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A STUDY TO DETERMINE

THE BEST WAY, WITHIN EXISTING CONSTRAINTS, TO
MINIMIZE LOST TRAINING TIME DUE TO RECRUIT
SICK CALL AT THE MARINE CORPS RECRUIT DEPOT,
PARRIS ISLAND, SOUTH CAROLINA.

A Graduate Research Project
Submitted to the Faculty of
Baylor University
In Partial Fulfillment of the
Requirements for the Degree

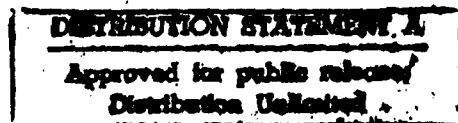
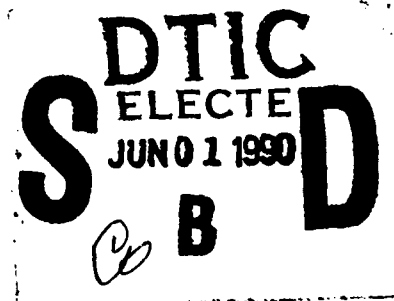
of

Master of Health Care Administration

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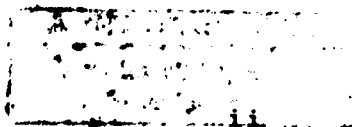
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CHAPTER 1

INTRODUCTION

BACKGROUND: MARINE CORPS RECRUIT DEPOT, PARRIS ISLAND

The Marine Corps Recruit Depot (MCRD), Parris Island is one of only two sites where Marine Corps basic training is conducted. MCRD, Parris Island is located just south of Beaufort, South Carolina, and provides basic training for approximately 19,000 male and female recruits annually. The mean number of recruits onboard MCRD, Parris Island is 4700, with significant fluctuations from month to month.

The Recruit Training Regiment (RTR) is responsible for recruit inprocessing and providing basic training for male and female recruits. Four Recruit Training Battalions (the 1st, 2nd, 3rd, and 4th), the Support Battalion, the Recruit Administration Center, and a Regimental Headquarters make up RTR. The goal of Marine Corps basic training is, "to produce basic Marines who function effectively in garrison, are trained with the service rifle and in rudimentary field and combat skills, and practices those personal and professional traits that distinguish him as a Marine!"

Upon arrival at MCRD, Parris Island, male recruits are assigned to the 1st, 2nd, or 3rd battalion and female recruits are assigned to the 4th battalion. The 10 weeks of recruit training is divided into three distinct phases. During the second phase of recruit training all recruits spend three weeks in the Weapons Training Battalion and one week in the Field Training Unit.

The Recruit Training Battalion is the center of the recruit's 'world' for the 10 weeks of basic training. For 8

of the 10 weeks the recruit spends on Parris Island they are berthed in barracks located in their Recruit Training Battalion's area. Each Recruit Training Battalion consists of two Recruit Training Companies; each Recruit Training Company is made up of up to 5 Recruit Training Series. A Recruit Training Series is formed during inprocessing and consists of a group of recruits that arrive for basic training at about the same time. The Recruit Training Series is the recruit's "family" during basic training. The recruit lives, trains, and learns what it is to be a Marine with the other recruits in his/her "Series".

The Weapons Training Battalion provides marksmanship and weapons training for all recruits. During the second week of marksmanship training, recruits are berthed in barracks at the Weapons Training Battalion.

The Field Training Unit provides individual combat training and field training for all recruits. During the week recruits spend at the Field Training Unit they are bivouacked in two-man tents in the training area.

The Special Training Division provides, "... special instruction to male recruits whose physical conditioning or short term medical disability precludes their continuation in training with their peers".² The Special Training Division consists of the Medical Rehabilitation Platoon and the Physical Conditioning Platoon.

Medical Support

A Navy Branch Medical Clinic is located on the Marine Corps Recruit Depot, Parris Island to provide medical support for recruit training. Naval Hospital, Beaufort is its parent command and is located approximately four miles away. The Branch Medical Clinic provides medical inprocessing, immunizations, recruit sick call, and emergency medical care for the recruit population.

Providing a morning and afternoon recruit sick call is a labor intensive and organizationally difficult task that drives the staffing of the Branch Medical Clinic. How recruit sick call is conducted at MCRD, Parris Island, has changed significantly within the last two years. To better understand these changes, the following pertinent background information is provided.

Prior to February of 1987, Navy hospital corpsmen conducted recruit sick call in Battalion Aid Stations (BASs) located in the barracks of the Recruit Training Battalions. A BAS was located in each of the four Recruit Training Battalions, the Weapons Training Battalion, and the Field Training Unit. The Navy corpsmen in the BASs provided recruit sick call, responded to medical emergencies, and provided medical coverage for physical fitness and other training exercises.

In February of 1987, the BASs in the four Recruit Training Battalions were closed and their recruit sick call

moved to the Branch Medical Clinic. The BASs were closed because they did not provide for 'adequate' physician supervision of nonphysician providers as required by the Naval Medical Command in Washington, DC.

Closing the BASs in the Recruit Training Battalions and moving their recruit sick call to the Branch Medical Clinic was perceived by all concerned as less than an optimal solution. The primary concern was that closing the BASs would increase the amount of lost training time due to recruit sick call, especially during the first and third phases of recruit training. In response to this concern, the Commanding Officer of Naval Hospital, Beaufort requested an in-depth management study be conducted to determine the best way to minimize lost training time due to recruit sick call.

PROBLEM STATEMENT

To determine the best way, within existing constraints, to minimize lost training time due to recruit sick call at the Marine Corps Recruit Depot, Parris Island.

OBJECTIVES

The following objectives must be met to complete this Graduate Research Project (GRP):

1. Conduct a literature review.
2. Identify and describe the characteristics of the recruit population at MCRD, Parris Island.

3. Review the historical demand for recruit sick call at MCRD, Parris Island.

4. Review the personnel resources (ie. physician and nonphysician providers) of the Branch Medical Clinic, MCRD, Parris Island and Naval Hospital, Beaufort.

5. Analyze available data on lost training time due to recruit sick call at MCRD, Parris Island.

6. Interview key Navy and Marine Corps personnel concerning recruit sick call at MCRD, Parris Island.

7. Review correspondence with higher Navy and Marine Corps commands concerning recruit sick call at MCRD, Parris Island.

8. Review pertinent DOD and Navy directives.

9. Conduct a telephone survey of other Marine Corps, Navy, Army and Air Force recruit training centers to determine what strategies they use to minimize lost training time due to recruit sick call.

10. Identify alternative sick call strategies to minimize lost training time due to recruit sick call at MCRD, Parris Island.

11. Use a decision making process to evaluate the alternative strategies and determine the best way to minimize lost training time due to recruit sick call at MCRD, Parris Island.

CRITERIA/CONSTRAINTS

The decision as to which of the alternative sick call strategies is the 'best way' to minimize lost training time due to recruit sick call at MCRD, Parris Island, is bounded by a set of existing constraints. The existing constraints are imposed by higher authority, the nature of basic training, and the quest to provide the highest quality medical care possible. The existing constraints are the criteria against which the alternative sick call strategies will be judged. The alternative sick call strategy determined to be the 'best way' must:

1. produce the minimal amount of lost training time due to recruit sick call achievable within existing constraints.
2. provide for conducting recruit sick call 'with available personnel resources' at the Branch Medical Clinic, MCRD, Parris Island and Naval Hospital, Beaufort.
3. not compromise the quality of medical care available at recruit sick call.
4. meet the requirements of DOD, Navy, and Marine Corps directives.
5. be affordable; ie. within the financial resources of Naval Hospital, Beaufort.
6. be acceptable to the Commanding General, MCRD, Parris Island and the Commanding Officer, Naval Hospital, Beaufort.

ASSUMPTIONS: None

LIMITATIONS

That additional physician and nonphysician providers are not available from higher commands to augment the staff devoted to recruit sick call at MCRD, Parris Island.

LITERATURE REVIEW

Sick call is the primary means for active duty military personnel to seek treatment for non-emergent acute medical conditions and minor injuries. Sick call is conducted daily, usually first thing in the morning. Morning sick call allows servicemembers to be evaluated for an illness or injury prior to their normal duty hours. In this way, medical problems which preclude or would be made worse by normal military activities may be avoided and appropriate medical care provided.⁷

The predominant organizational structure within which sick call has been, and is still today provided is best characterized as being highly centralized. All the medical resources devoted to sick call are located in one medical treatment facility (MTF), such as an ambulatory care clinic or free-standing medical clinic or dispensary.⁵ An example of this traditional organizational structure is the U.S. Army's Consolidated Troop Medical Clinic (CTMC).⁶

The centralization of all medical resources devoted to sick call has certain advantages arising from economies of scale in medical personnel, equipment, ancillary support (ie. laboratory, radiology, pharmacy) and physical plant.⁷ In

fact, this concept has been proclaimed by at least one author as the panacea for all problems associated with the delivery of primary health care to active duty personnel.⁸ However, there are also a number of characteristic problems inherent in this highly centralized organizational structure. To introduce these problems, the characteristics of sick call, and recruit sick specifically, are discussed below. The characteristics of sick call discussed are attributable to recruit sick call; however, the converse is not necessarily true due to the uniqueness of recruit training and the characteristics of the recruits.

