AN IN-BARRACKS MEDICAL SCREENING PROGRAM AT THE RECRUIT TRAINING COMMAND, NAVAL TRAINING CENTER, ORLANDO, FLORIDA

A Problem Solving Project

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By

Lieutenant John R. Heltsley, MSC, USN

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The typical military system of morning sick call is employed to provide outpatient medical care to active duty servicemembers, allowing those who are ill the opportunity to be medically evaluated and treated prior to the normal duty day. A major problem with this system involves the queuing of patients and resultant lost duty/training time. This study implements a trial in-barracks medical screening program intent upon alleviating queuing problems at a Branch Clinic subordinate to the Naval Regional Medical Center, Orlando, Florida. Results show that recruits in this test group were returned to duty in one sixth the time when compared to the present system, that pharmaceutical costs were reduced by two thirds, that total visits to sick call were reduced by 20%, and that 85% of the recruits were returned to duty without requiring the services of a physician or physician's assistant. Fewer patients needing to be seen at the Branch Clinic as a result of in-barracks pre-screening provided for significantly reduced waiting times at that facility. (Keywords:

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CHAPTER I

INTRODUCTION

Background

The "real value" of the resources of the Department of Defense health care delivery system has, in recent years, been under constant resource constraints and has been shrinking. Concomitantly, both the beneficiary population and the services provided have continued to escalate. In order to follow the criteria of "doing more with less," each individual provider of health care must be concerned with the development of the most effective and efficient means of delivering that care to all eligible beneficiaries.

The typical system that the military employs to provide outpatient medical care to the active duty population is through utilization of the morning sick call. This system, designed around the early morning clinical visit, allows the military member, who is ill, the opportunity to be medically evaluated and treated prior to beginning his normal duty day. The impetus for the continued use of this treatment modality has been the expedient evaluation of an individual's illness, the appropriate treatment of that illness, and the expeditious return of the individual to a full duty status.[1]

At the Naval Regional Medical Center, Orlando, Florida, the active duty patient is provided outpatient medical care at the Branch Clinic, Naval Training Center, Orlando, Florida. The relationship between the Branch Clinic and the rest of the regional medical center appears as Appendix A.

The Branch Clinic has been specifically tasked with providing and coordinating all of the services that are relative to the examination, diagnosis, care, treatment, and appropriate disposition of recruit patients, and to provide complete outpatient services, including physical examinations, to all of the active duty personnel assigned to the Naval Training Center, Orlando, Florida and to all of its component commands.[2] The organization of the Branch Clinic is depicted in Appendix B.

Administrative Branch, NRMC Branch Clinic

The Administrative Branch has the responsibility for administering the nonclinical functions associated with the day-to-day management of the clinic. In general, the Administrative Branch is divided into the three sections shown in Figure 1.

FIGURE 1

Administrative Branch

1. Health Records Section
2. Medical Boards/Clinical Records Section
3. Administrative/Supply Section

Clinical Branch, NRMC, Branch Clinic

The Clinical Branch is responsible for providing quality outpatient medical care to all active duty military personnel assigned to commands located and/or attached to the Naval Training Center. All of the sections of this branch have been authorized to consult directly with the various specialty clinics located at the regional medical center. This branch is divided into the eleven sections shown in Figure 2.

FIGURE 2

Clinical Branch

1. Physical Exam Section
2. Optometry and Spectacle Fabrication Section
3. Podiatry Section
4. Immunization Section
5. Male Recruit Sick Call Section
6. Other Male Active Duty Sick Call Section
7. Female Active Duty Sick Call (Including Female Recruits) Section

8. Physiotherapy Section
9. Pharmacy Section
10. Radiology Section
11. Laboratory Section

In general, research has shown that the multitude of all active duty patients seeking outpatient medical treatment arrive at the NRMC Branch Clinic during the first hour of the duty day. This local observation has been substantiated through studies in other services.[3] When the medical treatment facility is inundated by this massing of patients an intensive queuing problem is created, especially in light of the fact that the health care provider is attempting to deliver expeditious, high quality health care in a timely fashion.

Considering all of the problems that are, or can be, associated with providing health care under the constraints inherent to this particular type of health delivery system, the one that appears to have the major impact on the mission of the military is the loss of time through queuing. Initial studies indicate that there appear to be three feasible solutions that would either alleviate the problem at the Branch Clinic, or at least allow a significant reduction in the problem: (1) to decrease the

number of patients that present to the Branch Clinic at any given time; (2) to devise a specific methodology to evaluate, treat, and schedule the patients throughout the normal working day; or, (3) to institute a combination of these two possible solutions.

In any attempt to reduce or control the workload of a specific population, the researcher must decide what comprises that workload. In this instance the Branch Clinic's Medical Services and Outpatient Morbidity Reports were screened in an attempt to select the major user of health services at the clinic.

These reports suggested that the principle user of health services at the Branch Clinic was the Recruit Training Command, Naval Training Center, Orlando, Florida.

Recruit Training Command

It is the primary mission of the Recruit Training Command (RTC), Naval Training Center, Orlando, Florida to conduct an extremely intensive, eight week training program, tailored to effect each individual recruit's smooth transition from civilian to Navy life. In order to accomplish this mission each recruit's program is controlled by an RTC master training schedule which is so rigid that any recruit who is separated from his training

unit for more than two scheduled training days, is re-assigned to another training unit.[4]

Under the present system of providing outpatient medical care to the Recruit Training Command, an inordinate amount of training hours are being lost through the queuing problems that are associated with sick call procedures at the Branch Clinic.

It is the purpose of this problem solving project, through the implementation of a medical screening program and an eight week trial period, to alleviate the present system's queuing problems associated with the provision of outpatient medical treatment to the Orlando recruit population.

Footnotes

[1]LTC Barry W. Wolcott, MC, USA, and 1st LT Robert E. Stieneker, MSC, USA, "The Use of In-Barracks Screeners to Improve Military Sick Call," Military Medicine, (February, 1979), p.99.

[2]_____. Naval Regional Medical Center, Orlando, Florida, Organizational Manual. NRMC Orlando Instruction 5450.1. (December, 1975), p.56.

[3]Wolcott, "The Use of In-Barracks Screeners to Improve Military Sick Call," pp.99-100.

[4]_____. Company Commander Guide. Recruit Training Command, Naval Training Center, Orlando, Florida, NAVCRUITRACOMORLINST 5400.1 (April, 1978), pp.1-2.

CHAPTER II

STUDY OBJECTIVES

Problem Statement

The problem is to determine whether there is a valid need for an in-barracks medical screening program for the Recruit Training Command. The problem parameters involve three major areas within the proposed structure: quality of care rendered; provider and patient productivity; and provider utilization.

The first parameter, that of the quality of care provided, involves several elements within the present system of active duty, outpatient medical treatment. Presently there appears to be inordinate time lost between the patient's initial contact with the health care delivery system, with his subsequent evaluation and treatment, and with his return to a training status. It is during this time interval of approximately one to three hours that the recruit is in a non-productive status.

The second parameter, that of patient and provider productivity, there appear two facets that seem to be inherent in the problem. First, compromised provider productivity occurs when a specific time space, i.e.,

appointment, is not available for a definitive number of patient visits. An unpredictable influx of patients automatically overloads the system during the morning sick call hours. Secondly, the assignment of a sufficient number of providers to accommodate the peak load of patients is impractical. The patient's productivity is affected when the individual recruit is removed from his intensive training schedule for a time consuming visit to the medical treatment facility.

The third parameter, that of provider utilization, closely parallels that of provider productivity. The concern that must be addressed here is whether or not a lower-level of treatment/medical care rendered could have been utilized at this particular stage of the patients illness or injury. It is through this type of protocol that would allow the in-barracks medical screener to evaluate whom the patient needs to see, and when he needs to be seen.

Research Methodology

The following methods for problem resolution are proposed for this study; (1) direct site analysis, (2) modeling and flow charting, (3) direct and indirect

research, (4) recurring data analysis, and (5) cost-benefit analysis.

The direct site analysis will involve examining the existing system as well as the prospective system. This examination will include, but not be limited to, on-site visits, examination of the cybernetic systems involved, and methodological investigation of structural parameters. Modeling and flow charting will occur throughout the project, and in general, will be used in a conceptual sense to describe and manipulate the real-life systems that are being studied.

Direct and indirect research, including historical research on the existing system, will be integrated with recurring data analysis in an attempt to produce information that will best achieve the objectives of the study. Finally, cost-benefit analysis will be employed to consider the interactions of the alternatives with both the expected controllables and uncontrollables and to explore those interactions in both subjective and objective terminology. This information will then be matched against evaluation criteria for comparison data.

Study Outline

The hypothesis of this research effort is that the establishment of an in-barracks medical screening program will significantly reduce the problems associated with the present system of active duty outpatient medical treatment.

The objectives of this study are:

1. To identify the number of recruit training units that can be effectively managed by the model corpsman team.

2. To identify billets and positions that will be necessary to adequately staff an in-barracks medical screening program.

3. To decrease the number of recruits that present, often inappropriately, to the Branch Clinic for sick call.

4. To reduce recruit sick call non-productive time, thereby increasing actual training time.

5. To increase the productivity of the Branch Clinic physicians and physician extenders by more effectively utilizing their levels of expertise.

6. To establish an appointment system for routine non-emergency, outpatient medical care.

7. To establish a cost-benefit comparison between the present and the proposed systems.

Criteria

In the selection of the initial recommended standard for this research effort, the criteria was based, in part, on test data established by Lieutenant Colonel Barry Wolcott, MC, USA and First Lieutenant Robert Stieneker, MSC, USA in their in-barrack screening study. The data was also compared to the results obtained from recruit training companies that did not utilize the in-barracks medical screening program, i.e., control divisions. Once the in-barracks pilot screening program was completed, its data base was then used to quantify the results gathered from other recruit companies and divisions, as well as against other studies.

