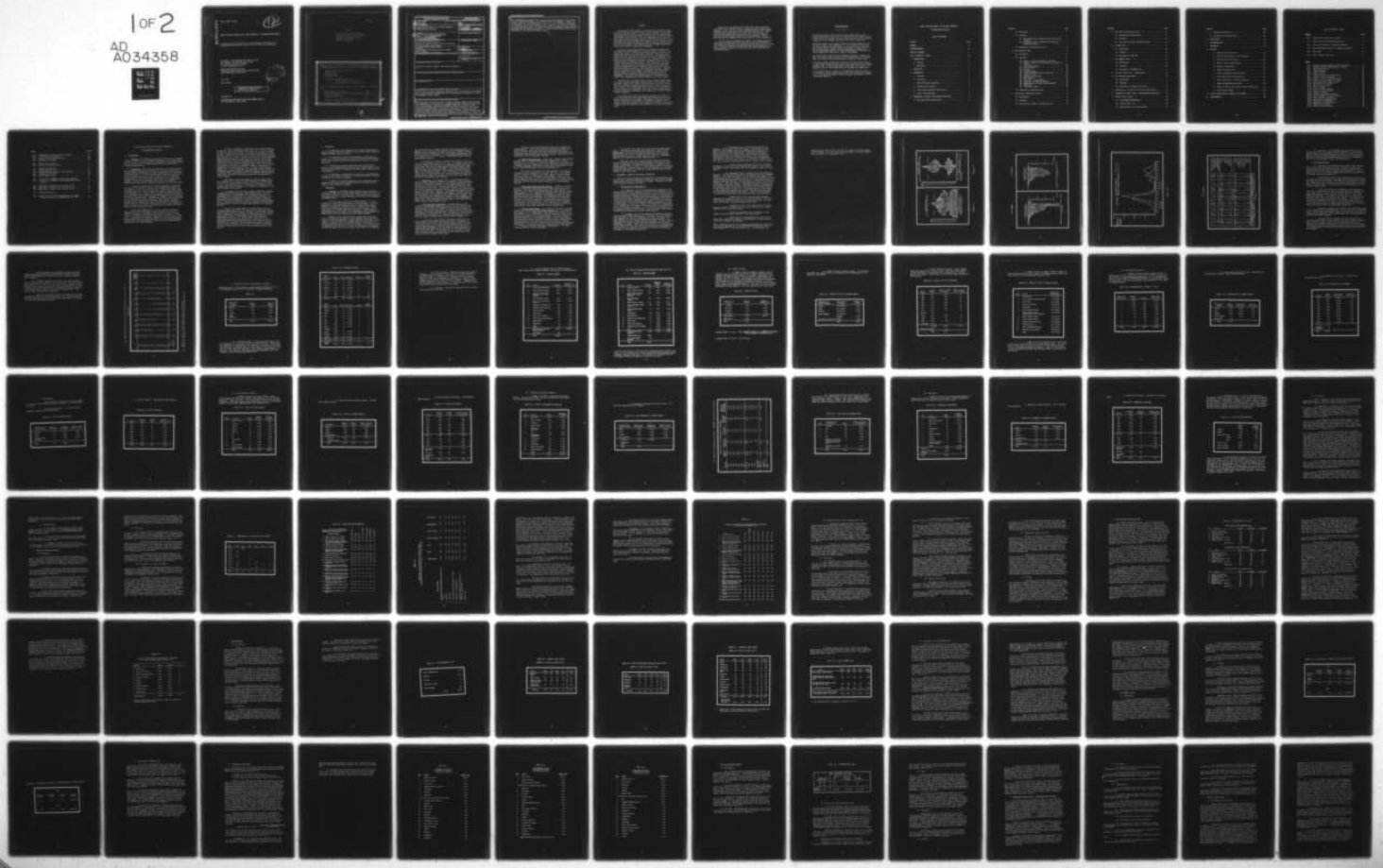

Report HCSD- 76-008

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# FAMILY PRACTICE MODELS FOR AN ARMY COMMUNITY - A DEMONSTRATION PROJECT

A detailed study and analysis of the development and operation of a neighborhood-based family practice clinic at Fort Ord, California

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

The objectives of this study were to study in detail, analyze, and describe the development and operation of a neighborhood-based family practice clinic in an Army setting. Voluminous demographic data was collected on 1469 families who were members of the clinic; data were compiled on over 45,000 encounters between patients and family practitioners. Patient and staff satisfaction was studied; patient utilization of other sources of care, both within and without the military, were evaluated with assistance of inputs

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from the OMB Military Health Care Study and from the Office for the Civilian Health and Medical Program of the Uniformed Services (OCHAMPUS). Major conclusions were that the neighborhood clinic is not as efficient and effective as one located in or near a hospital; that assigning a set panel of families to a family physician is not an effective method of managing a family practice workload; and that families assigned to a family practice panel still receive a majority of their care from other sources.

## SUMMARY

At the Army's first Seminar on Ambulatory Health Services held in 1971 at Fort Sam Houston, Texas, it was recommended that neighborhood family practice clinics be established to provide primary and comprehensive care, both outpatient and inpatient, to military health care eligible beneficiaries. Prior to establishment of the second Army family practice training program at Fort Ord, California, it was determined that the development and operation of this new health care delivery method should be studied in detail, analyzed, and described, in order to document or refute these empirical recommendations and their equally untested underlying assumptions.

An on-site study team, attached to and under the guidance of the Health Care Studies Division, Academy of Health Sciences, Fort Sam Houston, Texas, collected data from the opening of the Fort Ord Family Practice clinics in 1973 until mid-1975. Voluminous demographic data was collected on 1469 families who were members of the North Fort Ord Family Practice Clinic. Over 45,000 encounters between patients and family physicians were documented in detail, including patient information, provider identity, length of visit, problem, prescriptions, lab studies, x-rays, referrals, and immunizations. Patient and staff satisfaction surveys were developed, validated, administered in the family practice and several control clinics on multiple occasions, and the results analyzed. Ancillary data was obtained from the Office of Management and Budget (OMB), Military Health Care Study (MHCS), and from the Office for the Civilian Health and Medical Program of the Uniformed Services (OCHAMPUS). Advantages and disadvantages of a neighborhood-based clinic, when compared with a hospital-based clinic, were sought.

The North Fort Ord Family Practice Clinic ranked highest among the clinics tested in patients' satisfaction with the medical care provided. Though staff satisfaction was high, there was no difference in satisfaction between the family practice staff and those of other clinics. The neighborhood clinic was found to be inefficient in its utilization of resources, and to offer few advantages while demonstrating many disadvantages, when compared to a clinic based in or near a hospital.

It was also determined that assigning patients as a panel to a specific physician was an inefficient and ineffective way of managing a family practice workload. The number of patients seen per day was controlled by the number of appointments scheduled, the number of walk-ins accepted, and the number of no-shows, and appeared to bear little relationship to the existence of or size of a patient panel.

Though it had previously been thought that family physicians took care of 80 to 90-plus percent of their patients problems, data obtained in this study and from the OMB MHCS indicated that families received fully 60 percent of their care from other sources. The study provides doubts that the continuity of care under family practice is significantly improved over other methods of primary care delivery, and suggests many areas worthy of further evaluation.

Action-oriented recommendations suggest that neighborhood-based clinics not be established where hospital facilities are adequate, that panels of patients not be assigned specific physicians but rather that a different system be devised, and that further evaluation of family practice inpatient load and family practice outpatient productivity be done.

## ACKNOWLEDGEMENTS

* * * * * * *

The project officers wish to express their appreciation to the several physicians on the staff of the North Fort Ord Family Practice Clinic for their assistance in data collection and for their gracious acceptance of the constant scrutiny of the on-site study team.

MAJ Rizwan Nomani is due special thanks for his assistance with the section on clinic cost comparisons, as is 1LT Robert W. Tardy, who was on-site Project Officer during the last year of data collection. Mrs. Kathryn Hatler provided valuable assistance throughout the study as management analyst, as did SP4 Mike Wunder in automation of the voluminous data base and in computer programming.

COL Joseph Powers, Health Services Command Consultant in Ambulatory Care, was always ready with sage advice, an open mind, and a helping hand, in return for which the authors can only give their thanks.

The authors greatly appreciate the efforts of COL William G. Peard, C, Health Care Studies Division (HCSD), LTC Anna Koneck, Nurse Methods Analyst, HCSD, and MAJ Rizwan Nomani, OR/SA, HCSD, for review of the manuscript and for their many invaluable comments and suggestions.

It is obvious that in a study of this magnitude, thanks are due to a multitude of others, without whom little could have been accomplished -- to those many unnamed, behind-the-scenes contributors, is sent a heartfelt thank you.

FAMILY PRACTICE MODELS FOR AN ARMY COMMUNITY -

A DEMONSTRATION PROJECT

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FAMILY PRACTICE MODELS FOR AN ARMY COMMUNITY -

- A DEMONSTRATION PROJECT

1. INTRODUCTION.

a. Purpose. The purposes of the project are to study in detail, analyze, and describe the development and operation of an Army family practice clinic, and to provide such information to The Surgeon General for use in planning future health care delivery to military-care eligible beneficiaries.

b. Background. The priorities within health care delivery have been subjected to significant revision over the past several years, with the gradual awakening of the medical profession to the importance of ambulatory care. It is moot whether this change has been due to a desire to upgrade quality or rather to reduce costs. In any case, outpatient services no longer play second fiddle to the inpatient clinical areas. Within the medical, political, and consumer arenas emphasis has shifted to ambulatory care, and with the shift in emphasis have come shifts in manpower, resources, and research efforts.

A natural outgrowth of the shift in emphasis to ambulatory care has been a revival of interest in the Family Practitioner as a key element in the delivery of such care. Interest has indeed waxed and waned since 1902, when the family physician was fondly spoken-of by Sir William Osler. (Osler, 1902). At times the God-like patriarch to his patients, and at others the second-rate purveyor of "scientific medicine" to his specialist colleagues, he seemed to be a dying breed in the '50s and early '60s. Combined with a great feeling of loss for the old-time GP, who knew his patients' names, parents, children, problems and all, really cared for them, made himself available to them at any hour of the day or night, and so forth, was a feeling that he just was not able to handle the myriad modern diseases and treatments in a truly scientific manner.

The doctors themselves did little to allay this feeling. Fewer and fewer medical students chose the practice of general medicine, and many of the medical school faculty frowned on those who did. The graduate was either going to be a specialist, or "just a GP". The practitioner himself realized that the very volume of his practice prevented him from keeping abreast of the rapidly changing medical scene, and his attempts to limit his practice furthered the expectation of his eventual demise.

The shift in emphasis to ambulatory care, and the revival of interest in the Family Practitioner led, not to re-use of the old GP mold, but rather to the birth of a new specialty, that of Family Practice. Supporters envisioned a new breed, incorporating all the good that could be found in the old GP, while eliminating or changing that which was not so good. Ideally, what was felt to be needed was a primary care physician who could respond to all the needs of the family (medical, social, and emotional) and who had the necessary training to provide competent outpatient and inpatient care for a broad range of problems on a continuing basis. Such care was to be, by definition, accessible, acceptable, complete, continuous, comprehensive, efficient, effective, etc., in short, ideal, quality medical care. In this atmosphere the "Specialty of Family Practice" developed; residencies began to mushroom throughout the country; and in February 1969, the Advisory Board of the American Medical Association Council on Medical Education approved the new specialty of Family Practice.

This study is an early attempt to look at Family Practice as it developed in the Army, with the hope that the findings will be of value to future decision makers. Priorities are in a state of flux. Each additional bit of information will hopefully aid in channeling our medical energies in the direction of efficient, high-quality health care delivery.

In November 1971, The Surgeon General sponsored a Seminar on Ambulatory Health Services in San Antonio, Texas. One of the recommendations of the Emergency Room and Family Practice Subcommittee was that "Family Practice Clinics be established to provide primary and comprehensive care (general medical, pediatric, obstetric, and minor surgical) on both an outpatient and inpatient basis." The Army's first family practice resident-training program was established in mid-1972 at Martin Army Hospital, Ft. Benning, Georgia.

Prior to the establishment of a second family practice residency program and clinic, and unaware of its eventual location, the Health Care Research Division (now Health Care Studies Division (HCSD)) submitted an "Application to Conduct Research" for a study to be titled "Family Practice Models for an Army Community: A Demonstration Project." The research effort was directed at establishing and putting into operation at this second site, a neighborhood-based family practice clinic, which could be studied systematically, along with the hospital-based clinic, in order to "capture" early experience, and in order to establish a data-base upon which sound planning of future family practice clinics could proceed.

2. OBJECTIVES.

a. To investigate the feasibility of providing comprehensive health and social services to panels of Army family units, within the context of family practice clinics.

b. To systematically explore and describe in detail the experience of a broad program of family-oriented health and social services, and to document problems encountered and attempts at problem resolution.

c. To explore and describe experience with family practice models -- one neighborhood-based and the other hospital-based -- and to comparatively analyze advantages and disadvantages associated with each approach.

d. To establish a setting which could serve as an ongoing laboratory for the conduct of research into problems relevant to family-oriented health and social services.

e. To assure the ready availability of one functioning family practice clinic which could assimilate some of the output of the family practice residency programs.

3. METHODOLOGY.

a. Overview. In September 1972, approval for the study was received from The Office of The Surgeon General (OTSG), with Fort Ord, California, selected as the study site. The approval was subject to the availability of a suitable building at Fort Ord for the neighborhood-based clinic.

The study plan called for the establishment of a clinic proximate to both enlisted and officer on-post housing. It was suggested that an existing building, such as a large duplex family quarters, be modified to house the clinic, and that it be staffed with three trained family physicians, one social workers, and an appropriate mix of other health care personnel. Another hospital-based family practice clinic was to be established approximately six months later, when more family physicians became available.

However, by the time the study plan was approved by HSC, the Fort Ord Medical Department Activity (MEDDAC) was already committed to the establishment of a Family Practice Clinic (FPC) in the hospital. Moreover, five fully-trained family practitioners, including the Program Director, had been assigned. The residency training program was to begin in July 1973, the application for approval of which was based on a plan to utilize clinic space in the hospital,

and it was felt that to change this plan would delay the start of the program, and could invite the disapproval of the Residency Review Committee during subsequent reviews. The MEDDAC suggested that this did not preclude establishment of a second (neighborhood-based) FPC to be opened in July 1973, or later, as additional Family Practice staff became available.

Such was the situation in October 1972, when the first on-site study team member arrived at Fort Ord. By December, the on-site team was complete and consisted of a management analyst (MOS 2610), a statistician (MOS 6400), a psychology-social work technician (MOS 91G20), and a clerk typist (MOS 71B20). The Project Officer was a physician (MOS 3153) assigned to HCSD, Academy of Health Sciences (AHS), Fort Sam Houston, Texas. With the exception of the statistician, each of these positions was filled by several different persons during the period of the study, and there were times when one or more of the positions were unfilled.

b. Facilities. On 8 January 1973, a hospital-based Family Practice Clinic, henceforth known as the Hospital Clinic, was opened. The search for adequate quarters for the neighborhood-based clinic resulted in saving a wing of the old cantonment-type hospital from the wreckers for such use. It was located slightly over two miles from the new Silas B. Hayes Army Hospital, was near two housing areas, and could be modified as required. The neighborhood-based clinic was opened on 30 July 1973. Although this sequence of clinic openings was the reverse of that planned in the original study proposal, data was collected at both clinics from the time of their openings. The major study effort was concentrated, however, on the neighborhood-based clinic, which subsequently became known as the North Fort Ord Family Practice Clinic (North Clinic).

c. Data Collection Instruments. The description of data collection and analysis efforts, as proposed in the original study proposal were very broad and ambiguous, stating that "A range of data collection methods will have to be used, to include direct observation, interviews, questionnaires, utilization of tally counts, maintenance of a historical log, etc., as required by the particular question under investigation." (Original study questions, which have been modified several times, can be found in Appendix A).

It was left to the on-site Study Team to determine just what information was needed, and how to go about collecting it. Initial work in the Fall of 1972 involved identification of essential baseline data to be acquired on the patients served by the clinics, and development of the instrument for data collection. A questionnaire was prepared, and was ready for distribution by the middle of October 1972. The necessity for an encounter form was also recognized, and one was developed by the Study Team in conjunction with the Hospital Clinic staff.

Some data, such as encounter-form data, were collected on a continuing basis. Other smaller studies were begun and ended over shorter periods. Many other collection instruments were used to collect such data as patient and staff satisfaction information, and information from inpatient and outpatient records. These will be discussed more fully in subsequent sections.

d. Revised Study Proposal. In May 1974 a Revised Study Proposal was submitted to US Army Health Services Command (HSC), and was approved on 12 July 1974. It called for extension of the study for an additional year, to December 1975, and an additional clerk typist and a computer programmer (MOS 74F20) for the on-site Study Team. A new set of study questions was outlined (See Appendix B).

The second clerk typist was never assigned. The computer programmer was not assigned until January 1975, and it was decided that for the short remaining time of the study, he could be better utilized at HCSD, Ft. Sam Houston, Texas (FSHTX), than at Ft. Ord with the on-site team. In late 1973 a physician at the North Clinic with an MPH degree had begun acting as consultant for the on-site team part-time (two half-days per week), assisting in study design and analysis.

e. Study Team Interaction With Clinics. A symbiotic relationship was established between the on-site Study Team and the clinic personnel. The additional administrative functions required of a family practice clinic, such as distributing, collecting, and filing applications for clinic membership, maintenance of a waiting list, notifying families of acceptance, and assigning patients to doctors' panels as spaces became available, were handled by the Study Team. In return, the clinic receptionist, doctors, and other providers filled out a short encounter form on each patient seen, and helped in other data collection efforts. As will be seen later, however, such tasks for the doctors were kept at a bare minimum, and did not significantly affect their available time for patient care.

f. Study Process/Outcome. The outcome of the study is related directly to the process which actually occurred, not to any that was anticipated prior to commencement. The initial study proposal was very general in its description of what was proposed, and the methodology to be employed for its accomplishment. The major weakness of the study proposal was the assumption that the on-site study team would have the power to manipulate variables in order that different configurations of clinic structure could be studied and compared. This is particularly evident from many of the original study questions (Appendix A), in statements such as: "What are the optimum numbers . . .," "What are the most satisfactory arrangements . . .," and "How many families should be assigned . . .".

In actuality, the study team did not have such manipulative powers. Its function was merely that of observer; except for the administrative assistance the team provided to the clinic, it remained merely, as it were, "outside the one-way glass," observing structure and function of a family practice clinic as it developed under its own, hospital-supervised administration.

Thus, the study in its various phases answers some of the questions specifically; some of them generally; and some of them not at all. Accordingly, the subsequent discussions, conclusions, and recommendations make no attempt to relate specific answers to specific study questions. Rather, the goal is the presentation of an accurate, integrated compendium, with individual items discussed only as they relate to major topic areas.

4. PROCEDURES, FINDINGS, AND RELATED DISCUSSION.

Each of the data collection procedures will be described in more detail in the following paragraphs, followed in each case by findings and discussion related to the specific findings. Discussion of other topics follows in separate sections.

a. *The Application-Questionnaire.*

(1) Procedures. The one page Application (Appendix C) and nine page Questionnaire (Appendix D) served the dual purposes of obtaining a roster of those families wishing to join the family practice system and gaining demographic information on each of the families who utilized the clinics. As there were several methods of obtaining patients for the clinics (see Appendix E), a Questionnaire was not obtained from each family during the early days of the clinic; however, in January 1974, the long questionnaire became the application form. In other words, in order for a family to be considered for inclusion in the program and to be placed on the waiting list, the questionnaire had to be voluntarily completed. It was felt that willingness to do so indicated interest in the program. After that time, questionnaire information was available on all new clinic families.

(2) Findings. Of the 1627 families who visited the North Clinic at least twice between July 1973 and June 1975, questionnaires were completed by 1469, or 90 percent. Of these, 1030 were active duty families and 439 were retired/deceased sponsor families. Of those families on whom complete data was available, 612 were initially assigned to the Hospital Clinic and were transferred to the North Clinic when it opened. (The ratio of active duty to retired/deceased sponsor families in the clinic cannot be interpreted to represent the true ratio in the population, as the clinic ratio was artificially maintained by the selection procedure).

(a) Demographic Data on Families With Active Duty Sponsors. The average active duty family in this sample was composed of a male sponsor, age 33, his spouse, age 31, and two children, a boy and a girl, both age nine. Ninety-three percent of sponsors were Army, 69 percent white, and 56 percent protestant. Ninety-four percent had completed high school, and 50 percent had some college. Moreover, 55 percent of the sponsors had completed less than 12 years of service, 56 percent were in pay grades E-5 thru E-7, and 81 percent indicated plans to make a career in the military.

For the spouse, 69 percent were white, 55 percent protestant, and 81 percent had completed high school. (See following pages for charts and graphs which more completely depict the above data).

(b) Demographic Data on Families With Retired/Deceased Sponsors. The average retired family (including those with a deceased sponsor -- less than three percent in this sample) was composed of a male sponsor, age 54, his spouse, age 51, and one and one-half children, equally divided between boys and girls age 15. Eighty-eight percent of sponsors were Army retirees, 74 percent were white, and 61 percent were protestant. Ninety-two percent of sponsors had completed high school, and 59 percent had some college. Ninety-four percent of the sponsors had completed twenty or more years of service, and 56 percent had retired in Pay Grades E-6 thru E-8. Sixty-eight percent of the spouses of retired/deceased sponsors were white, 59 percent were protestant, and 80 percent had completed high school. (See the following pages for charts and graphs which more completely depict the above data).

*Figures 4a-1 and 4a-2 are population pyramids depicting the sex/age distribution of the family members in the North Clinic panels, both those with active duty sponsors (Fig. 4a-1) and those with retired or deceased sponsors (Fig. 4a-2).*

*Figures 4a-3 and 4a-4 are distributions of family size as a percent of families of that type (active duty or retired/deceased) seen in the North Clinic.*

*Figure 4a-5 represents the distribution of Pay Grades of the sponsors of families in the North Clinic.*

*Figure 4a-6 is a representation in chart form of three other demographic variables of the sponsors and their spouses, their race, religion, and education.*

NOTE: Pages five and six of the Questionnaire (Appendix D) deal with Army and civilian medical care utilization during the year prior to making application for family practice care. Unfortunately, the

questions were posed in such a way that no average utilization figures can be obtained. Data from pages seven and eight of the Questionnaire will be provided in a subsequent report.