Characteristics of Sick Call

The large influx of patients when sick call begins is the primary characteristic of sick call, especially morning sick call. The vast majority of sick call patients, (upwards of 80%) present for evaluation and treatment during the first one and one-half hours.⁹ This influx of patients at morning sick call causes a queuing problem which significantly prolongs the patients' waiting time. Wolcott and Stieneker identified this prolonged waiting time resulting from the influx of patients as having, "the major impact upon the quality and process of medical care at sick call."¹⁰

The waiting times associated with morning sick call, and to a lesser extent afternoon and evening sick call, are a significant concern to line commanders, especially those of recruit and other types of training commands.¹¹ Time

servicemembers spend waiting for treatment at sick call represents lost duty time for the active duty member, and lost training time for recruits and other trainees.

The long waiting times, combined with the requirement to provide high quality and expeditious medical care creates a dilemma in regards to physician and nonphysician staffing of sick call. The following excerpt best describes this dilemma:

"Unless enough physicians are available to see all the patients that present within the first one and one-half hours of military sick call, the military physician must either (1) shorten the period of time spent with each patient, or (2) accept the complaints of the line commanders.... Shortening the time spent with each patient is associated with the risk of decreasing the quality of medical care.

Assigning enough physicians and nonphysician providers to military sick call to rapidly evaluate and treat all the patients that present in the first one and one-half hours is impractical because the intense queuing phenomena would require so many physicians in the morning that excess physicians would exist during slack periods."¹²

Several authors have commented on the widespread use of manipulative behavior, or malingering, by active duty personnel and recruits who use sick call as a means of avoiding unpleasant duties or training.¹³ Unfortunately consequences of this malingering is that it further lengthens the waiting time for personnel at sick call, and adds to the workload of the healthcare providers. Since the malingerer shows definite gain from their aberrant behavior, physician and nonphysician providers react with anger towards them as a group. Two factors believed to cause physicians to react in

this manner towards malingerers are: (1) malingering behavior threatens the basic cornerstone of trust in the doctor-patient relationship, and (2) malingering behavior affects the delicate balance of the medical professional functioning within the military system.¹⁴

How much of the total demand for sick call is attributable to malingerers is unknown. However, documented decreases in the demand for sick call have been attributed to decreasing malingering. In both cases, the decrease in malingering followed the initiation of programs to reduce the waiting time for sick call. It is believed that decreasing the waiting time for sick call reduced malingering by reducing the malingerer's gain by reporting to sick call.¹⁵ Hinkle attributed a 20% reduction in the total number of sick call visits;¹⁶ and McKenna a 30% reduction in the average number of personnel reporting for sick call after initiating programs to reduce waiting times at sick call.¹⁷

The increased demand for sick call attributed to positive malingerers (personnel who produce or exaggerate physiological or psychological symptoms) is at least partially offset by negative malingerers (personnel who deny or minimize physiological or psychological symptoms).¹⁸ Negative malingering is thought to be most common in high prestige military units where very high standards of physical and mental ability are demanded.¹⁹

Three unique characteristics of recruit sick call attributable to the basic training mission and

characteristics of the recruits that have a tremendous impact upon how recruit sick call is conducted are:²⁰

- (1) The basic training mission. If a recruit misses large segments of training because of being detained on sick call they may be dropped from training.
- (2) The intensity of basic training. The recruit is exposed to hard, intense physical training almost continuously throughout the day.
- (3) The recruit's physical condition. The recruit is generally in poorer physical condition, at least at the start of basic training than is the average active duty servicemember. The recruit's susceptibility to disease is also expected to be higher.

Recruit sick call is an example of a joint production, i.e., a process in which a single production effort produces multiple outputs.²¹ Recruit sick call not only provides access to medical care for non-emergent acute illness and minor injury, it also plays a pivotal role in influencing the recruit's long term perception of the military health care system.²² Zurcher examined the latter function by studying recruit's perception of medical care received at recruit sick call. As Zurcher explains:

"Patients equate quality with performance, and trainees carry this poor perception of medical performance, and therefore quality, with them when they leave basic training. Poor performance valuations can also lead to poor expectations for treatment outcomes and poor compliance with treatment plans. ...if trainees carry this negative attitude about military medical care with them when they leave basic training, this same disruptive influence on outcomes may be impacting throughout the Army."²³

Sick Call Strategies

Several alternative strategies have been discussed in the literature to counter the inherent problems of the centralized organizational structure within which sick call has been traditionally conducted. Before discussing these alternative sick call strategies, it is beneficial to first note that they all share a common objective and means: to decrease the waiting times by reducing the number of patients reporting for sick call that require the level of care provided by a physician. The alternative sick call strategies discussed below are not mutually exclusive.

Preventing Illness and Injury

Preventing illness and injury from occurring is the primary strategy used to decrease the number of patients reporting for sick call. Articles on the prevention of specific illnesses and injuries among active duty personnel and recruits are found frequently in the literature.²¹ While it is beyond the scope of this paper to address each article, suffice it to say the old adage, "an ounce of prevention is worth a pound of cure", is applicable when discussing sick call strategies. For my purposes preventing illness and injury is considered a complimentary strategy, always used to some extent in addition to the other strategies discussed.

Using Nonphysician Providers in Sick Call

Physician assistants (PAs) and specially trained enlisted medical personnel are used as physician extenders in sick

call in many MTFs. PAs are uniquely suited for working in the primary care setting of military sick call. The original impetus for training PAs in the United States, and the main focus of their education and training is the delivery of patient care in the primary care setting.²⁵

Studies designed to measure PA's productivity indicate that a PA is capable of handling one-half to three-quarters of the patient workload that their supervising physician would.²⁷ In addition, studies indicate that in primary care settings up to 80 percent of adult visits can be safely managed by a PA.²⁸

A large quantity of research has been conducted on the quality of care provided by PAs. One review of over 40 studies of the quality of care provided reported that PAs 'provide office-based care that is indistinguishable from physician's care'.²⁹ Another review concluded no significant differences between the care provided by general and family practitioner and general internists and the care provided by PAs in terms of 'diagnostic errors, treatment plans, prescription errors, referrals to specialist, or success of treatment'.³⁰ In addition, a study designed to measure three aspects of the quality of care (i.e., process of care, medical outcome, and patient satisfaction) found that in ambulatory primary care settings PAs deliver care equivalent in quality to that provided by physicians.³¹

Studies also suggests that utilizing PAs in private practice setting reduces malpractice exposure. The lower

malpractice risk is thought to be attributable to the positive effects that PAs have in primary care settings, such as: reduced waiting periods, more personal care, improved patient compliance, diminished somatic complaints, less need for return visits, and fewer hospitalizations.³²

Algorithm-Based Triage and Written Protocols

In addition to PAs, specially trained enlisted medical personnel are also used as physician extenders in sick call. These enlisted medical personnel are normally trained to use a physician prepared algorithm-based triage manual or written protocols to guide their evaluation and treatment.³³ An appealing characteristic of algorithm-based triage is that patients are sent to the initial care provider that is medically indicated by the patient's medical condition. Under conditions of scarce medical resources, algorithm-based triage allows medically efficient resource allocation.³⁴

Vaughn and et al provide a description and evaluation of such an algorithm-based triage system.³⁵ U.S. Army enlisted medical personnel specially trained to use the algorithm-based triage system interviewed all patients upon their arrival at sick call. The patient's chief complaint determined which triage algorithm the medic used. Based on the patient's answers to specific questions, the medic triaged the patient to the appropriate initial care provider (ie. physician, physician assistants, a specialty clinic, etc.).³⁶

The study found that 96 percent of the patients reporting for sick call were eligible for care provided by nonphysician providers; and that 36 percent of the patients were eligible for self care protocols.³⁷ The study concluded, 'personnel receiving basic medical training and orientation to an algorithm-directed triage system can direct military patients to appropriate levels of health care.'³⁸

The use of physician prepared algorithms and written protocols by nonphysician providers is not unique to the military. Numerous examples in the civilian sector attest to the efficacy of nonphysician providers using algorithms and written protocols in treating acute minor illnesses and chronic medical problems.³⁹ In addition, these studies have shown that patient charges and direct outpatient medical costs can be decreased for certain medical conditions, such as acute respiratory illnesses, using algorithm directed treatment by nonphysician providers.⁴⁰

Reorganizing Resources Devoted to Sick Call

The alternative organizational structures proposed in the literature decentralize sick call by establishing a medical screening and /or treatment capability at the platoon, company, or battalion level. The three alternative organizational structures proposed in the literature are:

- (1) an in-barracks screening program,
- (2) an in-barracks treatment and screening program,
- (3) and multiple decentralized free-standing clinics.

The three alternatives above differ primarily in the degree they decentralize the sick call function and medical resources devoted to it. These alternative organizational structures are made possible only by utilizing nonphysician providers and algorithm-based triage systems.

In-Barracks Screening Programs

In-barracks screening programs feature specially trained enlisted medical personnel located in the barracks of the supported units to "screen" all personnel before they report for sick call. It is important to emphasize that the medical personnel in the barracks do not initiate treatment, but only "screen" the patients and triage them to the appropriate initial care provider using an algorithm-based triage system. Wolcott and Stieneker studied such an in-barracks screening program at the Academy of Health Sciences, Fort Sam Houston Texas.^W A description of how the in-barracks screening program operated, and their results are presented below.