Limitations

During the research preparatory to this study, the establishment of guidelines, the conduct of analysis, and the development of criteria, there were two significant limitations which governed all of the aspects of this study. The first limitation was the number of properly trained para-medical personnel to adequately cover a

complete in-barracks medical screening project throughout the entire Recruit Training Command. This researcher felt that properly trained clinical assistants (CA's) were adequate to provide the desired services; however, due to the human resource constraints of the current Command manpower authorizations there were not enough CA's to adequately triage all recruit personnel. The constant turnover of para-medical personnel at the regional medical center also provided some continuity problems during the pilot study.

The second limitation was the command's projected budget constraints. The amount of funds required to initiate this research effort were considerable; however, over the long term this program should actually reduce the command's budget (for the Branch Clinic).

Assumptions

The following assumptions were inherent to the study's approach, and provided the basis for the philosophy used in developing the conclusions of this study.

1. That the random choice of recruit companies and divisions is a valid sample of all recruit companies and divisions at the Recruit Training Command, Naval Training

Center, Orlando, Florida.

2. That comparing the Navy's Clinical Assistant Program to the Army's Amosist's Program is valid.

3. That the expected workload will approximate the normal workload encountered in an individual's eight weeks in recruit training.

4. That the control recruit population will approximate the test recruit population, both in average strength and in average number of sick call visits.

CHAPTER III

THE PILOT PROJECT

In order to be able to test the proposed hypothesis it was necessary to first devise the guidelines and parameters of the pilot project itself, for it was this project that would enable the researcher to take the findings of the study and apply them to the research methodologies, and thus investigate the details of the hypothesis. This chapter will describe both the universe and the environment in which the pilot project took place as well as the basis of the project itself.

The Universe

The universe of this study includes the entire Recruit Training Command, Orlando, Florida. RTC is composed of a maximum of ten training divisions, with each division being housed in separate barracks. Each training division is comprised of as many as 12 training companies with approximately 80 recruits assigned. On 1 January 1980, there were five active divisions of ten companies each at RTC, Orlando. These divisions are presented as Table 1.

TABLE 1

UNIVERSE OF RTC

Division 4	Male Recruits (10 companies)
Division 5	Male Recruits (10 companies)
Division 7	Female Recruits (12 companies)
Division 8	Male Recruits (10 companies)
Division 9	Female Recruits (12 companies)

The Environment

The Recruit Training Command staff is composed of 34 officers and 508 enlisted men and women.[1] The staff administers a training program which provides each recruit with a curriculum established by the Chief of Naval Technical Training which is augmented by RTC, Orlando orders, regulations and instructions. The educational curriculum is rounded out with military drills, inspections, physical training, damage control/firefighting, small arms familiarization and basic naval orientation subjects.

The pilot project research data indicates that during any given week somewhere between 20 and 30 percent of an entire division is seen in the sick call environment (Chapter IV, Table 4). These figures represent only the sick call workload of a division. In addition, this study

must be examined from the prospective of including the other ancillary services that are provided through the Branch Clinic.

Figure 3 represents selected data gathered from calendar years 1977 and 1978. This data shows that in 1977, 30,922 recruits completed the training program with a male to female ratio of graduates of 85 percent.

FIGURE 3

SELECTED RECRUIT STATISTICS

CY 1977

	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Totals
Total Recruits Graduated	8130	6517	7823	8452	30,922
Male Recruits Graduated	7413	5118	6553	7216	26,300
Female Recruits Graduated	717	1399	1270	1236	4,622
Percentage Male to Female					85.1%

SOURCE: Recruit Training Command, NTC, Orlando, Florida

Figure 4 indicates that during calendar year 1978 the total graduate population dropped to 25,548; however, the distribution by sex had changed to approximately 76 percent male.

FIGURE 4

SELECTED RECRUIT STATISTICS

CY 1978

	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Totals
Total Recruits Graduated	6765	5251	6881	6551	25,548
Male Recruits Graduated	5202	3925	5460	4927	19,574
Female Recruits Graduated	1563	1326	1421	1724	6,034
Percentage Male to Female					76.4%

SOURCE: Recruit Training Command, NTC, Orlando, Florida

Figure 5 illustrates the Recruit Training Command attrition statistics for both calendar years 1977 and 1978. During this two year period 6,866 recruits were discharged from the naval service for a variety of reasons. Of that number, the Branch Clinic completed 1,353 full or limited medical boards. These figures do not include the approximately 47 females that were discharged for pregnancy. Although the complete data for calendar year 1979 is not yet available, initial informal survey suggests that 826 medical boards were written, representing an increase of 8.6 percent in medical

discharges over CY 1978.

FIGURE 5

SELECTED RECRUIT ATTRITION STATISTICS

CY 1977

Male/Female	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Totals
Unsuitable	497/95	475/115	576/72	465/66	2015/348
Medical	168/18	92/13	116/14	146/26	572/71
Misconduct	81/2	55/2	39/1	39/2	214/7
Other	58/11	51/16	75/14	67/14	251/55[a]
					3052/481

CY 1978

Unsuitable	432/111	359/93	546/108	348/129	1685/441
Medical	102/26	121/46	168/53	150/44	541/169
Misconduct	38/1	37/2	47/0	26/2	148/5
Other	59/16	43/29	54/33	62/48	218/126[b]
					2592/741

SOURCE: Recruit Training Command, NTC, Orlando, Florida

[a]Includes pregnancy discharges in CY 1977
[b]Includes pregnancy discharges in CY 1978

Approximately 40 to 50 percent of all the individuals that report to the Branch Clinic, for the myriad of health related services it provides, belong to RTC. It

therefore seems reasonable that we should look towards improving our system of providing those health services to this specific group of consumers. This process of providing health services, as presented in this research paper, will examine the delivery of ambulatory outpatient health care from within the recruits divisional spaces.

In-Barrack Medical Screening: An Overview

Although Chapter II referred to the five general research methodologies that will be utilized throughout this research effort, this section will give the reader an overview of the specific research instrument that was used to collect the data essential to this study. This specific instrument had to be capable of measuring the impact of the sick call statistics on the Branch Clinic as well as on the Recruit Training Command. It was also essential to gather data that would be pertinent to all the phases of an individual's productivity, i.e., satisfaction, dissatisfaction, motivation, assignment, queuing times, and the perception of the quality of care. The instrument that was utilized to gather both recruit and Branch Clinic data was the pilot in-barracks medical screening project.

As was shown in Table 1, during the test phase there were five recruit divisions in the training cycle. Of these, two were female divisions and, because of a lack of female health care providers, not considered for the pilot project. Two male divisions were then randomly selected; Division 8 as the test division and Division 5 as the control division.

The basic outfitting of the Division 8 sick call area can be seen as Appendix C, and its actual organization as Appendix D. Division 8 was staffed with two locally trained Clinical Assistants and one independent duty qualified hospital corpsman. Each of these divisions were tested for an eight week period that began on 21 January 1980. The purpose for an eight week test was to ensure that at least one company, in each division, began and ended its complete training cycle during the observation period.

The data collection phase of the in-barracks screening program terminated on 14 March 1980, which marked the beginning of the next phase, that of data analysis.

Footnotes

[1]Captain L. R. Kuhn, USN, Commanding Officer, RTC, Orlando, in a lecture to the staff of the Naval Regional Medical Center, Orlando on January 28, 1980.

CHAPTER IV

DATA ANALYSIS

The Test Itself

It has been said by those who indulge in medical research that Nature often appears to lay traps to prevent researchers from approaching the truth. Because we know that man's prejudices and desires, as well as his ignorance will interfere with his research effort, each investigator should invent a scheme through which he can objectively analyze his data and control those areas which tend to skew his project data.[1] Indeed, throughout this research effort, but especially in this chapter, this researcher has attempted to avert Nature's pitfalls and apply the data in an unprejudiced and systematic manner.

The stated objective of this research effort was to significantly reduce the problems associated with the present system of active duty outpatient medical treatment, specifically for the Recruit Training Command. Accordingly, the data analysis begins with a description of the participating population that is shown as Table 2, Selected Statistics of the NRMC Branch Clinic between October 1978 and October 1979. Table 3 shows the numbers of personnel, both military and civilian, assigned

TABLE 2

NRMC BRANCH CLINIC
SELECTED WORKLOAD DATA - OCT 78/OCT 79

	1978 OCT	NOV	DEC	1979 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1. Visits:													
Outpatient	12910	11386	9928	11319	10227	11149	10206	12975	14058	17180	17576	14258	15234
Inpatient	57	54	44	13	29	27	22	69	25	0	35	28	19
2. Laboratory Tests	29938	22236	16497	19614	18763	18211	22451	22589	25836	27316	35401	35088	29737
3. Pharmacy Units	14577	13641	13895	15885	12194	12267	12835	14040	12349	15512	16288	14844	18777
4. X-Ray Exposures	2223	2186	1725	2289	1888	1989	1887	2038	1823	2038	1694	1717	2169
5. Ophthalmology Visits	1019	990	991	1114	1139	1218	1190	1137	1441	1304	1073	657	739
6. Flight Physicals	156	108	88	108	148	198	122	95	123	75	109	102	131
7. Other Complete Physicals	666	457	593	637	905	566	460	457	983	1351	1336	1113	1574
8. Immunizations	29466	29006	33448	26836	24006	25290	26470	13751	18574	24861	32100	32135	39267
9. Limited Svc	8898	7992	8991	8183	7656	7324	8000	3269	2667	8048	7082	7252	7514

SOURCE: Naval Regional Medical Center, Branch Clinic, Medical Services and Outpatient Morbidity Reports

to the Branch Clinic as of 1 January 1980.

The data provided by these two tables would seem to indicate that the Branch Clinic is providing a large amount of medical and health care services, on a continuing basis, with a minimum number of assigned personnel.