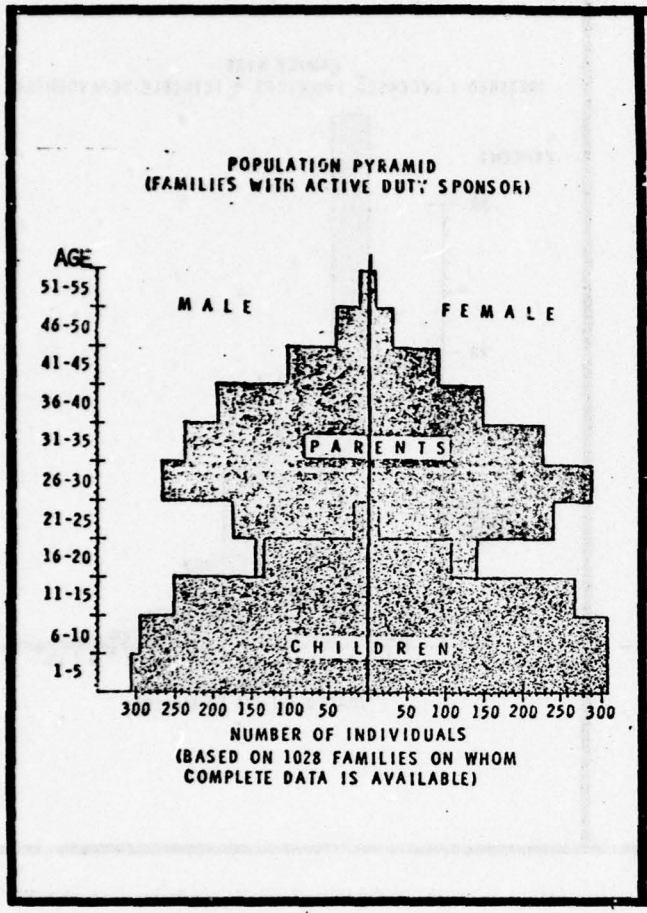


Figure 4a-1

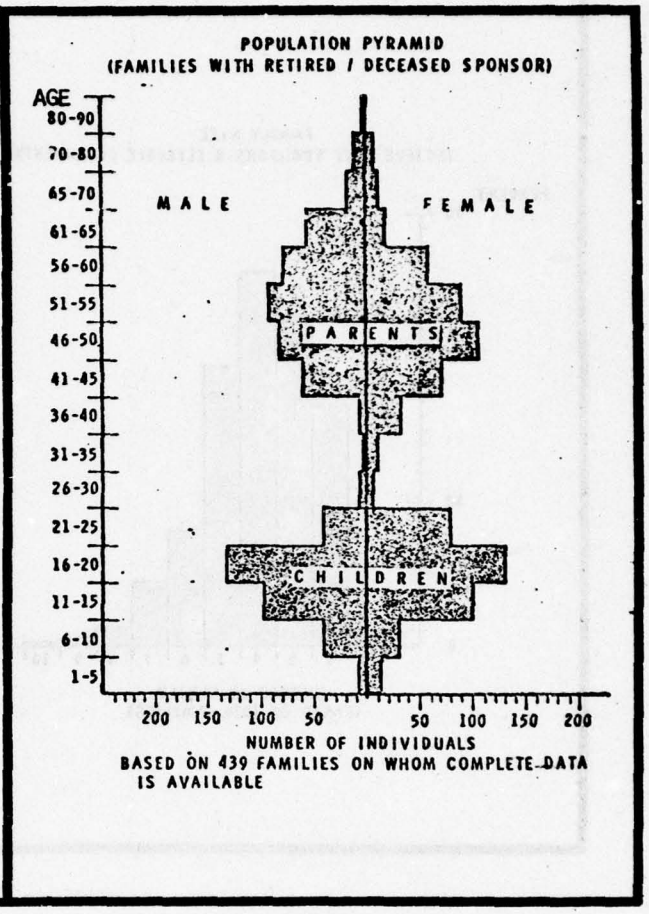


Figure 4a-2

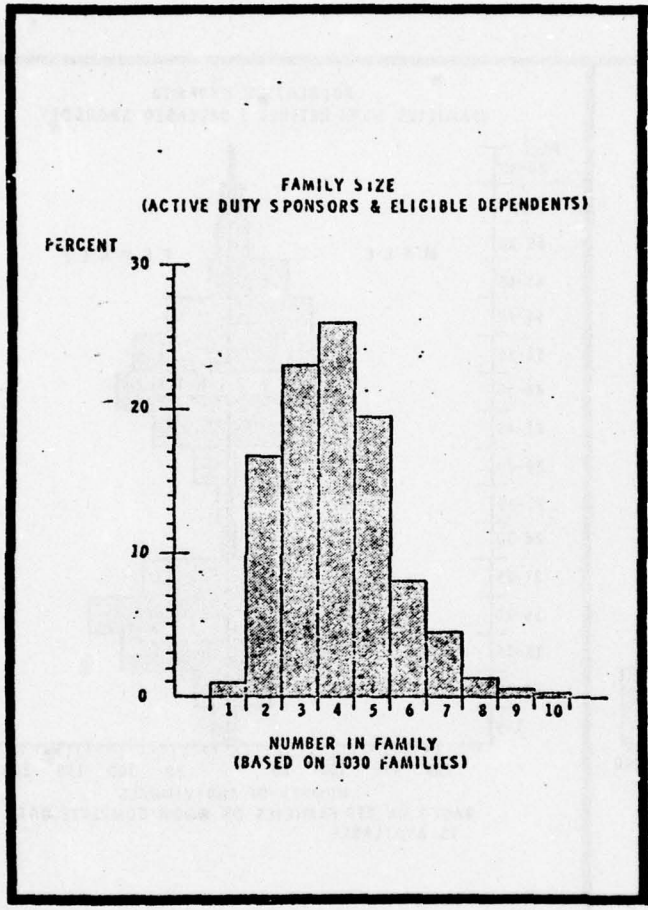


Figure 4a-3

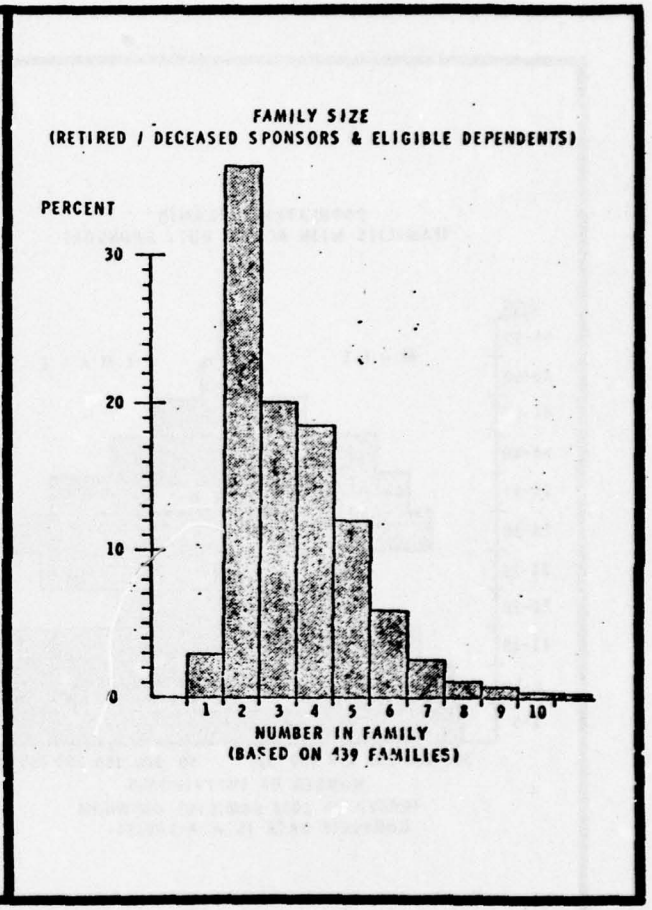


Figure 4a-4

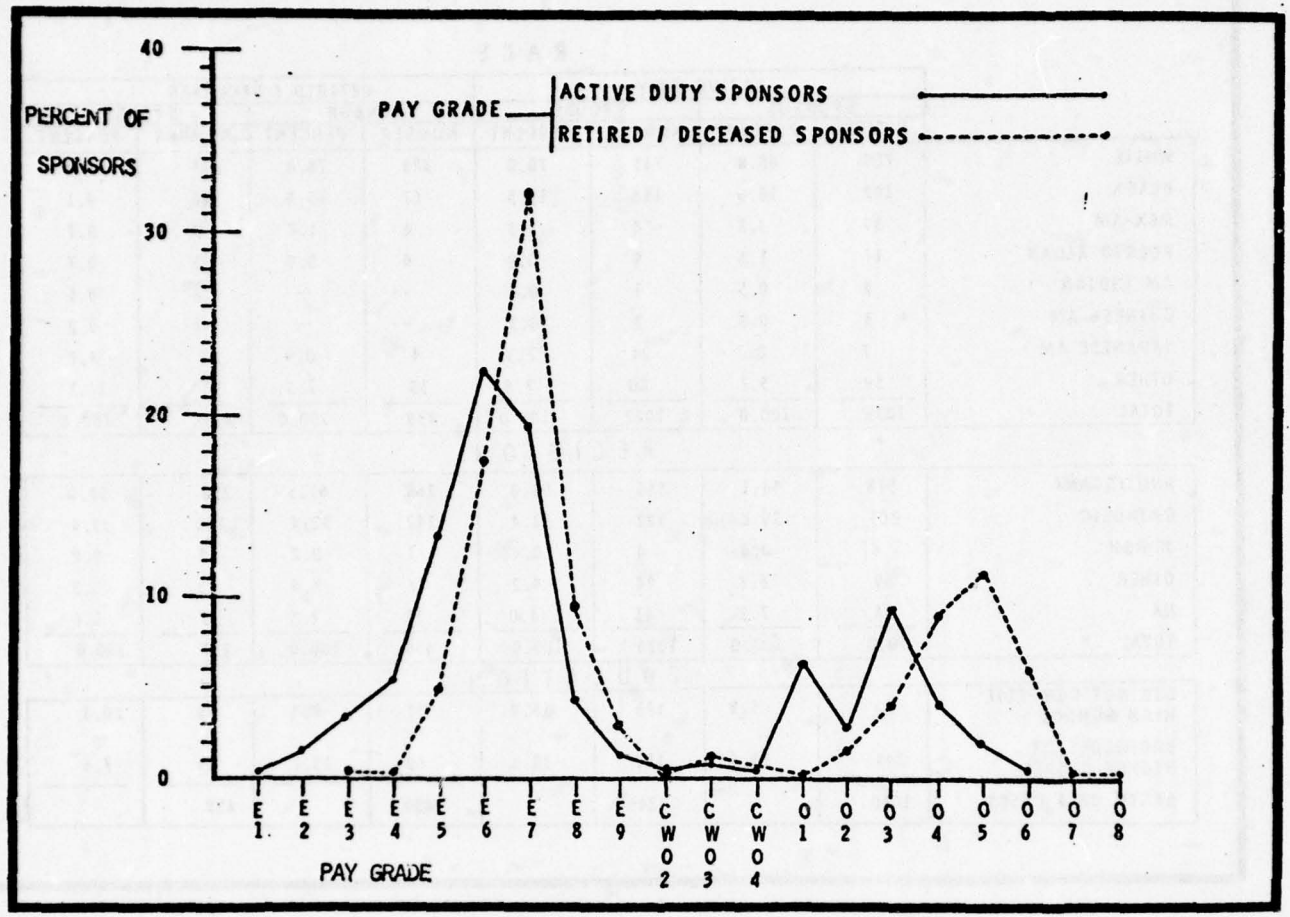
40
30
20
10
0
PERCENT OF SPONSORS
PAY GRADE
ACTIVE DUTY SPONSORS
RETIRED / DECEASED SPONSORS
E 1
E 2
E 3
E 4
E 5
E 6
E 7
E 8
E 9
CWO2
CWO3
CWO4
O 1
O 2
O 3
O 4
O 5
O 6
O 7
O 8
PAY GRADE

Figure 4a-5

## RACE

| | ACTIVE DUTY | | | | RETIRED / DECEASED | | | |
|---|---|---|---|---|---|---|---|---|
| | SPONSOR | | SPOUSE | | SPONSOR | | SPOUSE | |
| | NUMBER | PERCENT | NUMBER | PERCENT | NUMBER | PERCENT | NUMBER | PERCENT |
| WHITE | 709 | 68.8 | 715 | 70.0 | 325 | 74.0 | 297 | 68.0 |
| BLACK | 192 | 18.6 | 156 | 15.3 | 67 | 15.3 | 40 | 9.1 |
| MEX-AM | 39 | 3.8 | 34 | 3.3 | 6 | 1.4 | 3 | 0.7 |
| PUERTO RICAN | 17 | 1.6 | 9 | 0.9 | 4 | 0.9 | 3 | 0.7 |
| AM INDIAN | 5 | 0.5 | 1 | 0.1 | -- | -- | 2 | 0.5 |
| CHINESE AM | 3 | 0.3 | 3 | 0.3 | -- | -- | 1 | 0.2 |
| JAPANESE AM | 7 | 0.7 | 24 | 2.3 | 4 | 0.9 | 38 | 8.7 |
| OTHER | 59 | 5.7 | 80 | 7.8 | 33 | 7.5 | 53 | 12.1 |
| TOTAL | 1031 | 100.0 | 1022 | 100.0 | 439 | 100.0 | 437 | 100.0 |

## RELIGION

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| PROTESTANT | 578 | 56.1 | 565 | 55.0 | 269 | 61.3 | 258 | 59.0 |
| CATHOLIC | 305 | 29.6 | 322 | 31.4 | 142 | 32.4 | 148 | 39.9 |
| JEWISH | 4 | 0.4 | 4 | 0.4 | 1 | 0.2 | 1 | 0.2 |
| OTHER | 69 | 6.7 | 94 | 9.2 | 16 | 3.6 | 23 | 5.3 |
| NA | 74 | 7.2 | 41 | 4.0 | 11 | 2.5 | 7 | 1.6 |
| TOTAL | 1030 | 100.0 | 1026 | 100.0 | 439 | 100.0 | 437 | 100.0 |

## EDUCATION

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| DID NOT COMPLETE HIGH SCHOOL | 60 | 5.8 | 193 | 18.9 | 37 | 8.4 | 89 | 20.4 |
| BACHELORS OR HIGHER DEGREE | 243 | 23.6 | 114 | 11.1 | 60 | 13.7 | 33 | 7.6 |
| BASED ON # CASES | 1030 | | 1024 | | 439 | | 437 | |

Figure 4a-6

(3) Discussion. The demographic data presented are descriptive statistics and require little explanation. It is interesting to note that the average active duty family is composed of four members, evenly distributed between father, mother, son and daughter, and that the average retired/deceased sponsor family is composed of three and one-half members, again evenly distributed.

b. The Encounter Form.

(1) Procedures. Development of an encounter form was begun early in the study, in conjunction with the Hospital Clinic staff. The form was modified several times over a period of months until a finalized form was initiated in December 1973 (Appendix F). This encounter form, with only slight modifications which did not affect data collection, was used throughout 1974.

The encounter form not only collected data necessary for the study, but also was used as a routing and disposition sheet, where the physician or other provider could check the requirements for X-ray, lab, immunization, and consultation, and also indicate when the patient needed to be seen again. The provider was thus encouraged to fill out a form on each patient.

At the time the patient checked-in, the receptionist completed the administrative data on the upper portion, including the date, name, sponsor's Social Security Number (SSN) with the family-member-identifying prefix, appointment status, type of clinic, and health care provider. The form was then attached to the front of the patient's chart. The nurse entered the complaint. The remainder of the form was completed by the health care provider, who gave it to the patient at the end of the visit. The patient then took the form to the lab, X-ray, nurse, or receptionist, as needed, and the last provider collected the forms for appropriate disposition.

Forms were collected from January 1973 thru December 1974 at the Hospital Clinic and from August 1973 thru June 1975 at the North Clinic. The encounter forms were coded on the same form by the on-site study team and then sent to HCSD, FSHTX, where they were keypunched and stored on a CDC 6500 computer.

The North Clinic encounters were also cumulated on a roster by family (SSN), so that relevant individual family utilization data could be obtained. This roster also included visits at the Hospital Clinic between January and July 1973 for those families who had initially belonged to the Hospital Clinic and were then transferred to the North Clinic. This roster was cumulated and stored on the CDC 6500 computer.

The data analysis was performed utilizing the canned statistical package "Statistical Programs for the Social Sciences" (SPSS). The programs most frequently utilized included 'codebook' and 'crosstab'.

(2) Findings. During the period of the study, a total of 45,898 encounter forms (Appendix F) were collected. Of these, 24,120 came from the North Clinic, and 21,778 came from the Hospital Clinic. Blocks of data based on various time periods were extracted from these encounters; the main block reported on included all forms collected at the North Clinic between 1 January and 31 December 1974. This block of data included 13,175 encounters.

Data from the encounters will be described in the order in which they appear on the encounter forms. The following blocks of data relate to the North Clinic during the period January thru December 1974, unless otherwise specified.

(a) Number of Patient Visits by Month and Provider, Jan 74 - Dec 74.

TABLE 4b-1

| | TOTAL | MD#1 | MD#2 | MD#3 | MD#4 | MD#5 | MD#6 | MD#7 | PR#A | PR#B | PR#C | PROVIDER UNKNOWN |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| JAN | 1,157 | 337 | 223 | 275 | 224 | * | * | * | 86 | - | - | 12 |
| FEB | 1,046 | 312 | 249 | 194 | 167 | * | * | * | 110 | 3 | 1 | 10 |
| MAR | 1,290 | 339 | 280 | 287 | 252 | * | * | * | 112 | 6 | 2 | 12 |
| APR | 1,149 | 341 | 261 | 173 | 225 | * | * | * | 131 | 12 | 1 | 5 |
| MAY | 967 | 258 | 123 | 201 | 270 | * | * | 6* | 82 | 10 | 2 | 15 |
| JUN | 832 | 227 | 208 | 2* | 226 | * | * | 82* | 74 | 10 | 2 | 1 |
| JUL | 1,012 | * | 256 | 13* | 199 | 76* | 52* | 325 | 37 | 19 | 24 | 9 |
| AUG | 1,280 | * | 270 | * | 161 | 231 | 215 | 281 | 109 | 5 | 7 | 1 |
| SEP | 1,082 | * | 177 | * | 150 | 207 | 267 | 126 | 133 | 18 | 2 | 2 |
| OCT | 1,197 | * | 263 | * | 211 | 276 | 240 | * | 180 | 24 | 2 | 1 |
| NOV | 1,074 | * | 214 | * | 115 | 284 | 243 | * | 157 | 38 | - | 23 |
| DEC | 1,089 | * | 266 | * | 127 | 262 | 257 | * | 128 | 28 | 13 | 8 |
| TOTAL | 13,175 | 1,814 | 2,790 | 1,145 | 2,327 | 1,338 | 1,274 | 820 | 1,339 | 173 | 56 | 99 |
| AVG. PER ACTIVE MO. | 1,098 | 302 | 232 | 226 | 194 | 252 | 244 | 244 | 112 | | | |

* - Month not used in calculating average per active month.
MD - Physician provider; PR - Other provider (Nurse Practitioner, PA)

(b) Patient Visits by Relationship to Sponsor.

(Population ratio in this sample for sponsor:spouse:children was 1:1:2. Other dependents account for 0.39 percent of sample population.)

TABLE 4b-2

| RELATIONSHIP OF PATIENT TO SPONSOR | NUMBER OF VISITS | PERCENT OF VISITS |
|---|---|---|
| SPONSOR | 2757 | 21.00% |
| SPOUSE | 5724 | 43.61% |
| CHILDREN | 4571 | 34.83% |
| OTHER DEPENDENTS | 74 | 0.56% |
| TOTAL | 13,126 | 100.00% |

(c) Appointment Status. During the period August 1973 thru December 1973, a total of 5,093 visits were recorded. These visits were comprised of 'Appointments' and 'Walk-ins' until early in December. The latter part of December (835 of 1,056 visits) as well as all of 1974 (13,175 visits) separated 'Emergency' visits from the appointments and walk-ins. The results of this distribution by appointment status are tabulated on the following page (TABLE 4b-3).

TABLE 4b-3 APPOINTMENT STATUS

| MONTH/ YEAR 1973 | VISITS | WALK-INS/PERCENTAGE | | EMERGENCY | NOT RECOPDED |
|---|---|---|---|---|---|
| AUGUST | 827 | 71 | ( 8.59%) | -- | 3 |
| SEPTEMBER | 904 | 74 | ( 8.19%) | -- | 15 |
| OCTOBER | 1,154 | 131 | (11.35%) | -- | -- |
| NOVEMBER | 1,153 | 154 | (13.36%) | -- | -- |
| DECEMBER | 1,056 | 69 | ( 6.53%) | 3 | 15 |
| (Early) | (221) | (15) | ( 6.79%) | -- | (5) |
| (Late) | (835) | (54) | ( 6.47%) | (3) | (10) |
| 1973 TOTAL | 5,094 | 499 | ( 9.80%) | 3 | 33 |

| MONTH/ YEAR 1974 | VISITS | WALK-INS/PERCENTAGE | | EMERGENCY | NOT RECORDED |
|---|---|---|---|---|---|
| JANUARY | 1,157 | 51 | ( 4.41%) | 8 | -- |
| FEBRUARY | 1,046. | 84 | ( 8.03%) | 3 | -- |
| MARCH | 1,290 | 74 | ( 5.74%) | 7 | -- |
| APRIL | 1,149 | 86 | ( 7.48%) | 5 | -- |
| MAY | 967 | 95 | ( 9.82%) | 3 | -- |
| JUNE | 832 | 51 | ( 6.13%) | 4 | -- |
| JULY | 1,012 | 33 | ( 3.26%) | 1 | -- |
| AUGUST | 1,280 | 20 | ( 1.56%) | 2 | -- |
| SEPTEMBER | 1,082 | -- | | | -- |
| OCTOBFR | 1,197 | 24 | ( 2.00%) | 6 | -- |
| NOVEMBER | 1,074 | 24 | ( 2.23%) | 3 | -- |
| DECEMBER | 1,089 | 68 | ( 6.24%) | 1 | -- |
| 1974 TOTAL | 13,175 | 610 | ( 4.63%) | 43 | -- |
| 17 MONTH TOTAL | 18,269 | 1,109 | ( 6.07%) | 46 | 33 |

(d) Type of Clinic. Although the form was initially designed to show the nature of the visit, i.e., whether the visit was made during the 'regular' clinic hours or during a 'Special Clinic' at night or on Saturdays, or 'Non-clinic', less than one percent of visits were recorded as other than the 'regular' clinic between January and July 1974 (47 of 7378 visits). Consequently it was concluded that further analysis of these data would be of little value to the overall objectives of this study.

(e) Provider. The data for each provider has already been furnished in Table 4b-1.

(f) Patient Encounter Data by Primary Problem.
(Rank ordered by decreasing frequency of percent of recorded visits.)

TABLE 4b-4 PRIMARY PROBLEM

| ORDER | PROBLEM | FREQUENCY | PERCENT OF RECORDED VISITS |
|---|---|---|---|
| 1 | ACUTE (TEMPORARY PROBLEM) | 2,739 | 22.14% |
| 2 | CHRONIC PROBLEM, ROUTINE | 2,314 | 18.70% |
| 3 | PARTIAL EXAM, WELL BABY, SCREENING EXAM, OR PREV. EDUCATION | 2,264 | 18.29% |
| 4 | CHRONIC PROBLEM, FLARE-UP | 1,338 | 10.81% |
| 5 | ACUTE (TEMPORARY) PROBLEM FOLLOW-UP | 1,021 | 8.25% |
| 6 | PRENATAL AND POSTNATAL CARE | 926 | 7.48% |
| 7 | COMPLETE HX AND PE FINISHED | 522 | 4.22% |
| 8 | COUNSELING/ADVICE | 492 | 3.98% |
| 9 | ACUTE INJURY | 235 | 1.90% |
| 10 | ACUTE INJURY FOLLOW-UP | 176 | 1.42% |
| 11 | FAMILY PLANNING/CONTRACEPTION | 151 | 1.22% |
| 12 | ADMINISTRATIVE | 59 | 0.48% |
| 13 | IMMUNIZATION | 40 | 0.32% |
| | OTHER | 98 | 0.79% |
| | TOTAL VISITS WITH PRIMARY PROBLEM RECORDED | 12,375 | 100.00% |
| | NOT RECORDED | 800 | --- |
| | TOTAL | 13,175 | |

(g) Second Problem Treated during the Same Visit.(*)

TABLE 4b-5 SECOND PROBLEM

| ORDER | PROBLEM | FREQUENCY | PERCENT OF RECORDED VISITS | PERCENT OF 2ND PROBLEMS |
|---|---|---|---|---|
| 1 | COUNSELING/ADVICE | 469 | 3.79% | 22.27% |
| 2 | CHRONIC PROBLEM, ROUTINE | 436 | 3.52% | 20.70% |
| 3 | PARTIAL EXAM, WELL BABY, SCREEN EXAM, OR PREV. EDUCATION | 435 | 3.52% | 20.66% |
| 4 | ACUTE (TEMPORARY) PROBLEM | 230 | 1.86% | 10.92% |
| 5 | CHRONIC PROBLEM, FLARE-UP | 214 | 1.73% | 10.16% |
| 6 | ACUTE (TEMPORARY) PROBLEM FOLLOW-UP | 128 | 1.03% | 6.08% |
| 7 | FAMILY PLANNING/CONTRACEPTION | 71 | 0.57% | 3.37% |
| 8 | IMMUNIZATION | 33 | 0.27% | 1.57% |
| 9 | ADMINISTRATIVE | 33 | 0.27% | 1.57% |
| 10 | PRENATAL AND POSTNATAL CARE | 22 | 0.18% | 1.04% |
| 11 | ACUTE INJURY | 11 | 0.09% | 0.52% |
| 12 | ACUTE INJURY FOLLOW-UP | 9 | 0.07% | 0.43% |
| 13 | COMPLETE HX AND PE FINISHED | 7 | 0.06% | 0.33% |
| | OTHER | 8 | 0.06% | 0.38% |
| | TOTAL RECORDED SECOND PROBLEMS | 2,106 | 17.02% | 100.00% |
| | PRIMARY PROBLEM ONLY | 10,269 | | |
| | NO PRIMARY PROBLEM RECORDED | 800 | | |
| | TOTAL | 13,175 | | |

* Of the 12,375 visits in 1974 that had a Primary Problem recorded, only 2,106, or 17.02 percent, had a second problem requiring evaluation and/or treatment during the same visit. The frequency of encounters and the percentage of second problems are provided in the table.

(b) Length of Visit.

1 Length of Visit by Number of Visits. On the encounter form the provider recorded the 'Length of This Visit' by checking incremental time blocks of 0-5 minutes, 5-20 minutes, 20-40 minutes, and Over-40 minutes. Observation by the HCSD study team revealed that the 0-5 minute block averaged approximately four minutes, the 5-20 minute block averaged approximately 15 minutes, the 20-40 minute block averaged approximately 30 minutes, and the Over-40 minute block averaged approximately 52 minutes. The number of visits by these approximate average length of visit are provided in the table below:

TABLE 4b-6 LENGTH OF VISIT

| LENGTH OF VISIT/ AVERAGE | NUMBER OF VISITS | PERCENT OF RECORDED VISITS |
|---|---|---|
| 4 MINUTES | 291 | 2.46% |
| 15 MINUTES | 8,829 | 74.73% |
| 30 MINUTES | 2,333 | 19.75% |
| 52 MINUTES | 362 | 3.06% |
| TOTAL RECORDED | 11,815 | 100.00% |
| NOT RECORDED | 1,360 | |
| TOTAL | 13,175 | |

$$\text{Average length of visit} = \frac{\Sigma \ ((\text{LENGTH OF VISIT}) \times (\text{NUMBER OF VISITS}))}{(\text{TOTAL NUMBER OF RECORDED VISITS})}$$

Average length of visit = 18.82 minutes.

2 Length of Visit by Patient Prefix. In the following table, the length of visit is tabulated by the relationship of the patient to the sponsor.

TABLE 4b-7 LENGTH OF VISIT BY PATIENT PREFIX

| RELATIONSHIP OF PATIENT TO SPONSOR | AVERAGE LENGTH OF VISIT | NUMBER OF VISITS |
|---|---|---|
| SPONSOR | 20.19 Minutes | 2,454 |
| SPOUSE | 20.14 Minutes | 5,127 |
| CHILDREN | 16.93 Minutes | 4,066 |
| OTHER DEPENDENTS | 20.25 Minutes | 69 |
| | SUB-TOTAL | 11,716 |
| RELATIONSHIP OR LENGTH NOT RECORDED | | 1,459 |
| | TOTAL | 13,175 |

3 Length of Visit by Provider. Visit average length was calculated for each provider, using the formula given in Section 4b(2)(h)1. The average was also calculated for 'ALL MDs' and for 'ALL OTHERS'. Recall that the calculated overall average was 18.82 minutes.

TABLE 4b-8 LENGTH OF VISIT BY PROVIDER

| PROVIDER | MINUTES PER VISIT | NUMBER OF VISITS/ DATA BASED ON | NUMBER OF VISITS/ DATA NOT RECORDED |
|---|---|---|---|
| MD#1 | 16.36 | 1,778 | 36 |
| MD#2 | 20.24 | 2,654 | 136 |
| MD#3 | 15.35 | 600 | 545 |
| MD#4 | 17.24 | 2,179 | 148 |
| MD#5 | 17.28 | 1,264 | 74 |
| MD#6 | 15.69 | 1,043 | 231 |
| MD#7 | 18.07 | 764 | 56 |
| (ALL MDs) | 17.69 | | |
| PR#A | 28.54 | 1,260 | 79 |
| PR#B | 16.81 | 154 | 19 |
| PR#C | 17.60 | 42 | 14 |
| (ALL OTHERS) | 26.98 | | |
| | SUB-TOTAL | 11,738 | 1,338 |
| PROVIDER NOT RECORDED | | 99 | |
| | TOTAL | 13,175 | |

4 Length of Visit by Primary Problem. Length of visit was calculated for each category of primary problem recorded, and rank ordered in increasing average length of visit.

TABLE 4b-9 LENGTH OF VISIT BY PRIMARY PROBLEM

| ORDER | PROBLEM | AVERAGE VISIT LENGTH/MINUTES |
|---|---|---|
| 1 | ADMINISTRATIVE | 14.66 MINUTES |
| 2 | ACUTE (TEMPORARY) PROBLEM FOLLOW-UP | 15.52 MINUTES |
| 3 | ACUTE INJURY | 15.55 MINUTES |
| 4 | ACUTE INJURY FOLLOW-UP | 15.59 MINUTES |
| 5 | IMMUNIZATION | 15.92 MINUTES |
| 6 | ACUTE (TEMPORARY) PROBLEM | 16.19 MINUTES |
| 7 | PARTIAL EXAM, WELL BABY, SCREENING EXAM, OR PREV. EDUCATION | 18.15 MINUTES |
| 8 | CHRONIC PROBLEM, FLARE-UP | 18.73 MINUTES |
| 9 | CHRONIC PROBLEM, ROUTINE | 19.70 MINUTES |
| 10 | PRENATAL AND POSTNATAL CARE | 20.29 MINUTES |
| 11 | COUNSELING/ADVICE | 22.53 MINUTES |
| 12 | FAMILY PLANNING/CONTRACEPTION | 23.98 MINUTES |
| 13 | COMPLETE HX AND PE FINISHED | 34.48 MINUTES |
| | OTHER | 22.21 MINUTES |

5 Length of Visit by Second Problem. Some 2,106 of the 13,175 visits in 1974 had a second problem listed. On 2,008 of these the time was recorded; 81.32 percent of these were 15 minute visits. The weighted average in minutes per visit for visits having a second problem recorded was 18.05 minutes (recall 18.82 minutes for all visits).

(j) Prescriptions Ordered.

1 Number of Prescriptions by Number of Visits. During 13,175 visits to the North Clinic in 1974, 11,259 prescriptions were written, or 0.85 prescriptions per visit. The two extremes consisted of 6,870 visits, or 52.15 percent, with no prescriptions ordered, and three visits with nine prescriptions for each patient. This data is tabulated below:

TABLE 4b-10 PRESCRIPTIONS BY NUMBER OF VISITS

| NUMBER OF RXs PER VISIT (X) | NUMBER OF VISITS | TOTAL RXs | PERCENT/VISITS WITH (X) RXs |
|---|---|---|---|
| 0 | 6,870 | -- | 52.15% |
| 1 | 2,997 | 2,997 | 22.75% |
| 2 | 2,169 | 4,338 | 16.46% |
| 3 | 795 | 2,385 | 6.04% |
| 4 | 233 | 932 | 1.77% |
| 5 | 78 | 390 | 0.59% |
| 6 | 23 | 138 | 0.17% |
| 7 | 4 | 28 | 0.03% |
| 8 | 3 | 24 | 0.02% |
| 9 | 3 | 27 | 0.02% |
| TOTAL | 13,175 | 11,259 | 100.00% |

2 Prescription by Patient Prefix. (For whom were prescriptions written?) Data is tabulated below.

TABLE 4b-11 PRESCRIPTION BY PATIENT PREFIX

| RELATIONSHIP TO SPONSOR | NUMBER OF VISITS | PERCENT/VISITS WITH NO RXs | MEAN NUMBER/ RXs PER VISIT |
|---|---|---|---|
| SPONSOR | 2,741 | 52.10% | 0.89 |
| SPOUSE | 5,697 | 49.94% | 0.91 |
| CHILDREN | 4,549 | 54.83% | 0.76 |
| OTHER DEPENDENTS | 74 | 51.35% | 1.32 |
| NOT RECORDED | 114 | | |
| TOTAL | 13,175 | | |

3 Prescription by Provider. *(By whom were prescriptions written?)*

TABLE 4b-12 PRESCRIPTION BY PROVIDER

| PROVIDER | NUMBER/ VISITS | PERCENT/VISITS WITH NO RXs | MEAN NUMBER/ RXs PER VISIT |
|---|---|---|---|
| MD#1 | 1,814 | 39.03% | 1.01 |
| MD#2 | 2,790 | 46.67% | 0.92 |
| MD#3 | 1,145 | 48.03% | 0.90 |
| MD#4 | 2,327 | 59.60% | 0.68 |
| MD#5 | 1,338 | 37.22% | 1.35 |
| MD#6 | 1,274 | 81.79% | 0.31 |
| MD#7 | 820 | 50.73% | 0.95 |
| PR#A | 1,339 | 59.67% | 0.74 |
| PR#B | 173 | 41.62% | 0.97 |
| PR#C | 56 | 67.86% | 0.64 |
| SUB-TOTAL | 13,076 | | |
| PROVIDER NOT RECORDED | 99 | | |
| TOTAL | 13,175 | | |

(1) EKGs Ordered.

1 EKG by Visits. During 13,175 visits in 1974 to the North Clinic, EKGs were ordered 255 times, or at 1.94 percent of visits.

2 EKG by Patient Prefix. *(On whom were EKGs ordered?)* Results are tabulated below.

TABLE 4b-13 EKG BY PATIENT PREFIX

| RELATIONSHIP OF PATIENT TO SPONSOR | NUMBER OF EKGs ORDERED | PERCENT OF EKGs ORDERED | PERCENT OF VISITS (FROM 4.b.(2)(b)) |
|---|---|---|---|
| SPONSOR | 95 | 37.26% | 21.00% |
| SPOUSE | 136 | 53.33% | 43.61% |
| CHILDREN & OTHER DEPENDENTS | 24 | 9.41% | 35.39% |
| TOTAL | 255 | 100.00% | |

3 EKG by Provider. *(By whom were EKGs ordered?)*

TABLE 4b-14 EKG BY PROVIDER

| PROVIDER | NUMBER OF VISITS | NUMBER OF EKGs | PERCENT OF VISITS WITH EKG |
|---|---|---|---|
| MD#1 | 1,811 | 12 | 0.66% |
| MD#2 | 2,790 | 21 | 0.75% |
| MD#3 | 1,144 | 8 | 0.70% |
| MD#4 | 2,327 | 30 | 1.29% |
| MD#5 | 1,337 | 63 | 4.71% |
| MD#6 | 1,274 | 66 | 5.18% |
| MD#7 | 820 | 18 | 2.20% |
| OTHER | 1,672 | 37 | 2.21% |
| TOTAL | 13,175 | 255 | 1.94% |

(k) X-ray Procedures Ordered.