Personnel assigned to the test company reported to a triage desk in their barracks before reporting to sick call at the TMC, whereas personnel assigned to the control companies reported directly to the TMC for sick call. An enlisted triage corpsmen working at the triage desk interviewed each patient using an algorithm-based triage manual to guide their interview. Based on the patient's answers to specific questions, the patient was directed to the appropriate initial care provider at the TMC, or to a specialty clinic located at a nearby military hospital.

The enlisted triage corpsmen in this study could also provide a limited assortment of over-the-counter (OTC) medications to patients that specifically requested them. It is important to note that the triage corpsmen did not attempt to give the patient an OTC medication unless that was the patient's request at the triage desk.

During the 8 weeks of the study there was a total of 744 visits to the in-barracks 'screener', of which 474 were referred to the TMC for sick call. Of the 744 visits to the in-barracks 'screener', only 36 or 4.85% required a physician as the initial care provider. Of the 744 visits to the in-barracks 'screener', 23.8% required only OTC medications; and 12.5% required only a consult to a specialty clinic (ie. Gynecology, Dental, and Optometry). Thus, the in-barracks 'screener' was responsible for returning to training 270 patients (36.3%) in a very short period of time that otherwise would of had to go to the TMC for sick call. This represented a direct decrease in the number of patients reporting for sick call at the TMC compared to the workload there would of been. Reducing the workload in the TMC by 36% during the morning sick call would allow more attention to be paid to the quality of medical evaluation and the timely return of the remaining patients to duty or training.⁴²

A similar study found that two training brigades experienced a rate of return to duty of 36.36% and 37.48% respectively when they utilized an in-barracks screening program.⁴³ The author summarized his findings in the following way:

"The fact that this study produced results extremely similar to those of Wolcott and Stieneker lends strong support to their contention that many soldiers reporting for sick call can be adequately cared for in their own battalion or barracks area without having to go to the TMC, thereby saving a lot of lost academic or productive time."⁴⁴

Armondo studied the effect in-barracks screening programs had on the incidence of acute respiratory disease in the trainee population of Fort Knox, Kentucky.⁴⁵ The idea behind this study was that in-barracks screening programs decreases the cross-contamination which occurs due to the intermingling of personnel from different units at the TMC. Relatively healthy soldiers awaiting care in a TMC for ailments such as musculoskeletal problems are exposed to the aerosol droplets of those who do in fact have acute respiratory disease. Thus, these relatively healthy soldiers are new susceptibles for active ARD pathogens to attack. Therefore, new cases of ARD are caused by the normal modality for soldiers to receive care for whatever other medical problem which they are experiencing.⁴⁶

Though not statistically significant at a significance level of 90%, the in-barracks screening program did have an effect on the incidence of acute respiratory disease within the training population.⁴⁷

In-Barracks Treatment and Screening Program

In-barracks treatment and screening programs feature specially trained enlisted medical personnel located in the barracks of the supported units to 'screen' all personnel requesting to go to sick call using an algorithm-based triage system. Treatment was conducted in the barracks, unless the algorithm indicates the patient's condition requires a PA or physician as the initial care provider.

Heltsley studied such an in-barracks treatment and screening program at the Naval Training Center in Orlando, Florida.⁴⁸ Since the study provided much of the impetus for proliferating in-barracks treatment and screening programs throughout the U.S. Navy in the early 1980's, and it provides a description of how such a program operates, the methodology and results are presented below.

Two recruit training divisions, each composed of roughly 800 recruits, were randomly chosen to serve as his test and control populations. An area to conduct recruit sick call was established in the test division's barracks, and was staffed with two junior general duty hospital corpsmen (NEC 0000) and one independent duty qualified senior hospital corpsmen (NEC 8425). All recruits requesting to go to sick call reported first to this area within their barracks where they were evaluated and treated if appropriate. Over the counter medications were available to the corpsmen as part of

their treatment regimen. Those recruits requiring a PA or physician as the initial care provider were referred to another medical treatment facility.

During the course of the study, 85% of the recruits seen at the in-barracks treatment and screening program were returned to training without requiring the services of a physician or physician assistant.⁴⁹ In addition, the recruits using the in-barracks treatment and screening program were returned to training in about one-sixth of the time of the recruits in the control division.⁵⁰ Heltsley also found that the in-barracks treatment and screening program reduced pharmaceutical costs by two-thirds, improved health record maintenance, and reduced the total visits to sick call by 20%.⁵¹

Multiple Free-Standing Medical Clinics

Establishing multiple free-standing clinics to provide sick call is another way to decentralize the sick call resources. The U.S. Army's use of decentralized TMCs is the best example of this strategy.

Hinkle's research on the U.S. Army's decentralized TMCs at FT Leonard Wood provides much insight into establishing multiple free-standing clinics as a sick call strategy.⁵² Hinkle found that it was the perception of the basic training Company Commanders that decentralized TMCs returned their soldiers to training faster, and that overall the decentralized TMC system best supports the training mission.⁵³

Comparing the average "health care treatment times" at FT Leonard Wood against those at FT Jackson (which uses a CTMC), Hinkle found that, "...there is no statistically significant difference between the average health care treatment times of the two systems (CTMC vs TMC)".⁵⁴

Based on his observations, Hinkle concluded:

"... the optimal system (to provide sick call for the basic trainees at FT Leonard Wood) is the decentralized TMC model.... while neither system appeared to show any great advantage in having a lower treatment time or a more efficient use of personnel, the decentralized TMC model was greatly preferred by the basic training company commanders and medical staff members at the surveyed MEDDACs."⁵⁵

Diverting Patients to Later Evaluations

The last three sick call strategies to be discussed share a common objective, to divert some patients normally seen at morning sick call into evaluations later in the day.⁵⁶ These three sick call strategies (staggering sick call hours, appointment systems, and operating afternoon or evening sick calls) are for the most part self explanatory. A brief review of each is provided below.

Staggering Sick Call Hours

Staggering sick call hours, where one unit comes to sick call at 0615, another unit at 0715, and so on, is an alternative strategy to cope with the large influx of patients when morning sick call begins. However, staggering sick call hours only moves the queue for sick call out of the medical treatment facility and into the supported units. This still represents time lost from

duty or training, since the servicemembers or recruits are still waiting for medical care, just as though they were physically waiting in the medical treatment facility.⁵⁷

Appointment Systems for Sick Call

Establishing an appointment system for sick call has seldom been discussed in the literature. McKenna's discussion of establishing an appointment system for sick call aboard the USS Midway (CV-41) was the only reference to this strategy found in the literature.⁵⁸ McKenna describes the appointment system as, "an unqualified success". The advantages, some of which were brought out by McKenna, will be elaborated on in a later section of this paper. An unanticipated outcome of establishing the appointment system for sick call was a 30% reduction in the average number of personnel reporting for sick call.⁵⁹

Operating an Afternoon and/or Evening Sick Call

Operating an afternoon and/or evening sick call is the primary strategy used to divert some patients normally seen at morning sick call into evaluations later in the work day. The characteristics of the population served heavily influences the decision to conduct an afternoon and/or evening sick call. For example, Tremblay in his plan for a new Cadet Health Center at the United States Military Academy recommended that an afternoon sick call be conducted as a means of meeting the special needs of the cadet population.⁶⁰

RESEARCH METHODOLOGY

This GRP will be conducted in three phases. In the first phase, information will be gathered from various sources about sick call in general, and recruit sick call at the Marine Corps Recruit Depot, Parris Island, in particular. In the second phase, the information collected will be synthesized and alternative sick call strategies identified to minimize lost training time due to recruit sick call at MCRD, Parris Island. In the third phase, each alternative sick call strategy will be evaluated against the defined criteria. The following paragraphs provide a brief explanation of each research and evaluative techniques used.

Literature Review

A literature review was conducted to determine what was already known about sick call and sick call strategies, and to review the approaches other researchers have used.

Review of Pertinent Directives and Correspondence

Pertinent DOD, Navy, and Marine Corps directives, and correspondence with higher commands concerning recruit sick call at MCRD, Parris Island were reviewed. This has identified some of the criteria, as well as provided general background and valuable insight into areas of command interest.

Direct Observation of Recruit Sick Call

Recruit sick call at the Marine Corps Recruit Depot, Parris Island, will be carefully observed on several occasions. The observations will serve as the basis for a description of the current organizational structure for conducting recruit sick call. Additionally, recruit sick call at the U.S. Army's Fort Jackson (Columbia, SC), and sick call at Fort Gordan (Augusta, GA) will be observed. Fort Jackson represents a centralized organizational structure, and Fort Gordan represents a decentralized structure for providing sick call to large training populations.

Description of Recruit Population Characteristics

The characteristics of the recruit population at the Marine Corps Recruit Depot, Parris Island, will be described. Characteristics described will include: the size and fluctuation of the recruit population, the demographic characteristics (ie. proportions of male and female recruits, average age, average educational levels) and the geographic dispersion of recruits.

Analysis of Demand for Recruit Sick Call

Outpatient workload data from the Branch Medical Clinic, MCRD, Parris Island, and other sources, will be analyzed to determine the historical demand for recruit sick call.