The problem, as stated, was to determine whether there was a valid need for an in-barracks medical screening program for the Recruit Training Command. In order to make this determination the eight week pilot project was begun at RTC. The universe and the environment of the project was presented in Chapter III, and the results of the study appear as Table 4, Eight Week Test Data.

There are a number of areas in Table 4 that need further explanation. The most obvious of these is the positive correlation of the non-productive time of each individual recruit. Through utilization of the in-barracks screening program the average non-productive time is 14.78 minutes versus 95.83 minutes of non-productive time at the Branch Clinic. This figure is even more significant in that it does not include the approximate 30 minutes required to walk between division spaces and the dispensary. In contrast,

TABLE 3

NRMC BRANCH CLINIC
PERSONNEL ASSIGNMENTS (JAN-80)

Officers:

	O6	O5	O4	O3	O2	O1	WO	Total
Medical Corps	2	1	3	1	0	0	0	7
Med Serv Corps	0	0	0	1	0	0	0	1
Nurse Corps	0	1	0	0	3	0	0	4
Physicians Assistants	0	0	0	0	0	0	4	4
								16

Enlisted:

	E9	E8	E7	E6	E5	E4	E3	
Hospital Corpsmen	1	0	6	6	9	18	19	59

Civilians:

	GS13	GS6	GS4	GS3	
Physicians	1	0	0	0	1
Clerical	0	1	2	6	9
					10

Totals:

Officers:	16
Enlisted:	59
Civilian:	10
Total	85

TABLE 4

EIGHT WEEK TEST DATA

Test Group - Division 8

Week:	1	2	3	4	5	6	7	8	Totals
N (Population Seen)	164	173	249	259	202	166	216	249	1678
Test Data Used (Sample N)	155	165	230	207	176	138	185	202	1458
Mean Non-Effective Time (In Minutes)	26.2	15.1	13.2	13.1	16.3	11.4	11.8	11.2	14.78
Total Referrals	21	30	48	29	30	18	38	45	259
Percent Referrals	12.8	17.3	19.3	11.1	14.9	10.8	17.6	18.1	15.4
Pharmacy Cost, $ (Per Patient)	.345	.325	.44	.286	.264	.34	.371	.31	.335
Percent of the Total Population Seen/Week	28.5	26.7	24.8	26.6	20.6	17.0	22.5	25.7	24.1

Control Group - Division 5

N (Population Seen)	214	261	275	310	281	217	242	317	2117
Test Data Used (Sample N)	41	142	126	178	127	105	185	111	1015
Mean Non-Effective Time (In Minutes)	115.3	99.0	84.7	96.4	88.2	94.4	97.5	91.2	95.83
Pharmacy Cost, $ (Per Patient)	Average cost per patient was .9821								

A weekly breakdown of these figures appears as Appendix G.

a recruit in Division 8 could leave his work space in the division, go to the sick bay which is located in the center core of the division, and return to his work space within a five minute period. Although individual productivity will be addressed later in this chapter, it is significant to note that the recruit company commanders in the test division feel that both their and their recruits' productivity is increased through less training time lost for sick call visits. Also, less time required for repeating lessons means time saved for other training.

During the conception phase of the in-barracks medical screening program it was considered that an acceptable "screen out," or non-referral rate would be 50 percent, and that the program would be considered to be highly effective if the screening process approached the 70 percent level. Using the Wolcott study as a guideline, it was noted that their referral to clinic percentages or disposition rate averaged approximately 24 percent for over-the-counter medications only and 40 percent for treatment by an AMOSIST. This represents 64 percent screened out, an acceptable guideline for this study.

The Division 8 test statistics (Table 4) reveal that the amount of referrals to the Branch Clinic varied from

a weekly high of 19.3 percent (Week 3), to a low of 10.8 percent (Week 6). The eight week average for the study was 15.4 percent. In other words, 85 out of every 100 recruits who were seen in the in-barracks medical screening program were evaluated, treated and returned to duty within 15 minutes; only 15 out of every 100 recruits required referral to the Branch Clinic.

The total percentage of the population seen during the test phase varied from a high of 28.5 percent (Week 1), to a low of 17.0 percent (Week 6), and averaged 24.1 percent for the entire test period. It would appear that if the screening program were to be expanded to the entire Recruit Training Command that approximately 25 percent of the total population could be expected to be seen in the sick call environment in any given week, and 15 percent of that 25 percent (3-3/4 percent of the total population) would need to be referred to the Branch Clinic or core hospital for further evaluation and/or treatment.

If we were to estimate a recruit loading population of 5000 personnel, which is an approximation of the year round loading average for RTC, then we could expect

approximately 1250 recruits to be screened in the in-barracks program in any given week, and of those screened, 188 referred to the Branch Clinic. Further analysis indicates that the clinic could expect a daily workload of between 37 and 40 recruits. By utilizing this formula, and with the knowledge that the recruit patient presenting at the clinic had already been screened by qualified para-medical personnel, the daily volume of sick call could then be treated by a single physician and physician extender. Further, it is anticipated that the small number of recruits reporting for daily sick call could be readily assimilated into the active duty sick call schedule.

The variance between the total number of recruits seen for sick call in the test division (1678) and in the control division (2117) represents a difference of approximately 21 percent. Although it is difficult to elicit the possible reasons for this variance, experience would suggest that many individuals know how to manipulate the system in an attempt to avoid unpleasant tasks. This type of behavior often is manifested by trips to the available sick call treatment facility. With an

average non-productive time of approximately 96 minutes at the Branch Clinic this researcher feels that many of those 21 percent were recruits who discovered how to manipulate the present health care delivery system to their advantage. In contrast, once their communications revealed that sick call at the barracks sick bay took only 15 minutes and that the individual company commanders were authorized to schedule their sick call time in consonance with their training schedule, fewer visits to the screening program were made. The secondary gain by the recruit population was thereby eliminated.

Productivity

The second parameter of this research effort involved the evaluation of both the patients' and the providers' productivity. One of many ways used to describe management is in terms of three of its basic functions; planning, organizing, and controlling. Because management is a continuous ongoing process, adequate attention to both those basic functions over a period of time will ultimately determine productivity.

Productivity, as defined by Henry L. Sisk, "...is expressed as the relationship between total output,

measured in respect to dollar volume or units produced, and units of input."[2] For a health care facility, this research effort will measure productivity in terms of output per health care provider and recruit man-hours invested.

Some of the factors that affect an individual's productivity are leadership, stature and significance, utility, compensation, incentives, tenure, duties, responsibilities, competition, authority, decentralization of budgeting for time and people, and perfection.

In researching these factors, the most important one in attaining efficiency of personnel, is leadership. The real leader is a person who achieves his objectives through the proper utilization of personal example, with his followers thereby attempting to emulate that example. One of the more impressive features of good leadership is that even when he is not actively watching, the employees will continue to perform well on the job.[3]

If an investigator were to research all of the individual factors that contribute to productivity, he would find that collectively they add up to a reciprocal factor called morale. In other words, there is some

type of formula that, although it varies with time, place, and a myriad of other circumstances, shows a cylic relationship between morale and productivity. This research effort uncovered a "reasonable expectation" that the productive utilization of resources, leadership, social determinates of group expectations, the measurement of group standards to those of management, authority, and responsibility were all important factors in dealing with the productivity of the health care providers in the Branch Clinic. In essence, these were all factors that were important to the individuals and factors that could be affected by the senior officers within the command.

Because there appeared to be this inherent tie between productivity and morale, especially in the lower rated individuals in the clinic, some of the factors that contribute to high or increased morale should be explored. Frederick Herzberg felt that there were two basic factors that contributed to morale, and he called these "Hygiene Factors and Motivators." He suggested that the hygiene factors were those that were extrinsic to the employee's job, factors such as company policy, supervision, working conditions, salary, interpersonal

relationships, status, and security. Further, he felt that these factors did not motivate employees, they just keep them from becoming dissatisfied. He further suggested that motivators were factors that were intrinsic to the employee's job, and were factors such as recognition, achievement, the work itself, responsibility, advancement, and growth. Herzberg said that these factors contributed positively towards the employee having job satisfaction. He also postulated that even though one does not receive job satisfaction from the extrinsic factors, that through the proper utilization of these factors management can effectively keep the employee from becoming dissatisfied. When management further provides the employee with the intrinsic factors, or motivators, then they are giving him job satisfaction, and the results should be an increase in the individual employee's productivity.[4]

After spending eight weeks working on the test project in Division 8 and the Branch Clinic, this researcher feels that there is a positive correlation between the morale and the productivity of the employees at the Branch Clinic, and that by utilizing the

in-barracks medical screening program both the morale and the productivity of the clinic personnel will improve.

In this case, the queuing problems that are inherent in the present system of early morning sick call have led to massive overcrowding and excessively long waiting times for the recruit population. This has led to a concomitant desire by the providers of the health services to push harder for quicker treatments to the patients, which has led to a reduction in the quality of care provided. It has also led to a generalized movement or "shift" of personnel to "put out the fires where they lay", thus giving an instability to personnel assignments in the clinic. All of these cyclic movements have taken away the provider's job satisfaction, status, security, achievement and recognition, and have effectively left him dissatisfied with his job and his position in the organization.

Through the use of an in-barracks medical screening program it is felt that the providers of the medical services will gain needed recognition, both by the patients they treat, their peers and their superiors. The sense

of achievement so gained, will produce enjoyment in the work itself and will enhance growth of professional responsibility towards independent status. This in turn will lead to regaining job satisfaction. Even with the limited test that was run in Division 8, there has been a noticeable improvement in the morale of providers, both in the division setting and in the clinic area, and as a consequent, improvement in the quality of medical care provided. As expected from the above there has been an apparent concomitant improvement in the productivity of the providers in the clinic setting.

It seems reasonable that a thorough review of the test statistics will reveal that the patients productivity has improved by utilizing the in-barracks medical screening program due to the dramatic decrease in the non-productive time of the recruit population in Division 8, when compared to the non-productive time of Division 5. These statistics would seem to suggest that 30,000 to 45,000 hours of training could be utilized more effectively were the Branch Clinic to utilize the screening program throughout RTC. This proposed savings of man hours is shown in Figure 6.