1 Numbers and Types of X-rays Ordered. During 13,175 visits, 993 x-rays were ordered. Approximately one-half of these x-rays were 'Chest, PA & LAT'. Nine other types account for an additional quarter. Forty-eight infrequently ordered types account for the final quarter. The ten most commonly ordered are tabulated below.

TABLE 4b-15 TYPES OF X-RAYS ORDERED

| ORDER | TYPE X-RAY | NUMBER | PERCENT OF VISITS | PERCENT OF X-RAYS |
|---|---|---|---|---|
| 1 | CHEST, PA & LAT | 490 | 3.72% | 49.35% |
| 2 | CHEST, PA | 55 | 0.42% | 5.54% |
| 3 | UPPER GI | 42 | 0.32% | 4.23% |
| 4 | PATELLA | 42 | 0.32% | 4.23% |
| 5 | SPINE, LS | 28 | 0.21% | 2.82% |
| 6 | IVP | 27 | 0.20% | 2.72% |
| 7 | BE | 23 | 0.17% | 2.32% |
| 8 | SKULL SERIES | 22 | 0.17% | 2.22% |
| 9 | FOOT | 21 | 0.16% | 2.11% |
| 10 | SPINE, CERVICAL | 19 | 0.14% | 1.91% |
| | OTHER (48 TYPES) | 224 | 1.70% | 22.55% |
| | TOTAL | 993 | 7.54% | 100.00% |

2 X-ray Procedures by Patient Prefix. (On whom were x-rays ordered?)

TABLE 4b-16 X-RAYS BY PATIENT PREFIX

| RELATIONSHIP | NUMBER OF VISITS | NUMBER OF X-RAYS | PERCENT VISITS WITH X-RAYS ORDERED |
|---|---|---|---|
| SPONSOR | 2,741 | 310 | 11.31% |
| SPOUSE | 5,697 | 448 | 7.86% |
| CHILDREN | 4,549 | 215 | 4.73% |
| OTHER DEPENDENTS | 74 | 13 | 17.57% |
| SUB-TOTAL | 13,061 | 986 | 7.55% |
| INCOMPLETELY CODED | 114 | 7 | |
| TOTAL | 13,175 | 993 | 7.54% |

3 X-Ray Procedures by Provider. (By whom were x-rays ordered?)

TABLE 4b-17 X-RAYS BY PROVIDER

| PROVIDER | NUMBER OF VISITS | NUMBER OF X-RAYS | PERCENT VISITS WITH X-RAYS ORDERED |
|---|---|---|---|
| MD#1 | 1,814 | 94 | 5.18% |
| MD#2 | 2,790 | 217 | 7.78% |
| MD#3 | 1,145 | 38 | 3.32% |
| MD#4 | 2,327 | 135 | 5.80% |
| MD#5 | 1,338 | 164 | 12.26% |
| MD#6 | 1,274 | 164 | 12.87% |
| MD#7 | 820 | 58 | 7.07% |
| TOTAL MD | 11,508 | 870 | 7.56% |
| PR#A | 1,339 | 98 | 7.32% |
| PR#B | 173 | 17 | 9.83% |
| PR#C | 56 | 6 | 10.71% |
| TOTAL OTHER PROVIDER | 1,568 | 121 | 7.72% |
| SUB-TOTAL | 13,076 | 991 | 7.58% |
| INCOMPLETELY CODED | 99 | 2 | |
| TOTAL | 13,175 | 993 | 7.54% |

(ℓ) Laboratory Procedures Ordered.

1 Numbers and Types of Laboratory Procedures Ordered. During 13,175 visits, 10,258 lab procedures were ordered, or 0.78 lab procedures per visit.

TABLE 4b-18 TYPES OF LABORATORY PROCEDURES

| ORDER | TYPE LAB | NUMBER | PERCENT OF LAB ORDERED |
|---|---|---|---|
| 1 | CBC & DIFF. | 1,389 | 13.54% |
| 2 | SMA-12, FASTING | 924 | 9.00% |
| 3 | URINALYSIS | 911 | 8.88% |
| 4 | THROAT CULTURE | 751 | 7.32% |
| 5 | CLEAN CATCH URINALYSIS | 680 | 6.63% |
| 6 | RPR | 603 | 5.88% |
| 7 | CHOLESTEROL & TRIGLYCERIDES | 479 | 4.67% |
| 8 | URINE CULTURE | 471 | 4.59% |
| 9 | PAP SMEAR | 438 | 4.27% |
| 10 | ELECTROLYTES | 370 | 3.61% |
| 11 | SMA-12, NON-FASTING | 327 | 3.19% |
| 12 | CERVICAL CULTURE | 303 | 2.95% |
| | OTHER | 2,612 | 25.45% |
| | TOTAL | 10,258 | 100.00% |

2 Laboratory Procedures by Patient Prefix. *(On whom were laboratory tests ordered?)*

TABLE 4b-19 LAB PROCEDURES BY PATIENT PREFIX

| RELATIONSHIP OF PATIENT TO SPONSOR | NUMBER OF LAB TESTS ORDERED | PERCENT OF RECORDED TESTS | PERCENT OF VISITS (FROM 4.b.(2)(b)) |
|---|---|---|---|
| SPONSOR | 2,275 | 23.49% | 21.00% |
| SPOUSE | 4,670 | 48.21% | 43.61% |
| CHILDREN | 2,668 | 27.55% | 34.83% |
| OTHER DEPENDENTS | 73 | 0.75% | 0.56% |
| SUB-TOTAL | 9,686 | 100.00% | |
| INCOMPLETELY CODED | 81 | | |
| TOTAL | 9,767 | | |

3 Laboratory Procedures by Provider. *(By whom were lab tests ordered?)*

TABLE 4b-20 LAB PROCEDURES BY PROVIDER*

| PROVIDER | NUMBER OF VISITS | NUMBER OF LAB PROCEDURES | LAB PROCEDURES PER VISIT | VISITS WITH ONE OR MORE LAB PROC. | PERCENT OF VISITS WITH ONE OR MORE LAB PROCEDURES |
|---|---|---|---|---|---|
| MD#1 | 1,814 | 625 | 0.34 | 302 | 16.65% |
| MD#2 | 2,790 | 2,451 | 0.88 | 1,086 | 38.92% |
| MD#3 | 1,145 | 514 | 0.45 | 218 | 19.04% |
| MD#4 | 2,327 | 1,812 | 0.78 | 866 | 37.22% |
| MD#5 | 1,338 | 1,391 | 1.04 | 510 | 38.12% |
| MD#6 | 1,274 | 1,646 | 1.29 | 598 | 46.94% |
| MD#7 | 820 | 484 | 0.59 | 290 | 35.37% |
| TOTAL MD | 11,508 | 8,923 | 0.76 | 3,870 | 33.63% |
| PR#A | 1,339 | 676 | 0.50 | 372 | 27.78% |
| PR#B | 173 | 110 | 0.64 | 88 | 50.87% |
| PR#C | 56 | 24 | 0.43 | 14 | 25.00% |
| TOTAL OTHER PROVIDER | 1,568 | 810 | 0.52 | 474 | 30.23% |
| SUB-TOTAL | 13,076 | 9,733 | 0.74 | 4,344 | 33.22% |
| INCOMPLETELY CODED | 99 | 525 | | | |
| TOTAL | 13,175 | 10,258 | | | |

(m) Immunizations and Skin Tests Requested. During 13,175 visits to the North Clinic in 1974, 1,637 immunizations and skin tests were ordered. Patients could receive immunizations at the hospital without referral, however. The following rank ordering indicates the relative frequency with which certain tests were ordered.

TABLE 4b-21 SKIN TESTS AND IMMUNIZATIONS

| ORDER | TYPE SKIN TEST OR IMMUNIZATION | NUMBER | PERCENT OF SKIN TESTS AND IMMUNIZATIONS |
|---|---|---|---|
| 1 | TINE TEST | 763 | 46.61% |
| 2 | OPV | 299 | 18.27% |
| 3 | DPT | 281 | 17.17% |
| 4 | DT | 134 | 8.18% |
| 5 | MMR | 65 | 3.97% |
| | OTHER (T. TOX, MEASLES AND RUBELLA, MUMPS, FLU, AND SMALL POX--(10-20 EACH) | 73 | 4.46% |
| | OTHER RARE (LESS THAN 5 EACH) | 22 | 1.34% |
| | TOTAL | 1,637 | 100.00% |

(n) Referrals.

1 Number of Referrals and Departments Referred to. During 13,175 visits, 629 referrals were made to other departments. These constitute 4.77 percent of total clinic visits.

TABLE 4b-22 REFERRALS BY DEPARTMENT

| ORDER | CLINIC | NUMBER | PERCENT OF REFERRALS |
|---|---|---|---|
| 1 | ORTHOPEDICS | 101 | 16.05% |
| 2 | OBSTETRICS/GYNECOLOGY | 71 | 11.28% |
| 3 | DERMATOLOGY | 65 | 10.33% |
| 4 | ENT | 62 | 9.86% |
| 5 | OPHTHALMOLOGY | 44 | 7.00% |
| 6 | SURGERY | 44 | 7.00% |
| 7 | INTERNAL MEDICINE | 40 | 6.36% |
| 8 | UROLOGY | 39 | 6.20% |
| 9 | OPTOMETRY | 34 | 5.41% |
| 10 | OCCUPATIONAL THERAPY/ PHYSICAL THERAPY | 24 | 3.82% |
| | OTHERS | 105 | 16.69% |
| SUB-TOTAL | | 629 | 100.00% |
| VISITS WITHOUT REFERRALS RECORDED | | 12,546 | |
| TOTAL | | 13,175 | |

2 Referrals by Patient Prefix. (*Which patients were referred?*)

TABLE 4b-23 REFERRALS BY PATIENT PREFIX

| PREFIX | NUMBER OF VISITS | NUMBER OF REFERRALS | PERCENT REFERRAL VISITS |
|---|---|---|---|
| SPONSOR | 2,741 | 180 | 6.57% |
| SPOUSE | 5,697 | 244 | 4.28% |
| CHILDREN | 4,549 | 193 | 4.24% |
| OTHER DEPENDENTS | 74 | 3 | 4.05% |
| SUB-TOTAL | 13,061 | 620 | |
| INCOMPLETELY CODED | 114 | 9 | |
| TOTAL | 13,175 | 629 | |

3 Referrals by Provider. (By whom were referrals made?)

TABLE 4b-24 REFERRALS BY PROVIDER

| PROVIDER | NUMBER OF VISITS | NUMBER OF REFERRALS | PERCENT OF VISITS WITH REFERRALS |
|---|---|---|---|
| MD#1 | 1,814 | 87 | 4.80% |
| MD#2 | 2,790 | 172 | 6.16% |
| MD#3 | 1,145 | 31 | 2.71% |
| MD#4 | 2,327 | 105 | 4.51% |
| MD#5 | 1,338 | 56 | 4.19% |
| MD#6 | 1,274 | 68 | 5.34% |
| MD#7 | 820 | 55 | 6.71% |
| TOTAL MD | 11,508 | 574 | 4.99% |
| PR#A | 1,339 | 44 | 3.29% |
| PR#B | 173 | 3 | 1.73% |
| PR#C | 56 | 3 | 5.36% |
| TOTAL OTHER PROVIDER | 1,568 | 50 | 3.19% |
| SUB-TOTAL | 13,076 | 624 | |
| INCOMPLETELY CODED | 99 | 5 | |
| TOTAL | 13,175 | 629 | 4.77% |

(o) Utilization Rates. In order to determine the utilization rates at the North Clinic, a roster of North Clinic families was created. Each encounter was cumulated, by family, using the Social Security Number of the sponsor. Attempts were made to correct for coding and other errors, so that all visits were applied to the proper family and time period. However, due to the military environment, many families departed and new families arrived during the test period. Consequently the short term utilization was difficult to categorize.

TABLE 4b-25 CLINIC UTILIZATION RATES

| | | ACTIVE DUTY | RETIRED/ DECEASED |
|---|---|---|---|
| FAMILIES | | 326 | 210 |
| PERSONS | | 1,358 | 740 |
| FAMILY SIZE: | MEAN | 4.166 | 3.524 |
| | MEDIAN | 4.091 | 3.233 |
| | MODE | 4 | 2 |
| VISITS IN 1974 | | 4,103 | 2,735 |
| VISITS PER FAMILY | | 12.586 | 13.024 |
| VISITS PER PERSON | | 3.021 | 3.696 |

It was determined, therefore, to select for analysis only those families who were definitely members of the clinic for the entire 1974 calendar year. This was done by selecting only those families who had at least one visit to the North Clinic prior to January 1974 AND one visit after December 1974. An additional requirement for selection was the availability of Baseline Data. In all, 326 active duty families and 210 families with retired/deceased sponsors met these criteria. It was recognized that this selection procedure could bias the sample slightly toward heavier health care utilizers. The results are given in Table 4b-25, above.

(3) Discussion.

Most of the data in the preceding tables in this section are self-explanatory. However, there are some items of particular interest that require further discussion and elaboration.

(a) Providers. An average of 242 visits per month per MD (using the averages per active month) equates to 60 visits per week or twelve per day. If these figures are multiplied by the average length of visit (as provided by the doctors themselves), the total average time spent in seeing clinic patients was 71.35 hours (242 X 17.69 min.) per month, 17.84 hours per week, or 3.57 hours per day (assuming linear relationship).

If, instead of using the average number of visits per month, the highest figure is used (341 visits for MD #1 in April 1974), the figures become 85 visits per week or 17 visits per day. Using the average length of visit for MD#1 (16.36 min.), total average time spent in seeing clinic patients was 93.0 hours per month, 23.24 hours per week, or 4.65 hours per day.

It is also interesting to note that the number of EKGs, X-ray, and lab tests ordered per visit appears to depend more on who is providing the care than on who is receiving it. The most striking example of this is in two groups of patients, each followed by two different physicians for six month periods. MD#1 and MD#3 served the clinic the first six months of 1974, and their panels of patients were taken over for the last six months by MD#6 and MD#5 respectively. In each case there was a large increase in tests ordered, even though the population of patients remained effectively the same. The percent of visits with EKGs ordered increased from 0.66 and 0.70 to 5.18 and 4.71, respectively. The percent of visits with X-rays increased from 5.18 and 3.32 to 12.87 and 12.26, and the number of lab tests per visit increased from 0.34 and 0.45 to 1.29 and 1.04, respectively. Because of the small sample of physicians, no attempt was made to analyze these data further, or to draw any conclusions. One can only speculate that the differences are due to differences in training and/or experience.

(b) Patients. The spouse, though accounting for only about 25 percent of the population served, accounts for almost 44 percent of visits to the clinic. Data from the National Health Survey indicates similarly about twice as many visits for women at age 30 as for men (Vital and Health Statistics, 1971).

Although the retired/decreased sponsor family is somewhat smaller than the active duty family (mean family size of 3.5 compared to 4.2), the average number of visits per year is slightly higher (13.0 compared with 12.6). This is accounted for by the fact that utilization rates per person are higher for the retired/deceased

sponsor family (3.7 compared with 3.0). As far as family practice utilization is concerned, then, the families can be considered equivalent.

(c) Miscellaneous.

o The number of prescriptions per visit (0.85) compares closely with that reported in The Milbank Memorial Fund Quarterly on "The Family Doctor" (0.59 to 0.86 prescriptions per visit). (Milbank, 1972).

o The distribution of acute and chronic problems seen (about 50-50) is similar to data from the National Health Survey (Vital and Health Statistics, 1971).

o Although 17 percent of visits had a second problem recorded, the length of visit with two problems was no greater than the length of visit in which only one problem was noted.

c. Patient Satisfaction Survey.

(1) Methodology.

A variety of problems are involved in assessing consumers' attitudes. Respondents tend to reply in a socially acceptable manner, expressing few negative feelings; it is difficult to objectively quantify a series of subjective reports to assess satisfaction; and the reliability and validity of the measuring instrument must be addressed.

The Patient Satisfaction Survey was administered with 19 items assessing attitudes toward physicians, nurses, medical auxiliaries, professional interest, courtesy, quality of care, adequacy of information, and convenience of the clinic.

The response format employed a five-point Likert scale from "completely dissatisfied" (1) to "neutral/undecided" (3) to "completely satisfied" (5). A "no contact and/or not applicable" response option was provided for each of the 19 statements. In addition, demographic information was collected regarding sex, age, military status, grade, education, family size, race, career intentions, and whether the patient had an appointment.

A cover letter from the Chief, Ambulatory Health Services, Ft. Ord, California, introduced the questionnaire (see Appendix G). The data collection instrument consisted of two parts: demographic information and satisfaction attitudes. Patients were

administered the demographic portion before receiving treatment. The consumer satisfaction was assessed after a patient had received medical care. Patients using the clinic under study were sampled usually on Tuesday or Thursday depending upon what day the patient presented himself for treatment. The survey was collected as the patient left the clinic.

(2) Findings.

(a) Overall Results. Patients from six clinics were surveyed on eight different dates from November 1973 to September 1975. The total number of patients responding was 1610. The sample consisted of 564 males, 1023 females, and 23 unidentified subjects. The number of patients surveyed by clinic and date is given in Table 4c-1.

The overall response to all 19 patient satisfaction items was very satisfactory (mean responses to all items being greater than 4.00 "Mostly Satisfied"). The mean-item rating (the average of all items responded to by a patient) was 4.54. Table 4c-2 summarizes the responses to each item, giving the grand mean and the dispersion around the grand mean for each clinic.

The item clusters were the mean responses to the items answered dealing with a particular topic (such as Interest or Adequacy of Information). The item clusters represent global measures of satisfaction. The grand mean responses for each item cluster were all greater than 4.50. Table 4c-3 summarizes the responses.

(b) Reliability of Survey Instrument.

A split-half reliability coefficient was computed comparing the average response to all odd-numbered items vs the average response to all even-numbered items. The simple correlation between the mean-odd and mean-even scores was .937. Correcting for the whole instrument, the reliability becomes .967.

In addition, a Principal Components Factor Analysis of all 19 items was performed. A sample of 178 subjects responded to all 19 items. This factor analysis revealed one factor with an eigenvalue greater than 1.000 (the actual value was 13.682), accounting for 72 percent of the common variance with all 19 items correlating .600 or greater (and 15 items correlating .800 and greater) with the first factor. A complete factor analysis of the 1610 subjects' responses to the 19 items revealed three factors with eigenvalues greater than 1.000 (accounting for a cumulative 67.6 percent of the common variance). The first factor alone accounted for 55.7 percent of the common variance. The first factor was labeled general satisfaction. The second

TABLE 4c-1 RESPONDENTS BY CLINIC AND DATE SURVEYED

| DATE | AMIC | GMC | FPN | FPH | PEDS | INT MD |
|---|---|---|---|---|---|---|
| Nov 73 | | 487 | | | | |
| Mar 74 | 172 | | | | | |
| May 74 | 174 | | | | | |
| Jul 74 | 131 | | | | | |
| Oct 74 | | | 74 | | | |
| Nov 74 | 162 | | | 65 | | |
| Apr 75 | 60 | | 32 | 74 | 42 | 45 |
| Sep 75 | 69 | | | 22 | | |
| TOTAL | 768 | 487 | 106 | 161 | 42 | 45 |

## TABLE 4c-2 GRAND MEAN AND DISPERSION

Grand mean and dispersion of clinics' mean (corrected for covarying out date) for individual items.

| SATISFACTION ITEMS | GRAND MEAN | AMIC | GMC | FAM PR NORTH | FAM PR HOSP | PEDIATRICS | INT MEDCN |
|---|---|---|---|---|---|---|---|
| 1. Doctor's interest in my problem | 4.62 | -.07 | -.08 | .32 | .22 | .24 | .18 |
| 2. Nurse's interest in my problem | 4.51 | -.05 | -.07 | .21 | .17 | .07 | .19 |
| 3. Other medical personnel interest in my problem (physician assistants, amosists, nurse clinicians) | 4.49 | -.08 | .05 | .21 | .06 | -.08 | .04 |
| 4. Courtecus treatment by doctors | 4.74 | -.05 | -.04 | .23 | .11 | .16 | .10 |
| 5. Courteous treatment by nurses | 4.67 | -.05 | -.03 | .19 | .10 | .21 | .06 |
| 6. Courteous treatment by other medical person (physician assistants, amosists, nurse clinicians) | 4.64 | -.06 | .03 | .14 | .08 | .09 | -.02 |
| 7. Courteous treatment by receptionist | 4.66 | -.06 | -.04 | .19 | .18 | .26 | .01 |
| 8. Quality of health care | 4.52 | -.11 | .02 | .20 | .16 | .29 | .21 |
| 9. Waiting time in this clinic | 4.12 | -.15 | .05 | .22 | .29 | .22 | .07 |
| 10. Convenience of location of this clinic | 4.62 | -.05 | .03 | -.12 | .13 | .15 | .12 |
| 11. Convenience of operating hours of this clinic | 4.62 | -.05 | .02 | .05 | .07 | .17 | .02 |
| 12. Adequacy of this clinic's physical facilities (seating, comfort, decor) in general | 4.58 | -.05 | .04 | .07 | -.03 | .12 | .14 |
| 13. Adequacy of information given to you about your medical problem by doctor | 4.59 | -.06 | -.04 | .23 | .13 | .27 | .09 |
| 14. Adequacy of information given to you about your medical problem by nurse | 4.47 | -.06 | -.10 | .28 | .18 | .17 | .31 |
| 15. Adequacy of information given to you about your medical problem by other personnel (physician assistants, amosists, nurse clinician) | 4.46 | -.04 | -.02 | .19 | .09 | .02 | .02 |
| 16. Continuity of health care provided (continued thorough care) | 4.55 | -.04 | -.10 | .24 | .17 | .14 | .21 |
| 17. Laboratory services provided by this facility | 4.49 | -.04 | -.13 | .26 | .14 | .17 | .16 |
| 18. Pharmacy services provided by this facility | 4.48 | .00 | -.11 | .46 | -.04 | -.12 | .11 |
| 19. X-ray services provided by this facility | 4.38 | -.01 | -.03 | .29 | -.18 | .25 | .27 |

**TABLE 4c-3**

GRAND MEAN AND DISPERSION OF CLINICS' MEAN
(CORRECTED FOR COVARYING OUT DATE) FOR ITEM CLUSTERS

| ITEM CLUSTERS | GRAND MEAN | AHIC | GMC | FAM PR NORTH | FAM PR HOSP | PEDIATRICS | INT MEDCN |
|---|---|---|---|---|---|---|---|
| 1. Mean-item rating (general satisfaction level) | 4.54 | -.06 | -.02 | .20 | .14 | .16 | .13 |
| 2. Interest | 4.54 | -.07 | -.04 | .26 | .19 | .13 | .16 |
| 3. Courtesy | 4.67 | -.06 | -.03 | .19 | .13 | .19 | .06 |
| 4. Convenience and adequacy of clinic | 4.60 | -.05 | .03 | -.01 | .06 | .16 | .10 |
| 5. Adequacy of Information | 4.51 | -.06 | -.06 | .26 | .16 | .19 | .15 |
| 6. Ancillary services (laboratory, pharmacy, and x-ray) | 4.45 | .00 | -.08 | .40 | -.10 | -.12 | .16 |
| 7. Physicians | 4.64 | -.07 | -.05 | .27 | .17 | .23 | .16 |

identifiable factor was ancillary services (laboratory, pharmacy, and x-ray). The third factor was unidentified. A factor analysis of the 1610 subjects' responses to 16 items (omitting the three items dealing with ancillary services) revealed two factors with eigenvalues greater than 1.000 (accounting for 65 percent of the common variance). A varimax rotation was performed on the factor structure; the two factors were labeled 1) non-physician interactions (nurses, receptionists, other medical personnel) and 2) physician interactions/quality and continuity of health care. Since the reliability of a test is often considered the limit of the variance of the instrument which can be accounted for by the factors, the reliability of the survey instrument as determined by Factor Analyses falls between 65.0 and 72.0 percent of the common variance being accounted for by the factors (simple correlation coefficients of between .81 to .85).

(c) Validity. The validity of the survey instrument was assessed using correlations with specific criterion items. The simple correlations between the mean-item rating (average of all items to which the subject responded) and the individual 19 items ranged from .609 to .814 (median correlation was .760). The simple correlation between the mean-item rating and the item dealing with "Quality of Health Care" was .740.

The correlation of the mean-odd score with the mean-item rating was .931, while the correlation of the mean-even score with the mean-item rating was .882.

(d) Demographic analyses covarying out date. For each of the demographic variables of sex, race, highest level of education, military grade, status, whether patient had an appointment, and whether sponsor intended to make the military a career, separate analyses were performed. The effects of different times of administering the Patient Satisfaction Survey were accounted for by analyses of covariance. Separate analyses were performed for each item.

For Sex, there was a significant F ratio on item 4 ($p = .038$), males being significantly more satisfied than females. There were no other significant sex differences on any of the other items.

For whether patient had an appointment (Appointment), there were significant differences between groups (yes vs no) on 15 of the 19 items and on the mean-item rating. Those individuals who did have an appointment scheduled reported significantly greater satisfaction with the 15 items. Table 4c-4 shows which items there were with significant differences. Significant differences exist for p values less than or equal to 050.

The career intentions of the sponsor (Career) showed significant differences between groups (yes, undecided, no) on 12 of the 19 items and on the mean-item rating. In all cases, responses of career-oriented sponsors were more satisfied than the other groups.

The Status of the respondent indicated significant differences between groups (active duty dependent, active duty sponsor, retired dependent, retired sponsor) for 10 of the 19 items and the mean-item rating. Of the respondents, retired sponsors were most satisfied on all items.

Of the responses broken down by military grade (Grade) groups (company grade officers, field grade officers, warrant officers, E-1 to E-5s, and E-6 to E-9s), there were significant differences between groups on 16 of the 19 items and on the mean-item rating. The warrant officer group was generally most satisfied.

For Race, there were significant differences between groups on three items (1, 4, and 11). The Chinese-Americans and Japanese-Americans reported the greatest dissatisfaction with these three items.

For highest level of education reached (Education), there were no significant differences between groups for any of the items.

## TABLE 4c-4

INDIVIDUAL ITEMS BROKEN DOWN BY DEMOGRAPHIC VARIABLES SHOWING SIGNIFICANCE LEVEL FROM ANALYSIS OF VARIANCE (p VALUE)

| | SATISFACTION ITEMS | SEX | APPOINTMENT | CAREER | STATUS | GRADE | SCHOOL | RACE |
|---|---|---|---|---|---|---|---|---|
| 1. | Doctor's interest in my problem | 097 | 001 | 026 | 242 | 001 | 103 | 027 |
| 2. | Nurse's interest in my problem | 176 | 002 | 010 | 001 | 001 | 270 | 417 |
| 3. | Other medical personnel interest in my problem (physician assistants AMOSISTs, nurse clinicians) | 999 | 106 | 001 | 001 | 002 | 999 | 999 |
| 4. | Courteous treatment by doctors | 038 | 001 | 162 | 073 | 001 | 999 | 010 |
| 5. | Courteous treatment by nurses | 999 | 006 | 023 | 018 | 016 | 345 | 101 |
| 6. | Courteous treatment by other medical personnel (physician assistants, AMOSISTs, nurse clinicians) | 999 | 084 | 010 | 016 | 001 | 999 | 999 |
| 7. | Courteous treatment by receptionist | 999 | 002 | 001 | 278 | 001 | 173 | 999 |
| 8. | Quality of health care | 163 | 001 | 174 | 262 | 014 | 999 | 999 |
| 9. | Waiting time in this clinic | 999 | 001 | 076 | 156 | 085 | 999 | 191 |
| 10. | Convenience of location of this clinic | 117 | 002 | 002 | 041 | 043 | 999 | 999 |
| 11. | Convenience of operating hours of this clinic | 266 | 005 | 011 | 178 | 081 | 999 | 033 |
| 12. | Adequacy of this clinic's physical facilities in general | 055 | 188 | 999 | 045 | 147 | 999 | 999 |
| 13. | Adequacy of information given to you about your medical problem by doctor | 999 | 001 | 005 | 131 | 001 | 999 | 167 |
| 14. | Adequacy of information given to you about your medical problem by nurse | 999 | 001 | 013 | 006 | 001 | 999 | 999 |
| 15. | Adequacy of information given to you about your medical problem by other personnel (physician assistants, AMOSISTs, nurse clinicians) | 999 | 023 | 001 | 001 | 001 | 999 | 999 |
| 16. | Continuity of health care provided (continued thorough care) | 272 | 001 | 012 | 005 | 001 | 999 | 078 |
| 17. | Laboratory services provided by this facility | 999 | 017 | 999 | 126 | 007 | 999 | 999 |
| 18. | Pharmacy services provided by this facility | 999 | 025 | 167 | 012 | 021 | 999 | 154 |
| 19. | X-ray services provided by this facility | 999 | 180 | 999 | 158 | 031 | 999 | 999 |
| | Mean-item rating (general satisfaction) | 135 | 001 | 001 | 003 | 001 | 999 | 175 |

(e) Analyses across clinics covarying out date.

1 Analyzing the separate items across clinics revealed significant differences between clinics on 12 of the 19 items. For items in which there was a significant difference between clinics, the Family Practice North Clinic was ranked highest in terms of patients' satisfaction on items 1, 2, 4, and 18; Family Practice North Clinic co-ranked highest on items 5 and 13 (with Pediatrics clinic) and co-ranked highest on items 14 and 16 with Internal Medicine Clinic. Family Practice Hospital Clinic was ranked highest for item 9. Pediatrics was ranked highest on items 7, 8, and 11. Family Practice North Clinic was ranked lowest in satisfaction for item 10.