Telephone Survey of Other Basic Training Sites

A telephone survey of other Marine Corps, Navy, Army and Air Force recruit training centers will be conducted to determine how recruit sick call is performed. A structured telephone interview (Appendix C) will be conducted with a knowledgeable representative of the military medical treatment facility responsible for providing recruit sick call. Emphasis will be put upon sick call strategies currently or previously used to minimize lost training time due to recruit sick call.

Interviews with Key Personnel

Interviews will be conducted with key personnel concerning recruit sick call at MCRD, Parris Island. The interviews will provide background information, identify areas of command interest, and provide valuable insight into their perceptions and values.

Analysis of Available Data on Lost Training Time

Available data on lost training time per recruit sick call visit at MCRD, Parris Island, will be analyzed. A nineteen week study of lost training time due to recruit sick call at the Branch Medical Clinic, MCRD, PI was conducted from 8 June till 16 October 1987. The raw data from this study will be analyzed and mathematically manipulated to produce some meaningful measures of lost training time. For comparison, raw data from one of the two remaining BASs will be included in this analysis.

Review of Personnel to Conduct Recruit Sick Call

The personnel resources of the Branch Medical Clinic, MCRD, Parris Island and Naval Hospital, Beaufort will be reviewed.

Identify Alternative Sick Call Strategies

Alternative sick call strategies to minimize lost training time due to recruit sick call at MCRD, Parris Island will be identified.

Decision Making Process

A decision making process that takes into consideration the diverse existing constraints/criteria will be used to evaluate the alternative sick call strategies and determine the best way to minimize lost training time due to recruit sick call at MCRD, Parris Island. The existing constraints are the criteria against which the alternative sick call strategies will be judged. The existing constraints/criteria, ranked in order of significance are:

- (1) the amount of lost training time,
- (2) available personnel resources,
- (3) the quality of care available at recruit sick call,
- (4) the requirements of DOD and Navy directives,
- (5) the approval of the Commanding General, MCRD, Parris Island and the Commanding Officer, Naval Hospital, Beaufort.
- (6) and affordability,

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CHAPTER 2

DISCUSSION

DESCRIPTION OF RECRUIT POPULATION CHARACTERISTICS

The size of the recruit population at MCRD, Parris Island fluctuates significantly throughout the year. Seasonal differences in the availability of potential recruits within the civilian population accounts for most of this fluctuation. Historically, the largest number of potential recruits are available in the summer when high school seniors graduate. ¹

During calendar year (CY) 1987, the number of recruits onboard MCRD, Parris Island ranged from 3382 to 6293 with a mean of 4777 and a median of 4700.² The recruit population is largest in late summer, and lowest in late December and early summer.

All female recruits are assigned to the Fourth Training Battalion. During CY-1987, the number of female recruits ranged from 247 to 514 with a mean of 413.³ On average, female recruits accounted for 9.5% of the total number of recruits onboard MCRD, Parris Island during CY 1987.

The average age of both male and female recruits at MCRD, Parris Island during CY 1987 was 20 years. Of all recruits accessioned through MCRD, Parris Island in CY-1987: 99.2% of the males and 100% of the females were high school graduates, 73% of the males and 69% of the females were caucasian, and 25% of the males and 20% of the females were black.⁴

The recruit population at the Marine Corps Recruit Depot (MCRD), Parris Island can be subdivided into 8 sub-

populations. The Branch Medical Clinic, MCRD, Parris Island is centrally located in relation to these subpopulations, and is within walking distance of all but the Weapons Training Battalion and the Field Training Unit. These subpopulations and their respective distances from the Branch Medical Clinic are shown in Table (1).

First Recruit Training Battalion	3 Blocks
Second Recruit Training Battalion	3 Blocks
Third Recruit Training Battalion	4 Blocks
Fourth Recruit Training Battalion	3/4 Mile
Recruit Administration Center	1 Block
Special Training Division	1 Block
Weapons Training Battalion	1.5 Miles
Field Training Unit	3 Miles

Table 1, Distance of Subpopulations from
Branch Medical Clinic, MCRD, Parris Island

The number of recruits in each of the subpopulations fluctuates as the total number of recruits onboard MCRD, Parris Island fluctuates throughout the year.⁵ Appendix A shows this fluctuation in the number of recruits in each of the subpopulations during CY 1987, as well as weekly and monthly averages for the recruit population as a whole.

REVIEW OF PERTINENT DIRECTIVES AND CORRESPONDENCE

Pertinent directives were reviewed to provide some of the parameters, or criteria, for the decision making process presented later in this paper. Pertinent correspondence was reviewed to provide general background information.

Policies stated in Department of Defense (DOD) and Department of the Navy (DON) directives determine the way

physician and nonphysician health care providers can be utilized in military MTFs. These policies determine how physicians and nonphysician providers are organized to provide health care services to the beneficiary population. More specifically as it relates to this paper, decisions on how physicians and nonphysician providers are organized to provide recruit sick call are bounded by these policies.

The DOD and DON directives defining the requirement for physician supervision of nonphysician providers have the greatest impact upon how physicians and nonphysician providers are organized to provide recruit sick call. DOD directive 6025.2 of November 17, 1983 requires all DOD nonphysician health care providers to "... function under the supervision of a DOD doctor of medicine or osteopathy in all patient care activities that determine, start, or alter a regimen of medical treatment." DON, or OPNAV instruction 6320.3 of August 6, 1984 implemented DOD directive 6025.2 for the Navy Medical Department. OPNAV instruction 6320.3 required all Navy nonphysician providers to, "... function under the supervision of a physician", and that "... no more than three nonphysician providers shall be supervised and evaluated by a single physician."

Correspondence dating back to October of 1982 was reviewed as a primary source of background information on recruit sick call at MCRD, Parris Island. The correspondence reviewed provided insight into the circumstances that lead to the closing of the BASs in the Recruit Training Battalions in

February of 1987. A chronology of the significant events is presented below.

In October of 1982, Naval Hospital, Beaufort and all other Navy MTFs supporting recruit training were directed to establish an in-barracks medical screening program modeled after the program at the Recruit Training Center at Orlando, Florida.⁸

An in-barracks medical screening program had been in place at MCRD, Parris Island since 1973. The Parris Island Recruit Battalion Sick Call Program, initiated in February of 1973, utilized Navy hospital corpsmen to conduct recruit sick call in Battalion Aid Stations (BASs) located in the barracks of the Recruit Training Battalions.⁷ The program was temporarily suspended in the summer of 1980 due to medical personnel shortages and renovation of facilities, but was reinstated in April of 1981. Under this program as it operated until January of 1987, a BAS was located in each of the four Recruit Training Battalions, the Weapons Training Battalion, and the Field Training Unit.⁸ The Navy corpsmen in the six BASs provided recruit sick call, provided medical coverage for physical fitness and other training exercises, and responded to medical emergencies.⁹

Disestablishment of the Parris Island Recruit Battalion Sick Call Program was initiated by a teletype message sent to all Navy MTFs from the Commander, Naval Medical Command on November 19, 1985.¹⁰ The message reiterated the DON policy that a single physician could supervise no more than three

nonphysician providers, but went on to require that the supervising physician be located within the same building as the nonphysician providers. The message classified all MTFs that did not meet this requirement as "unauthorized clinics" because they did not provide "adequate" physician supervision of the Navy nonphysician providers. The DOD wide emphasis upon quality assurance and risk management, and the litigious environment of the mid 80's provided the overall impetus for this stringent requirement for physician supervision of nonphysician providers.

The requirement that the supervising physician be located within the same building as the nonphysician provider had severe implications on how physicians and nonphysician providers could be organized to provide recruit sick call at MCRD, Parris Island and all other Navy and Marine Corps recruit training centers. In effect, it prohibited any type of in-barracks screening or in-barracks screening and treatment program unless a physician was placed in the barracks to supervise the nonphysician providers. Due to the limited number of physicians, especially Primary Care Medical Officers (PCMOs), on active duty in the Navy it was not feasible to place physicians in the barracks to supervise the nonphysician providers.¹¹

In December of 1985, the six BASs at MCRD, Parris Island were categorized as "unauthorized clinics" by Naval Hospital, Beaufort in accordance with the guidelines from the Naval Medical Command.¹² Conducting recruit sick call at the

BASs was determined to be unacceptable at this time because it did not provide "adequate" supervision of the nonphysician providers working in the BASs.

In May of 1986, the Navy Inspector General (Navy IG) inspected the BASs at MCRD, Parris Island. As a result of this inspection, the Navy IG via the Commander, Naval Medical Command directed the Commanding Officer of Naval Hospital, Beaufort to close the six BASs.¹³ The overall impact, and alternative methods of providing recruit sick call were extensively studied during the following months in anticipation of closing the BASs.

In February of 1987, the BASs in the four Recruit Training Battalions were closed and their recruit sick call moved to the Branch Medical Clinic.¹⁴ The Weapons Training Battalion and the Field Training Unit BASs remained open to provide recruit sick call in addition to their primary mission of providing emergency medical care for injured recruits. Closing the four BASs was a compromise worked out between the Navy IG, the Commander, Naval Medical Command, and the Commanding Officer of Naval Hospital, Beaufort.¹⁵ This compromise legitimized the existence of the BASs at the Weapons Training Battalion and the Field Training Unit and achieved the highest level of physician supervision for the nonphysician providers possible with the number of assigned physicians.¹⁶

DIRECT OBSERVATION OF RECRUIT SICK CALL

Recruit sick call at MCRD, Parris Island was closely observed on numerous occasions during the period August 1, 1987 to May 31, 1988. Recruit sick call at the Army's Basic Training Center at Fort Jackson in Columbia, SC was observed on December 3, 1987 during a visit to Montcrief Army Community Hospital. Sick call for the large training population at Fort Gordon in Augusta, GA was observed on October 8, 1987 during a visit to Eisenhower Army Medical Center. The sites chosen represent three different models for organizing medical resources to provide recruit sick call. Recruit sick call at Fort Jackson is completed centralized, recruit sick call at MCRD, Parris Island is both centralized and decentralized, and sick call at Fort Gordon is completely decentralized.