FIGURE 6

PROPOSED SAVING OF RECRUIT TRAINING HOURS

1.	Number of Recruits per Year, estimated	30,000
2.	Estimated number of visits to sick call, per recruit, per training cycle	2
3.	Estimated man-hours saved by utilizing in-barracks screening program	1 to 1-1/2
4.	Estimated savings in man-hours, per year	30-45,000/year

The figures that appear above are estimates that have been taken from data uncovered in this research effort. The 30,000 recruits per year was the approximate number graduated in CY 1977; the number of sick call visits was estimated by using the data from the eight week test (25 percent of the total number seen per week, times 4 weeks, times 2 for total training time, equals 2 visits per recruit) of the screening program. The estimated savings in man-hours is a conservative projection of screening time in the in-barracks program versus the present program at the Branch Clinic.

Pharmaceutical Costs

In Chapter I a reference was made to the "real value" of health resources. Likewise, it is recognized that the Department of Defense is continually under resource constraints. For the past two or three decades the entire health care delivery system in the United States has been on a spending spree. It was not until early 1977 that cost containment and the voluntary effort became highly visible, essential issues in health care management.

Because of the rise in health care costs, the Department of Defense is faced with one of the most challenging and difficult problems in its history - curbing the explosion of health care costs while continuing to provide high quality medical care.

The present era is one of significant fiscal limitations. Because pharmacy supplies constitute a significant portion of fiscal resources it was deemed appropriate to study the cost factors of the in-barracks screening program. The personnel assigned to the division sick bay utilized only the relatively inexpensive, over-the-counter (OTC) medications in their treatment modality.

In order to accurately isolate the costs of pharmaceuticals used in the Division 8 program, a strict accounting

of every prescription was kept. Each week, a report was prepared that showed the total dollar amount spent for pharmaceuticals that week. Further costs were analyzed on a per-patient figure based on the number of patients actually receiving prescriptions rather than total patients being evaluated. Appendix E is a compilation of the standard OTC medications dispensed at the division level. Figure 7 shows the total weekly pharmacy cost as well as the average weekly per-patient cost for the Division 8 test program.

FIGURE 7

WEEKLY PHARMACEUTICAL COSTS
DIVISION 8

	Test Week	Total Prescriptions Filled	Total Costs	Average Per-Prescription Cost
	1	165	$57.14	$0.345
	2	173	56.20	.325
	3	154	67.73	.440
	4	230	65.91	.286
	5	170	44.91	.264
	6	148	50.37	.340
	7	180	66.42	.370
	8	247	76.45	.310
Totals		1467		$0.335

1. Actual cost per patient:

   1678 patients seen
   1467 prescriptions filled
   .88 prescription/patient

2. Average patient cost is:

   .88 X .335 = $0.295

To enable the reader to compare the Division 8 pharmacy costs with those of the Branch Clinic, a two week concurrent pharmacy study was undertaken. The determination was made to attempt to keep the total N's of both studies as close as possible, therefore, the two week test in the clinic. During this study there were 1110 prescriptions filled at the clinic (compared to a total of 1467 in the screening program) for male recruits. A thorough evaluation of the techniques used to fill and record prescriptions was undertaken to ensure that only male recruit prescriptions were evaluated during this study in order to maintain reasonable similarity between the two data bases. One problem encountered in compiling this data was the inability to subtract the 15 percent of the Division 8 recruits who were referred to the Branch Clinic. This factor causes the pharmaceutical costs to be slightly skewed in the direction of higher costs to the clinic. It is, however, felt that with an N of more than 1000, this skewness should be extremely small.

At the end of the two week Branch Clinic study the 1110 prescriptions filled averaged out to a per-prescription cost of $0.9821, and a total cost of $1,082.43.

Appendix F is a breakdown of the medications prescribed by the Branch Clinic providers during the two week study period, their individual and total costs, and the total number of prescriptions filled for that specific medication.

Although this type of cost comparison is difficult to evaluate with a high degree of accuracy, it is felt that the significant cost difference suggested between Division 8 and the test population provide the impetus for a thorough cost analysis of the in-barrack screening program as well as the prescribing habits of the providers in the Branch Clinic. With the data available in this test it appears that 85 percent of the recruits in Division 8 are being treated for approximately one-third the cost accrued if their treatment were at the Branch Clinic.

One possible cost benefit analysis model that might be used to determine benefits of the pharmaceutical portion of the in-barracks medical screening program is described below:

The basic formula for cost-benefit analysis is TC=G, where the total cost of the program is defined as the benefit in dollars which would accrue to the hospital if

the in-barracks screening program were to be implemented throughout the entire Recruit Training Command (TC=DC+IC).

With the total implementation of the program you have NB = DC+IC-F, where the net benefit to the hospital (NB) is defined as the cost of the program (DC+IC) less the cost of the 15 percent of the recruits referred to the Branch Clinic (F). Table 5 shows the definitions for the symbols.

TABLE 5

DEFINITION OF SYMBOLS

DC = Direct Costs (Cost of pharmaceuticals)

IC = Indirect Costs (Packaging and distribution costs to the individual divisions)

TC = Total Costs

F = Control Factors (15% of patients seen at clinic vice at the division)

NB = Net Benefit to the Hospital

G = Gross Benefit to the Hospital

Communications

Within the twentieth century health care facility there is growing a constant pressure on the communications systems; not only are the providers pushing in a variety of directions, the factions outside the facility

are constantly encroahing upon the environment of the hospital. One of the numerous problems that is continually encountered is how each individual must work to make his messages stand out from the messages of others, and how that same individual goes about picking out the messages that he needs to know. This problem is even more meaningful in the military health care environment where the line and staff must interact on a continuing basis, and where this interaction contains the potential for conflict. Some of the forces that contribute to the potential line-staff conflict are: dual authority; mission differences; specialist versus generalists; and, the staff as an instrument of top management.[5]

The relationship that exists between the Branch Clinic (staff) and the Recruit Training Command (line) includes each of the four potential line-staff problems listed above. The measures that are normally recommended to alleviate these problems are: constructive interaction of conflicting points of view; working together; dual recognition for performance, be it good or bad; and support of projects by top management.[6]

Early in the design phase of the in-barracks medical

screening program, the commanding officers of both NRMC and RTC agreed that the proposed project would provide certain benefits to both organizations. This agreement by top management quickly permeated both the formal and informal communications structures of both organizations and provided this researcher with the necessary tools to effectively and efficiently establish the test proposals, organize the necessary personnel, and more importantly, to gain access to the resources necessary to implement this study. In effect, through the formal approval of this project by top management, the major line-staff communication problems were averted.

With the actual implementation of the program within the confines of RTC and Division 8, an immediate working relationship was established between the recruit company commanders and the screening hospital corpsmen. At this stage of the program these personnel were placed in the position of being forced into group interactions where conflict resolutions could effectively be worked out. The establishment of this working relationship provided the bridge to the last barrier of communications, that of working together, for the staff specialist had been

placed in the proper perspective to the line generalist, and as such created a cohesiveness towards the project.

Some other areas of improved communications that have been noted during this test project are: constructive interaction between the line and staff officers of the two organizations; a communicated understanding of each other's mission and function; an effective access to other programs and projects that fall within dual areas of responsibility; and more importantly, the opening of new and unlimited channels of communications between these two base organizations.

Health Records Maintenance

In the formal organization of the Branch Clinic the responsibility for health records maintenance is vested in the Administrative Branch (see Figure 1). This branch is presently staffed by five hospital corpsmen, two civil service (GS-3) file clerks, and at times, three CETA workers. These employees are responsible for both the recruit and active duty health records, including maintenance of those records to include recording sick call visits (transcription when necessary), and filing consultations, narrative summaries, laboratory and x-ray reports,

for collating recruit records into the correct order prior to transfer, and for incorporating dental records into all health records prior to the transfer of an individual. All health records in the Branch Clinic are maintained through the use of the terminal digit filing system.

In the design stage of the screening program one of the major concerns to many of the providers, who were being questioned in a consultative role, was how we proposed to incorporate the daily visits to the in-barracks medical screening program into the present system of health records maintenance. A variety of methodologies were discussed and reviewed, and the final determination was made that the hospital corpsmen in the test division would be responsible for the maintenance of their divisional health records.

This system was chosen over the other possible solutions for a variety of reasons, the foremost of which were:

1. The screening hospital corpsmen would be able to provide a higher quality of health care to their patients because they would have the necessary instant access to

the treatment records, thus they would know exact treatments that had been rendered to the patient(s) during his previous visits (i.e., continuity of care).

2. The advantage of immediate transcription of services provided, rather than transcription at some later date as is now the case in the Branch Clinic. This proposed system should practically eliminate the loss of records.

3. A higher quality of health record for the field activities should be the end result. The screeners were tasked with ensuring that each recruit health record was collated in the correct order prior to transfer.

4. It was suggested that through the move of health records into the division area the corpsmen would have a proprietary interest in maintaining a high quality health record.

During the eight week test project the routine was established for the maintenance of records in which any type of procedure that was completed on a Division 8 recruit at the Branch Clinic, the procedural chit would be returned to the division within a 24 hour period. A random inspection of 200 health records in the test division

revealed only eleven records with any type of error, or a 0.05 percent error rate. A concurrent inspection of 200 randomly chosen health records in the Branch Clinic revealed 55 errors or an error rate of 0.275 percent.

The overall impression of this research area is that the in-barracks medical screening program provides the field with a higher quality of health records than does the present system, and that the patient receives a higher quality of health care because of the instant access to and documentation of procedures by the Division 8 providers.