2 Analyses of the mean responses to item-clusters revealed the following significant differences between clinics. For the mean-item response, the Interest-cluster, the Adequacy of Information-cluster, and the Ancillary personnel cluster, the Family Practice North Clinic was ranked highest. For the Courtesy-cluster and the Physician-cluster, the Family Practice North Clinic was tied with Pediatrics Clinic for highest ranking.

(3) Discussion.

(a) Reliability and validity characteristics. The use of a five-point Likert format is a convenient method to allow respondents greater discrimination of the intensity of their beliefs regarding an issue, without sacrificing reliability (consistency) of the scale.

The reliability of the Patient Satisfaction Survey was assessed using a split-half reliability coefficient ($r = .967$) and the amount of variance accounted for in Principal Components Factor Analyses of all 19 items ($r = .822$) and of the 16 items excluding ancillary services ($r = .806$). The actual reliability of the Patient Satisfaction Survey falls between .81 and .97, indicating very high inter-item consistency. These values exceed the reliabilities reported by Hulka et al in their scale for measuring attitudes toward physicians and primary medical care.

The reliability of a scale generally exceeds the validity of the instrument, and this was found for the Patient Satisfaction Survey. Scale validity was assessed using correlations with criterion items. The simple correlation between the mean-item rating and item 8 "Quality of health care" was .740. Individual item correlations with the mean-item rating have a median correlation of .760. Both serve as estimates of the internal validity of the scale.

The reliability and validity determined for the Patient Satisfaction Scale are highly acceptable.

Hulka, Zyzanski, Cassel, and Thompson (1970) used the Thurstone Method of Equal Appearing Intervals to develop a scale for the measurement of attitudes toward physicians and primary medical care. Judges evaluated statements for favorable (or unfavorable) attitudes. Three dimensions were determined: personal qualities of physicians, professional competence of physicians, and cost/convenience of care. Scale items were presented in a dichotomous format (agree - disagree).

In a follow-up article, Zyzanski, Hulka, and Cassel (1974) offered modifications in content, format, and scoring of their earlier scale. A Likert method providing a range of five response options from strongly agree to strongly disagree was utilized. The Likert scale format allowed for greater discrimination of the intensity of a respondent's belief regarding an issue. The Likert scale format produced scores that were consistently more reliable than scores computed using the Thurstone method. The split half correlations for the three component scales were: .75, .86, and .68.

Lebow (1974) discussed consumer assessments of the quality of medical care. A variety of methodological issues must be considered: 1) reliability, the consistency of an instrument over repeated administrations; 2) concurrent validity, consensus between different measures of satisfaction; 3) reactivity, the extent patients' responses reflect their attitudes rather than the demand characteristics of the situation (being surveyed); 4) external validity, do patients' perceptions accurately reflect care given; 5) criterion reference, what absolute measure of quality of care can be used for comparison; 6) variability in data, or lack thereof. There is a definite need for multi-trait, multi-method comparisons (Campbell and Fiske, 1959) to assess satisfaction.

(b) Overall satisfaction.

The overall response to all items was in the very satisfied direction (judging from the mean-item rating and the item clusters). The high level of satisfaction left little room for change because of a ceiling (the end-point of the continuum was 5.00).

The item clusters were intended to help separate attitudes toward specific topics (such as toward Physicians in general, or Courtesy of the staff). The item clusters revealed very high satisfaction in all areas.

The only reservation regarding the overall high satisfaction echoes the concern expressed by Lebow (1974) regarding variability in the data, or lack thereof. In this population, the majority of the respondents were satisfied with what was asked about. Whether this reflects the consumers' total feelings toward the medical care provided can only be guessed.

(c) Demographic Characteristics.

Overall, there were no significant differences between groups on the items for Education, on all but on item for Sex, and all but three items for Race. Women were significantly more dissatisfied by the "Courteous Treatment by Doctors". Chinese-Americans and Japanese-Americans were least satisfied by the Doctor's Interest, Courteous Treatment, and the Convenience of the operating hours of the clinic. Perhaps there may have been some discrimination by the physicians toward minority groups (like women). However, the physicians' behaviors did not significantly affect the overall level of perceived medical care.

Whether the respondent had an Appointment, the Career intentions of the sponsor, the military Grade of the sponsor, and the Status of the respondent were all significant determiners of patients' attitudes. The significantly more satisfied consumers tended to have the following characteristics: Status -- retired sponsor; military Grade -- warrant officer or senior grade (frequently officer); careerist; and had an Appointment. However, the amount of variance ($R^2$) accounted for by the demographic variables is small (less than six percent at best). Differences between groups can be more attributable to the large sample size than to the demographic characteristics themselves (a large sample can make small differences statistically significant, but provide little further information).

(d) Clinics.

The Family Practice North Clinic was ranked highest in terms of patients' satisfaction with the medical care provided. The physicians' Interest and Courtesy (and the Physician-cluster) and the continuity of health care were reported as most satisfying. *The only major patient dissatisfaction factor was the location of the North Ft. Ord Family Practice Clinic.* This was surprising in light of the fact that the clinic was specifically designed as a 'neighborhood-based' clinic for the convenience of patients. A partial explanation for this apparent discrepancy can be found in Section 4h (only a portion of the patients came from the nearby housing area, and patients at times had to go back and forth to the hospital for special x-rays, procedures, consults, and other services not available at the North Clinic).

d. The Staff Satisfaction Survey.

(1) Background and Methodology. One of the questions of great interest when the family practice program was conceived was whether family practice physicians and staff would be more satisfied in the work they were doing than physicians and staff members in other medical specialties and clinics. As a means of measuring satisfaction, a questionnaire was adapted from the Job Descriptive Index (Smith et al, 1969). The questionnaire (Appendix H) was administered three times (in June and December of 1974, and in May 1975) to six primary care clinics at Silas B. Hayes Army Hospital, Fort Ord. The clinics included the Acute Minor Illness Clinic (AMIC), the Emergency Treatment Room (ETR), both Family Practice Clinics (North Clinic and Hospital Clinic), the Internal Medicine Clinic (IMC), the Obstetrics and Gynecology Clinic (OB/GYN), and the Pediatric Clinic (PEDS).

Lists containing the names of every individual in each of the clinics to which the questionnaire was administered were given to the NCOIC of each clinic. Two envelopes and a questionnaire for each individual on the list were also provided; one envelope was blank, while the other had the individual's name on it and contained the Job Descriptive Index. Individuals were instructed that when the questionnaire was completed, they were to seal it in the blank envelope and return it to the NCOIC. The NCOIC checked the individual's name off the list when questionnaires were returned. The envelopes were collected and sent to HCSD, FSHTX, where they were opened and the results tabulated.

(2) Findings. Analyses were made of the six satisfaction scores across clinics by times administered. Separate tests were made for physicians, in addition to the overall staff results. The hypothesis being tested was that there were equal treatment effects (no difference between cell means). Significant F ratios indicate that the treatments differ in their effects upon the criterion variable, but do not indicate which treatments differ from one another nor to what degree they differ. The Scheffé method of multiple contrasts was employed to separate the treatment effects of significant F ratios. Table 4d-1 summarizes return rates found.

For the first administration in June 1974, there was a significant F ratio for the staff sample for the satisfaction variable SUPERVISOR ($F = 2.49(6/100)$, $p = .027$). There were no significant differences between clinic means. For the physician sample, there was a significant F ratio for the satisfaction variable FACES ($F = 2.67(6/31)$, $p = .032$). There were no significant differences between clinic means of physician responses (Tables of results in Appendix I).

## TABLE 4d-1 RETURN RATES BY CLINIC

### Ft Ord Jun 3-7, 1974 Administration

| # | CLINIC | TOTAL | RETURNED | NO RESPONSE |
|---|---|---|---|---|
| 1 | Obstetric-Gynecology | 20 | 18 | 2 |
| 2 | Family Practice - North | 15 | 15 | 0 |
| 3 | Internal Medicine | 15 | 13 | 2 |
| 4 | Pediatrics | 14 | 12 | 2 |
| 5 | Acute Minor Illness Clinic | 30 | 21 | 9 |
| 6 | Emergency Room | 26 | 12 | 14 |
| 7 | Family Practice - Hospital | 19 | 16 | 3 |
| | Grand Total | 139 | 107 | 32 |

### Ft Ord Dec 2-6, 1974 Administration

| # | CLINIC | TOTAL | RETURNED | NO RESPONSE |
|---|---|---|---|---|
| 1 | Obstetric-Gynecology | 16 | 16 | 0 |
| 2 | Family Practice - North | 15 | 12 | 3 |
| 3 | Internal Medicine | 21 | 19 | 2 |
| 4 | Pediatrics | 12 | 10 | 2 |
| 5 | Acute Minor Illness Clinic | 27 | 25 | 2 |
| 6 | Emergency Room | 29 | 27 | 2 |
| 7 | Family Practice - Hospital | 20 | 12 | 8 |
| | Grand Total | 140 | 121 | 19 |

### Ft Ord May 19-23, 1975 Administration

| # | CLINIC | TOTAL | RETURNED | NO RESPONSE |
|---|---|---|---|---|
| 1 | Obstetric-Gynecology | 20 | 17 | 3 |
| 2 | Family Practice - North | 15 | 13 | 2 |
| 3 | Internal Medicine | 26 | 20 | 6 |
| 4 | Pediatrics | 15 | 10 | 5 |
| 5 | Acute Minor Illness Clinic | 24 | 19 | 5 |
| 6 | Emergency Room | 29 | 29 | 0 |
| 7 | Family Practice - Hospital | 24 | 15 | 9 |
| | Grand Total | 153 | 123 | 30 |

In the second administration (in December 1974) there were significant F ratios for the staff sample for the satisfaction variables PAY ($F = 2.78(6/110)$, $p = .014$) and FACES ($F = 3.10(6/113)$, $p = 007$). For PAY, the staff responses for Pediatrics were significantly more satisfied ($p < .05$) than the staff responses from the North Clinic. In addition, on FACES the Pediatric staff was more satisfied with their job than the staff from Internal Medicine ($p < .05$). There were no significant differences between physician responses in the various clinics in the December 1974 sample (Appendix I).

In the May 1975 sample there were no significant differences between staff responses in the clinics, nor were there between physician responses (Appendix I).

The responses from all three administrations were pooled and tested for interactions between clinic and date-tested. For the pooled staff there were significant main effects for PAY broken down by clinic ($F = 3.706(6/306)$, $p = .002$), CO-WORKERS broken down by date-tested ($F = 4.105(2/306)$, $p = .017$), FACES broken down by clinic ($F = 3.397(6/306)$, $p = .003$), and FACES broken down by date-tested ($F = 4.670(2/306)$, $p = .010$). There were no significant interaction effects in the pooled staff responses. Simple effects tests were performed through one-way ANOVAs. There were significant F ratios for: SUPERVISOR by clinics ($F = 3.277(6/311)$ $p = .003$), though no significant differences between clinics; PAY by clinics ($F = 3.181$ $(6/333)$, $p = .004$) in which the PEDS staff was significantly more satisfied than the staff of the North Clinic and the ETR ($p < .05$); CO-WORKERS by date-tested ($F = 4.649(2/334)$, $p = .010$), December 1974 responses being significantly more satisfied than May 1975 ($p < .05$); FACES by clinics ($F = 3.681(6/340)$, $p = .001$), PEDS being more satisfied than Internal Medicine ($p < .05$); and FACES by date tested ($F = 3.780(2/344)$, $p = .023$), December 1974 responses being more satisfied than May 1975 responses ($p < .05$).

The pooled responses of all physicians were tested for interactions between clinic and date-tested. For the pooled physicians there were significant main effects for: SUPERVISOR broken down by clinics ($F - 2.371(6/75)$, $p = .037$); PAY broken down by clinics ($F = 2.571(6/87)$, $p = .024$); and PROMOTION broken down by clinics ($F = 2.390(6/87)$, $p = .034$). There were no significant interactions found. Simple effects tests were performed through one-way ANOVAs. There were significant F ratios for: PAY by clinics ($F = 2.176(6/106)$, $p = .050$), though no significant differences between clinics; PAY by date-tested ($F = 3.652(2/110)$, $p = .029$) with December 1974 being significantly more satisfied than May 1975; PROMOTIONS by clinic ($F = 2.766(6/102)$, $p = .015$), with no significant differences between clinics; and FACES by clinics ($F = 2.235$ $(6/105)$, $p = .045$), with no significant differences between clinics.

(3) Discussion of Staff Satisfaction Data. From the separate administrations of the Job Descriptive Index, there were no consecutively significant differences found between staff or physician responses between clinics. In testing the pooled responses for possible significant interactions between date-tested (of the three administrations) and clinic differences, there were no significant interactions detected for either staff or for physician responses. In examining the staff responses, the Pediatric staff was significantly more satisfied ($p < .05$) on the dependent variables PAY and FACES.

In examining physician responses there appeared to be comparable results found between the March 1974 general satisfaction levels of varying medical specialties (see Table 4d-2) and the JDI results for the three administrations. There were no consecutive significant differences between clinics (or specialties). *The results suggest that generally the Ft. Ord physicians tested are satisfied with their job, but fail to show any greater or lesser satisfaction on the part of Family Practice physicians.*

TABLE 4d-2

GENERAL SATISFACTION LEVELS BY SPECIALTIES OF PHYSICIANS
AT FT. ORD, CALIFORNIA SURVEYED IN MARCH, 1974

| SPECIALTY | MEAN | STD DEV | N |
|---|---|---|---|
| 1. Radiologists | 2.638 | 0.982 | 2 |
| 2. Preventive Medicine | 2.344 | 0.143 | 5 |
| 3. General Medicine Officers | 2.282 | 0.383 | 19 |
| 4. Internal Medicine | 2.265 | 0.383 | 16 |
| 5. OB-GYN | 1.907 | 0.350 | 6 |
| 6. Surgeons | 2.775 | 0.533 | 22 |
| 7. Anesthesiologists | 2.367 | 0.151 | 3 |
| 8. Psychiatrists | 2.680 | 0.383 | 4 |
| 9. Pathologists | 2.125 | 0.294 | 2 |
| Total Population | 2.402 | 0.490 | 79 |

A 5-point Likert scale continuum where (1) equals very satisfied to (5) very dissatisfied was used.

e. The OMB Study.

(1) Methodology.

Though not originally intended to be a part of the study of Family Practice in the Army, the Department of Defense (DOD), Department of Health, Education, and Welfare (DHEW), Office of Management and Budget (OMB) Military Health Care Study (MHCS) proved to be a valuable adjunct. (Report of the Military Health Care Study, December 1975). An encounter study similar to that conducted in the Family Practice clinics had been planned by the on-site Family Practice study group for many of the other primary and specialty clinics at Ft. Ord, to begin about mid-1974. The purpose would have been to determine the utilization of other medical facilities by Family Practice clinic patients.

The OMB MHCS, however, conducted an Encounter Survey between 1 April 1974 and 31 July 1974, in the Northern California area, including all of the medical clinics at Ft. Ord. It was felt that to then ask the clinic staffs to collect encounter data for the Family Practice study for several additional months would have been not only a severe imposition, but might well have resulted in inaccurate data. It was therefore decided to request specific data that could satisfy the Family Practice study needs, directly from the MHCS Office.

Although the MHCS Encounter Survey (Appendix J) had initially included the Social Security Number (SSN) of the military or retired sponsor, these SSNs were subsequently purged from the files. A new identifying number was given each family, however, so that multiple visits by the same family could still be associated. The MHCS Office was therefore requested to ". . . take the block of identification numbers of those patients who had visited the North Ft. Ord Family Practice Clinic during the period of (your) study, and search this list against all other clinics in the immediate area for match . . ." They were then asked to either send the individual encounter data or summary statistics.

(2) Findings.

Subsequent to the request for encounter data on all visits in the Ft. Ord area made by members of the North Ft. Ord Family Practice Clinic, a computer tape listing 12,975 encounters was received from the OMB MHCS (more correctly, from the Office for the Civilian Health and Medical Program of the Uniformed Services (OCHAMPUS), which was handling the automatic data processing (ADP) for the OMB MHCS).

Some 3,984 of the 12,975 visits were made to the North Clinic. This compares to 3,956 visits as recorded by this study, (see para 4b(2)(a)), a difference of only 0.71 percent.

From the remaining 8,991, 1,857 can be subtracted as having no consequence for the study (Dental, Optometry, Podiatry, OT, and PT), as listed in Table 4e-1.

The remaining 7,134 (8,991 less 1,857) are listed in the succeeding three tables, divided into Primary Care (Table 4e-2), Part/Primary/Part Specialty Care (Table 4e-3), and Specialty Care (Table 4e-4). Clinics are ranked in order of decreasing frequency of visits within each table.

TABLE 4e-1 OMB NONRELEVANT VISITS

| | |
|---|---|
| DENTAL (HOSPITAL ONLY) | 307 |
| OPTOMETRY | 1,218 |
| PODIATRY | 46 |
| OCCUPATIONAL THERAPY | 11 |
| PHYSICAL THERAPY | 275 |
| TOTAL | 1,857 |

TABLE 4e-2 PRIMARY CARE CLINICS

(Number of visits by month, 1974)

| CLINIC | APRIL | MAY | JUNE | JULY | TOTAL |
|---|---|---|---|---|---|
| EMERGENCY ROOM | 219 | 203 | 156 | 178 | 756 |
| TROOP CLINICS | 207 | 118 | 115 | 308 | 748 |
| HOSPITAL FAMILY PRACTICE CLINIC | 224 | 146 | 118 | 51 | 539 |
| ACUTE MINOR ILLNESS CLINIC | 150 | 107 | 97 | 115 | 469 |
| SUB-TOTAL | 800 | 574 | 486 | 652 | 2512 |

TABLE 4e-3 PART PRIMARY/PART SPECIALTY CARE CLINICS

(Number of visits by month, 1974)

| CLINIC | APRIL | MAY | JUNE | JULY | TOTAL |
|---|---|---|---|---|---|
| PEDIATRICS | 105 | 95 | 86 | 48 | 334 |
| GYNECOLOGY | 75 | 55 | 41 | 20 | 191 |
| OBSTETRICS | 53 | 36 | 37 | 30 | 156 |
| INTERNAL MEDICINE | 43 | 42 | 20 | 22 | 127 |
| SUB-TOTAL | 276 | 228 | 184 | 120 | 808 |

TABLE 4e-4 SPECIALTY CARE CLINICS

(Number of visits by month, 1974)

| CLINIC | APRIL | MAY | JUNE | JULY | TOTAL |
|---|---|---|---|---|---|
| ALLERGY | 302 | 279 | 209 | 217 | 1,007 |
| ORTHOPEDICS | 98 | 112 | 95 | 85 | 390 |
| IMMUNIZATION | 85 | 102 | 96 | 81 | 364 |
| PHYSICAL EXAM ROOM | 102 | 103 | 61 | 75 | 341 |
| DERMATOLOGY | 78 | 88 | 33 | 27 | 226 |
| UROLOGY | 54 | 57 | 70 | 44 | 225 |
| OTOLARYNGOLOGY | 99 | 46 | 38 | 32 | 215 |
| PSYCHIATRY | 110 | 51 | 6 | 27 | 194 |
| GENERAL SURGERY | 59 | 40 | 31 | 33 | 163 |
| OPHTHALMOLOGY | 75 | 24 | 25 | 34 | 158 |
| OCCUPATIONAL HEALTH | 19 | 35 | 31 | 20 | 105 |
| OTHER CLINICS* | 172 | 84 | 93 | 77 | 426 |
| SUB-TOTAL | 1,253 | 1,021 | 788 | 752 | 3,814 |
| TOTAL FOR ALL CLINICS EXCEPT FAM. PRAC. | 2,329 | 1,823 | 1,458 | 1,524 | 7,134 |

* - There were 22 other specialty clinics, which had less than 100 visits each during the four month period.

*In summary, from 1 April thru 31 July 1974, the same family practice patient panel members who made 3,984 visits to the North Clinic also made 7,134 visits to other medical clinics.* This data is summarized below in Table 4e-5.

TABLE 4e-5 CLINIC SUMMARY DATA

| CLINIC | APRIL | MAY | JUNE | JULY | TOTALS |
|---|---|---|---|---|---|
| NORTH FORT ORD FAMILY PRACTICE | 1,233 | 996 | 783 | 972 | 3,984 |
| OTHER PRIMARY CARE (ETR, TROOP CLINICS, HOSPITAL FAMILY PRACTICE, AMIC) | 800 | 574 | 486 | 652 | 2,512 |
| PART PRIMARY/PART SPECIALTY CLINICS (INT MED, OB, GYN, PEDS) | 276 | 228 | 184 | 120 | 808 |
| ALL OTHER SPECIALTY CLINICS | 1,253 | 1,021 | 788 | 752 | 3,814 |
| TOTAL VISITS BY THIS GROUP OF PATIENTS TO ALL CLINICS, APRIL - JULY 1974* | 3,562 | 2,819 | 2,241 | 2,496 | 11,118 |

* - Not counting Dental, Optometry, Podiatry, OT or PT.

(3) Discussion of the OMB MHCS Data.

When the data received from the OMB MHCS was compared with the encounter data obtained from this study, the number of visits to the North Clinic during the four months of the MHCS, April thru July 1974, matched very closely (3,984 visits according to MHCS, 3,956 from Family Practice Models encounter data). For this reason, as well as the overall quality of this high level study, it is reasonable to accept the veracity of the OMB data. The data is quite surprising, however, as it does not confirm earlier thinking or reports of utilization of other primary and specialty clinics by family practice patients.

There has been a general feeling that the family practitioner takes care of 80 to 90 plus percent of his patients' problems. In a thesis based on data from the North Clinic outpatient chart review, it was concluded that ". . . the Family Practice Clinic is providing 94 percent of the care required by members who come into the clinic, and 72.5 percent of the care required by the total membership." (Perry, 1975).

These conclusions are not substantiated by the OMB MHCS data, which show that, during the four month period of the study, only about 36 percent of this group of patients' visits were actually made to the North Clinic. Even if visits to the Hospital Clinic are included (some were evening or weekend visits), and visits to the Immunization Clinic are excluded, the total is raised to only about 42 percent. (Monthly Vital Statistics for July 14, 1975 reported that 40.4 percent of all office visits were made to general and family practitioners (Monthly Vital Statistics, July 14, 1975)).

First of all, why does the OMB data suggest conclusions so significantly different from Perry's conclusions? Assuming that both the OMB MHCS data and Perry's data are accurate, the only explanation is that significant numbers of clinic visits did not get recorded in the patient's chart. This explanation is reasonable in light of the fact that North Clinic patient's charts are kept at the North Clinic, some two and a half miles from the hospital (and therefore from the other clinics), and that the records room at the North Clinic had no attendant outside of normal duty hours, making it inconvenient and difficult for a patient to obtain records to carry to other clinics.

Secondly, patients could easily become aware of the fact that, if they were recognized as family practice panel members (charts were so marked), they would not be seen at other clinics without a referral (except as noted below). The OMB MHCS data appears to indicate that patients utilize whatever system they can most easily

gain access to at the time. It is quite likely that, at times, they preferred not to be recognized as family practice panel members, but rather to gain the best of both worlds. It is likely therefore, that although the data from the two sources appears contradictory, it is not incompatible.

There are many other interesting items in the data. Visits to the Troop Clinics by the sponsor numbered 748 during the four months, which would extrapolate to roughly 2244 for the year. Sponsor visits to the North Clinic in 1974 numbered 2757. (This latter included visits by retired sponsors; the Troop Clinic data are for active duty sponsors only). The active duty sponsor, then, visited the Troop Clinics more often than he did the North Clinic.

Visits to the Troop Clinics were appropriate, as the sponsor had free access to both clinics (though he needed an appointment at the North Clinic). Also a part of the visits to the Hospital Clinic were appropriate for North Clinic patients, as they were probably evening or weekend visits in many cases. However, family practice panel members were instructed that their care outside of duty hours would also be by the family practice doctors, all of whom rotated on call. Some of the visits to the Emergency Treatment Room (ETR) may have been seen by the family practice physician on call; however, all other visits to the ETR and to the Acute Minor Illness Clinic (AMIC) would have to be considered 'inappropriate' visits.

It is difficult to explain the large number of 'inappropriate' visits during the four month period, except that the family practice physician was required to come in only for walk-ins with life threatening problems. If a patient called-in and talked to the family practice physician on call, as the system was suppose to work, and was told that the problem was not serious and could await the morrow, he might well walk-in to the ETR or AMIC for more immediate care. After becoming aware of the family practice physicians' policy of coming in only for walk-ins with life threatening problems, the family practice walk-ins to the ETR or AMIC were treated and the family practice on-call physician was not notified unless ETR or AMIC personnel felt that the illness was serious enough to warrant family practice notification. This point should be remembered when discussing continuity of care.

Many of the visits to the Part Primary/Part Specialty Clinics also appear to have been inappropriate, that is, not direct referrals from the North Clinic, but more likely patients seeking primary care that could have been provided by North Clinic physicians.

For instance, encounter data from the North Clinic listed only 21 referrals to Pediatrics in 1974; the OMB MHCS data, however, showed 334 visits by family practice patients to Pediatrics in four months. If a consult to Peds, on the average, results in about six visits, as determined earlier (Appendix K), [redacted] 21 consults would result in only about 126 visits during the year, whereas the OMB MHCS four month data would extrapolate to about 1,002. Only about 13 percent then (126/1,002) of Peds visits by North Clinic patients resulted from referrals from family practice.

Similar low percents were found for other clinics in this group. It is apparent that family practice patients are using the primary care potential of these clinics, without being referred by their family practice physician. Whether this utilization is due to the long wait for appointments at the North Clinic, or to a desire to see a "specialist" is not clear. It is again apparent, however, that the patients use ("shop around for") the best of both systems.

The discrepancy between referrals, corrected by the estimated number of visits per referral, and the number of visits actually recorded by the OMB MHCS to the Specialty Clinics, though not as great as that demonstrated by the Primary and Part Primary/Part Specialty Clinics, again showed that family practice patients were either being referred from other sources, or were somehow gaining direct access to the Specialty Clinics. Using the same means of calculation as above, 43 percent of Orthopedic visits by North Clinic patients were on referral from their physician ((101 X 5)/1,170), and 38 percent of Dermatology visits by North Clinic patients were on referral from their family physician ((65 X 4)/678).

f. The CHAMPUS Study.

(1) Methodology.

In order to determine total health care utilization of family practice panel families, OCHAMPUS (Office for the Civilian Health and Medical Program of the Uniformed Services) was asked to provide information on visits, hospital days, and costs, on a block of family practice patients. It was felt that the amount of CHAMPUS utilization might also reflect the patient's dissatisfaction with the military health care delivery system. Consequently data for 1972 and 1974 were requested. During 1972, the patients did not have access to a family practice clinic, whereas during 1974 they were all members of such a clinic. A gap was left between the two periods because of the long delays in compiling statistical CHAMPUS reports, and because of the staggered start of families in the family practice clinic in 1973.

Specifically, the Roster (see para 4b(o)) was searched for families shown to be members throughout 1974 by having at least one visit prior to January 1974 AND at least one visit after December 1974. A further qualification was that the sponsor was on active duty or retired in 1972 (i.e., did not come on active duty in the interim).

As a result of this search, 232 active duty families and 169 retired/deceased sponsor families were found to fulfill these criteria. The SSNs of the sponsors were sent to OCHAMPUS for search against their files.

(2) Findings.

Of the 232 active duty families, 87 had one or more CHAMPUS encounters during the two years; however, 30 of these encounters were for dental services. Dental CHAMPUS is not germane to this study, and is not reported here. In all, then, 24.5 percent (57/232) of families were shown to have some CHAMPUS medical contact during the two years studied.

Breakdown by year showed 36 families with one or more encounters in 1972 (15.5 percent (36/232); 27 had encounters in 1972 only and 9 had encounters both years). Some 30 families had encounters in 1974 (12.9 percent (30/232); 21 in 1974 only and 9 both years).

Similarly, of the 169 retired/deceased sponsor families, 48 had one or more CHAMPUS encounters. Three of these were dental only. Therefore, 26.6 percent (45/169) of retired/deceased sponsor families had some CHAMPUS medical contact during the two years.

Breakdown by year showed 32 families with one or more encounters in 1972 (18.9 percent (32/169); 17 had encounters in 1972 only and 15 had encounters both years. Some 28 families had encounters in 1974 (16.6 percent (28/169); 13 in 1974 only and 15 both years). This data includes three families which were on active duty in the Ft. Ord area in 1972 and retired in the area in 1974.

Table 4f-1 gives more detail on the active duty families' utilization of CHAMPUS, including the number of outpatient visits, the number of hospital days, and costs to the government. Though all the families obviously lived in the Ft. Ord area in 1974, as they were all members of the North Clinic, some 24 of them had CHAMPUS visits reports in other areas of the country in 1972, so their 1972 location is listed as unknown. Similar information is given in Table 4f-2 for the retired/deceased sponsor families; they were all in the Ft. Ord area both years.