The observations were structured, with emphasis put upon sick call strategies currently used to reduce the amount of training time lost due to sick call. Appendix B, used for the telephone survey of basic training sites, was also used during my observations of sick call to provide consistency from site to site and to record my observations.

Marine Corps Recruit Depot, Parris Island

Recruit sick call for the first and third phases of recruit training at MCRD, Parris Island is centralized at the Branch Medical Clinic. Recruit sick call for the second phase of recruit training (ie. marksmanship, weapons and

field training) is decentralized at the two remaining BASs. Recruit sick call is conducted twice a day. Check in for morning sick call is 0600-0700, and for afternoon sick call 1300-1330.

During the first and third phases of recruit training, recruit sick call begins in the Recruit Training Battalion when the recruit informs a Drill Instructor (DI) that they are ill or injured. A Sick Call Slip, referred to as a "walking chit" is completed by the DI and given to the recruit. The Sick Call Slip allows the DIs to maintain personnel accountability for their recruits. The recruit takes their Sick Call Slip and walks to the Branch Medical Clinic.¹⁰

Upon entering the Branch Medical Clinic, the recruits are triaged by a hospital corpsmen and directed to the appropriate area. Recruits presenting for initial evaluation and treatment of a chief complaint, or for physician follow-up pick up their health record and have their vital signs taken. All other recruits are routed to a separate line to pick up their health records.

After picking up their health record the recruits proceed to the appropriate treatment area. Recruits presenting for lower extremity injuries proceed directly to Podiatry. Recruits presenting for blisters and dressing changes for blisters proceed directly to Dermatology Sick Call. Recruits presenting for initial evaluation and treatment of a chief complaint, or for physician follow-up

proceed to the Recruit Sick Call Area. After logging in the Recruit Sick Call Area, the recruit waits to be evaluated and treated by either a "junior" screener, a "senior" screener, a PA, or a PCMO depending upon their chief complaint.

"Junior" screeners are General Duty Hospital Corpsmen (HM-0000) or Field Medical Technicians (HM-8404) who have at least 12 weeks experience at the Branch Medical Clinic and have completed a special orientation and training program. "Junior" screeners are allowed to see only certain categories of patients (ie. musculoskeletal injuries, rashes, upper respiratory infections, etc.) that their supervising PCMO have certified them competent to evaluate and treat. "Senior" screeners have been certified competent by their supervising PCMO to see a wider range of minor illnesses. "Junior" and "senior" screeners are guided in their evaluation and treatment of recruits by the written treatment protocols in the Hospital Corpsman Screener's Guide.¹⁷ Physician Assistants see the more seriously ill recruits, including those patients referred by the "screeners". Primary Care Medical Officers see the most seriously ill recruits, including those referred by the PAs and the "screeners", and physician follow-ups.¹⁸

After being evaluated and treated in the Recruit Sick Call Area, the recruits are logged out of the treatment area and are either: (1) returned to their Recruit Training Battalion, (2) sent to the Pharmacy to pickup medications, (3) or referred to another treatment area. Recruits then

walk or ride the base bus back to their Recruit Training Battalion.

A full range of ancillary services, such as laboratory, radiology, pharmacy, physical therapy, optometry, and psychiatry are available at the Branch Medical Clinic. The personnel working in these areas are assigned to their respective departments at Naval Hospital, Beaufort, and are rotated between the Branch Medical Clinic and the Naval Hospital. Availability of a full range of ancillary services at the Branch Medical Clinic saves lost training time since the recruit does not have to be transferred to another MTF for a laboratory test or x-ray.¹⁰

During the second phase of recruit training, recruit sick call is conducted at one of the remaining BASs. Recruits participating in marksmanship and weapons training at the Weapons Training Battalion go to the Weapons Battalion BAS for recruit sick call. Recruits participating in field training at the Field Training Unit go to the Field Training Unit BAS. After informing the DI that they are ill or injured, and being given a Sick Call Slip, the recruit walks to the appropriate BAS for recruit sick call.

At the BAS the recruits are logged in, and have their vital signs taken. Recruits reporting for a physician follow-up appointments, podiatry problems, or weight checks await transportation to the Branch Medical Clinic. Those recruits reporting for initial evaluation and treatment of a chief complaint seen by 'senior' screeners. The 'senior'

screeners assigned to the BAS evaluate and treat the recruits according to established treatment protocols in the Hospital Corpsman Screener's Guide.

Hospital corpsmen assigned to the BASs are permitted to treat only minor illnesses and injuries. More seriously ill or injured recruits are referred to the Branch Medical Clinic for evaluation and treatment by a PA or PCMO. Hospital corpsmen assigned to the BASs are only allowed to examine female recruits above the neck, from the elbow down, and from the knees down.²⁰

A review of the clinic log at Weapons Training Battalion BAS for the months of February and April 1987 showed that on average 26% of the recruits reporting to the BAS for recruit sick call are referred to the Branch Medical Clinic for further evaluation and treatment. A similar review of the clinic log at the Field Training Unit BAS for the months of February, March, August, and September 1987 showed that on average 27% of the recruits reporting to the BAS for recruit sick call are referred to the Branch Medical Clinic for further evaluation and treatment.

Recruits referred from the BASs to the Branch Medical Clinic are transported there in a variety of ways. Ambulances are available at both the Field Training Unit and Weapons Training Battalion BAS to transport seriously ill or nonambulatory recruits. From the Field Training Unit, recruits referred to the Branch Medical Clinic are either transported by a Recruit Training Battalion vehicle or by the

base bus. From the Weapons Training Battalion BAS, recruits are either transported by a base bus or ambulance. The base bus stops at each location only once per hour, so a significant amount of training time can be lost waiting for the bus, and during transportation to the Branch Medical Clinic.²¹

Recruits referred from the BASs to the Branch Medical Clinic are given head-of-the-line privileges in the Recruit Sick Call Area and other treatment areas. Head-of-the-line privileges are given so these recruits can be returned to training as soon as possible. Due to the nature of recruit training in the third phase (ie. marksmanship, weapons and field training), it is especially important that recruits do not miss training while waiting to be seen by a health care provider.²² After being evaluated and treated at the Branch Medical Clinic, the recruits are transported back to the Field Training Unit or Weapons Training Battalion by the base bus. Again, a significant amount of training time is lost waiting for the bus, and during transportation back to the training area.

Fort Jackson, SC

Recruit sick call at the Army's Basic Training Center at Fort Jackson in Columbia, SC was observed on December 3, 1987. Recruit sick call is conducted at the McWethy Consolidated Troop Medical Clinic (CTMC) which is located immediately adjacent to Montcrief Army Community Hospital. The recruits are bussed from their barracks areas to the

McWethy CTMC. Sick call is conducted once a day. Recruit sick call hours are staggered, with each of the Training Brigades having a different check in time (ie. one Training Brigade checks in from 0630-0700, another from 0730-0830, and so on).

Recruits wait outside until they are directed to come in, pick up their health records, and log in. The recruits are then directed to the appropriate treatment area based on their chief complaint. Recruits presenting for initial evaluation and treatment of a chief complaint or for physician follow-up are directed to one of four "treatment lanes".

In the "treatment lanes", vital signs are taken and recruits are triaged by a Basic Medic (91-Alpha) in accordance with the Algorithm Directed Troop Medical Care procedures contained in the U.S. Army Health Services Command's publication (HSC PAM 40-7-21) dated June 1985. Based upon the recruit's chief complaint, vital signs, and answers to specific questions the Basic Medic either: (1) refers the recruit to a PA or PCMO, (2) refers the recruit to an ambulatory care clinic at the hospital, or (3) gives the recruit an over-the-counter medications and instructions for use as part of a Self-Care Protocol.

An interesting observation made at the McWethy CTMC was that the Training Brigades ignored the staggered sick call hours that were established by the clinic staff. On the day I observed, all four Training Brigades sent their recruits to

the CTMC at 0630, which resulted in over 100 recruits being lined up outside waiting to come into the building. In discussing this with the Non-Commissioned Officer in Charge (NCOIC) of the Clinic, he stated that the Training Brigades often failed to comply with the staggered sick call hours because it interfered with their training schedule.²³

The bus transportation of recruits to and from recruit sick call was viewed as an asset by the NCOIC of the Clinic.²⁴ A bus stopped at the CTMC every fifteen minutes to return recruits to their training areas, thus reducing training time lost by recruits waiting for transportation. The buses also prevented recruits from "wandering off" on the way to, and back from recruit sick call.²⁵

Fort Gordon, SC

Sick call for the large training population at Fort Gordon in Augusta, GA was observed on October 8, 1987. The majority of the students at Fort Gordon are junior Army enlisted personnel going through basic military occupational specialty training. Sick call is provided for this large training population by three decentralized Troop Medical Clinics (TMCs). The TMCs are located in near proximity to the student's barracks and classrooms. The TMCs instituted an appointment system for sick call in August of 1987.