Holistic Health Care

In recent years there has been a trend to provide a side to patient care that goes beyond the traditional caring/curing of a patients physical complaints. The basis of this new trend, termed holistic health care, is the idea of treating the individuals psychological and spiritual needs as well as his physical needs.[7] In dealing with the typical Navy recruit, the health care provider is more likely to be working with an individual who is under the age of 20, who drinks and smokes, who eats too much food (volume) and too little food (nutrition),

and who is probably away from home for the first time in his life. In addition, he has probably led a sedentary life, he is in poor physical condition, and he has never had to take and/or react to military discipline. For these reasons, the medical screeners could provide a limited amount of holistic health care (TLC) within the recruit training situation.

Although individual hospital corpsmen are not trained to provide spiritual guidance to the individual recruit, a certain amount of sick call visits made by recruits are more for reassurance that they are not ill. It is only natural that the unaccustomed rigors of recruit training will bring on a certain amount of "aches and pains" that have not previously been experienced. It is this type of encounter between the provider and the patient that can be expected to yield some type of "fatherly" advice, and enhance the concept of the Navy caring for its own. Such interaction at the recruit level might well improve retention.

The other aspect to holistic health care falls under the general guidelines of patient education. Such educational encounters provide preventive education, realistic

expectations of medical care, self reliance and less dependence on the medical care system.[8]

The individual health provider, in educating the public, can provide reassurances that through the utilization of sound health practices each person has the ability to significantly control or reduce his future health problems. In essence, the individual, as a patient, must be given an active role in his own health care. Although each individual has the right to expect treatment, he also has the obligation to participate actively in his health status. This type of training can readily be provided by the in-barracks corpsmen. Such training is unavailable in the present clinic sick call situation.

Footnotes

[1]Donald Mainland. Elementary Medical Statistics. (W. B. Saunders Co., Philadelphia, Pa., 1964), p. 1.

[2]Henry L. Sisk. Management and Organizations. (Cincinnati, Ohio: South-Western Publishing Co., 1973), p.622.

[3]H. B. Maynard. Top Management Handbook. (New York: McGraw-Hill Book Co., 1960), p. 842.

[4]Frederick Herzberg, "One More Time : How Do You Motivate Employees?" Harvard Business Review. (January-February, 1968), pp. 53-62.

[5]Dale S. Beach. Personnel : The Management of People at Work. (New York : MacMillian Publishing Co., 1975), pp. 184-185.

[6]Ibid., pp. 185-186.

[7]Mark Perlberg, "There's More to Patient Care Than Medicine," Hospitals. (August 16, 1978), pp. 62-65.

[8]Linn Meyer, "Consumers Must Become Partners in Their Own Care," Hospitals. (April 1, 1977), pp. 79-82.

Summary

This study has been principally directed toward determining whether there is a valid need for an in-barracks medical screening program at the Recruit Training Command, Naval Training Center, Orlando, Florida. The stated hypothesis was, that through the establishment of an in-barracks screening program the problems associated with the present system of active duty, outpatient medical treatment would be significantly reduced. The problem parameters involved the quality of care rendered, provider and patient productivity, and provider utilization.

In order to test the hypothesis, the methodology was established, and both the universe and the environment were described. During this stage of the project, workload statistics were gathered in order to provide environmental background data in which to compare the results of the test project.

Chapter IV provided an analysis of the data itself. Here the statistics are revealed which will either support or reject the stated hypothesis. The research instrument and methodology provide an analysis of recruit non-productive time which shows that, on an eight week average,

recruits were returned to duty in about one-sixth the time when compared to the present system, that pharmaceutical costs were reduced by more than two-thirds, that total visits to sick call were reduced by 20 percent, and that approximately 85 percent of the recruits seen at the in-barracks screening program were returned to duty without requiring the services of either a physician or physicians assistant and without any medication other than over-the-counter preparations.

The productivity of both the patient and the provider appear to have been increased during the test, and the job satisfaction and morale at the Branch Clinic were improved. It appears feasible that this program could save as many as 45,000 recruit man-hours annually. Other areas of positive correlation include improved communications between the Recruit Training Command and the Branch Clinic and between the recruit company commanders and the health care providers; improved utilization and maintenance of health records; and the ability of the providers to enhance the health status of the individual recruits through utilization of holistic health care.

CHAPTER V

CONCLUSIONS/RECOMMENDATIONS

Conclusions

It is concluded from this research effort that the in-barracks medical screening program tested at the Recruit Training Command can significantly reduce the problems that are associated with the present system of active duty, outpatient medical treatment.

Based upon this research effort it seems evident that a reduction in the recruit non-productive time can be accomplished, and that this reduction in recruit non-productive time will concomitantly reduce the queuing problems at the Branch Clinic. If this program were to be instituted throughout the entire Recruit Training Command it would appear entirely feasible to staff the program through the assignment of two clinical assistants and one independent duty qualified hospital corpsman for each two recruit training divisions. This staffing pattern would require a maximum of 18 clinical assistants and 4 to 5 independent duty hospital corpsmen if the entire nine training divisions at the Recruit Training Command were activated. The personnel requirements could be met with 10 clinical assistants and five independent duty hospital

corpsmen.

Utilization of the medical screening program would also allow at least seven positions now used for health records maintenance to be reassigned within the Branch Clinic or within the core hospital. These billets might also provide for a reduction in the civilian staffing. This proposed reorganization of health care related billets should also allow two enlisted female billets to be utilized elsewhere in the medical region. It would seem reasonable that the utilization of the in-barracks medical screening program at the Recruit Training Command would allow the maximum utilization of scarce resources at both commands.

Recommendations

It is recommended that:

1. The in-barracks medical screening program be instituted throughout the entire Recruit Training Command.

2. The Commanding Officer, Naval Regional Medical Center, Orlando institute a continuing training program for clinical assistants that will meet the necessary personnel staffing levels to maintain the in-barracks screening program.

3. The Commanding Officer, Naval Regional Medical Center, Orlando submit a request to the Chief, Bureau of Medicine and Surgery for the reallocation or reassignment of enough independent duty hospital corpsmen billets to allow for the full implementation of the in-barracks medical screening program.

4. That the Commanding Officer, Health Sciences Education and Training Command, Bethesda, Maryland undertake a feasibility study to determine the possibility of rotating the graduates of the independent duty school through the Recruit Training Command for an eight week "residency" period.

5. That further research be conducted to evaluate the appropriateness of establishing an appointment system for RTC that would go beyond that undertaken in this pilot project.

6. That an in-depth cost comparison of these two programs be accomplished that would provide data on man-hour and training dollar figures.