TABLE 4f-1 UTILIZATION OF CHAMPUS BY ACTIVE DUTY FAMILIES

| | NUMBER OF FAMILIES | OUTPATIENT VISITS | HOSPITAL DAYS | COST TO GOVERNMENT |
|---|---|---|---|---|
| **1972** | | | | |
| FORT ORD AREA | 12 | 154 | 379 | $16,252.02 |
| LOCATION UNKNOWN | 24 | 59 | 99 | $17,145.18 |
| TOTAL | 36 | 213 | 478 | $33,397.20 |
| **1974** | | | | |
| TOTAL | 30 | 182 | 648 | $35,087.96 |

TABLE 4f-2 UTILIZATION OF CHAMPUS BY RETIRED/DECEASED SPONSOR FAMILIES

| NUMBER OF FAMILIES | OUTPATIENT VISITS | HOSPITAL DAYS | COST TO GOVERNMENT |
|---|---|---|---|
| | 1972 | | |
| 32 | 295 | 210 | $16,328.96 |
| | 1974 | | |
| 28 | 185 | 109 | $18,310.14 |

(3) Discussion of CHAMPUS Data.

The size of the CHAMPUS sample is too small to allow conclusions to be drawn from changes in utilization over the two years. This is particularly true since one family in the active duty sample accounted for 77 percent of hospital days in 1972, 47 percent in 1974, and over 30 percent of all costs in both years. It can be seen, then, that one family with very high medical utilization can significantly influence the totals in a sample of this size.

In the active duty sample, visits dropped slightly from 213 to 182 between 1972 and 1974, whereas hospital days and costs increased. (Costs are not adjusted for inflation). The average number of CHAMPUS outpatient visits per year per family over a two year period was 0.85 (198/232), or about 0.28 per person (four person family less active duty member).

In the retired/deceased sponsor sample, CHAMPUS outpatient visits dropped by 37 percent, hospital days dropped by 48 percent, and costs to the government increased 12 percent. This may well show decreased utilization of CHAMPUS by the retired family practice family, although again the sample is too small to give the figures much weight. The average number of visits per year per family in this sample was 1.42 over the two year period (240/169), or about 0.41 per person (three and a half person family).

In sum, about 15 percent of family practice families use some CHAMPUS for their medical care, including both those services not provided by the Army and just as a matter of preference. Utilization per person, however, is very low for this population, during the year prior to availability of family practice care as well as during the year that they were members of a family practice clinic, and accounts for only about 0.25 to 0.5 visits per person per year.

g. Costs per Clinic Visit.

In order to relate cost data with patient workload, the mathematical relationships for the following costs were developed and calculated from the data obtained during FY 74.

- o Average cost per Family Practice visit.
- o Average cost per general and specialty clinic visit.
- o X-ray, pharmacy, and lab costs per Family Practice visit.

Ideally, these costs would be computed on the basis of actual expenses incurred during the year under study; however, accurate estimates of such information for FY 74 were not available. A number of alternate approaches were considered and the chosen alternate approach consisted of obtaining cost figures for FY 75 and then applying them against workload data for FY 74, FY 75, and the first half of FY 76. This procedure was based on the premise that such an approach would yield more realistic cost comparisons between average cost per patient visit for FY 74, 75, and 76 by eliminating any unusual or one time setup costs normally associated with the establishment of a new clinic. Thus, under this procedure, the cost data for FY 75 could be used as the base year data in developing cost comparisons between FY 74, 75, and 76. Employing this concept, data pertaining to personnel costs (MPA), supply costs (OMA), and patient workload data were obtained for each clinic at Ft. Ord. This data is given in Appendix L, entitled "Cost Summary Format". MPA costs, adjusted MPA costs, OMA costs, patient workloads, and average cost per clinic visit are given for First Half of FY 75, Second Half of FY 75, and First Half of FY 76.

The basis for developing the outpatient cost comparison hinged on identifying those costs that are directly attributable to the outpatient clinics themselves, both primary and specialty. As a result, MPA costs were adjusted to reflect only that portion of expenses that were charged to the outpatient areas. The average cost per visit for each clinic was then calculated using the following equation:

$$\text{Average cost per visit} = \frac{\text{OMA costs + Adjusted MPA costs}}{\text{Clinic Workload}}$$

The average cost per clinic visit for each clinic is given in the last columns of the tables in Appendix L, and has been furnished in rank order in Tables 4g-1 thru 4g-3. The clinics have been arranged in descending order by dollar cost per clinic visit.

The MEDDAC, Ft. Ord, also provided figures on dollar costs for lab and x-ray support attributable to the North Clinic and the Hospital Clinic. They stated that these supportive costs were not

excessive and compared favorably with all other clinics at Ft. Ord. Since no comparison figures were obtained, the data is not presented here.

*It is apparent that the costs per clinic visit at the North Clinic were high when compared with Internal Medicine, Pediatrics, and OB-GYN.* The Hospital Family Practice Clinic costs per clinic visit were also consistently less than those at the North Clinic.

TABLE 4g-1

RANK ORDER OF CLINICS
BY AVERAGE COST PER VISIT
(1st & 2d Qtr, FY 75)

| RANK | CLINIC | AVERAGE COST |
|---|---|---|
| 1 | Nuclear Medicine | $39.35 |
| 2 | General Surgery | 22.77 |
| 3 | Social Work | 15.22 |
| 4 | Emergency Medical Services | 14.85 |
| 5 | Cardiology | 13.44 |
| 6 | Urology | 12.42 |
| 7 | Neurology | 11.91 |
| 8 **** | North Ft Ord Family Practice Clinic | 11.26 |
| 9 | Hospital Family Practice | 9.67 |
| 10 | Allergy | 8.56 |
| 11 | Medical Exam | 7.88 |
| 12 | ENT & OPTH | 7.60 |
| 13 | Orthopedic | 6.69 |
| 14 | Podiatry | 6.68 |
| 15 | Internal Medicine | 6.40 |
| 16 | Occupational Therapy | 6.05 |
| 17 | Acute Minor Illness | 5.96 |
| 18 | Physical Therapy | 5.38 |
| 19 | OB-GYN | 5.18 |
| 20 | Pediatric | 4.81 |
| 21 | Dermatology | 3.53 |
| 22 | Optometry | 3.44 |

TABLE 4g-2

RANK ORDER OF CLINICS
BY AVERAGE COST PER VISIT
(3d & 4th Qtr, FY 75)

| RANK | CLINIC | AVERAGE COST |
|---|---|---|
| 1 | Social Work | $47.94 |
| 2 | Nuclear Medicine | 32.55 |
| 3 | Emergency Medical Service | 20.64 |
| 4 **** | North Ft Ord Family Practice Clinic | 14.99 |
| 5 | Neurology | 14.01 |
| 6 | Cardiology | 12.83 |
| 7 | Urology | 11.54 |
| 8 | General Surgery | 11.01 |
| 9 | Allergy | 10.81 |
| 10 | Hospital Family Practice | 9.73 |
| 11 | ENT | 9.65 |
| 12 | Acute Minor Illness | 7.22 |
| 13 | Orthopedic | 6.73 |
| 14 | Pediatric | 6.49 |
| 15 | OB-GYN | 6.15 |
| 16 | Internal Medicine | 6.12 |
| 17 | Occupational Therapy | 5.20 |
| 18 | Medical Exam | 5.20 |
| 19 | Physical Therapy | 4.86 |
| 20 | Podiatry | 4.76 |
| 21 | Dermatology | 3.93 |

AVERAGE COST PER CLINIC VISIT AT FT ORD = $10.26

TABLE 4g-3

RANK ORDER OF CLINICS
BY AVERAGE COST PER VISIT
(1st & 2d Qtr, FY 76)

| RANK | CLINIC | AVERAGE COST |
|---|---|---|
| 1 | Nuclear Medicine | $42.78 |
| 2 | Social Work | 28.19 |
| 3 | Neurology | 13.05 |
| 4 | Urology | 12.49 |
| 5 | Allergy | 12.31 |
| 6 | Medical Exam | 12.21 |
| 7 **** | North Ft Ord Family Practice Clinic | 11.97 |
| 8 | ENT | 11.56 |
| 9 | Emergency Medical Service | 10.14 |
| 10 | General Surgery | 9.25 |
| 11 | Acute Minor Illness | 7.94 |
| 12 | Orthopedic | 7.08 |
| 13 | Internal Medicine | 6.75 |
| 14 | Dermatology | 6.68 |
| 15 | Pediatric | 5.79 |
| 16 | Cardiology | 5.67 |
| 17 | Occupational Therapy | 5.29 |
| 18 | Hospital Family Practice | 5.44 |
| 19 | Physical Therapy | 4.96 |
| 20 | Podiatry | 4.92 |
| 21 | OB-GYN | 4.89 |

h. The Transportation Study.

(1) Methodology.

One of the objectives of the study was to look at the advantages and disadvantages of a neighborhood-based clinic as compared to a hospital-based clinic. The North Clinic was established on the premise that a clinic located near family housing areas would offer convenience advantages to those families living in the contiguous area. By convenience was meant primarily ease of physical access to the clinic.

To test one element of this convenience, a study was done on how patients arrived at the clinic, i.e., whether they walked, drove, took a taxi, and so forth. A simple form was designed which required only the date and answers to two questions, (1) Do you live in Patton Park?, and (2) How did you get to the clinic today? (Patton Park is the base housing area nearest the clinic).

A short trial of having the patient fill out the form did not prove successful. Therefore, the receptionist dated the form and clipped it to the patient's chart; then the nurse or dispensary attendant who screened the patient asked the two questions, marked the responses, and collected the sheets. The study was conducted for four weeks in May 1975.

(2) Findings. During May 1975, 870 patients were surveyed on whether they lived in Patton Park and how they got to the clinic. The responses are tabulated below in TABLE 4h-1.

TABLE 4h-1 TRANSPORTATION DATA

| MEANS OF GETTING TO THE CLINIC | | | |
|---|---|---|---|
| | HOW DID YOU GET TO THE CLINIC? | | |
| DO YOU LIVE IN PATTON PARK? | DROVE | RODE WITH A FRIEND | BUS, TAXI, OR WALKED |
| YES - 168 | 149 | 7 | 12 |
| NO - 702 | 671 | 21 | 10 |
| TOTAL RESPONSES 870 | 820(94%) | 28(3.22%) | 22(2.53%) |

(3) *Discussion of Transportation Data.*

As could be expected, only a very small proportion of patients came to the clinic by means other than private automobile. In fact, less than three percent of patients arrived by other means. The only gain, then, to those living near-by the North Clinic was not having to drive the additional two and a half miles to the hospital.

The majority of patients, moreover, did not live in the adjoining housing area. Many of the on-post quarters are closer to the hospital than they are to the North Clinic. Also, the retirees who came from off-post often came in a gate closer to the hospital than to the North Clinic. The hospital was also closer to the PX, Commissary, and Service Station. The mere location of the clinic, then, offered almost no advantage over a location within the hospital.

Although the hospital parking lot appears quite adequate, parking at the North Clinic was superb and very close to the entrance, so to this extent there was a slight convenience advantage over the hospital clinics.

i. Evaluation of Co-located X-ray, Lab, and Pharmacy.

The North Clinic, isolated some two and a half miles from the hospital, installed on-site X-ray, laboratory, and pharmacy services.

There is little question of the value of having such services available locally. For purposes of this study, evaluation revolved primarily around productivity.

(1) X-ray.

Encounter data on X-rays ordered, Table 4b-14, shows that 993 X-rays were ordered during 1974 by the North Clinic doctors (average of four doctors). An evaluation of the types of X-rays ordered reveals that up to 90 percent could be taken and processed locally. Even if all were taken and processed locally, there would be only about 83 per month or four per clinic day. The Staffing Guide for US Army medical department activities, DA Pamphlet 570-557, indicates that one X-ray specialist can process up to 4,000 examinations per month. It appears, then, that the technician could be used more efficiently in a larger operation.

In addition to the technician, equipment is a major expense in X-ray. A room had to be lead-lined, and additional supports had to be installed to strengthen the ceiling, for support of the overhead unit. The radiographic unit, transformer, collimator, table, and automatic film processing machine, and the small ancillary equipment, cost in excess of $60,000. The equipment, though capable of 24 hour operation, was used only during the day shift, five days a week, as the clinic was not open at other times. The equipment, then, was utilized less than 25 percent of its available time.

(2) Laboratory.

Observation of and by the laboratory technician revealed that he performed between 500 and 900 procedures a month, including those that he collected but did not process. This is compatible with figures obtained in the Encounter Study, as listed in Table 4b-17. The 10,258 lab tests ordered in 1974 would average 855 per month. A large proportion of them required specialized equipment for processing and could not be done locally, so that at times the technician merely collected the sample and then had to transport it to the hospital laboratory.

According to standard workload data from DA Pamphlet 570-557, 3,200 lab procedures a month are required to justify one lab technician. Again it is apparent that the technician could be more efficiently utilized in a larger operation.

(3) Pharmacy.

Whereas in X-ray and the lab, the technician was not able to perform all the various tests ordered, the situation was somewhat the reverse in the pharmacy. The pharmacist filled more prescriptions than those written by the North Clinic doctors. He filled refills; other clinics in the area sent patients to the North Clinic pharmacy; and some patients from the hopsital clinics used its services in order to receive faster service than could generally be obtained at the hospital pharmacy.

Table 4b-10 reveals that about 1,000 prescriptions were ordered per month by the North Clinic Physicians. The pharmacist kept a tally sheet for several weeks which revealed that he filled approximately twice that number, including refills and prescriptions from other clinics. He also counselled patients regarding drug matters. Except for the fact that he had to make frequent trips to the hospital pharmacy to pick up supplies, the North Clinic pharmacist appears to have been well utilized.

j. Neighborhood-Based Clinic: Advantages/Disadvantages.

At the 1971 Seminar on Ambulatory Health Services held at Ft. Sam Houston, Texas (Proceedings of the Seminar, 1971), one question posed to the committees was "Should troop clinics be centralized or decentralized?" The Command Control Subcommittee answered that centralization is preferable, because ". . . of the obvious resultant concentration of personnel and equipment, thereby maximizing utilization of the services performed while reducing the costs that result from fragmentation". They went on to state, however, that decentralization is often made necessary ". . . when support must be provided to a widely dispersed population . . .", especially in a training base environment where clinics need to be within easy walking distance of the population served.

Though not so specifically asked, the Emergency Room and Family Practice Subcommittee volunteered that " . . . decentralized neighborhood clinics staffed by family physicians is the ideal in those installations where it is applicable and where financing of additional separate facilities is available". One of the purposes of the present study was to evaluate the advantages and disadvantages of the neighborhood-based clinic concept.

Throughout the period of the study, the advantages of the neighborhood-based clinic have been diligently sought-after -- with little success. Most desirable characteristics appear to be available in more abundance in a clinic within or adjacent-to a hospital, and most undesirable characteristics appear less a problem in the centralized setting.

(1) Advantages.

(a) Patients could park closer to the clinic entrance than was often the case at the hospital.

(b) For those patients whose X-ray, lab work, or prescriptions were available at the North Clinic, the wait was usually less than at the corresponding service at the hospital.

(c) The staff was able to function more autonomously and independently.

(2) Disadvantages.

(a) Those patients whose X-ray, lab, or prescriptions were not available at the North Clinic had to make an additional trip to the hospital.

(b) Patient records, kept at the North Clinic, were relatively unavailable at night (the physician had to get the key and go get them or send for them).

(c) When an OB patient went into labor, the record had to be obtained from the North Clinic Record Room during the day. Each evening, the OB records had to be taken to Labor and Delivery, and each morning they had to be returned to the North Clinic.

(d) Costs per clinic visit at the North Clinic were higher for each six month period of the 18 months studied, than at the Hospital Clinic.

(e) Co-located X-ray was not cost effective.

(f) Co-located lab was not cost effective.

(g) The pharmacist, unable to maintain a complete drug inventory, had to make frequent trips to the hospital pharmacy for supplies.

(h) For the physicians, there was no availability of "hallway consultation" with other specialists.

(i) No immediate radiological consultation was available.

(j) Isolation made it difficult for physicians to check inpatients during the clinic day.

(k) Isolation resulted in decreased personal contact of family practice physicians with other physicians at the hospital.

(l) More time was lost from clinic hours for hospital staff meetings because of the time required to get back and forth. Lunch hours had to be 1 1/2 hours, to accommodate noon meetings.

(m) Physical surroundings at the clinic were less attractive than at the hospital.

(n) The clinic was less convenient than the hospital for retirees and for many in on-post housing. (The hospital was nearer the PX, Commissary, and Service Station).

There is little question that the disadvantages heavily outweigh the advantages. In those cases where a hospital is available nearby with adequate clinic space, there appears to be little justification for the establishment of a neighborhood-based clinic.

k. Patient Panel System.

(1) Advantages/Disadvantages.

Family practice, in its present configuration, is a relatively new specialty. Many of the present practice methods are based on assumptions, rather than on hard evidence of effectiveness. Such may be the case with the assignment of patients as a panel to individual family practitioners. It has been assumed that this is necessary to insure that the practitioner does not get overburdened with patient workload to the point that he loses proper time and relationship with patients. It was further assumed that the panel was essential for the continuity of care and for familiarity with the patient and family. However, it is time to take a much closer look at these supposed advantages.

Selection of a patient panel is not accomplished without some difficulty. Unless there are enough family practitioners to care for all eligible patients (a condition not likely to occur in the near future), only some patients will be able to receive family practice care. When the clinic panels are full, waiting lists must be established for those wishing to join. Since the active duty population is mobile, excessive time on the waiting list decreases the time under the (continuous) care of one family practitioner. If only one list is kept for both active duty and retired families, the clinic population will eventually become entirely retired families, since the retired families can wait almost indefinitely and the active duty families will be moved. If separate lists are maintained, as

was done at Ft. Ord, with the proportion of active duty to retired families in the clinic arbitrarily maintained at a constant level, then the retired list will hardly move at all, once the panels are full, as the retirees are much more permanent in the area. A new retiree moving to the area and signing up for the clinic might have to wait literally years before acceptance. Even maintaining the two lists causes problems, as when an active duty family, known to have arrived and signed-up later than a retired neighbor, is accepted earlier.

Control of the patient panel, once established, is also difficult. A manual system, using file cards, is cumbersome though necessary where automation is not available. Automation, on the other hand, required a significant amount of keypunch and computer time. The most frustrating problems are independent of whether a manual or automated system is used. These include cases where, even though patients are requested to report to the clinic before leaving the area in order to pick up their medical records, they often do not. Others just quit the clinic without notification. It is relatively impossible to determine with any certainty the exact number of families in a panel at any particular time. Some of the departed families were determined at Ft. Ord by checking through the entire post ETS/PCS roster, each month, for family practice panel families. Since the number leaving is very high compared to the numbers in family practice, this procedure is time consuming even with the aid of the computer.

Family panel slots cannot be refilled if there is no indication that the family has ceased coming to the clinic. To replace families that are known to have left the panel, as they leave, requires more administrative time than to do so by blocks; however, block refills results in more erratic panel sizes over time.

There is also the problem that some families wish to change doctors after they are enrolled in a panel. This was discouraged at the North Clinic. However, as rapport between patient and physician plays an important role in a family practice clinic, some switching may well be desirable. It again, however, increases the administrative burden.

The panel system was devised, among other reasons, as a means of keeping the number of clinic visits down to a manageable figure, i.e., to avoid the 80 patients/day situation of the old GP. It becomes readily apparent, however, that neither the existence of a fixed panel nor its size is a controlling factor on the number of patient visits per day to a particular physician. Such would only be the case if the demand for services were no greater than the

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day-to-day supply. As it is, the only controlling factors are: (1) the number of appointments made; (2) the number of walk-ins accepted; and (3) the number of no-shows. This is, of course, given that the physician is available during the appointment hours. The existence of a panel and its size would only control the number of daily visits if all patients who needed and/or wanted to be seen were seen on the desired day.

One of the other, perhaps more important, reasons for using the panel system is so that a physician can get to know his panel of patients, their families, and their problems. It is highly conjectural, however, that a physician can 'get to know' the members of, relationships between, and problems of some 300 to 600 or 800 families, during his period of overlap with them at a duty station they each inhabit for a limited time.

For patients to 'know they have a doctor' is another of the theoretical advantages of the panel system. However, it seems to lose much of its value when (1) the waiting time for appointments is very long; (2) the doctor shares night call with many others (up to 14 at Ft. Ord); and (3) after hours, only patients with "life threatening emergencies" are seen.

Unless family practice services can be offered to all military health care eligible beneficiaries in the area, discrimination would result. It can be seen from the OMB MHCS cited previously that patients who are members of the family practice clinic do not limit their visits to this clinic, but in fact only make about 42 percent of their visits there. Family practice becomes an additional point of access to health care that is open to some and not to others.

The amount of administrative time required by the panel system was mentioned earlier. At Ft. Ord it was determined to require in excess of 72 hours per month just to maintain the panels. A list of administrative functions necessary to maintain the panels, and the time required, is given in Table 4k-1.

TABLE 4k-1

ADMINISTRATIVE FUNCTIONS PERFORMED FOR THE FAMILY PRACTICE CLINICS BY THE HCSD TEAM AT FT ORD

| 1. CONTINUOUS SERVICES | HOURS PER MONTH |
|---|---|
| A. Collect and file applications | 5 |
| B. Keep distribution areas supplied with application forms | 1.5 |
| C. Keep current file of applicants by date of application (type cards and assign sequence numbers) | 16 |
| D. Answer phone calls from applicants concerning status | 18 |
| E. Supply clinic with encounter forms, and collect, separate, and file them | 12 |
| F. Update card file from ETS/PCS roster | 20 |
| | 72.5 |
| **2. PERIODIC SERVICES** | |
| A. Type, reproduce, and collate application forms | 4 |
| B. Maintain random MD list for assignment of patients | 2.5 |
| C. Re-allocation of patients on transfer of MD | 6 hrs per occurrence |
| D. Patient acceptance procedures | 7.5 hrs per block of patients |
| E. Update information on patients assigned each MD | 4 hrs per occurrence |

Control of the panels, then, requires over one-half of all the time of an administrative assistant, and even then, the control is far from perfect. It appears that, in spite of the fact that the panel system has been considered necessary for family practice, it is fraught with problems that tend to negate its values, and as well is a costly system to maintain.

(2) Patient Panel Size.

In spite of all the above disadvantages of the panel system, it may be elected to continue with this system. If this is done, what is the appropriate panel size? At Ft. Ord, approximately 325 families were assigned to each family physician. Ft. Sill, Oklahoma was aiming at approximately 600 families. The Navy announced that at the Navy hospital at Millington, Tennessee, "Each practitioner will provide continuous care for about 400 Navy families, but eventually will care for up to 800 families. (US Med, Mar 1, 1975).

Where do these numbers come from? Are they as arbitrary as they appear? Probably not quite: they are based on estimates of utilization, length of average visit, working hours, and assumptions that panel members will get most of their primary care at the family practice clinic, and so forth.

From the previous section it can be readily seen that the panel size itself controls nothing, but only influences the length of the waiting list for appointments. The waiting time in turn influences the utilization of both the family practice clinic and other clinics where access may be easier or faster.

It has already been stated that the study team was not permitted to manipulate the size of individual physician panels in order to study other characteristics. Also, almost all family practice clinics have 'cut-offs' on appointments, that is, they only book appointments up to a certain future date, often not more than two weeks. Other patients who call in are told to call back on a certain date to make an appointment. Therefore, it is usually impossible to determine what the true demand for service is, that is, what the length of the waiting list would be if no such arbitrary cut-off were used.

In spite of all the above, if a panel system is to be used, the following determinations from this study should help set the appropriate size. (Remember that these determinations were made from data collected from a specific neighborhood-based clinic).

- The average family makes about 12.5 to 13 visits per year to family practice.

- The average length of visit to family practice is 17 to 18 minutes

Approximately 3.6 hours per year, then, are required to care for the average family in the family practice clinic. If the average annual number of clinic hours per physician is divided by this number, the initial panel size can be determined. However, as noted in the previous section, maintaining the size with any accuracy is nearly impossible.

(3) Alternatives to the Panel System.

If it is accepted that the panel system and panel size has very little influence on the number of patients seen per day or on physician productivity, that it is extremely difficult to effectively control the panel, that it is very costly in administrative time to maintain it, and that it is not absolutely necessary to the 'continuity of care' concept, acceptable alternatives must be sought.

One alternative would be to just do away with the panel system and appoint any patient who calls. This would result almost in a reversion to the old general outpatient clinic and its problems, and as such, would not be acceptable to providers or consumers.

Another alternative would be to eliminate only the administrative control of the panel and allow it to develop itself, similar to the way a private physician's panel develops. This method would eliminate the assignment and control problems and the administrative costs, but maintain the benefits of the system.

More specifically, it is suggested that there be no control of the patient panel, that is, no assignment, waiting list, keeping track of, limiting, or other influencing of the panel size except as follows:

(a) Appointments for formerly seen family practice patients and members of their families could be made at any time, with their physician.

(b) Appointments for new patients could only be made for vacancies available in the immediate two-week period.

As a new panel developed, more and more appointment slots would become filled with formerly seen patients, until finally there were no appointment slots for new patients within the two-week period, and the panel would be "full".

Over a period of time, as patients left the system, open slots would again begin to show up during the two-week period, and would be automatically filled with new patients. When a doctor was transferred, his former patients would be referred to his replacement in the same way.

This system, or one like it, would:

- Eliminate the necessity for panel control and the associated administrative costs.
- Allow daily appointment slots to be kept full.
- Allow families to change doctor by reapplying as a new patient.
- Partly remove the inequity of some patients having family practice availability and others not having it.
- Eliminate the need to set the number of families in a doctor's panel -- the doctor would be assigned a specific number of appointments per day, as he is now, and it would not be necessary to even know how many families this comprised.

Such a system, though obviously not perfect, would tend to eliminate many of the problems with the present panel system. It would, however, maintain all the good features of the present system. As mentioned before, it would not be unlike what happens in the civilian community, in the establishment and maintenance of a private physician's panel of patients.

Still other alternatives should be sought. Perhaps a more efficient system, with little loss of continuity, would result if a panel of patients had a 'panel of physicians', rather than being attached to only one specific physician. Such questions are beyond the scope of the present study, but provide fertile ground for further research.

*l.* Physician Productivity.

The mere mention of physician productivity is often enough to open a veritable Pandora's Box of charges and countercharges, innuendos and defensive postures. When evaluating a new method of health care delivery, however, the subject cannot be totally ignored. In private, fee-for-service practice, income bears a direct relationship to productivity, *within the specialty and geographic area of practice.* In a salaried system, such as federal service, however, no such incentive/measuring device is available.

It is easy to find fault with the use of the number of visits per unit time as a measure of productivity. The length of the visit may in fact be related to quality of care; spending more time with a patient may well alleviate the need for a subsequent visit, or substitute for the visit of another family member. Telephone consultations may take the place of a visit; knowledge of the family may aid in preventive care, and so forth. However, at the present time, the number of visits is the only measure of productivity that is available for the comparisons in outpatient areas.

In reality, it may be a better measure of productivity than some would admit. The annual output in visits per physician is a reflection of the number of hours spent in clinical outpatient care, as well as the number of minutes spent per patient.

Measured in this way, using only the gross numbers for the North Clinic for 1974, 13,175 visits, divided by an average of 3.8 physicians (one physician consulted one-fifth time with the HCSD on-site study team), the outpatient care productivities in thousands of visits per physician manyear for the North Clinic family practice physicians is 3.467. (The patients seen by the nurse practitioners are included as part of the productivity of the physicians).

The outpatient care productivities in thousands of visits per physician manyear, as reported in the Report of the Military Health Care Study, Supplement: Detailed Findings, December 1975, page 281, for selected specialties, are as follows:

| | |
|---|---|
| Medicine | 7.819 |
| OB-GYN | 7.771 |
| Pediatrics | 8.568 |
| General | 12.724 |

Reinhardt (1975) lists average weekly patient loads, in visits, and average practice hours per week, for various specialists in solo and group practice. For group practice, single specialty, he gives the following figures, based on 1965-1967 data:

| | |
|---|---|
| Internists | 140 visits per week |
| OB-GYN | 138 visits per week |
| Pediatrics | 169 visits per week |
| General Practitioners | 213 visits per week |

These figures should be compared with a figure of approximately 70 visits per week for the North Clinic physicians in 1974 (based on overall figures, 13,175 visits in 47 weeks by four physicians).

This gross comparison indicates that the number of visits per physician manyear at the North Clinic was low compared with General Practitioners and compared with other primary care specialists (Medicine, OB-GYN, and Pediatrics). The reasons for this lower productivity have not been investigated by this study.

m. Utilization of Health Services.

Visits to the North Clinic, per person, were calculated for a sample of families known to be members of the clinic throughout 1974. For the active duty family, there were 3.021 visits per person per year; for the retired/deceased sponsor family, the figure was 3.696 visits per person per year (Table 4b-25).

The data obtained from the OMB MHCS through OCHAMPUS revealed that only about 36 percent of visits by the group of families assigned to the North Clinic were actually made to the North Clinic. The families made 3,984 visits to the North Clinic between 1 April and 31 July 1974, while they made 7,116 visits to other clinics during the same period (exclusive of Dental, Optometry, Podiatry, OT and PT visits). The visit rate per person, adjusted by this figure, would be 8.39 visits per person per year for active duty family members, and 10.26 visits per person per year for retired/deceased sponsor family members.

To these figures must be added utilization of CHAMPUS by eligible members, in order to estimate total utilization. The figures given in Section 4f(3) are, for the active duty dependent, 0.28 visits per person per year, and for the retired family member, 0.41 visits per person per year.

Overall, utilization rates for family practice panel members are high when compared with the rate of about 4.5 visits per person per year for nonactive duty military beneficiaries in northern California, as reported in the OMB MHCS. (Military Health Care Study, 1975).