Check in for sick call at the TMCs is between 0630-0730. Students are checked in, briefly evaluated by a PA and vital signs taken as deemed appropriate. Every student that reports for sick call is evaluated and treated by a PA.

Students too sick to participate in training or nonambulatory are treated immediately. All other students are given an appointment for an evaluation later in the day, and returned to training.

The TMCs have a small pharmacy, but no laboratory or radiology equipment or personnel. Students requiring laboratory work or x-rays were transported by bus to Eisenhower Army Medical Center.

The appointment system for sick call was well liked by the medical personnel interviewed.²⁶ The appointment system: spread the work out through the day, decreased lost training time due to sick call, allowed the PA to spend a full 10 minutes with each patient, significantly decreased the congestion in the TMC waiting room, and allowed the student some flexibility to schedule their appointment around tests and other significant training evolutions.²⁷

Initially, there was resistance to the appointment system from personnel in the Training Brigades because they feared it would increase lost training time since the students had to make two trips to the TMC. According to the Officer in Charge (OIC) of one of the TMCs, much of the resistance had already been overcome as the positive aspects of the appointment system were experienced by personnel in the Training Brigades.²⁸

In discussing appointment systems for sick call, the OIC did not think an appointment system for recruit sick call

would work due to the rigidity of the recruit training schedule, and the difficulty in transporting recruits to and from appointments if a CTMC was used. The OIC was aware of several armed forces training centers that had successfully implemented appointment systems for sick call, but knew of no basic training sites that had.²⁹

ANALYSIS OF DEMAND FOR RECRUIT SICK CALL

The demand for recruit sick call at MCRD, Parris Island fluctuates significantly throughout the year, and is positively correlated to the total number of recruits onboard MCRD, Parris Island. Table (2) provides information on the number of recruit sick call visits from June 1987 to May 1988.

The demand for recruit sick call also fluctuates significantly from day-to-day throughout the week. Table (3) shows the number of recruit sick call visits at the Branch Medical Clinic for each day of the week for a sixteen week period in 1987. This fluctuation from day-to-day is attributed to certain training activities that result in injuries, and to avoidance of strenuous training evolutions by recruit malingerers.³⁰

Though female recruits accounted for only 9.5% of the average number of recruits onboard MCRD, Parris Island they accounted for 15% of the total recruit sick call visits from June 1987 to May of 1988. Table (4) provides information on the number of recruit sick call visits from June 1987 to May

	RSC, BMC	BAS, FTU	BAS, WPNS	TOTAL
JUN 87	3996	109	152	4257
JUL 87	4550	160	206	4916
AUG 87	5121	206	196	5523
SEP 87	4330	166	121	4617
OCT 87	3506	60	592	4158
NOV 87	3228	65	342	3635
DEC 87	3035	60	215	3310
JAN 88	2701	79	82	2862
FEB 88	1467	52	428	1947
MAR 88	2116	172	414	2702
APR 88	3228	140	203	3571
MAY 88	3148	104	153	3405
TOTAL	40426	1373	3104	44903

RSC, BMC = Recruit Sick Call, Branch
Medical Clinic

BAS, FTU = Battalion Aid Station,
Field Training Unit

BAS, WPNS = Battalion Aid Station,
Weapons Training BN

Table 2, Total Recruit Sick Call MCRD, Parris
Island, June 1987 to May 1988

WEEK OF	Recruit Sick Call, Branch Medical Clinic						TOTAL
	MON	TUES	WED	THURS	FRI	SAT	
6 JUN	160	165	127	119	186	N/A	757
15 JUN	194	167	171	145	199	N/A	876
22 JUN	212	181	138	81	173	N/A	785
29 JUN	198	149	122	104	74	N/A	647
6 JUL	216	140	139	69	180	N/A	744
13 JUL	289	189	171	109	219	70	977
20 JUL	256	219	193	153	295	122	1116
27 JUL	305	260	200	104	241	195	1110
3 AUG	296	232	220	178	323	151	1249
10 AUG	301	185	259	116	260	110	1121
17 AUG	270	223	205	142	316	111	1156
24 AUG	257	199	197	144	213	95	1010
31 AUG	269	208	174	88	187	148	926
7 SEP	N/A	270	189	107	244	76	810
14 SEP	266	139	203	76	185	83	869
21 SEP	273	147	227	116	215	97	978
28 SEP	191	176	194	134	174	94	869
5 OCT	225	178	164	131	165	71	863
12 OCT	N/A	186	149	113	154	56	602
AVG	246	190	181	117	211	106	919

Table 3, Number of Recruit Sick Call Visits Per Day at
the Branch Medical Clinic, MCRD, Parris Island

1988 broken down by sex. This finding is not surprising, since a 1986 study at the Navy Recruit Training Center in Orlando, Florida found that female recruit's utilization of recruit sick call was 30% greater than that of male recruits.³⁰

	Male	Percent Male	Female	Percent Female	Total
RECRUIT SICK CALL, BRANCH MEDICAL CLINIC	34551	85%	5875	15%	40426
BATTALION AID STATION, FIELD TRAINING UNIT	1208	88%	165	12%	1373
BATTALION AID STATION, WEAPONS TRAINING BN	2422	78%	682	22%	3104
TOTAL	38181	85%	6722	15%	44903

Table 4, Total Recruit Sick Call, June 1987
To May 1988 MCRD, Parris Island

TELEPHONE SURVEY OF OTHER BASIC TRAINING SITES

A telephone survey of Marine Corps, Navy, Army and Air Force recruit training centers was conducted to determine how recruit sick call is currently being performed at other DOD installations. The recruit training centers included in the telephone survey are shown in Table (5).

A structured telephone interview was conducted with a knowledgeable representative of the MTF responsible for providing recruit sick call. During the interviews, emphasis was placed upon sick call strategies currently or previously used to minimize lost training time due to recruit sick call.

Appendix B was used to guide the interviews and provide a degree of consistency from one interview to the next.

Appendix B was pretested with the Administrative Officer, MCRD, Parris Island and the Officer-in-Charge, Recruit

U.S. Navy/U.S. Marine Corps

- * Recruit Training Center, Great Lakes, IL
- * Recruit Training Center, San Diego, CA
- * Recruit Training Center, Orlando, FL
- * Marine Corps Recruit Depot, Parris Island, SC
- * Marine Corps Recruit Depot, San Diego, CA

U.S. Air Force

- * Lackland Air Force Base, San Antonio, TX

U.S. Army

- * Fort Leonard Wood, MO
- * Fort Sill, OK
- * Fort Benning, Columbus, GA
- * Fort Bliss, TX
- * Fort McClellan, AL
- * Fort Knox, Fort Knox, KY
- * Fort Jackson, Columbia, SC

Table 5. Recruit Training Centers Surveyed

Training Center, Great Lakes, IL.³¹ Their response to the questions asked and to the interview as a whole were used to modify Appendix B and the interview procedure. A summary of the responses to the telephone survey are presented below in Table (6).

SICK CALL STRATEGIES	ARMY		NAVY		USAF		SUMMARY	
	YES	NO	YES	NO	YES	NO	YES	NO
Prevent illness/injury	7	0	5	0	1	0	13	0
Nonphysician providers	7	0	5	0	1	0	13	0
Algorithm-based triage	7	0	0	5	0	1	7	6
Decentralize resources	5	2	2	3	1	0	7	6
Staggering hours	2	5	1	4	0	1	3	10
Appointment system	0	7	0	5	0	1	0	13
Afternoon sick call	2	5	3	2	1	0	6	7
Evening sick call	0	7	0	5	1	0	1	12

Table 6. Summary of Responses to Telephone Survey
All of the MTFs surveyed emphasize the prevention of

illness and injury as a primary means to minimize lost training time due to recruit sick call. Example of this are the efforts made to prevent heat related injuries,

overuse injuries of the lower extremities, and sling palsy during recruit training.³²

All of the military MTFs surveyed utilize nonphysician providers as physician extenders in recruit sick call. Though the Army, Navy, and Air Force MTFs utilize PAs in this capacity, only the Navy PAs are required to practice in the same building as their supervising physician. The Air Force was the only service that utilized Primary Care Nurse Practitioners in recruit sick call.³³

A wide variety of enlisted physician extenders are used in recruit sick call by the military MTFs surveyed. The Army utilizes Basic Medics (91-B) and Advanced Medics (91-A) in this capacity; the Navy utilizes Independent Duty Technicians (HM-8425), Field Medical Service Technicians (HM-8404) and General Duty Hospital Corpsmen (HM-0000); and the Air Force utilizes Basic Medical Technicians (902). It is important to note that the duties performed by these enlisted physician extenders varies significantly among the services.

All the Army MTFs surveyed utilize an algorithm-based triage system, and the Branch Medical Clinic, MCRD, Parris Island uses written protocols to guide their enlisted physician extenders in their evaluation and treatment at recruit sick call. Algorithm-based triage, conducted in accordance with the procedures contained in the U.S. Army Health Services Command's publication HSC PAM 40-7-21 dated June 1985, is a predominant feature of recruit sick call conducted by the Army MTFs. Basic Medics, '91 Alphas', are

trained by the local MTFs to use the algorithm-directed troop medical care procedures to screen all personnel reporting for recruit sick call. The Hospital Corpsman Screeners Guide contains written protocols and is used by the enlisted physician extenders at the Branch Medical Clinic, MCRD, Parris Island.