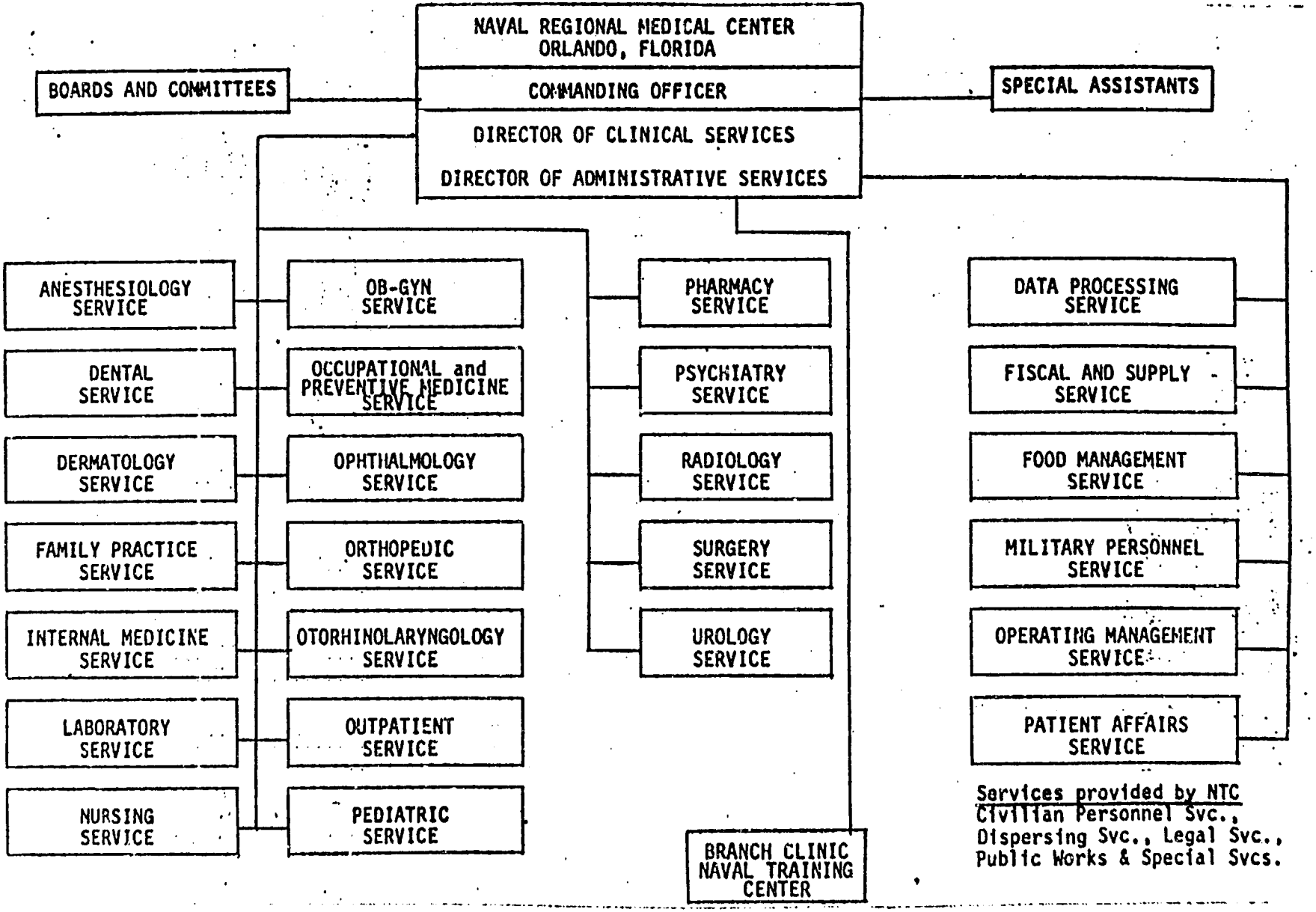
APPENDIX A

ORGANIZATIONAL CHART

NRMC, ORLANDO, FLORIDA

APPENDIX A

ORGANIZATIONAL CHART
NRMC, ORLANDO, FLORIDA



APPENDIX B

ORGANIZATIONAL CHART

BRANCH CLINIC

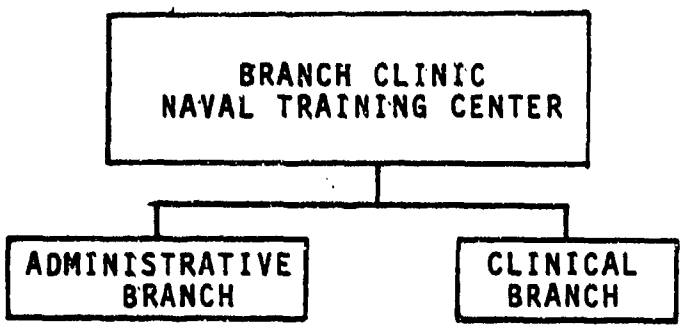
NRMC, ORLANDO, FLORIDA

APPENDIX B

ORGANIZATIONAL CHART

BRANCH CLINIC

NRMC, ORLANDO, FLORIDA



APPENDIX C

BASIC OUTFITTING

DIVISION 8

APPENDIX C

BASIC OUTFITTING

DIVISION 8

Supplies

	Item	Amount/Quantity
1.	Tongue Blades	3 Bx
2.	Tissue Paper	3 Bx
3.	Surgical Tape; Assorted Sizes	2 Rl
4.	2x2 gauze	3 Pg
5.	4x4 gauze; sterile	3 Pg
6.	Bandaids	3 Bx
7.	Culture Tubes	1 Bx
8.	Surgical Jelly	2 Tu
9.	Hydrogen Peroxide	4 Bt
10.	Ace Bandages; Assorted Sizes	16 Ea
11.	Specimen Cups	24 Ea
12.	Ammonia Inhalants	3 Bx
13.	Bacitracin Ointment	3 Tu
14.	Alcohol Sponges	3 Bx
15.	Q-Tips	3 Pg
16.	Triangular Bandages	6 Ea
17.	Bandage Scissors	1 Ea
18.	Telfa Pads	2 Bx
19.	Scrotal Supports, medimum	1 Bx
20.	Suture Removal Sets	6 Se
21.	Betadine Solution	1 Gal
22.	Phiohex Soap	1 Gal
23.	4x8 gauze	1 Pg
24.	Kerlix	6 Ea
25.	Finger Splints	1 Bx
26.	Tempa Dots	4 Bx
27.	Skin Guard Tape	2 Bx
28.	Blood Pressure Cuff	1 Ea
29.	Stethoscope	2 Ea
30.	Oto-ophthalmoscope	1 Ea
31.	Wash Basin	2 Ea
32.	Emesis Basin	2 Ea
33.	Tincture of Benzoine	1 Cn
34.	Reflex Hammer	1 Ea

Drugs

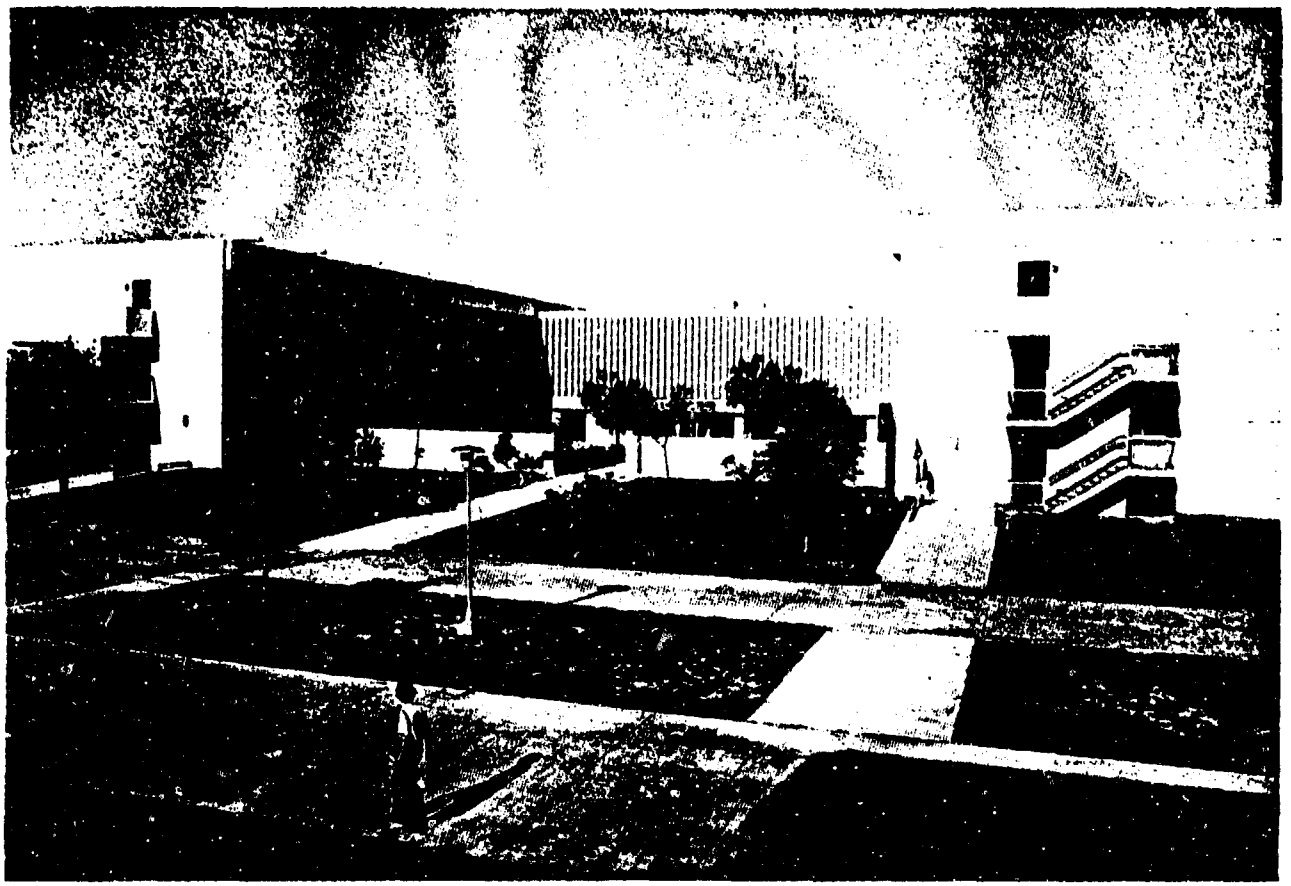
Item	Amount/Quantity
1. Actifed Tablets, 12's	65
2. Amphojel Suspension, 360ml	12
3. Analgesic Balm, 30Gm	24
4. Afrin Nasal Spray	6
5. Anusol Suppositories, 12's	6
6. Ascorbic Acid Tablets, 500mgm, 30's	6
7. Aspirin Tablets, 325mgm, 20's	100
8. Bacitracin Ointment, 15Gm	12
9. Benzyl Peroxide Gel, 5%, 1.5oz	6
10. Betadine Scrub, 120ml	1
11. Betadine Solution, 120ml	1
12. Burow's Tablets, 12's	40
13. Calamine Lotion, 53ml	12
14. Cepacol Lozenges, 16's	50
15. Cepacol Troches, 12's	50
16. Chlor-trimeton Tablets, 4mgm, 12's	30
17. Colace Capsules, 100mgm, 10's	10
18. Desenex Powder, 30Gm	12
19. Desenex Solution, 60ml	6
20. Doxidan Capsules, 10's	5
21. Dramamine Tablets, 50mgm, 12's	5
22. Dulcolax Tablets, 5mgm, 4's	6
23. Dulcolax Suppositories, 10mgm, 2's	6
24. Fleets Enemas	4
25. Fostex Cake	12
26. Fostex Cream, 4.5oz	12
27. Gaviscon Tablets, 40's	5
28. Gelusil Suspension, 180ml	6
29. Gyl-oxide, 10%, 15ml	6
30. Guaifensin Syrup, 120ml	24
31. Guaifensin with D.M., Syurp, 120ml	24
32. Halotex Solution, 1%, 10ml	10
33. Heat Rash Powder, 60Gm	12
34. Kaopectate, 43.5Gm	10
35. Kewell Cream, 60Gm	10
36. Lanolin Lotion, 120ml	5
37. Liquilfilm Tears, 1.4%, 15ml	5
38. Meclizine Tablets, 25mgm, 12's	5
39. Maalox Suspension, 180ml	12
40. Milk of Magnesia, 30ml	10
41. Mylanta Tablets, 40's	10
42. Mylicon Tablets, 40mgm, 12's	10

Item	Amount/Quantity
43. Neosynephrine Nose Drops,1/2%,15ml	12
44. Nonavitamins, 30's	12
45. Methyl Salicylate	1
46. PABA Sunscreen, 120ml	5
47. Phisohex Soap, 120ml	3
48. Prefrin Eye Drops, 20ml	10
49. Selsun Shampoo, 120ml	12
50. Sodium Chloride Solution, 0.9%, 240ml	3
51. Sudafed Tablets, 30mgm, 24's	60
52. Terpin Hydrate Elixer, 120ml	6
53. Tigan Suppositories, 200mgm, 4's	6
54. Titralac Tablets, 40's	10
55. Tylenol Tablets, 325mgm, 16's	100
56. Vitamin A&D Ointment, 2oz	5
57. Zinc Oxide Ointment, 30Gm	2