5. CONCLUSIONS.

a. The North Ft. Ord Family Practice Clinic was ranked highest, among six Ft. Ord primary care clinics, in patients' satisfaction with the medical care provided. The physicians' interest, courtesy, and the continuity of health care were reported as most satisfying. The only major patient dissatisfaction factor was the location of the North Ft. Ord Clinic. (Section 4c(3)).

b. A clinic staffed by four physicians does not provide a co-located X-ray unit with a sufficient workload for efficient operation. (Section 4i(1)).

c. A clinic staffed by four physicians does not provide a co-located laboratory with a sufficient workload for efficient operation. (Section 4i(2)).

d. The free-standing neighborhood-based clinic should not be established in areas where a nearby hospital has adequate clinic space. (Section 4k).

e. Job satisfaction among North Ft. Ord Family Practice physicians did not differ from that of other clinics' physicians at Fort Ord. (Section 4d).

f. Physicians productivity, in visits per physician manyear, at the North Clinic was low compared with Internal Medicine, Obstetrics/Gynecology, and Pediatrics. (Section 4m).

g. The arbitrary assignment of panels of families to specific physicians is an inefficient and ineffective method for management of family practice workloads. (Section 4ℓ).

h. In this study overall utilization of health care services by family practice panel members was demonstrated to be high when compared with other nonactive duty military beneficiaries. (Section 4m).

i. Only about 40 percent of North Clinic family practice panel members' visits were actually made to the North Clinic family practice physicians. (Section 4e(3)).

j. Cost per clinic visit at the North Clinic was higher than at the Hospital Family Practice Clinic, and higher than Internal Medicine, Obstetrics/Gynecology, and Pediatrics. (Section 4g).

k. CHAMPUS utilization was low both during and prior to family practice, for a sample of 401 families, and there was no significant difference between the number of families in the sample who used CHAMPUS while enrolled as family practice members, compared with the number of families in the sample who used CHAMPUS prior to establishment of family practice. (Section 4f(3)).

ℓ. The many specific findings in Section 4, PROCEDURES, FINDINGS, AND RELATED DISCUSSION, can provide useful information to those operating or planning to operate a military family practice clinic. Some especially useful items are considered to be:

(1) The distribution of patient visits. (The spouse, for instance, though comprising approximately 25 percent of the population of family practice panel members, made 43.6 percent of North Clinic visits).

(2) The length of patient visit. (For physicians at the North Clinic, average was 17.69 minutes).

(3) The ratio of consultants to family practitioners. (See Appendix K).

m. There is a tendency for physicians in a neighborhood clinic setting to minimize their inpatient workload because of the physical distance to the hospital. (Conclusion based on subjective impressions and not on validated data).

6. RECOMMENDATIONS.

a. Neighborhood-based clinics should not be established when a hospital with adequate clinic space is located within a reasonable distance and transportation is available.

b. Patients should not be assigned to family practitioners as a set panel. The individual physician practice population should be allowed to develop itself as suggested in Section 4*l*, or some other alternative found.

c. Methods of improving the productivity of family practitioners in a neighborhood clinic should be considered, in such areas as:

(1) Increased number of clinic appointments per day;

(2) Increased hours devoted to clinical patient care;

(3) Increased use of physician extenders.

d. Productivity of family practice physicians in hospital-based clinics should be studied, and compared with that of other primary care practitioners.

e. The inpatient load usually cared-for by family practitioners in hospital-based practice needs to be documented.

f. The many specific findings in Section 4, PROCEDURES, FINDINGS, AND RELATED DISCUSSION, should be made available to those operating or planning to operate a military family practice clinic.

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# APPENDIX A

# ORIGINAL STUDY QUESTIONS

## APPENDIX A

## ORIGINAL STUDY QUESTIONS

1. Questions related to size and composition of the family practice group and size of panel served:

a. What is the smallest number of family practice physicians that should be in a family practice group, such that each family unit can preserve identification with its physician, and physicians can provide coverage one for another during non-clinic hours?

b. What are the optimum numbers and types of supportive health care personnel (such as nurses, nurse-clinicians, 91Cs, 91Bs, and X-Ray and laboratory technicians) for the family practice group? Is it feasible to cross-train individuals to serve in multiple roles (e.g., a combined X-Ray and laboratory technician)?

c. What are the most satisfactory arrangements for incorporating into the family clinic a program of comprehensive social services to work with such problems as abuse of alcohol and other drugs, marital and other family conflicts, deliquency and juvenile court matters, child abuse, out-of-wedlock pregnancies, need for adoptive and foster home services, requirements for nursing home placements, need for homemaker services by ill mothers, coordination and referral services for the physically and mentally handicapped, situation-related tensions which find expression in somatic complaints, preparation for psychiatric referrals, etc.?

d. How many families should be assigned to each physician in the family practice group to assure services which are at once comprehensive, personalized, and economical?

2. Questions related to facilities, equipment, and supply needs:

a. What are the facility, supply, and service needs of the family practice group in the hospital-based setting? In the neighborhood-based setting? What arrangements are most satisfactory to meet those needs?

b. What are the pharmacy support needs of the family practice group in both settings? How can those needs be best met in each setting?

3. Questions related to administrative support needs:

a. What are the requirements for clerical support in the family practice group? What level of clerical skill is required?

b. Is there need for a full-time administrative NCO in the family practice clinic? What, if any, other administrative personnel are needed?

4. Questions related to appointment system and clinic operation hours:

a. What is the most satisfactory schedule for normal clinic operating hours?

b. What appointment system is most advantageous for the family practice clinic?

c. What is the most advantageous arrangement for taking calls during non-clinic hours? What problems and/or benefits are associated with using non-physicians (e.g., 91C or nurse-clinician) as first call person during non-clinic hours?

d. What proportion and what types of problems arising during non-clinic hours can be managed satisfactorily by telephone?

e. Is it economical for the physician to see patients during non-clinic hours at his own clinic? Or does that system require uneconomical presence of supportive staff in the clinic during these hours?

5. Questions related to medical records:

a. What, if any, modifications of the problem-oriented medical record prove to be advisable for use in family practice clinics?

b. What system for record maintenance works out well in family practice? What are the consequences of permitting family units to keep their own records in their own possession?

6. Questions related to health services utilization, and other health-related behavior and consumer satisfaction:

a. What are the patterns of utilization of health services provided in the hospital-based clinic? In the neighborhood-based clinic? What kinds of problems do they bring to the clinic and with what frequency?

b. To what extent do panel members use other health-related resources in the military and civilian community? Why do they do so? For what kinds of problems?

c. How does consumer satisfaction with family clinic services compare with their reactions to services received in the past? How does it compare with the satisfaction of non-panel members who are cared for in the general medical clinic?

d. What approaches to consumer grievance-management seem to work best in the family practice clinic setting?

e. What are patterns of family health behavior in such areas as self-treatment, drug-taking, family-planning, etc.?

7. Questions related to the relationship of the family practice clinic to other MEDDAC services:

a. How well is the family practice clinic received by other parts of the MEDDAC patient-care community (e.g., pediatrics, OB-GYN, internal medicine, general surgery services)? By the MEDDAC administrative community? What advantages and disadvantages do they associate with this kind of clinic?

b. What, if any, problems arise in connection with family practitioners providing inpatient care for their patients?

c. What patterns of specialty referral and consultation emerge in family practice clinics? How do these patterns differ from those in the general medical clinic?

d. What kinds of laboratory and X-Ray support does the family practice clinic require?

e. What are the patterns of utilization of hospital beds by panel families?

8. Questions related to staff satisfaction:

a. How does staff satisfaction in the family practice clinic compare with staff satisfaction in other parts of the MEDDAC?

b. What changes or improvements are needed to increase family practice clinic staff satisfaction?

# APPENDIX B

# REVISED STUDY PROPOSAL STUDY QUESTIONS

## APPENDIX B

### REVISED STUDY PROPOSAL STUDY QUESTIONS

1. What is the panel size assigned each physician in the North Fort Ord Clinic and how many families and patients utilize his services?

2. What type of population is seen by the Family Practice Clinic in terms of numbers of family members, ages of sponsor and dependents, race, officer, or enlisted, sex, retired or active duty, residence on or off post, and previous utilization of health services?

3. Of those families enrolling in the North Fort Ord Family Practice Clinic, how many actually utilize the Clinic and what are their utilization patterns in terms of visits?

4. How often do Family Practice patients utilize other hospital clinics, and what proportion of the patients are referrals from the Family Practice Clinic as opposed to self-referrals or referrals from other clinics outside the Family Practice Clinic?

5. What is the military hospitalization pattern for Family Practice patients including length of stay, referral or Family Practice care, and level of care (Intensive Care, General Ward, Operating Room, or Delivery Room)?

6. In what volume and for what types of care do Family Practice Clinic families utilize the CHAMPUS programs?

7. To what extent do panel members use non-CHAMPUS health resources in the civilian community?

8. How many patients who never joined the Family Practice program utilize Family Practice Services?

9. What are the supporting services utilized by a three and 4/5th doctor Family Practice Group?

10. From what sources do patients officially enrolled in the North Fort Ord Family Practice Clinic actually obtain primary care?

11. What are the facility, supply, and service needs of the North Fort Ord Family Practice Clinic, and what arrangements were arrived at to meet those needs?

12. What system for taking call during nonclinic hours was arrived at and how?

13. Do any problems arise in connection with family physicians' providing inpatient care for their patients?

14. What is the best way to select a control group from the potential non-Family Practice patients of Silas B. Hays Army Hospital that is comparable to the Family Practice Clinic in terms of number of family members, number of outpatient visits, whether they are active duty or retired, pay grade of the sponsor, race of the sponsor, and race of the spouse?

15. Of the control group, how many actually utilize the primary care clinics (AMIC, Pediatrics, GYN, ETR, and Internal Medicine) and what are their utilization patterns?

16. How often and for what reasons do patients in the control group utilize other hospital clinics?

17. What is the military hospitalization pattern for patients in the control group in relation to length of stay, specialty of the physician primarily responsible for the patient's care and level of care (Intensive Care, General Ward, Operating Room, or Delivery Room).

18. What volume and for what types of care do control group patients utilize the CHAMPUS program?

19. To what extent does the control group use non-CHAMPUS health-related resources in the civilian community?

20. What is the number of patients in the control group utilizing the North Fort Ord Family Practice Clinic and hospital Family Practice Clinic as their source of primary care?

21. What are the supporting services (Laboratory, X-ray, and Pharmacy) utilized by health care providers in the primary care clinics (AMIC, Pediatric Clinic, Gyn Clinic, Internal Medicine and the Emergency Room) in their delivery of medical care to patients in the control group?

22. What are the differences in utilization of health resources by patients in the Family Practice Clinic panel compared to patients in the control group?

23. How do the total costs in dollars compare between delivering care including hospitalization to a panel of patients in the North Fort Ord Family Practice Clinic and to a matched control group whose care is provided in the general clinic approach?

24. How does consumer satisfaction with Family Practice Clinic services compare with the satisfaction with services received in the past? How does it compare with consumer satisfaction of patients treated in other primary care clinics?

25. What are some of the differences in the care delivered to Family Practice patients as opposed to control group patients which indicate but do not measure the differences in quality of care delivered in the two methods?

26. How do resource utilization costs in dollars compare between delivering care in the following approaches: The North Family Practice Clinic, the hospital-based Family Practice training program clinic, and the other primary care clinics delivering care to control group patients?

27. How does patient panel size influence the availability of Family Practice physicians to their patients?

28. Is there a critical number of hours per week that the family physician must be available for his patients to see him if continuity is to be maintained?

29. How does staff satisfaction in Family Practice Clinic compare with staff satisfaction in other parts of the MEDDAC patient care community?

30. What are the changes in patient utilization of medical services observed when a Family Practice program is instituted?

31. What are the costs and productivity of the general clinic approach to primary care?

32. What are the costs, benefits, and problems of maintaining a separate pharmacy, X-ray and laboratory unit within the North Fort Ord Family Practice Clinic as opposed to utilizing the central X-ray, pharmacy, and laboratory facilities at the hospital?

## APPENDIX C

## APPLICATION FOR ENROLLMENT

(Copies reduced in size)

FAMILY PRACTICE SERVICE
U.S. ARMY MEDICAL DEPARTMENT ACTIVITY (MEDDAC) FORT ORD
FORT ORD, CALIFORNIA 93941

AMNOR-MED-FP 1 July 1973

SUBJECT: Family Practice Medical Care

TO: Active and Retired Military Families

You and your family are invited to make application to participate in the Family Practice Medical Care Program at Fort Ord. In January 1973, Silas B. Hays Army Hospital began a new program in providing health care to active and retired servicemen and their families. Because of limited resources, only a few families could be invited to join the program at its beginning. Families already participating in the program are encouraged to continue and do not need fill out the application.

More Family Practice doctors have now been assigned, and more space has been acquired, so that a new Family Practice Clinic will be opened in the old hospital area this summer. Two buildings have been extensively remodeled and equipped. The new clinic will be able to provide Family Practice care for over 2000 families. The new clinic, called the "North Fort Ord Family Practice Clinic", will operate mainly by appointment during the day, with a doctor on call to care for acute emergencies at night or on weekends. The Family Practice Center at the hospital will continue to operate as it has in the past.

Doctors trained in the specialty of Family Practice provide total medical care to entire families. The Family Practice doctor can personally care for about 85 percent of each family member's medical problems. He consults with and works closely with other specialists as needed. All the members of the family have one doctor whom they see first, and who cares for them when ill or injured or pregnant, or for routine problems such as well baby exams, PAP tests, periodic check-ups, etc.

All active and retired military families in the Fort Ord area are encouraged to make application for Family Practice care. The number of families that can be included is limited. Most of the families selected will receive their care at the North Fort Ord Family Practice Clinic in the old hospital area, on Third Avenue, between 10th and 12th Streets. Selection considerations will include closeness of the home address to the clinic, time remaining in the Fort Ord area, and status (active or retired). A representative cross section of officer and enlisted and active and retired military families will be selected.

If your family decides to make application for Family Practice care, please complete the attached form and mail it to the address at the top of the form. Families selected will be notified by mail and will be provided more information at that time. The first families selected will be notified by mid-summer. Additional families will be added to the program gradually, so that a family not selected initially may be selected later. If you make application, please continue to obtain medical care in the usual way until you have been notified that your family has been selected. Families already receiving care at the Main Hospital Family Practice Center need not apply, and are encouraged to continue with their Family Practice Care.

Family Practice Service

FAMILY PRACTICE SERVICE
U.S. ARMY MEDICAL DEPARTMENT ACTIVITY (MEDDAC) FORT ORD
Fort Ord, California 93941

Sponsor's SSAN _____ Date _____

Name and Ages of Sponsor and All Dependents Living In This Area:

Sponsor _____

Spouse _____

Children _____

_____

_____

_____

Other _____

Active _____ Retired _____ Rank or Grade _____ Branch/Service _____

Military Unit _____ Phone _____
(or business address)

Local Home Address _____ Phone _____

Estimated date of departure from Fort Ord area _____

Any Major Health Problems in Family? _____

_____

_____

_____

_____

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APPENDIX D

MEDICAL HISTORY QUESTIONNAIRE

(Copies reduced in size)

## SPONSOR INFORMATION

Today's Date_____

Sponsor's Name:_____ SSAN_____
Last First MI

Present Marital Status: Never Married___ Married___ Divorced___
Widowed___ Separated___

Pay Grade (circle one): E-1 E-2 E-3 E-4 E-5 E-6 E-7 E-8 E-9

WO-1 CWO-2 CWO-3 CWO-4

O-1 O-2 O-3 O-4 O-5 O-6 O-7 O-8 O-9

Branch of Service (circle one): USA USN USAF USMC USCG Other

Sponsor's Date of Birth:_____ Sex___ Status: Active___ Retired___ Dec ___
Day/Month/Year

Number of Eligible Dependents: Spouse_____ Children____ Other_____

If family is living in the Ft Ord area, including cities on the Peninsula, what is the estimated date of departure?
Departure Date_____

Duty or Business Address_____ Phone_____

Home Address_____ Phone_____

## FAMILY INFORMATION

Spouse's Name:_____ Living in Ft Ord area (including cities on the Peninsula)?
Last First MI Yes___ No___

Sex:___ Date of Birth(DOB):_____
Day/Month/Year

Children's Names(oldest to youngest): SPECIFY LAST NAME IF DIFFERENT FROM PARENTS

_____ Living in Ft Ord area?___Sex___DOB_____
First MI (including cities on peninsula) Day/Month/Year

_____ Living in Ft Ord area?___Sex___DOB_____
(including cities on peninsula) Day/Month/Year

_____ Living in Ft Ord area?___Sex___DOB_____
(including cities on peninsula) Day/Month/Year

_____ Living in Ft Ord area?___Sex___DOB_____
(including cities on peninsula) Day/Month/Year

_____ Living in Ft Ord area?___Sex___DOB_____
(including cities on peninsula) Day/Month/Year

(USE REVERSE SIDE IF NECESSARY)

## OTHER ELIGIBLE DEPENDENTS

Name _____ Relationship _____ Living in Ft Ord area? (including cities on peninsula) ___ Sex ___ DOB _____ Day/Mo/Yr

Name _____ Relationship _____ Living in Ft Ord area? (including cities on peninsula) ___ Sex ___ DOB _____ Day/Mo/Yr

THE FOLLOWING INFORMATION WILL BE USED ONLY TO DESCRIBE THE POPULATION SERVED AND TO GET YOUR VIEWS TO ADD IN OUR PLANNING TO BETTER SERVE YOUR HEALTH CARE NEEDS.

NOTE: THE FOLLOWING INFORMATION PERTAINS TO THE SPONSOR.

1. Sponsor's race or ethnic group:

___White (Caucasian)

___Black

___Mexican-American

___Puerto Rican

___American Indian

___Chinese American

___Japanese American

___Not Above; Please Specify_____

2. Sponsor's religious preference:

___Protestant

___Catholic

___Jewish

___Not Above; Please Specify_____

___None

3. What is the highest level of formal civilian education the sponsor has completed?

___Eight years or less

___Some high school but did not graduate

___High school graduate

___Two years college or less with no degree

___Associate Degree

___More than two years college but no degree

___Bachelors Degree (other than LLB)

___LLB, JD, or equivalent

___Masters Degree

___Earned Doctorate (PhD, MD, etc.)

5. How many years of total active federal military service has sponsor completed?

___Less than 6 months

___At least 6 months but less than 2 years

___At least 2 years but less than 4 years

___At least 4 years but less than 8 years

___At least 8 years but less than 12 years

___At least 12 years but less than 16 years

___At least 16 years but less than 20 years

___At least 20 years

6. Does the sponsor intend to make the military a career?

___Definitely No

___Probably No

___Undecided

___Probably Yes

___Definitely Yes

___Not Applicable (Retired, Deceased, etc.)

IF YOU DO NOT HAVE A SPOUSE AT THE PRESENT TIME

SKIP THE NEXT PAGE (Page 4)

NOTE: THIS PAGE PERTAINS ONLY TO THE SPOUSE. IF YOU ARE NOT MARRIED GO TO PAGE 5

8. Highest level of formal civilian education spouse has completed:

___Eight years or less

___Some high school but did not graduate

___High school graduate

___Two years of college or less with no degree

___Associate Degree

___More than two years of college but no degree

___Bachelors Degree (other than LLB)

___LLB, JD or equivalent

___Masters Degree

___Earned Doctorate (PhD, MD, etc.)

9. Spouse's race or ethnic group:

___White (Caucasian)

___Black

___Mexican-American

___Puerto Rican

___American Indian

___Chinese American

___Japanese American

___Not Above; Please Specify_____

10. Spouse's religious preference:

___Protestant

___Catholic

___Jewish

___Not Above; Please Specify_____

___None

## ARMY MEDICAL CLINIC UTILIZATION

11. Sponsor's utilization of Army Clinics for outpatient care during the past 12 months. (Other than routine physical exams and immunizations):

___Never during the past year
___Once
___Twice
___3 times
___4 times
___5-9 times
___10-14 times
___15-19 times
___More than 19 times

12. Spouse's utilization of Army Clinics for outpatient care during the past 12 months. (Include all visits for any purpose):

___Never during the past year
___Once
___Twice
___3 times
___4 times
___5-9 times
___10-14 times
___15-19 times
___More than 19 times
___Not Applicable; I have no spouse

13. Eligible children's combined total number of visits to Army Clinics for outpatient care during the past 12 months. (Include all visits for any prupose):

___Never during the past year
___Once
___Twice
___3 times
___4 times
___5-9 times
___10-14 times
___15-19 times
___More than 19 times
___Not applicable; I have no eligible children.

## CIVILIAN MEDICAL CLINIC UTILIZATION

14. Sponsor's utilization of civilian medical facilities for outpatient care during the past 12 months:

___Never during the past year
___Once
___Twice
___3 times
___4 times
___5-9 times
___10-14 times
___15-19 times
___More than 19 times

15. Spouse's utilization of civilian medical facilities for outpatient care during the past 12 months:

___Never during the past year
___Once
___Twice
___3 times
___4 times
___5-9 times
___10-14 times
___15-19 times
___More than 19 times
___Not applicable; I have no spouse

16. Eligible children's combined total number of visits to civilian medical facilities for outpatient care during the past 12 months:

___Never during the past year
___Once
___Twice
___3 times
___4 times
___5-9 times
___10-14 times
___15-19 times
___More than 19 times
___Not applicable; I have no eligible children.

17. The following items are to help us determine the sponsor's satisfaction with outpatient Army Health Care at Silas B. Hays Army Hospital, Ft Ord (Check the one box that best describes your feelings).

| WHAT HAS BEEN SPONSOR'S SATISFACTION IN TERMS OF: | Completely Dissatisfied | Mostly Dissatisfied | Neutral/ Undecided | Mostly Satisfied | Completely Satisfied | NO CONTACTS |
|---|---|---|---|---|---|---|
| 1. Doctor's interest in your problem | | | | | | |
| 2. Nurse's interest in your problem | | | | | | |
| 3. Courteous treatment by doctors | | | | | | |
| 4. Courteous treatment by nurses | | | | | | |
| 5. Courteous treatment by receptionist | | | | | | |
| 6. Quality of health care | | | | | | |
| 7. Waiting time in the Acute Minor Illness Clinic (Do not write times) | | | | | | |
| 8. Convenience of location of the Acute Minor Illness Clinic | | | | | | |
| 9. Convenience of operating hours of the Acute Minor Illness Clinic | | | | | | |
| 10. Adequacy of the Acute Minor Illness Clinic's physical facilities (seating, comfort, decor) in general | | | | | | |
| 11. Adequacy of information given to you about your medical problem by doctor | | | | | | |
| 12. Adequacy of information given to you about your medical problem by nurse | | | | | | |
| 13. Continuity of health care provided | | | | | | |
| 14. Laboratory services provided by the hospital facility | | | | | | |
| 15. Pharmacy services provided by the hospital facility | | | | | | |
| 16. X-ray services provided by the hospital facility | | | | | | |

8. The following items are to help us determine the spouse's satisfaction with outpatient Army Health Care at Silas B. Hays Army Hospital, Ft Ord (Check the one box that best describes your feelings).

WHAT HAS BEEN SPOUSE'S SATISFACTION IN TERMS OF:

| | Completely Dissatisfied | Mostly Dissatisfied | Neutral/ Undecided | Mostly Satisfied | Completely Satisfied | NO CONTACTS |
|---|---|---|---|---|---|---|
| 1. Doctor's interest in your problem | | | | | | |
| 2. Nurse's interest in your problem | | | | | | |
| 3. Courteous treatment by doctors | | | | | | |
| 4. Courteous treatment by nurses | | | | | | |
| 5. Courteous treatment by receptionist | | | | | | |
| 6. Quality of health care | | | | | | |
| 7. Waiting time in the Acute Minor Illness Clinic (Do not write times) | | | | | | |
| 8. Convenience of location of the Acute Minor Illness Clinic | | | | | | |
| 9. Convenience of operating hours of the Acute Minor Illness Clinic | | | | | | |
| 10. Adequacy of the Acute Minor Illness Clinic's physical facilities (seating, comfort, decor) in general | | | | | | |
| 11. Adequacy of information given to you about your medical problem by doctor | | | | | | |
| 12. Adequacy of information given to you about your medical problem by nurse | | | | | | |
| 13. Continuity of health care provided | | | | | | |
| 14. Laboratory services provided by the hospital facility | | | | | | |
| 15. Pharmacy services provided by the hospital facility | | | | | | |
| 16. X-ray services provided by the hospital facility | | | | | | |

19. The following space is for you to make any further comments you desire:

PLEASE RETURN THIS COMPLETED QUESTIONNAIRE BY THE INDICATED DATE. YOU MAY USE THE ENCLOSED ENVELOPE OR BRING IT PERSONALLY TO:

THANK YOU FOR YOUR COOPERATION.

# APPENDIX E

# METHODS OF ENROLLMENT

## APPENDIX E

## METHODS OF ENROLLMENT

Two methods of selecting panel members were used at Ft. Ord, the brigade system and an application enrollment system.

(1) The Brigade System. When the Hospital Family Practice Clinic first opened, each of the four doctors was assigned the permanent party personnel from one of the four training brigades on post. No direct method of entry was provided for retired personnel. Doctors were allowed to request individual families for their panels, so that residents could pick up families with interesting and varied diseases and also follow families of patients whom they took care of on their rotations on other services.

This system set up automatic assignment of patient to physicians, and provided for automatic replacement of those leaving post. However, it excluded retired personnel. Also, a change in brigade assignment necessitated a change in doctor or a breakdown in the assignment system. Since families were not required to come to family practice for care, there was no system for regulating the number of families handled by each physician, should the number of interested families vary among the brigades. Pressures from retired personnel and personnel in units outside the training brigades developed. Transfer of personnel between brigades and then the elimination of one brigade led to the eventual complete breakdown of the system.

(2) The Application Enrollment System. With the opening of the North Fort Ord Family Practice Clinic, the program was made available to all military health care eligible families in the Fort Ord area. Publicity regarding family practice was placed in the weekly post newspaper and disseminated by other means to units on post. Applications were placed in the post exchange, the commissary, the Welcome Center, the outpatient desk at the hospital, and at both the family practice clinics.

Filling out an application and returning it to the family practice clinic placed the family on one of four lists, (1) active enlisted, (2) active officer, (3) retired enlisted, or (4) retired officer. Selection for participation was then on a first-come basis from each of the four lists. (Living in the contiguous housing area gave families some priority for the North Clinic, and families expecting to leave within six months were generally not accepted). After the panels were filled, waiting lists were kept of those wishing to join when space became available.

## APPENDIX F

## SAMPLE ENCOUNTER FORM

(Reduced in size)

HEALTH CARE STUDIES UNIT
NORTH FAMILY PRACTICE CLINIC

1. Date:_____

2. Patient's Name:_____

3. Sponsor's SSAN (with patient's prefix):

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | |

_____ 4. Appointment Status:

_____ (20)Emergency (21)Appointment (22)Walk-in

_____ 6. Health Care Provider (Name or #):_____

7. Patient's Complaint:_____

8. PROVIDER TIME ON PROBLEM

Most Time / Second Most

(160)Acute injury.....(180)
(161)Acute injury followup.....(181)
_____ (162)Acute(temporary) problem.....(182)
(163)Acute9temporary) problem flu.(183)
(164)Chronic problem, routine.....(184)
_____ (165)Chronic problem, flare-up....(185)
(166)Prenatal & postntal care.....(186)
(167)Partial exam, well baby,
_____ screening lab, or prev. ed...(187)
(168)Complete HX and PE finished..(188)
(169)Family planning/Contraception(189)
_____ (170)Counseling/Advice.....(190)
(171)Immunization.....(191)
(172)Administrative.....(192)
_____ (173)Other.....(193)

(22-)PHARMACY: # of Rx_____

_____ (231) EKG

9. LENGTH OF THIS VISIT

(210) 0-5 min.
(211) 5-20 min.
(212) 20-40 min.
(213) Over 40 min.

10. X-RAY

(240)Chest-P.A.
(241)Chest-P.A. & Lat.

Other_____

_____

Other Nursing Care_____

_____

_____

_____ 11. LAB

| | |
|---|---|
| (350)SMA-12, Fasting | (360)CBC & Diff |
| (351)SMA-12, non-fasting | (361)CBC & Indicies |
| (352)Chol & Trigly | (362)Hct. |
| (353)Electrolytes | (363)Sickle Cell |
| (3C2)K+ | (370)G6PD |
| (?21)Na+ | |
| (354)Glucose, fasting | (364)Urinakysis |
| (355)Glucose, __hr pp only | (365)Clean catch UA |
| (356)Glucose, 2 hr p high sugar meal | (366)Urine culture |
| | (367)Throat culture |
| (357)RPR | |
| (358)Mononucl. Screen | (368)GC screen |
| (359)Rubella Screen | (369)PAP |
| (374)$T_3$ & $T_4$ | (504)Pregnancy test |

_____ Other Lab_____

_____ _____

12. IMMUNIZATIONS

| | |
|---|---|
| (610)OPV | (615)MMR |
| (611)DPT | (616)Measles & Rubel |
| (612)DT | (617)Mumps |
| (613)T. Tox | (618)Flu |
| (614)Tb test | (619)Smallpox |

Other_____

13. REFER TO

| | |
|---|---|
| (700)Dental | (709)Ophthalmology |
| (701)Dermatology | (710)Optometry |
| (702)ENT | (711)Orthopedics |
| (703)Internal Med. | (712)Pediatrics |
| (704)Ment Hyg/Soc Wk | (717)Preventive Med. |
| (705)Neurology | (713)Psychiatry |
| (716)Nuclear Med. | (714)Surgery |
| (706)OB-GYN | (715)Urology |
| (707)OT/PT | |

Other_____

NEXT APPOINTMENT

15 min_____

30 min._____

45 min._____

60 min._____

30 min with Nurse Clin_____

P.E. with Nurse Clin_____

Other_____

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## APPENDIX G

## PATIENT SATISFACTION QUESTIONNAIRE

**(Reduced in size)**

THE ATTACHED QUESTIONNAIRE HAS BEEN DESIGNED TO PROVIDE US WITH INFORMATION ABOUT THE PATIENTS WHO ARE USING THIS CLINIC. THIS INFORMATION WILL BE USED ALONG WITH ADDITIONAL DATA TO IMPROVE OUR SERVICE TO YOU.