The question concerning centralizing versus decentralizing medical resources devoted to recruit sick call provided the most diverse response of all the questions asked. Of the Army's seven recruit training centers, 5 have decentralized TMCs and 2 have CTMCs. The Air Force uses an in-barracks treatment and screening program at its only recruit training center. At its three recruit training centers the Navy utilizes centralized Branch Medical Clinics. However, the Navy utilizes a combination of centralized Branch Medical Clinics and decentralized BASs at the Marine Corps recruit training centers. Decentralized BASs are used to support the second phase (weapons and field training phases) of Marine Corps recruit training. The second phase of Marine Corps basic training at MCRD, San Diego is conducted at the Marine Corps Base, Camp Pendleton.³⁴

Only three military MTFs surveyed used staggered sick call hours, 2 were Army and 1 was a Navy MTF. Both of the Army MTFs staggered their recruit sick call hours by Training Brigade, for example: Brigade A checked in for recruit sick call at 0630, Brigade B at 0730, Brigade C at 0830, and so

on. Both of the Army MTFs were dissatisfied with the staggered sick call hours due to lack of compliance with the schedule by the Training Brigades.

MCRD, San Diego implemented an innovative approach to staggering sick call hours in February of 1988. Recruits in the first phase of training (Weeks 1-4) go to recruit sick call in the morning, recruits in the third phase of training (Weeks 9-12) go to recruit sick call in the afternoon. According to the OIC and the Senior Medical Officer this approach to staggering sick call hours is working very well.³⁶ The health care providers are very satisfied with the change since it spreads their workload throughout the day. The Marine Corps is satisfied in that it reduces waiting times and keeps the first phase and third phase recruits separated. The latter is thought important because the third phase recruits may have a demotivating effect upon the first phase recruits, and pass along information on how to avoid training, etc.³⁶

None of the 13 military MTFs surveyed currently uses an appointment system for recruit sick call. The Recruit Training Center, San Diego reported they had tried an appointment system for recruit sick call but had abandoned it due to problems in getting recruits to the Branch Medical Clinic for their appointments. Due to these problems, the appointment system increased the amount of training time lost due to recruit sick call.³⁷

Six of the thirteen MTFs surveyed conducted an afternoon recruit sick call in addition to morning sick call. The Army MTF that supports recruit training at Fort McClellan, Alabama conducts only an afternoon RSC. The afternoon sick call is conducted during the hottest part of the day, and is an integral part of their efforts to prevent heat related injuries. Though statistics were not available to support the claim, the NCOIC at the MTF believes the afternoon sick call does decrease heat related injuries.³⁰

Of the thirteen MTFs surveyed, only the Air Force MTF at Lackland Air Force Base conducted an evening recruit sick call.³⁰ Twelve of the thirteen MTFs referred after hours recruit sick call patients to the Emergency Room at the local military hospital.

INTERVIEWS WITH KEY PERSONNEL

Unstructured interviews were conducted with key Navy and Marine Corps personnel concerning recruit sick call at MCRD, Parris Island. The interviews provided valuable background information, identified areas of command interest, and insight into the perceptions and values of those interviewed. The interviews were recorded when possible, with the permission of the interviewee. The interviews not recorded generally occurred in settings (ie. training areas) that were not conducive to recording.

Though unstructured, the interviews often began by comparing the 'old' and 'new' way of conducting recruit sick

call at MCRD, Parris Island. The 'old' way being decentralized BASs located in the Recruit Training Battalions; the 'new' way being centralization of recruit sick call for the four Recruit Training Battalions at the Branch Medical Clinic. This 'jumping off point' would lead into a discussion of each methods strengths and weaknesses, and into other sick call strategies that the interviewee was familiar with.

Information gleaned from the interviews is interspersed throughout the paper to emphasize a particular issue or idea. A synthesis of the information gleaned from the interviews presented here would be repetitious.

ANALYSIS OF AVAILABLE DATA ON LOST TRAINING TIME

During the summer of 1987 a study was conducted at the Branch Medical Clinic, MCRD, Parris Island to evaluate the impact of closing the BASs upon lost training time due to recruit sick call. The Recruit Time Study was conducted from June 8 to October 16, 1987 during the period when the onboard recruit strength at MCRD, Parris Island and the demand for recruit sick call were at their highest in CY 1987.

The study's methodology was simple and straight forward. When a recruit entered the Branch Medical Clinic for recruit sick call their 'time in' was recorded on their Sick Call Slip. The recruit then proceeded to the appropriate treatment area and this 'time in' was recorded in a sign in log maintained in each treatment area. When the recruit was

ready to leave the treatment area after being evaluated and treated their "time out" was recorded in the sign in log.⁴⁰

From this data, the percentage of recruits that were returned to training within 1 hour, 2 hours, 3 hours, etc. was calculated weekly. Table (7) shows the results of this study. For example, during the week beginning 12 June 1987, 10.4% of the recruits that went to recruit sick call were returned to training within 1 hour; 39.2% within 2 hours; 61% within 3 hours; and 79.6% within 4 hours.

From the data gathered for the Recruit Time Study it was possible to calculate the mean training time lost per recruit sick call visit for each of the nineteen weeks of the study.

WK BEGINNING	Percentage of recruits returned to training within:			
	1 HR	2 HR	3 HR	4HR
8JUN87	10.4%	39.2%	61.0%	79.6%
15JUN87	15.3%	33.7%	54.0%	72.0%
22JUN87	19.1%	42.8%	66.8%	83.1%
29JUN87	19.5%	46.2%	66.9%	83.5%
6JUL87	19.0%	46.3%	70.0%	85.0%
13JUL87	21.2%	48.7%	71.6%	85.7%
20JUL87	14.8%	39.2%	63.2%	79.0%
27JUL87	13.0%	41.2%	62.7%	78.1%
3AUG87	16.2%	42.0%	67.1%	83.9%
10AUG87	26.4%	58.2%	79.5%	90.6%
17AUG87	28.5%	60.1%	78.9%	91.0%
24AUG87	18.6%	50.2%	71.5%	87.7%
31AUG87	28.1%	59.0%	76.8%	87.9%
7SEP87	32.8%	63.0%	83.0%	92.0%
14SEP87	32.0%	65.9%	82.1%	92.9%
21SEP87	34.7%	66.8%	82.9%	93.9%
28SEP87	39.2%	75.4%	87.4%	95.3%
5OCT87	38.8%	72.3%	89.9%	96.1%
12OCT87	48.3%	80.8%	90.9%	97.0%

Table 7, Results of Recruit Time Study Conducted

WEEK BEGINNING	MEAN TIME	TOTAL VISITS
8JUN87	2.4	757
15JUN87	2.5	876
22JUN87	2.2	784
29JUN87	2.3	572
6JUL87	2.2	744
13JUL87	2.0	977
20JUL87	2.4	1126
27JUL87	2.5	1105
3AUG87	2.2	1249
10AUG87	1.9	1118
17AUG87	1.8	1010
24AUG87	2.1	1154
31AUG87	1.8	916
7SEP87	1.6	810
14SEP87	1.7	868
21SEP87	1.6	980
28SEP87	1.5	874
5OCT87	1.4	874
12OCT87	1.3	602
MEAN	2.0	

Table 8, Mean Training Time Lost Per
Recruit Sick Call Visit

During the nineteen weeks of this study, the average recruit lost 2.0 hours of training time per recruit sick call visit.

Table (8) presents this information. Eight percent of the recruits seen at Recruit Sick Call during the course of the time study were excluded because they did not have their 'time-in' or 'time-out' properly recorded on their Sick Call Slip.

Another study was conducted to determine the mean training time lost per recruit sick call visit at the BAS, Field Training Unit for an 8 week period from 8 June to 31 July 1988. The purpose of this study was to gather data

to facilitate a comparison of the mean training time lost per recruit sick call visit at the BAS, Field Training Unit and Recruit Sick Call Area, Branch Medical Clinic.

The study was conducted by extracting information from the clinic log maintained at the BAS. During the period covered by the study, when a recruit arrived at the BAS, a 'time in' was recorded on their Sick Call Slip and in the clinic log. When the recruit left the BAS area after being evaluated and treated their 'time out' was recorded on their Sick Call Slip and in the clinic log.⁴¹

During the eight weeks of this study, the average recruit lost 1.0 hours of training time per recruit sick call visit at the BAS, Field Training Unit. Table (9) presents this information, and a comparison of the mean training time lost per recruit sick call visit at the BAS, Field Training Unit and Recruit Sick Call Area, Branch Medical Clinic for the eight week period from 8 June to 31 July 1988.

Combining data gathered during the Recruit Time Study with data about the number of recruits that were onboard MCRD, Parris Island (see Appendix B) at the time allowed an estimate of the percentage of the total recruit training time that was 'lost' due to recruit sick call to be calculated. Dividing the amount of training time lost per week due to recruit sick call by the amount of training time available yielded the percentage of the total training time available that was 'lost' due to recruit sick call during the nineteen weeks of the Recruit Time Study.