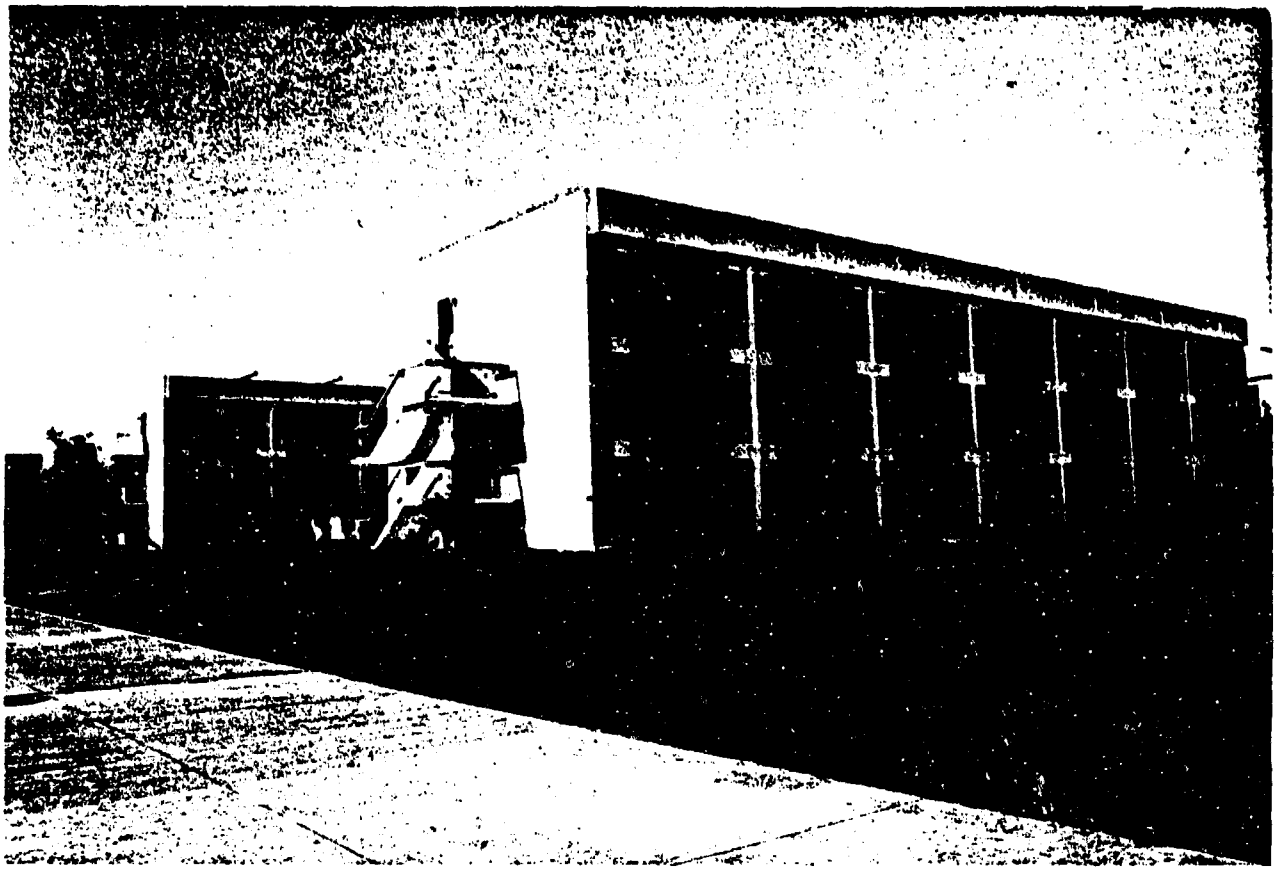
APPENDIX D

ORGANIZATION OF

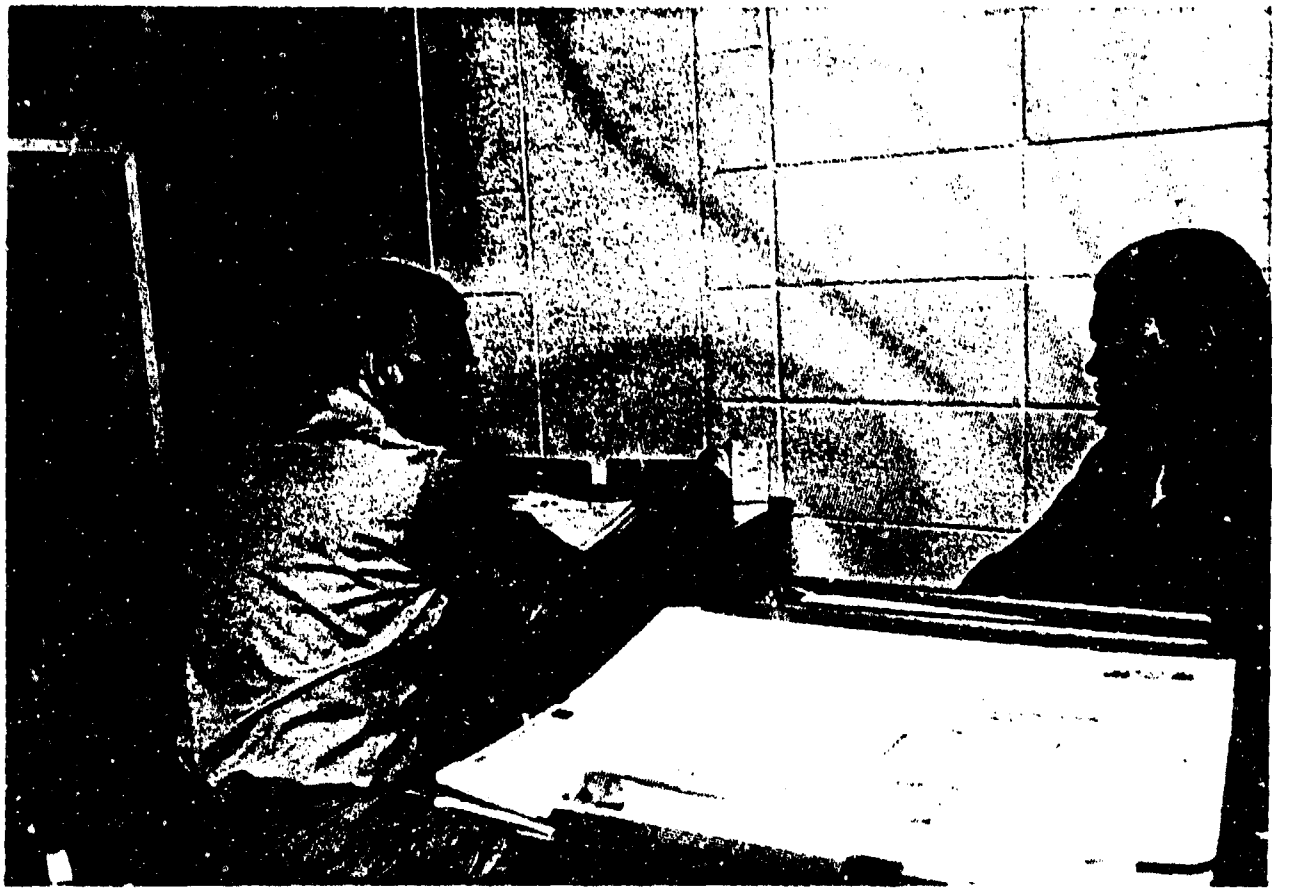
DIVISION 8 SICK CALL



Division 8. Main entrance to building. This view represents three companies on either side of the center core of the building.



Division 8, side view. Three companies are represented in this view.



Chief Phillips, the independent duty hospital corpsman, checks in a recruit for sick call.

West to East view of the screening area in the Division 8 program.

One of the Clinical Assistants completes a health record entry on a recruit.

Lieutenant Heltsley and Chief Phillips reviewing the supplies and drugs that are needed for the screening program. These can be seen to the rear of Chief Phillips.

APPENDIX E

STANDARD OVER-THE-COUNTER MEDICATIONS USED IN DIVISION 8 TEST

APPENDIX E

STANDARD OVER-THE-COUNTER MEDICATIONS USED IN DIVISION 8 TEST

Item

Actifed Tablets
Amphojel Suspension
Analgesic Balm
Afrin Nasal Spray
Anusol Suppositories
Ascorbic Acid Tablets
Aspirin Tablets
Benzyl Peroxide Gel
Burow's Tablets
Calamine Lotion
Cepacol Lozenges & Troches
Chlor-trimeton Tablets
Colace
Desenex Powder & Solution
Doxidan Capsules
Dramamine Tablets
Dulcolax Tablets & Suppositories
Fleets Enemas
Fostex Cake & Cream
Gaviscon Tablets
Gyl-oxide
Guaifensin Syurp and Syurp with D.M.
Halotex Solution
Heat Rash Powder
Kaopectate
Kewell Cream
Lanolin Lotion
Liquifilm Tears
Meclizine Tablets
Maalox Suspension
Milk of Magnesia
Mylanta Tablets
Mylicon Tablets
Neosynephrine Nost Drops
Nonavitamins
PABA Sunscreen

Item

Phisohex Soap
Prefrin Eye Drops
Selsun Shampoo
Sodium Chloride Solution
Sudafed Tablets
Terpin Hydrate Elixer
Tigan Suppositories
Titralac Tablets
Tylenol Tablets
Vitamin A&D Ointment
Zinc Oxide Ointment