PLEASE COMPLETE THIS FORM AND TURN IT IN TO THE HOSPITAL REPRESENTATIVE IN THE WAITING AREA WHEN YOU LEAVE THIS CLINIC.

A SMALL GROUP OF RANDOMLY SELECTED PATIENTS WILL BE ASKED TO TAKE A FEW MOMENTS AND COMPLETE ANOTHER SHEET CONCERNING SATISFACTION WITH THEIR VISIT TODAY.

THANK YOU VERY MUCH FOR YOUR COOPERATION.

Casimir A Gorczyca

CASIMIR A. GORCZYCA
COL, MC
C, Ambulatory Health Services

THIS QUESTIONNAIRE IS ANONYMOUS
PLEASE DO NOT INDICATE YOUR NAME

FOR OFFICIAL USE ONLY

Clinic [ ][ ][ ][ ][ ][ ][ ][ ][ ] (1 2 3 4 5 6 7 8 9)

Surveyor [ ][ ] (10 11) Time [ ][ ][ ][ ] (12 13 14 15)

Date (day/month/year) [ ][ ][ ][ ][ ][ ] (16 17 18 19 20 21)

IN THE BOX BELOW, WRITE IN THE LAST DIGIT OF YOUR SPONSOR'S SOCIAL SECURITY ACCOUNT NUMBER [ ]

Please circle the appropriate response for each item below:

1. Your Sex:
   (a) Male (b) Female [ ] 22

2. Your Age:
   (a) Less than 19 years (c) 36 – 50 years
   (b) 19 – 35 years (d) 51 years or older [ ] 23

3. Your Status:
   (a) Active Duty Dependent (d) Retired Sponsor
   (b) Active Duty Sponsor (e) Other
   (c) Retired Dependent [ ] 24

4. Sponsor's Grade:
   E-1, E-2, E-3, E-4, E-5, E-6, E-7, E-8, E-9
   WO-1, CWO-2, CWO-3, CWO-4
   O-1, O-2, O-3, O-4, O-5, O-6, O-7, O-8, O-9 [ ][ ] 25 26

5. What is your highest level of education now? (Include GED credits, if any)
   (a) No high school
   (b) Some high school
   (c) High school graduate or GED certificate or diploma
   (d) One or two years of college or vocational school (Include Associate degree)
   (e) More than two years of college
   (f) College degree (BA, BS, or equivalent)
   (g) Graduate Study up to and including Masters Degree
   (h) Doctoral Degree or equivalent [ ] 27

6. Number of persons in your immediate family (including yourself):
   (a) 1 (e) 5
   (b) 2 (f) 6
   (c) 3 (g) 7 or more
   (d) 4 [ ] 28

7. Your Race or Ethnic Group:
   (a) White (e) Chinese-American
   (b) Black (f) Japanese-American
   (c) Mexican-American (g) Filipino
   (d) American Indian (h) None of these, please specify _____ [ ] 29

8. Did you have an appointment today?
   (a) Yes (b) No [ ] 30

9. Does the sponsor intend to make the military a career?
   (a) Yes (c) Undecided
   (b) No (d) Not Applicable [ ] 31

**NOTE: The following items pertain only to your visit today to this clinic.**
**(Check the one box that best describes your feelings.)**

| WHAT IS YOUR SATISFACTION IN TERMS OF: | No Contact Today | Completely Dissatisfied | Mostly Dissatisfied | Neutral/ Undecided | Mostly Satisfied | Completely Satisfied | FOR OFFICIAL USE ONLY | |
|---|---|---|---|---|---|---|---|---|
| 1. Doctor's interest in your problem | | | | | | | | 32 |
| 2. Nurse's interest in your problem | | | | | | | | 33 |
| 3. Other medical personnel's interest in your problem (Physician Assistants, Amosists, Nurse Clinicians) | | | | | | | | 34 |
| 4. Courteous treatment by doctors | | | | | | | | 35 |
| 5. Courteous treatment by nurses | | | | | | | | 36 |
| 6. Courteous treatment by other medical personnel (Physician Assistants, Amosists, Nurse Clinicians) | | | | | | | | 37 |
| 7. Courteous treatment by receptionist | | | | | | | | 38 |
| 8. Quality of health care | | | | | | | | 39 |
| 9. Waiting time in this clinic (Do not write in times) | | | | | | | | 40 |
| 10. Convenience of location of this clinic | | | | | | | | 41 |
| 11. Convenience of operating hours of this clinic | | | | | | | | 42 |
| 12. Adequacy of this clinic's physical facilities (seating, comfort, decor) in general | | | | | | | | 43 |
| 13. Adequacy of information given to you about your medical problem by doctor | | | | | | | | 44 |
| 14. Adequacy of information given to you about your medical problem by nurse | | | | | | | | 45 |
| 15. Adequacy of information given to you about your medical problem by other medical personnel (Physician Assistants, Amosists, Nurse Clinicians) | | | | | | | | 46 |
| 16. Continuity of health care provided | | | | | | | | 47 |
| *If you have not yet had contact with any or all of the services listed below, the correct response is NO CONTACT TODAY.* | | | | | | | | |
| 17. Laboratory services provided by this facility | | | | | | | | 48 |
| 18. Pharmacy services provided by this facility | | | | | | | | 49 |
| 19. X-ray services provided by this facility | | | | | | | | 50 |

**We would appreciate any further comments you have.**

# APPENDIX H

# STAFF SATISFACTION QUESTIONNAIRE

## INTRODUCTION

This booklet contains a questionnaire from the Academy of Health Sciences. It is distributed locally by the Health Care Studies Unit, but will be tabulated & analyzed at Ft. Sam Houston. It is designed to reflect your perception of your present job. On the basis of your responses, a comparison of staff satisfaction among the various clinics at Silas B. Hays Army Hospital will be made.

Your responses to these questionnaire items will be used for research purposes only. DO NOT IDENTIFY YOURSELF BY NAME OR SOCIAL SECURITY ACCOUNT NUMBER.

Upon completion please place this questionnaire in the blank envelope, seal it, insert the sealed envelope in the envelope with your name on it, and return to the person who gave them to you. He will remove the outer envelope with your name on it so the questionnaire will be completely annonymous when it is returned to the Health Care Studies Unit.

INSTRUCTIONS

In this booklet are a number of adjectives and phrases which could be used to describe five important dimensions of your present job: your work, your supervisors, your pay, your opportunity for promotion, and your co-workers.

Put a "Y" in the blank beside an item if the item describes the particular aspect of your job printed at the top of the particular page (i.e., work, pay).

Put an "N" in the blank beside an item if the item does <u>not</u> describe the particular aspect of your job printed at the top of the particular page (i.e., work, pay).

Put a "?" in the blank beside an item if you cannot decide whether the item describes the particular aspect of your job printed at the top of the particular page (i.e., work, pay).

WORK

____ Fascinating (01)

____ Routine (02)

____ Satisfying (03)

____ Boring (04)

____ Good (05)

____ Creative (06)

____ Respected (07)

____ Hot (08)

____ Pleasant (09)

____ Useful (10)

____ Tiresome (11)

____ Healthful (12)

____ Challenging (13)

____ On your feet (14)

____ Frustrating (15)

____ Simple (16)

____ Endless (17)

____ Gives sense of accomplishment (18)

SUPERVISOR

____ Asks my advice (19)

____ Hard to please (20)

____ Impolite (21)

____ Praises good work (22)

____ Tactful (23)

____ Influential (24)

____ Up-to-date (25)

____ Does not supervise enough (26)

____ Quick tempered (27)

____ Tells me where I stand (28)

____ Annoying (29)

____ Stubborn (30)

____ Knows job well (31)

____ Bad (32)

____ Intelligent (33)

____ Leaves me on my own (34)

____ Lazy (35)

____ Around when needed (36)

## PAY

____ Income adequate for normal expenses (37)

____ Satisfactory profit sharing (38)

____ Barely live on income (39)

____ Bad (40)

____ Income provides luxuries (41)

____ Insecure (42)

____ Less than I deserve (43)

____ Highly paid (44)

____ Underpaid (45)

## PROMOTIONS

____ Good opportunity for advancement (46)

____ Opportunity somewhat limited (47)

____ Promotion on ability (48)

____ Dead end job (49)

____ Good chance for promotion (50)

____ Unfair promotion policy (51)

____ Infrequent promotions (52)

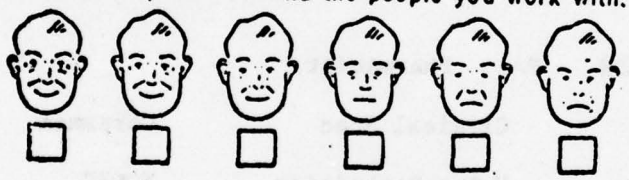
____ Regular promotions (53)

____ Fairly good chance for promotion (54)

## CO-WORKERS

| | | |
|---|---|---|
| ____ | Stimulating | (55) |
| ____ | Boring | (56) |
| ____ | Slow | (57) |
| ____ | Ambitious | (58) |
| ____ | Stupid | (59) |
| ____ | Responsible | (60) |
| ____ | Fast | (61) |
| ____ | Intelligent | (62) |
| ____ | Easy to make enemies | (63) |
| ____ | Talk too much | (64) |
| ____ | Smart | (65) |
| ____ | Lazy | (66) |
| ____ | Unpleasant | (67) |
| ____ | No privacy | (68) |
| ____ | Active | (69) |
| ____ | Narrow interests | (70) |
| ____ | Loyal | (71) |
| ____ | Hard to meet | (72) |

Put a check under the face that expresses how you feel about your job in general, including the work, the pay, the supervision, the opportunities for promotion and the people you work with.



(73)

## BIOGRAPHICAL/DEMOGRAPHIC INFORMATION

Age last birthday (in years) _____ (74-75)

Marital Status (circle one below):

Single Married Widowed Divorced (76)

If currently on active duty, how many years of active duty have you completed, and what is your present rank?

_____years rank:_____ (77-80)

Length of time since graduation from Medical/Dental/Veterinary/Nursing School (Only applies to active duty MC,VC,DC, & ANC)

_____years (1-2)

Current position (circle one):

MD RN LPN PA Pharmacist

Social Worker Clinical Spec Corpsman

Lab Technician X-Ray Technician NCOIC (3-4)

Records Clerk Receptionist Secretary

Clerk Typist Other (specify): _____

Clinic you are currently working in:

AMIC ER FAM. PRAC. HOSP (5)

INT. MED. OB-GYN PEDIATRICS

FAM. PRAC, NORTH

# APPENDIX I

## STAFF SATISFACTION - TABLES OF RESULTS

June 1974 Staff Satisfaction

| CLINIC | WORK | SUPERVISOR | PAY | PROMOTIONS | CO-WORKERS | FACES |
|---|---|---|---|---|---|---|
| OB-GYN | 33.00 (11.84) 18 | 42.27 (12.07) 18 | 12.44 (6.51) 18 | 12.33 (8.56) 18 | 45.94 (9.22) 18 | 4.31 (1.07) 16 |
| FAM PRAC N | 28.00 (11.40) 15 | 39.40 (8.87) 15 | 12.60 (7.26) 15 | 12.26 (8.15) | 39.46 (11.87) 15 | 4.00 (1.00) 15 |
| INT MED | 32.92 (10.33) 13 | 40.15 (10.94) 13 | 8.92 (7.28) 13 | 8.30 (7.45) 13 | 39.46 (16.01) 13 | 3.61 (1.44) 13 |
| PED | 38.08 (5.94) 12 | 47.00 (7.45) 12 | 15.08 (6.50) 12 | 15.83 (10.61) 12 | 40.66 (11.34) 12 | 4.45 (1.21) 11 |
| AMIC | 33.47 (12.94) 21 | 39.23 (10.67) 21 | 10.66 (6.26) 21 | 6.81 (6.45) 21 | 46.04 (8.26) 21 | 3.95 (0.92) 21 |
| ER | 29.00 (12.27) 12 | 43.16 (5.93) 12 | 8.58 (7.35) 12 | 12.58 (7.39) 12 | 40.83 (15.64) 12 | 3.25 (1.54) 12 |
| FAM PRAC H | 30.37 (14.38) 16 | 33.00 (12.61) 16 | 8.56 (6.51) 16 | 10.68 (7.62) 16 | 43.62 (10.01) 16 | 3.81 (1.10) 16 |
| MAXIMUM | 54.0 | 54.0 | 27.0 | 27.0 | 54.0 | 6.0 |
| POPULATION | 32.11 (11.85) 107 | 40.26 (10.76) 107 | 10.97 (6.92) 107 | 10.92 (8.25) 107 | 42.75 (11.61) 107 | 3.92 (1.18) 104 |
| F (df) | 1.08(6/100) | 2.49(6/100) | 1.81(6/100) | 2.16(6/100) | 1.01(6/100) | 1.52(6/97) |
| p | 0.378 | 0.027 | 0.103 | 0.052 | 0.418 | 0.179 |

June 1974 Physician Satisfaction

| CLINIC | WORK | SUPERVISOR | PAY | PROMOTIONS | CO-WORKERS | FACES |
|---|---|---|---|---|---|---|
| OB-GYN | 41.60 | 32.40 | 13.00 | 16.40 | 50.80 | 4.50 |
| | (2.88) 5 | (14.74) 5 | (1.73) 5 | (6.65) 5 | (3.27) 5 | (0.57 4 |
| FAM PRAC N | 37.00 | 35.66 | 11.00 | 13.00 | 44.00 | 4.33 |
| | (6.24) 3 | (5.13) 3 | (4.58) 3 | (7.55) 3 | (8.71) 3 | (0.57) 3 |
| INT MED | 31.62 | 40.00 | 6.12 | 7.62 | 40.00 | 3.12 |
| | (8.45) 8 | (8.28) 8 | (7.18) 8 | (8.12) 8 | (18.33) 8 | (0.64) 8 |
| PED | 40.00 | 45.75 | 11.25 | 17.25 | 42.25 | 4.50 |
| | (2.94) 4 | (9.94) 4 | (3.77) 4 | (11.84) 4 | (12.33) 4 | (0.57) 4 |
| AMIC | 37.00 | 48.25 | 11.25 | 6.75 | 47.50 | 4.25 |
| | (17.75) 4 | (4.03) 4 | (5.67) 4 | (2.63) 4 | (6.85) 4 | (1.25) 4 |
| ER | 21.00 | 45.25 | 7.00 | 12.75 | 48.50 | 2.75 |
| | (15.23) 4 | (7.36) 4 | (8.36) 4 | (7.67) 4 | (3.87) 4 | (1.25) 4 |
| FAM PRAC H | 31.40 | 37.54 | 8.63 | 12.72 | 43.81 | 4.00 |
| | (15.58) 11 | (11.20) 11 | (6.21) 11 | (7.57) | (9.68) 11 | (1.09) 11 |
| MAXIMUM | 54.0 | 54.0 | 27.0 | 27.0 | 54.0 | 6.0 |
| POPULATION | 33.71 | 39.97 | 9.23 | 12.02 | 44.64 | 3.84 |
| | (12.53) 39 | (10.37) 39 | (5.99) 39 | (7.99) 39 | (11.02) 39 | (1.05) 38 |
| F (df) | 1.42(6/32) | 1.56(6/32) | 0.99(6/32) | 1.31(6/32) | 0.62(6/32) | 2.67(6/31) |
| p | 0.234 | 0.190 | 0.447 | 0.277 | 0.707 | 0.032 |

December 1974 Staff Satisfaction

| CLINIC | WORK | SUPERVISOR | PAY | PROMOTIONS | CO-WORKERS | FACES |
|---|---|---|---|---|---|---|
| OB-GYN | 32.92 (9.57) 14 | 44.28 (9.63) 14 | 12.57 (6.61) 14 | 12.07 (9.49) 14 | 40.71 (11.80) 14 | 3.81 (1.10) 16 |
| FAM PRAC N | 34.54 (12.93) 11 | 40.00 (13.93) 11 | 7.09 (6.83) 11 | 9.09 (7.79) 11 | 48.72 (6.81) 11 | 4.25 (1.21) 12 |
| INT MED | 29.47 (13.34) 17 | 37.12 (13.28) 16 | 11.41 (7.26) 17 | 12.87 (8.98) 16 | 42.81 12.19) 16 | 3.27 (1.36) 18 |
| PED | 35.90 (5.91) 10 | 44.20 (12.25) 10 | 18.60 (4.64) 10 | 14.70 (9.04) 10 | 46.30 (10.07) 10 | 5.10 (0.73) 10 |
| AMIC | 31.30 (12.31) 26 | 40.84 (11.26) 25 | 13.73 (5.51) 26 | 10.80 (9.26) 26 | 42.88 (11.22) 26 | 4.46 (1.24) 26 |
| ER | 38.85 (7.78) 27 | 46.14 (10.38) 27 | 13.37 (8.18) 27 | 13.55 (8.13) 27 | 45.29 (10.93) 27 | 4.26 (1.21) 26 |
| FAM PRAC H | 31.50 (12.65) 12 | 41.41 (11.45) 12 | 12.75 (6.04) 12 | 12.09 (8.92) 11 | 45.66 (12.30) 12 | 4.00 (1.41) 12 |
| MAXIMUM | 54.0 | 54.0 | 27.0 | 27.0 | 54.0 | 6.0 |
| POPULATION | 33.69 (11.16) 117 | 42.26 (11.55) 115 | 12.86 (7.04) 117 | 12.19 (8.71) 115 | 44.31 (10.99) 116 | 4.14 (1.28) 120 |
| F (df) | 1.80(6/110) | 1.29(6/108) | 2.78(6/110) | 0.59(6/108) | 0.77(6/109) | 3.10(6/113) |
| p | .105 | .264 | .014 | .735 | .588 | .007 |

December 1974 Physician Satisfaction

| CLINIC | WORK | SUPERVISOR | PAY | PROMOTIONS | CO-WORKERS | FACES |
|---|---|---|---|---|---|---|
| OB-GYN | 36.60 (6.06) 5 | 50.80 (5.63) 5 | 13.00 (4.74) 5 | 18.40 (4.77) 5 | 47.80 (5.89) 5 | 4.00 (1.22) 5 |
| FAM PRAC N | 35.00 (12.80) 4 | 35.50 (15.15) 4 | 8.25 (7.93) 4 | 8.00 (5.59) 4 | 46.50 (8.91) 4 | 4.25 (1.50) 4 |
| INT MED | 30.25 (15.46) 8 | 32.37 (16.03) 8 | 10.75 (7.42) 8 | 12.25 (9.13) 8 | 46.50 (10.35) | 3.62 (1.40) 8 |
| PED | 35.66 (6.56) 6 | 41.83 (15.71) 6 | 17.66 (5.42) 6 | 14.66 (10.30) 6 | 46.16 (12.33) 6 | 4.83 (0.75) 6 |
| AMIC | 30.20 (16.81) 5 | 45.00 (8.30) 5 | 11.80 (6.14) 5 | 10.40 (9.91) 5 | 45.80 (8.31) 5 | 4.00 (1.00) 5 |
| ER | 37.50 (8.54) 4 | 50.25 (1.70) 4 | 18.50 (6.45) 4 | 14.00 (7.34) 4 | 49.50 (3.69) 4 | 4.25 (0.95) 4 |
| FAM PRAC H | 32.20 (13.86) 10 | 43.10 (11.55) 10 | 12.30 (6.30) 10 | 14.33 (8.26) 9 | 44.50 (13.26) 10 | 4.00 (1.49) 10 |
| MAXIMUM | 54.0 | 54.0 | 27.0 | 27.0 | 54.0 | 6.0 |
| POPULATION | 33.38 (12.00) 42 | 41.97 (13.03) 42 | 13.00 (6.69) 42 | 13.34 (8.24) 41 | 46.33 (9.71) 42 | 4.09 (1.22) 42 |
| F (df) | 0.31(6/35) | 1.77(6/35) | 1.59(6/35) | 0.74(6/34) | 0.13(6/35) | 0.56(6/35) |
| p | .923 | .132 | .178 | .616 | .991 | .757 |

May 1975 Staff Satisfaction

| CLINIC | WORK | SUPERVISOR | PAY | PROMOTIONS | CO-WORKERS | FACES |
|---|---|---|---|---|---|---|
| OB-GYN | 29.00 | 37.25 | 9.29 | 11.82 | 35.17 | 3.29 |
| | (10.88) 17 | (14.05) 16 | (6.59) 17 | (9.78) 17 | (13.29) 17 | (1.26) 17 |
| FAM PRAC N | 31.76 | 40.30 | 10.15 | 10.75 | 33.25 | 3.92 |
| | (14.40) 13 | (13.85) 13 | (6.06) 13 | (7.42) 12 | (15.69) 12 | (0.76) 13 |
| INT MED | 29.75 | 39.75 | 12.57 | 9.00 | 41.26 | 3.45 |
| | (15.16) 20 | (13.81) 20 | (9.14) 19 | (7.87) 18 | (12.96) 19 | (1.31) 20 |
| PED | 34.20 | 38.10 | 16.10 | 9.66 | 39.30 | 4.30 |
| | (9.24) 10 | (16.61) 10 | (8.97) 10 | (8.42) 9 | (13.87) 10 | (1.16) 10 |
| AMIC | 31.73 | 30.00 | 13.80 | 9.06 | 43.06 | 3.89 |
| | (15.77) 15 | (14.37) 15 | (6.03) 15 | (8.77) 15 | (9.33) 15 | (0.80) 19 |
| ER | 34.96 | 44.70 | 10.03 | 10.83 | 40.46 | 3.62 |
| | (10.88) 27 | (10.45) 27 | (6.94) 27 | (8.44) 24 | (13.67) 26 | (1.42) 29 |
| FAM PRAC H | 28.35 | 37.80 | 12.73 | 10.92 | 42.86 | 3.86 |
| | (13.13) 14 | (11.41) 15 | (5.12) 15 | (8.89) 14 | (10.96) 15 | (1.30) 15 |
| MAXIMUM | 54.0 | 54.0 | 27.0 | 27.0 | 54.0 | 6.0 |
| POPULATION | 31.55 | 38.96 | 11.71 | 10.34 | 39.60 | 3.70 |
| | (12.86) 16 | (13.55) 115 | (7.21) 116 | (8.39) 109 | (13.00) 114 | (1.21) 123 |
| F (df) | 0.69(6/109) | 2.11(6/109) | 1.63(6/109) | 0.25(6/102) | 1.22(6/107) | 1.09(6/116) |
| P | 0.652 | 0.057 | 0.144 | 0.957 | 0.298 | 0.370 |

May 1975 Physician Satisfaction

| CLINIC | WORK | SUPERVISOR | PAY | PROMOTIONS | CO-WORKERS | FACES |
|---|---|---|---|---|---|---|
| OB-GYN | 34.50 | 44.00 | 11.25 | 21.50 | 46.25 | 4.00 |
| | (5.56) 4 | (9.41) 4 | (5.67) 4 | (7.76) 4 | (7.76) 4 | (1.41) 4 |
| FAM PRAC N | 43.00 | 47.00 | 12.33 | 15.66 | 42.00 | 4.66 |
| | (11.35) 3 | (10.44) 3 | (5.50) 3 | (7.02) 3 | (5.00) 3 | (0.57) 3 |
| INT MED | 34.33 | 31.83 | 7.66 | 6.00 | 40.83 | 3.66 |
| | (18.25) 6 | (16.67) 6 | (9.73) 6 | (5.78) 5 | (17.63) 6 | (1.63) 6 |
| PED | 33.20 | 36.00 | 17.60 | 11.25 | 32.40 | 4.60 |
| | (9.80) 5 | (22.46) 5 | (11.19) 5 | (12.33) 4 | (17.51) 5 | (0.89) 5 |
| AMIC | 25.33 | 39.00 | 14.33 | 11.00 | 51.00 | 4.00 |
| | (16.50) 3 | (7.00) 3 | (1.15) 3 | (4.58) 3 | (3.00) 3 | (0) |
| ER | 27.00 | 49.66 | 11.33 | 10.00 | 32.00 | 4.00 |
| | (2.64) 3 | (7.50) 3 | (1.15) 3 | (1.41) 2 | (18.68) 2 | (0) |
| FAM PRAC H | 33.12 | 45.12 | 13.37 | 15.87 | 42.25 | 4.00 |
| | (12.84) 8 | (5.48) 8 | (6.36) 8 | (8.14) 8 | (10.13) 8 | (1.51) 8 |
| MAXIMUM | 54.0 | 54.0 | 27.0 | 27.0 | 54.0 | 6.0 |
| POPULATION | 33.15 | 41.09 | 12.50 | 13.37 | 40.78 | 4.09 |
| | (12.33) 32 | (13.27) 32 | (7.44) 32 | (8.53) 29 | (13.30) 32 | (1.17) 32 |
| F (df) | 0.61(6/25) | 1.10(6/25) | 0.87(6/25) | 1.75(6/22) | 0.97(6/25) | 0.37(6/25) |
| p | 0.719 | 0.386 | 0.530 | 0.155 | 0.464 | 0.888 |

APPENDIX J

SAMPLE OMB MHCS ENCOUNTER FORM

(Reduced in size)

Form Approved by Office Management and Budget No. 22-R-1225. Exp 03 '79

# PATIENT/MEDICAL TREATMENT FACILITY OUTPATIENT CONTACT RECORD

TO BE COMPLETED BY MEDICAL TREATMENT FACILITY STAFF

| Control No. (Cols 1–6) | Date (Day & Month) (Cols 7–9) | Install ID (Cols 10–12) |
|---|---|---|
| | | 01223 |

**NOTE:** This form will be used for a limited time to gather information for a special study of military health care. All information is confidential and will be used for statistical purposes only. There are two sections to this form, PART A and PART B. You are asked to complete only PART A. PART B is to be completed by the medical provider giving you treatment. If you have questions, check with the clerk or receptionist.

## PART A - PERSONAL DATA

*(To be completed by the patient or someone on behalf of the patient)*

### PATIENT INFORMATION

a. Age (Cols 13–16) (As of last birthday)

b. Sex (Col 17)
1 ☐ Male
2 ☐ Female

c. Marital Status (Col 18)
1 ☐ Never Married
2 ☐ Married
3 ☐ Widowed
4 ☐ Divorced

d. Zip Code of Present Address (Cols 19–23)

e. Appointment Status (Col 24)
1 ☐ Patient has an appointment for this visit
2 ☐ Patient did not seek an appointment for this visit
3 ☐ Patient could not get an appointment for this visit
4 ☐ An appointment is not required for this service

f. If patient has an appointment for this visit about how many days ago was it made? _____ (Cols 25–26)

g. Did this appointment result from a previous visit to this clinic for the same condition?
1 ☐ Yes 2 ☐ No (Col 27)

h. Status of patient: (Col 28)
1 ☐ Active duty uniformed services member
2 ☐ Retired uniformed services member
3 ☐ Dependent of active duty, deceased active duty, retired, or deceased retired uniformed services member
4 ☐ Civilian (No relation to U.S. uniformed services) If checked, go no further.

i. If patient is a dependent of a uniformed services member (active, retired, or deceased) what is the relationship of the patient to the member? (Col 29)
1 ☐ Wife/Husband
2 ☐ Son
3 ☐ Daughter
4 ☐ Parent
5 ☐ Parent-in-law

j. If the patient is a dependent, is he/she living with sponsor (active or retired uniformed services member)? (Col 30)
1 ☐ Yes 2 ☐ No

### SPONSOR (active or retired uniformed services member) Information
*(Complete appropriate items)*

k. Sponsor is: (Col 31)
1 ☐ On full-time active duty
2 ☐ On active duty for training (less than 30 days)
3 ☐ Retired
4 ☐ Deceased active duty
5 ☐ Deceased retired

l. Sponsor's Social Security Number (Cols 32–40)

m. Sponsor is serving or last served in the: (Col 41)
1 ☐ Army 2 ☐ Navy 3 ☐ Marine Corps 4 ☐ Air Force 5 ☐ Other Uniformed Service

n. Sponsor's pay grade or rank: _____ (Col 42)

## PART B - MEDICAL DATA

*(To be completed by medical treatment facility staff)*

a. Place of Contact (Check one only) (Col 43)
1 ☐ Sick Bay/Troop Clinic
2 ☐ Non-Specialty Clinic
3 ☐ Specialty Clinic
4 ☐ Emergency Room
5 ☐ Mental Health Clinic
6 ☐ Home
7 ☐ Other (Specify) _____

b. Primary Purpose of Contact (Check one only) (Col 44)
0 ☐ Injury
1 ☐ Disease (Non-injury)
2 ☐ Pre/Post Natal Visit
3 ☐ Well Baby Examination
4 ☐ Immunization
5 ☐ Counseling
6 ☐ Complete Physical Examination
7 ☐ Flight Physical Examination
8 ☐ Screening Examination
9 ☐ Administrative Evaluation

c. Is this a referral visit? (Col 45) 1 ☐ Yes 2 ☐ No

d. Is this an emergency visit? (Col 46) 1 ☐ Yes 2 ☐ No

e. Provider's Profession (Check one only) (Cols 47–48)
01 ☐ Physician
02 ☐ Dentist
03 ☐ Optometrist
04 ☐ Podiatrist
05 ☐ Psychologist
11 ☐ Physician's Assistant
12 ☐ Nurse-Midwife
13 ☐ Nurse-Clinician
14 ☐ Health Nurse
15 ☐ Nurse
16 ☐ Social Worker
17 ☐ Corpsman
21 ☐ Occupational Therapist
22 ☐ Physical Therapist
23 ☐ Speech/Audiology
31 ☐ Other (Specify) _____

f. Ancillary Services (Check one or more as appropriate) (Col 49)
1 ☐ None Ordered
2 ☐ Laboratory
3 ☐ X-ray
4 ☐ Prescription
5 ☐ Other (Specify) _____

g. Outpatient Surgery (Col 50)
1 ☐ Performed
2 ☐ Not Performed

h. Disposition of Patient (Active Duty and Other Patients) (Col 51)
1 ☐ Duty or Usual Activities
2 ☐ Limited Duty or Limited Activities
3 ☐ Quarters or Bed Rest
4 ☐ Referred to Other Clinic
5 ☐ Hospital
6 ☐ Other (Specify) _____

DD FORM 1 MAR 80 1935 (TEST)

# APPENDIX K

## NUMBER OF VISITS PER CONSULT, VARIOUS SPECIALTIES

## APPENDIX K

Early in the course of the study, consults to other clinics were evaluated and a determination made of specialist support required by family practitioners. This data was published in Progress Report II dated January 1974. The following pages have been extracted directly from that data. Though it is realized that the evaluations were made very early in the study, the data obtained from the various specialties on clinic time available and anticipated time necessary to handle consults, as well as the number of return visits expected to result from a consult, is still valid and is the part referenced in the current text.

In order to estimate the amount of time available in each specialty area for outpatient care, and to determine the total time generated for the specialist from one consultation, discussions were held with members of the teaching staff at Brooke Army Medical Center, with physicians at the Academy of Health Sciences, and with physicians at a post hospital. It was explained to each that the theoretical consult was to be an average of all consults received by that specialty from fully trained family physicians, and, when estimating the average number of follow-up visits the consult would require, the physicians were asked to keep in mind that the patient would be sent back to the referring family physician as soon as possible. Surgery time, time for rounds, etc., was averaged over five days.

The following pages list determinations for the various specialties.

## GENERAL SURGERY

The mean time available for daily outpatient care was determined as follows:

540 minutes (0730-1630) minus the sum of the following:

60 minutes = Lunch.
48 minutes = P.T. day averaged over 5 days.
57 minutes = Leave and TDY; assume 24 days leave and 5 days TDY are taken during the year = approximately 2.5 days/month, averaged over 5 days.
240 minutes = Estimated weekly time spent on rounds on non-operative days averaged over 5 days.
0 minutes = Estimated weekly time spent on rounds on non-operative days averaged over 5 days.

135 minutes = Estimated mean time available for daily outpatient care.

The consultative workload generated by the four family physicians in the hospital-based family practice clinic for the six-month period from February 1973 through July 1973 was determined as follows:

30 minutes = Estimated time for the initial consultative visit.
60 minutes = Time for the estimated number of follow-up visits, four 15 minute visits.

90 minutes = Estimated total work generated for the specialist for one consultation.

36 = Total number of consults from the 4 family physicians from February 1973 through July 1973.

3,240 minutes = Estimated total work generated by consults made from February through July 1973.

Determination of the number of family physicians one general surgeon can support.

17,010 minutes = Total time available to one general surgeon for outpatient care for 6 months (assume 21 weekdays per month).

3,240 minutes = Total work generated from the 36 consultations.

The total work generated from consultations represents 19% of the available outpatient time. Therefore, each family physician will require 4.75% of a general surgeon's available time (19% ÷ 4 = 4.75%).

It is therefore estimated that one general surgeon can support 21 family physicians (100% ÷ 4.75% = 21) if all of his outpatient time were devoted to seeing patients referred from family physicians.

## ORTHOPEDICS

The mean time available for daily outpatient care was determined as follows:

540 minutes (0730-1630) minus the sum of the following:

60 minutes = Lunch.
48 minutes = P.T. day averaged over 5 days.
57 minutes = Leave and TDY; assume 24 days leave and 5 days TDY are taken during the year = approximately 2.5 days/month, averaged over 5 days.
192 minutes = Estimated weekly surgical time averaged over 5 days (4 half days per week).
12 minutes = Estimated weekly time spent on rounds on non-operative days averaged over 5 days (60 minutes--1 day).

171 minutes - Estimated mean time available for daily outpatient care.

The consultative workload generated by the four family physicians in the hospital-based family practice clinic for the six-month period from February 1973 through July 1973 was determined as follows:

30 minutes = Estimated time for the initial consultative visit.
60 minutes = Time for the estimated number of follow-up visits, four 15 minute visits.

90 minutes = Estimated total work generated for the specialist from one consultation.

78 = Total number of consults from the 4 family physicians from February 1973 through July 1973.

7,020 minutes = Estimated total work generated by consults made from February through July 1973.

Determination of the number of family physicians one orthopedist can support.

21,546 minutes = Total time available to one orthopedist for outpatient care for 6 months (assume 21 weekdays per month).

7,020 minutes = Total work generated from the 78 consultations.

The total work generated from consultations represents 33% of the available outpatient time. Therefore, each family physician will require 8.25% of an orthopedist's available time (33% ÷ 4 = 8.25%).

It is therefore estimated that one orthopedist can support 12 family physicians (100% ÷ 8.25% = 12) if all of his outpatient time were devoted to seeing patients newly referred from family physicians.

## UROLOGY

The mean time available for daily outpatient care was determined as follows:

540 minutes (0730-1630) minus the sum of the following:

60 minutes = Lunch.
48 minutes = P.T. day averaged over 5 days.
57 minutes = Leave and TDY; assume 24 days leave and 5 days TDY are taken during the year = approximately 2.5 days/month, averaged over 5 days.
144 minutes = Estimated weekly surgical time averaged over 5 days (3 half days per week).
24 minutes = Estimated weekly time spent on rounds on non-operative days averaged over 5 days (60 minutes--2 days).

207 minutes = Estimated mean time available for daily outpatient care.

The consultative workload generated by the four family physicians in the hospital-based family practice clinic for the six-month period from February 1973 through July 1973 was determined as follows:

45 minutes = Estimated time for the initial consultative visit.
75 minutes = Time for the estimated number of follow-up visits, five 15 minute visits.

120 minutes = Estimated total work generated for the specialist from one consultation.

36 = Total number of consults from the 4 family physicians from February 1973 through July 1973.

4,320 minutes = Estimated total work generated by consults made from February through July 1973.

Determination of the number of family physicians one urologist can support.

26,082 minutes = Total time available to one urologist for outpatient care for 6 months (assume 21 weekdays per month).

4,320 minutes = Total work generated from the 36 consultations.

The total work generated from concultations represents 17% of the available outpatient time. Therefore, each family physician will require 4.25% of a urologist's available time (17% ÷ 4 family physicians = 4.25%).

It is therefore estimated that one urologist can support 24 family physicians (100% ÷ 4.25% = 23.5) if all of his outpatient time were devoted to seeing patients referred from family physicians.

## PSYCHIATRY

The mean time available for daily outpatient care was determined as follows:

540 minutes (0730-1630) minus the sum of the following:

60 minutes = Lunch.
48 minutes = P.T. day averaged over 5 days.
57 minutes = Leave and TDY; assume 24 days leave and 5 days TDY are taken during the year = approximately 2.5 days/month, averaged over 5 days.
0 minutes = Estimated weekly surgical time averaged over 5 days.
60 minutes = Estimated weekly time spent on rounds on non-operative days averaged over 5 days (60 minutes daily).

315 minutes = Estimated mean time available for daily outpatient care.

The consultative workload generated by the four family physicians in the hospital-based family practice clinic for the six-month period from February 1973 through July 1973 was determined as follows:

45 minutes = Estimated time for the initial consultative visit.
80 minutes = Time for the estimated number of follow-up visits, four 20-minute visits.

125 minutes = Estimated total work generated for the specialist from one consultation.

14 = Total number of consults from the 4 family physicians from February 1973 through July 1973.

1,750 minutes = Estimated total work generated by consults made from February through July 1973.

Determination of the number of family physicians one psychiatrist can support.

39,690 minutes = Total time available to one psychiatrist for outpatient care for 6 months (assume 21 weekdays per month).

1,750 minutes = Total work generated from the 14 consultations.

The total work generated from consultations represents 4% of the available outpatient time. Therefore, each family physician will require 1% of a psychiatrist's available time (4% ÷ 4 family physicians = 1%).

It is therefore estimated that one psychiatrist can support 100 family physicians (100% ÷ 1% = 100) if all his outpatient time were devoted to seeing patients referred from family physicians.

## PEDIATRICS

The mean time available for daily outpatient care was determined as follows:

540 minutes (0730-1630) minus the sum of the following:

60 minutes = Lunch.
48 minutes = P.T. day averaged over 5 days.
57 minutes = Leave and TDY; assume 24 days leave and 5 days TDY are taken during the year = approximately 2.5 days/month, averaged over 5 days.
0 minutes = Estimated weekly surgical time averaged over 5 days.
60 minutes = Estimated weekly time spent on rounds on non-operative days averaged over 5 days (60 minutes daily).

315 minutes = Estimated mean time available for daily outpatient care.

The consultative workload generated by the four family physicians in the hospital-based family practice clinic for the six-month period from February 1973 through July 1973 was determined as follows:

45 minutes = Estimated time for the initial consultative visit.
75 minutes = Time for the estimated number of follow-up visits, five 15 minute visits.

120 minutes = Estimated total work generated fro the specialist from one consultation.

7 = Total number of consults from the 4 family physicians from February 1973 through July 1973.

840 minutes = Estimated total work generated by consults made from February through July 1973.

Determination of the number of family physicians one pediatrician can support.

39,690 minutes = Total time available to one pediatrician for outpatient care for 6 months (assume 21 weekdays per month).

840 minutes = Total work generated from the 7 consultations.

The total work generated from consultations represents 2% of the available outpatient time. Therefore, each family physician will require 0.5% of a pediatrician's available time (2% ÷ 4 family physicians = 0.5%).

It is therefore estimated that one pediatrician can support 200 family physicians (100% ÷ 0.5% = 200) if all of his outpatient time were devoted to seeing patients referred from family physicians.

## INTERNAL MEDICINE

The mean time available for daily outpatient care was determined as follows:

540 minutes (0730-1630) minus the sum of the following:

60 minutes = Lunch.
48 minutes = P.T. day averaged over 5 days.
57 minutes = Leave and TDY; assume 24 days leave and 5 days TDY are taken during the year = approximately 2.5 days/month, averaged over 5 days.
0 minutes = Estimated weekly surgical time averaged over 5 days.

90 minutes = Estimated weekly time spent on rounds on non-operative days averaged over 5 days (90 minutes daily).

285 minutes = Estimated mean time available for daily outpatient care.

The consultative workload generated by the four family physicians in the hospital-based family practice clinic for the six-month period from February 1973 through July 1973 was determined as follows:

45 minutes = Estimated time for the initial consultative visit.
45 minutes = Time for the estimated number of follow-up visits, three 15 minute visits.

90 minutes = Estimated total work generated for the specialist from one consultation.

79 = Total number of consults from the 4 family physicians from February 1973 through July 1973.

7,110 minutes = Estimated total work generated by consults made from February through July 1973.

Determination of the number of family physicians one internist can support.

35,910 minutes = Total time available to one internist for outpatient care for 6 months (assume 21 weekdays per month).

7,110 minutes = Total work generated from the 79 consultations.

The total work generated from consultations represents 20% of the available outpatient time. Therefore, each family physician will require 5% of an internist's available time (20% ÷ 4 family physicians = 5%).

It is therefore estimated that one internist can support 20 family physicians (100% ÷ 5% = 20) if all of his outpatient time were devoted to seeing patients referred from family physicians.

## DERMATOLOGY

The mean time available for daily outpatient care was determined as follows:

540 minutes (0730-1630) minus the sum of the following:

60 minutes = Lunch.
48 minutes = P.T. day averaged over 5 days.
57 minutes = Leave and TDY; assume 24 days leave and 5 days TDY are taken during the year = approximately 2.5 days/month, averaged over 5 days.
0 minutes = Estimated weekly surgical time averaged over 5 days.
0 minutes = Estimated weekly time spent on rounds on non-operative days averaged over 5 days.

375 minutes = Estimated mean time available for daily outpatient care

The consultative workload generated by the four family physicians in the hospital-based family practice clinic for the six month period from February 1973 through July 1973 was determined as follows:

30 minutes = Estimated time for the initial consultative visit.
45 minutes = Time for the estimated number of follow-up visits, three 15 minute visits.

75 minutes = Estimated total work generated for the specialist from one consultation.

25 = Total number of consults from the 4 family physicians from February 1973 through July 1973.

1,875 minutes = Estimated total work generated by consults made from February through July 1973.

Determination of the number of family physicians one dermatologist can support.

47,250 minutes = Total time available to 1 dermatologist for outpatient care for six months (assume 21 weekdays per month).

1,875 minutes = Total work generated from the 25 consultations

The total work generated from consultations represents 4% of the available outpatient time. Therefore, each family physician will require 1% of a dermatologist's outpatient time (4% ÷ 4 family physicians = 1%).

It is therefore estimated that one dermatologist can support 100 family physicians (100% ÷ 1% = 100) if all of his outpatient time were devoted to seeing patients referred from family physicians.

## OPHTHALMOLOGY AND OTOLARYNGOLOGY*

The mean time available for daily outpatient care was determined as follows:

540 minutes (0730-1630) minus the sum of the following:

60 minutes = Lunch.
48 minutes = P.T. day averaged over 5 days.
57 minutes = Leave and TDY; assume 24 days leave and 5 days TDY are taken during the year = approximately 2.5 days/month, averaged over five days.
120 minutes = Estimated weekly surgical time averaged over 5 days (2 1/2 half days).
30 minutes = Estimated weekly time spent on rounds on non-operative days averaged over 5 days (60 minutes--2 1/2 days).

225 minutes = Estimated mean time available for daily outpatient care.

The consultative workload generated by the four family physicians in the hospital-based family practice clinic for the six-month period from February 1973 through July 1973 was determined as follows:

30 minutes = Estimated time for the initial consultative visit.
45 minutes = Time for the estimated number of follow-up visits, three 15 minute visit.

75 minutes = Estimated total work generated for the specialist from one consultation.

73 = Total number of consults from the 4 family physicians from February 1973 through July 1973.

5,475 minutes = Estimated total work generated by consults made from February through July 1973.

Determination of the number of family physicians one ophthalomologist and one otolaryngologist can support.

29,862 minutes = Total time available to one "EENT" specialist for outpatient care for 6 months (assume 21 weekdays per month).

5,475 minutes = Total work generated from the 73 consultations.

The total work generated from consultations represents 18% of the available outpatient time. Therefore, each family physician will require 4.5% of an "EENT" specialist's time (18% ÷ 4 family physician = 4.5%).

It is therefore estimated that one "EENT" specialist can support 22 family physicians, or that one ophthalmologist and one otolaryngologist can each support 44 family physicians (100% ÷ 4.5% = 22.2; 22.2 x 2 = 44.4) if all of their outpatient time were devoted to seeing patients referred from family physicians.

*It was necessary to consider these together instead of separately, because their clinics are combined and referrals to either are made to EENT.

## OBSTETRICS AND GYNECOLOGY

The mean time available for daily outpatient care was determined as follows:

540 minutes (0730-1630) minus the sum of the following:

60 minutes = Lunch.
48 minutes = P.T. day averaged over 5 days.
57 minutes = Leave and TDY; assume 24 days leave and 5 days TDY are taken during the year = approximately 2.5 days/month, averaged over 5 days.
192 minutes = Estimated weekly surgical time averaged over 5 days.
12 minutes = Estimated weekly time spent on rounds on non-operative days averaged over 5 days (60 minutes - 1 day).

171 minutes = Estimated mean time available for daily outpatient care.

The consultative workload generated by the four family physicians in the hospital-based family practice clinic for the six-month period from February 1973 through July 1973 was determined as follows:

30 minutes = Estimated time for the initial consultative visit.
60 minutes = Time for the estimated number of follow-up visits, four 15 minute visits.

90 minutes = Estimated total work generated for the specialist from one consultation.

50 = Total number of consults from the 4 family physicians from February 1973 through July 1973.

4,500 minutes = Estimated total work generated by consults made from February through July 1973.

Determination of the number of family physicians one obstetrician-gynecologist can support.

21,546 minutes = Total time available to one obstetrician-gynecologist for outpatient care for 6 months (assume 21 weekdays per month).

4,500 minutes = Total work generated from the 50 consultations.

The total work generated from consultations represents 21% of the available outpatient time. Therefore, each family physician will require 5.25% of an obstetrician-gynecologist's available time (21% ÷ 4 family physicians = 5.25%).

It is therefore estimated that one obstetrician-gynecologist can support 19 family physicians (100% ÷ 5.25% = 19) if all of his outpatient time were devoted to seeing patients referred from family physicians.

APPENDIX L

COST ANALYSIS FORMAT

(Data for determination of cost per clinic visit)

**COST ANALYSIS FORMAT**
**1st and 2nd Qtr FY 75**

| APC (CLINIC) | MPA | ADJUSTED MPA | OMA | TOTAL COST | WORK-LOAD | AVG. COST PER VISIT |
|---|---|---|---|---|---|---|
| Allergy (W311) | 5506.60 | 2753.30 | 14147.80 | 16901.10 | 1975 | 8.56 |
| Cardiology (W312) | 29503.76 | 14751.88 | 15008.85 | 29760.73 | 2219 | 13.44 |
| Derm (W313) | 9390.92 | 8390.92 | 5842.95 | 15233.87 | 4321 | 3.53 |
| Int Med (W314) | 94312.46 | 47156.23 | 18228.66 | 112541.12 | 10220 | 6.40 |
| Neurology (W316) | 19969.84 | 9984.72 | 849.11 | 20818.95 | 910 | 11.91 |
| Occupt Ther (W321) | 18473.40 | 18473.40 | 1073.99 | 23414.39 | 3867 | 6.05 |
| ENT & Opth (W322) | 81760.14 | 61320.11 | 23571.37 | 105331.51 | 8479 | 7.60 |
| Opty (W323) | 85102.16 | 85102.16 | 25129.05 | 110231.21 | 32018 | 3.44 |
| Ortho (W324) | 76673.52 | 46004.11 | 18908.65 | 95582.17 | 8560 | 6.69 |
| Podiatry (W325) | 16279.34 | 16279.34 | 3084.04 | 19363.38 | 2899 | 6.68 |
| PT Clinic (W328) | 46555.52 | 46555.52 | 11533.95 | 58089.47 | 10797 | 5.38 |
| Gen Surg Clinic (W329) | 69464.34 | 34732.17 | 6935.64 | 76399.98 | 3355 | 22.77 |
| Urology (W330) | 32075.34 | 16037.67 | 24839.02 | 56914.36 | 3356 | 12.42 |
| Social Work (W335) | 123315.06 | 123315.06 | 21953.25 | 145218.31 | 9544 | 15.22 |
| Mental Hyg (W336) | | | | | | |
| OB-GYN (W340) | 70212.34 | 35106.17 | 29543.24 | 99755.58 | 12472 | 5.18 |
| Ped Spec Clinic (W345) | 70083.64 | 52562.73 | 34336.38 | 104420.02 | 14433 | 4.81 |
| Nuc Med (W422) | 16975.10 | 16975.10 | 33378.90 | 50254.00 | 1277 | 39.35 |
| Med Exm (W359) | 21565.28 | 21565.28 | 49864.33 | 71429.61 | 9066 | 7.88 |
| AMIC (W368) | 76568.36 | 76568.36 | 121683.73 | 198252.09 | 33258 | 5.96 |
| Emg Med Svs (W360) | 21618.86 | 21618.86 | 103881.95 | 225500.81 | 15189 | 14.85 |
| No. Fam Prac (W353) | 72605.28 | 65344.75 | 12513.24 | 77857.99 | 6913 | 11.26 |
| Hosp FP (W357) | 59581.72 | 53623.58 | 6735.98 | 60359.56 | 6245 | 9.67 |

Adjusted MPA Cost = (MPA Cost)$\times(\alpha)$, where $\alpha$ denotes percentage of time devoted to outpatient care.

Average Cost Per Visit = $\frac{\text{Adjusted MPA + OMA}}{\text{Patient Workload}}$

COST ANALYSIS FORMAT
3d & 4th Qtr FY 75

| APC (CLINIC) | MPA | ADJUSTED MPA | OMA | TOTAL COST | WORK-LOAD | AVG. COST PER VISIT |
|---|---|---|---|---|---|---|
| Allergy | 6263.84 | 3131.92 | 24905.63 | 28037.55 | 2594 | 10.81 |
| Cardiology | 35292.92 | 17646.46 | 11693.16 | 29339.62 | 2287 | 12.83 |
| Dermatology | 10936.06 | 10936.06 | 7905.57 | 18841.63 | 4791 | 3.93 |
| Int Med | 127882.92 | 63941.46 | 17126.74 | 81067.90 | 13248 | 6.12 |
| Neurology | 21559.12 | 10779.56 | 161.47 | 10941.03 | 781 | 14.01 |
| Occupational Therapy | 21183.36 | 21183.36 | 2378.07 | 23561.43 | 4535 | 5.20 |
| ENT | 87984.16 | 65965.62 | 18473.70 | 84439.32 | 8752 | 9.65 |
| Orthopedic | 83840.46 | 50304.28 | 20832.81 | 71137.09 | 10573 | 6.73 |
| Podiatry | 16494.72 | 16494.72 | 2225.51 | 18720.23 | 3929 | 4.76 |
| Physical Therapy | 44659.12 | 44659.12 | 13461.03 | 58120.15 | 11955 | 4.86 |
| Gen Surgery | 56429.56 | 28214.78 | 10490.51 | 38705.29 | 3516 | 11.01 |
| Urology | 34098.24 | 17049.12 | 27237.08 | 44286.20 | 3837 | 11.54 |
| Social Work | 24523.40 | 24523.40 | 50786.00 | 75309.40 | 1571 | 47.94 |
| OB-GYN | 82225.88 | 41112.94 | 45635.06 | 86748.00 | 14101 | 6.15 |
| Ped Spec | 98586.40 | 73939.80 | 34632.08 | 108571.88 | 16722 | 6.49 |
| Nuc Med | 21812.78 | 21812.78 | 32641.68 | 43454.46 | 1335 | 32.55 |
| Med Exam | 25811.72 | 25811.72 | 36869.61 | 62681.33 | 12047 | 5.20 |
| AMIC | 76129.90 | 76129.90 | 102247.22 | 178377.12 | 24722 | 7.22 |
| Emg Med Svc | 230894.94 | 230894.94 | 130714.89 | 361609.83 | 17523 | 20.64 |
| No. Fam Prac | 97266.18 | 87539.56 | 24024.40 | 111563.96 | 7441 | 14.99 |
| Hosp Fam Prac | 75945.32 | 68350.79 | 12978.47 | 81329.26 | 8359 | 9.73 |

Adjusted MPA Cost = (MPA Cost)$\times(\alpha)$, where $\alpha$ denotes percentage of time devoted to outpatient care.

Average Cost Per Visit = $\frac{\text{Adjusted MPA + OMA}}{\text{Patient Workload}}$

**COST ANALYSIS FORMAT**
**1st and 2nd Qtr FY 76**

| APC (CLINIC) | MPA | ADJUSTED MPA | OMA | TOTAL COST | WORK-LOAD | AVG. COST PER VISIT |
|---|---|---|---|---|---|---|
| Allergy | 5090.58 | 2545.29 | 28866.75 | 31412.04 | 2552 | 12.31 |
| Cardiology | 26577.54 | 13288.77 | 16852.05 | 30140.82 | 5314 | 5.67 |
| Dermatology | 28029.54 | 28029.54 | 9804.27 | 37838.81 | 5660 | 6.68 |
| Int Med | 122000.78 | 61000.39 | 20766.29 | 81766.68 | 12110 | 6.75 |
| Neurology | 16870.26 | 8435.13 | 423.33 | 8858.46 | 679 | 13.05 |
| Occ Therapy | 24074.60 | 24074.60 | 398.44 | 24473.04 | 4623 | 5.29 |
| ENT | 95858.84 | 71894.13 | 13500.83 | 85394.96 | 7388 | 11.56 |
| Orthopedic | 69913.14 | 41947.88 | 32645.20 | 74593.08 | 10532 | 7.08 |
| Podiatry | 17016.12 | 17016.12 | 2029.29 | 19045.41 | 3873 | 4.92 |
| PT | 55956.78 | 55956.78 | 16990.05 | 72947.75 | 14718 | 4.96 |
| Gen Surg | 40521.36 | 20260.68 | 12764.81 | 33025.49 | 3569 | 9.25 |
| Urology | 43552.08 | 21776.04 | 34943.62 | 56719.66 | 4540 | 12.49 |
| Social Work | 78830.84 | 78830.84 | 34621.02 | 113451.86 | 4025 | 28.19 |
| OB-GYN | 86254.30 | 43127.15 | 50448.10 | 93575.25 | 19149 | 4.89 |
| Ped Spec | 82332.58 | 61749.44 | 25729.06 | 87478.50 | 15117 | 5.79 |
| Nuc Med | 25040.18 | 25040.18 | 28311.81 | 53351.99 | 1247 | 42.78 |
| Med Exam | 22361.80 | 22361.80 | 43506.78 | 65848.58 | 5394 | 12.21 |
| AMIC | 80442.78 | 80442.78 | 93999.70 | 174442.48 | 21972 | 7.94 |
| Emg Med Svc | 107166.40 | 107166.40 | 85172.42 | 192338.82 | 18965 | 10.14 |
| No Fam Prac | 82163.18 | 73946.84 | 31622.65 | 105569.49 | 8817 | 11.97 |
| Hosp Fam Prac | 53477.82 | 48130.04 | 10808.15 | 58938.19 | 10842 | 5.44 |



Adjusted MPA Cost = (MPA Cost)$\times(\alpha)$, where $\alpha$ denotes percentage of time devoted to outpatient care.

Average Cost Per Visit = $\frac{\text{Adjusted MPA + OMA}}{\text{Patient Workload}}$

## LIST OF ABBREVIATIONS, ACRONYMS, AND SYMBOLS

| | |
|---|---|
| AMIC | Acute Minor Illness Clinic |
| AVG | Average |
| BE | Barium Enema |
| CBC | Complete blood count |
| CHAMPUS | Civilian Health and Medical Program for the Uniformed Services |
| DHEW | Department of Health, Education, and Welfare |
| DIFF | Differential (blood count) |
| DOD | Department of Defense |
| DPT | Diphtheria, Pertusis, and Tetanus |
| DT | Diphtheria and Tetanus |
| EKG | Electrocardiogram |
| ENT | Ear, Nose, and Throat |
| ETR | Emergency Treatment Room |
| EXAM | Examination |
| FAM PR HOSP | Hospital Family Practice Clinic |
| FAM PR NORTH | North Fort Ord Family Practice Clinic |
| FLU | Influenza |
| FPC | Family Practica Clinic |
| FPH | Family Practice Hospital (i.e., Hospital Family Practice Clinic) |
| FPN | Family Practice North (i.e., North Fort Ord Family Practice Clinic) |
| FSHTX | Fort Sam Houston, Texas |
| GI | Gastrointestinal |
| GMC | General Medical Clinic |
| GP | General Practitioner |
| HCSD | Health Care Studies Division |
| Hospital Clinic | Hospital Family Practice Clinic |
| HSC | Health Services Command |
| HX | History (medical) |
| IMC | Internal Medicine Clinic |
| INT MD | Internal Medicine |
| INT MEDCN | Internal Medicine |
| IVP | Intravenous Pyelogram |
| Lab | Laboratory |
| LAT | Lateral |
| LS | Lumbosacral |
| MEDDAC | Medical Activity |
| MHCS | Military Health Care Study |
| MMR | Mumps, Measles, & Rubella |
| MOS | Military Occupation Specialty |
| MPA | Military Pay, Army |
| MPH | Master of Public Health |

| | |
|---|---|
| NCOIC | Noncommissioned Officer in Charge |
| North Clinic | North Fort Ord Family Practice Clinic |
| OB/GYN | Obstetrics and Gynecology |
| OCHAMPUS | Office of Civilian Health and Medical Program for Uniformed Service |
| OMA | Operations and Maintenance, Army |
| OMB | Office of Management and Budget |
| OPV | Oral Polio Vaccine |
| OTSG | Office of The Surgeon General |
| PA | Physician Assistant |
| PA | Posteroanterior (in radiology) |
| PE | Physical Examination |
| PEDS | Pediatrics |
| PREV | Preventive |
| PR | Provider (used for medical provider other than MD -- such as nurse clinician, Physician Assistant) |
| RPR | Reiter Protein Reaction |
| RX | Prescription |
| SMA-12 | Trade name for auto analyzer used in medical lab |
| SPSS | Statistical Program for the Social Sciences |
| SSN | Social Security Number |
| $\Sigma$ | Summation Sign |
| T.TOX | Tetanus Toxoid |

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