APPENDIX F

BRANCH CLINIC

PHARMACEUTICAL STUDY

APPENDIX F

BRANCH CLINIC

PHARMACEUTICAL STUDY

Medication/ Drug Used	Total Number Prescribed	Unit Cost	Total Cost
Cepacol Green	99	$0.22	$21.78
Aspirin	189	.05	9.45
Sodium Chloride	91	.20	18.20
GG with D.M.	96	.42	40.32
Tylenol	174	.07	12.18
TCN, 80's	13	1.60	20.80
Benzac 5	21	.75	15.75
Methyl Sal	140	.15	21.00
Norgesic, 16's	97	1.12	108.64
Viocort	11	1.75	19.25
Desenex	20	.69	13.80
Neosporin G	40	.67	26.80
Burow's Tablets	65	.35	22.75
Pynapen, 40's	23	3.60	82.80
Mylanta, 20's	16	.22	3.52
Tigan Suppositories	15	1.20	18.00
BenGay	108	.85	91.80
GG	43	.29	12.47
Actifed	95	.20	19.00
Sudafed	69	.10	6.90
Milk of Magnesia	2	.05	.10
Phisohex	1	.40	.40
Colace	10	.13	1.30
Visci-Lidocaine	2	1.77	3.54
Sudamyd	3	.51	1.53
Chlor-Trimeton	33	.03	.99
Cepacol Lozenges	164	.16	26.24
INH	5	1.09	5.45
TCN, 40's	9	.80	7.20
Bacitracin	48	.25	12.00
Tedral SA-1	1	.50	.50
CAMA, 20's	39	.16	6.24
Gelusil Liquid	17	.08	1.36
Prednisone	53	.15	7.95
Pen-VK, 56's	1	1.12	1.12
Parafon Forte	17	.68	11.56
Kaopectate	22	.59	12.98
Micatin	11	2.93	32.23

Medication/ Drug Used	Total Number Prescribed	Unit Cost	Total Cost
Pen-VK, 40's	9	$0.80	$7.20
Dimetapp, 12's	18	.48	8.64
Bentyl, 20's	3	.60	1.80
Wycillin, 2.4M.U.	6	2.38	14.28
Gaviscon	13	.88	11.44
Benzac	2	.75	1.50
Varidase	3	7.50	22.50
Wycillin, 600,000U	15	1.18	17.70
Bicillin, LA	7	2.62	18.34
Tigan, 12's	6	.96	5.76
NSND	14	.15	2.10
Ampicillin	28	1.60	44.80
Dimetapp, 20's	31	.80	24.80
Calamine	1	.50	.50
Hemm.Suppositories	2	.59	1.18
Azelid	2	1.44	2.88
Ducolax, 6's	1	.06	.06
Pyridium, 12's	8	.20	1.60
Flexeril, 15's	3	2.55	7.65
Cortisporin Solution	16	1.89	30.24
Erythromycin, 40's	13	1.80	23.40
Ampicillin, 80's	2	3.20	6.40
Kewell	6	.54	3.24
Chapstick	27	.14	3.78
Heatrash Pwd	6	.15	.90
Fostex Soap	14	1.28	17.92
Nonavitamin	9	.30	2.70
Halotex	11	1.75	19.25
Phenobel	3	.10	.30
Selsun	5	.66	3.30
Quibron, 16's	2	.64	1.28
Drixoral, 10's	2	.70	1.40
Benadryl, 12's	7	.85	5.95
Mylicon, 30's	2	.30	.60
Lotrimin	1	1.88	1.88
Benzac 10	4	.75	3.00
Afrin	4	1.06	4.24
Fostex Cream	2	1.51	3.02
Drixoral, 30's	1	2.10	2.10
E-Mycin, 56's	1	2.24	2.24
Prefrin	7	1.24	8.68
Orlex H.C.	4	1.95	7.80

Medication/ Drug Used	Total Number Prescribed	Unit Cost	Total Cost
Entex, 40's	1	$1.60	$1.60
Mycolog	1	2.03	2.03
Bicillin CR	4	1.68	6.72
Lanolin Lot	7	.60	4.20
Compazine, 20's	2	.60	1.20
Motrin	1	1.20	1.20
Periactin, 12's	2	.72	1.44
Neosporin Ophth Solution	2	2.03	4.06
Robinul, 28's	1	.75	.75
Phenegran Expectorant	1	.78	.78
Totals	1110		$1,082.43

APPENDIX G

WEEKLY TEST DATA

TEST AND CONTROL DIVISIONS

APPENDIX G

WEEKLY TEST DATA

TEST AND CONTROL DIVISIONS

Week One
21-25 January 1980

Test Group - Division 8

	MON	TUE	WED	THU	FRI
Total Recruits Seen	35	43	29	27	30
Average Non-effective Time	33.65	20.21	22.70	44.78	9.83
Total Referrals	3	4	3	6	5
Percent Referred	8.6	9.3	10.4	22.2	16.1

Control Group - Division 5

Total Recruits Seen	214
Average Non-effective Time	115.27

Weekly Pharmaceutical Cost - Division 8

Cost	$0.345

APPENDIX G

WEEKLY TEST DATA

TEST AND CONTROL DIVISIONS

Week Two
28 January - 1 February 1980

Test Group - Division 8

	MON	TUE	WED	THU	FRI
Total Recruits Seen	35	38	34	30	36
Average Non-effective Time	18.1	13.2	19.03	8.28	11.89
Total Referrals	7	4	8	4	7
Percent Referred	20.0	10.5	23.5	13.3	19.4

Control Group - Division 5

Total Recruits Seen	261
Average Non-effective Time	99.0

Weekly Pharmaceutical Cost - Division 8

Cost	$0.325
Sanitation and Mess Cook Physicals Performed, Division 8	166
Sanitation, Safety, Berthing Inspections Performed, Division 8	3

APPENDIX G

WEEKLY TEST DATA

TEST AND CONTROL DIVISIONS

Week Three
4-8 February 1980

Test Group - Division 8

	MON	TUE	WED	THU	FRI
Total Recruits Seen	48	51	44	52	54
Average Non-effective Time	9.69	13.6	13.13	17.77	11.58
Total Referrals	11	7	10	11	9
Percent Referred	22.9	13.7	22.7	21.1	16.6

Control Group - Division 5

Total Recruits Seen	275
Average Non-effective Time	14.73

Weekly Pharmaceutical Cost - Division 8

Cost	$ 0.44
Sanitation and Mess Cook Physicals Performed, Division 8	82
Sanitation, Safety, Berthing Inspections Performed, Division 8	4

APPENDIX G

WEEKLY TEST DATA

TEST AND CONTROL DIVISIONS

Week Four
11-15 February 1980

Test Group - Division 8

	MON	TUE	WED	THU	FRI
Total Recruits Seen	73	48	46	46	46
Average Non-effective Time	18.38	8.83	15.63	9.87	20.24
Total Referrals	6	3	7	4	9
Percent Referred	8.2	6.25	15.2	8.69	19.56

Control Group - Division 5

Total Recruits Seen	310
Total Non-effective Time (Average)	96.4

Weekly Pharmaceutical Cost - Division 8

Cost	$ 0.286
Sanitation and Mess Cook Physicals Performed, Division 8	158
Sanitation, Safety, Berthing Inspections Performed, Division 8	7

APPENDIX G

WEEKLY TEST DATA

TEST AND CONTROL DIVISIONS

Week Five
18-22 February 1980

Test Group - Division 8

	MON	TUE	WED	THU	FRI
Total Recruits Seen	HOLIDAY	56	51	54	41
Average Non-effective Time		22.8	16.51	11.0	14.66
Total Referrals		10	5	10	5
Percent Referred		17.8	9.8	18.52	12.2.

Control Group - Division 5

Total Recruits Seen	281
Average Non-effective Time	88.2

Weekly Pharmaceutical Cost - Division 8

Cost	$ 0.264
Sanitation and Mess Cook Physicals Performed, Division 8	00
Sanitation, Safety, Berthing Inspections Performed, Division 8	3

APPENDIX G

WEEKLY TEST DATA

TEST AND CONTROL DIVISIONS

Week Six
25-29 February 1980

Test Group - Division 8

	MON	TUE	WED	THU	FRI
Total Recruits Seen	27	41	31	37	30
Average Non-effective Time	15.59	10.95	19.06	4.59	14.53
Total Referrals	3	6	5	2	2
Percent Referred	11.1	14.6	16.1	5.4	6.67

Control Group - Division 5

Total Recruits Seen	217
Average Non-effective Time	94.37

Weekly Pharmaceutical Cost - Division 8

Cost	$ 0.34
Sanitation and Mess Cook Physicals Performed, Division 8	162
Sanitation, Safety, Berthing inspections Performed, Division 8	5

APPENDIX G

WEEKLY TEST DATA

TEST AND CONTROL DIVISIONS

Week Seven
3-7 March 1980

Test Group - Division 8

	MON	TUE	WED	THU	FRI
Total Recruits Seen	42	48	44	29	53
Average Non-effective Time	9.95	11.08	15.93	8.38	12.49
Total Referrals	11	4	6	6	11
Percent Referrals	26.2	8.3	13.6	20.7	20.8

Control Group - Division 5

Total Recruits Seen	242
Average Non-Effective Time	97.51

Weekly Pharmaceutical Cost - Division 8

Cost	$ 0.37
Sanitation and Mess Cook Physicals Performed, Division 8	80
Sanitation, Safety, Berthing Inspections Performed, Division 8	3

APPENDIX G

WEEKLY TEST DATA

TEST AND CONTROL DIVISIONS

Week Eight
10-14 March 1980

Test Group - Division 8

	MON	TUE	WED	THU	FRI
Total Recruits Seen	66	57	44	44	38
Average Non-Effective Time	15.2	11.68	14.47	15.5	10.85
Total Referrals	8	12	11	6	8
Percent Referrals	12.1	21.1	25.0	13.6	21.1

Control Group - Division 5

Total Recruits Seen	317
Average Non-effective Time	91.21

Weekly Pharmaceutical Cost - Division 8

Cost	$ 0.31
Sanitation and Mess Cook Physicals Performed, Division 8	162
Sanitation, Safety, Berthing Inspections Performed, Division 8	10

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