WEEK BEGINNING	MEAN TIME FTU, BAS	MEAN TIME RSC, BMC
8JUN87	1.1	2.4
15JUN87	0.7	2.5
22JUN87	0.2	2.2
29JUN87	0.5	2.3
6JUL87	0.6	2.2
13JUL87	1.5	2.0
20JUL87	1.1	2.4
27JUL87	1.1	2.5
MEAN	1.0	2.3

Table 9, Comparison of Mean Training Time
Lost per Recruit Sick Call Visit

WEEK OF	# OF VISITS	MEAN TIME LOST PER VISIT	TOTAL TRAINING TIME LOST	TOTAL TRAINING TIME AVAILABLE	PERCENT OF TOTAL TRAINING TIME LOST
8 JUN	757	2.4	1817	202450	0.90%
15 JUN	876	2.5	2190	213050	1.03%
22 JUN	784	2.2	1725	229600	0.75%
29 JUN	572	2.3	1316	203350	0.65%
6 JUL	744	2.2	1637	247250	0.66%
13 JUL	977	2.0	1954	270000	0.72%
20 JUL	1126	2.4	2702	283750	0.95%
27 JUL	1105	2.5	2763	294850	0.94%
3 AUG	1249	2.2	2748	296700	0.93%
10 AUG	1118	1.9	2124	309900	0.69%
17 AUG	1010	1.8	1818	307750	0.59%
24 AUG	1154	2.1	2423	298900	0.81%
31 AUG	916	1.8	1649	298500	0.55%
7 SEP	810	1.6	1296	292150	0.44%
14 SEP	868	1.7	1476	292200	0.50%
21 SEP	980	1.6	1568	286900	0.55%
28 SEP	874	1.5	1311	273250	0.48%
5 OCT	874	1.4	1224	275400	0.44%
12 OCT	602	1.3	783	257800	0.30%
			34522	5133750	0.67%

Table 10, Percentage of Total Recruit Training Time
'Lost' Due to Recruit Sick Call

8 June 1987 to 16 October 1987

The amount of training time lost due to recruit sick

call each week during the Recruit Time Study was estimated by multiplying the number of recruit sick call visits by the mean time lost per recruit sick call visit. The total amount of recruit training time available was estimated by

multiplying the number of recruits onboard by fifty, which is the average number of recruit training hours available Monday through Friday.⁴²

Table (10), shows the percentage of the total recruit training time available that was "lost" due to recruit sick call. During the nineteen weeks of the Recruit Time Study 0.67% of the available recruit training time was lost due to recruit sick call.

REVIEW OF PERSONNEL RESOURCES DEVOTED TO RECRUIT SICK CALL

"We cannot practice such safe medicine during peacetime that we don't prepare our PAs, IDTs, corpsmen, physicians, and nurses for their wartime mission"⁴³

VADM James A. Zimble
Surgeon General
United States Navy

It is impossible to discuss the issue of recruit sick call in the U.S. Navy without discussing the issue of utilization of enlisted physician extenders, such as General Duty Hospital Corpsmen and Field Medical Technicians. How enlisted physician extenders are utilized at Branch Medical Clinic, MCRD to conduct recruit sick call reflects the current policies of the Navy Medical Department on their use during peacetime and in wartime. It is not possible nor practical to separate the peacetime and wartime missions. Before reviewing the personnel resources devoted to recruit sick call at the Branch Medical Clinic, MCRD, Parris Island it is important to first briefly review its implications on wartime medical readiness.

"Putting ordnance on target" is the mission of the Navy Medical Department according to the Surgeon General of the Navy.⁴⁴ Since October of 1985 when the Secretary of Defense declared that, "wartime medical readiness is the number one priority of the military medical departments"⁴⁵ there has been significantly increased attention paid to wartime medical readiness in all the military medical departments.

In today's Navy Medical Department, as reflected in their use in recruit sick call, General Duty Hospital Corpsmen (NEC: "0000") and Field Medical Technicians (NEC 8404) are reduced to little more than "vital sign technicians" in the MTFs ashore.⁴⁶ For example, General Duty Hospital Corpsmen and Field Medical Technicians working in recruit sick call at the Navy Recruit Training Centers in Orlando, Great Lakes, and San Diego are permitted to only do the "S and O" of the patient's assessment as required by the "SOAP" documentation process.⁴⁷ The General Duty Hospital Corpsmen and Field Medical Technicians are only permitted to document the patient's chief complaint ("S"); and to take and record the patient's vital signs (temperature, pulse, blood pressure, and respirations), and their own direct observations of the patient's signs and symptoms ("O"). The General Duty Hospital Corpsmen and Field Medical Technicians are not permitted to perform an assessment of the patient ("A") nor develop a plan for treating the patient ("P"). This limitation upon what they are allowed to do during peacetime

has severe implications upon their ability to perform their wartime mission.

General Duty Hospital Corpsmen and Field Medical Technicians working under the limitations described above never have the opportunity to develop the medical nor decision making skills they will require to perform their wartime mission. The General Duty Hospital Corpsmen and Field Medical Technicians assigned to Navy and Marine Corps operational billets will be the primary medical care givers during wartime. There are too few PCMOs and PAs in the active duty and reserve forces for it to be otherwise. It is for this reason that the Navy Medical Department has an obligation to provide the General Duty Hospital Corpsmen and Field Medical Technicians the opportunity during peacetime to develop the skills they will require during wartime.

The Manpower Authorization Report (MPA) promulgated by the Naval Military Personnel Command reflects the billets authorized to staff the Branch Medical Clinic, MCRD, Parris Island. The MPA does not accurately reflect the number of personnel required to man the Branch Medical Clinic, nor the number of personnel currently assigned to the Branch Medical Clinic. Naval Hospital, Beaufort, on behalf of the Branch Medical Clinic, has made numerous attempts over the last several years to correct the MPA to accurately reflect the number of personnel required to staff the Branch Medical Clinic, but has been unsuccessful.⁴⁶ The number of personnel currently assigned to the Branch Medical Clinic,

MCRD, Parris Island exceeds the number authorized since the Commanding Officer of Naval Hospital, Beaufort is permitted to augment the staffing of the Branch Medical Clinic as required to meet its mission. The Commanding Officer, of Naval Hospital, Beaufort has publicly stated that the Branch Medical Clinic, MCRD, Parris Island, is the number one priority at his command in regards to staffing.⁴⁰

Naval Hospital, Beaufort is on record as requiring a minimum of 6 PCMOs and 5 PAs to meet the workload generated by the recruit population at MCRD, Parris Island.⁴⁰ The number of outpatient visits at the Branch Medical Clinic, MCRD, Parris Island justifies the assignment of 14 PCMOs and 11 PAs according to the manpower staffing standards used by the Naval Medical Command.⁴¹ The MPA shows 2 authorized billets for PCMOs and 1 authorized billet for a PA. As of 1 July 1988, there are 4 PCMOs and 5 PAs assigned to the Branch Medical Clinic. Of these, 2 PCMOs and 4 PAs are assigned to the Recruit Sick Call Area.

The upper echelon Commands of the Navy Medical Department are well aware of the PCMO and PA staffing situation at the Branch Medical Clinic, MCRD, Parris Island. However, there are too few PCMOs and PAs on active duty in the U.S. Navy to meet the identified requirements, and there is little hope for improvement in the near future.⁴²

Naval Hospital, Beaufort has requested and received limited assistance from Navy Reserve in the form of two-week

Active Duty for Training (ACDUTRA) PCMOs, PAs, and enlisted physician extenders. Authorization and funding do not currently exist to hire civilian physicians or PAs to augment the medical staff at the Branch Medical Clinic, MCRD, Parris Island.

With the limited number of PCMOs and PAs assigned to the Recruit Sick Call Area, maximum use has had to be made of enlisted physician extenders. Independent Duty Technicians, Field Medical Technicians, and General Duty Hospital Corpsmen are utilized at the Branch Medical Clinic, MCRD, Parris Island.

The junior enlisted physician extenders (General Duty Hospital Corpsmen and Field Medical Technicians), are used extensively to provide recruit sick call. The General Duty Hospital Corpsmen and Field Medical Technicians that work in the Recruit Sick Call Area complete a special orientation and training program to prepare them for their duties. The General Duty Hospital Corpsmen and Field Medical Technicians that work in the Recruit Sick Call Area are guided in their evaluation and treatment of recruits by the Hospital Corpsman Screener's Guide. The Guide contains physician approved written protocols for many common chief complaints. Following the written protocols in the Guide, the General Duty Hospital Corpsmen and Field Medical Technicians working in the Recruit Sick Call Area are able to evaluate and treat many of the recruits with minor ailments without the recruit having to see a PA or PCMO.

IDENTIFY ALTERNATIVE SICK CALL STRATEGIES

Alternative sick call strategies to minimize lost training time due to recruit sick call during the first and third phase of recruit training at MCRD, Parris Island are identified in Table (11). Many of the alternative sick call strategies were first introduced in the literature review. The alternative sick call strategies below are not mutually exclusive and may be used effectively in combination, with perhaps the exception of centralizing or decentralizing medical resources devoted to recruit sick call. However, even these two seemingly mutually exclusively sick call strategies are used during the different phases of recruit training at MCRD, Parris Island.

- Preventing Illness & Injury
- Utilizing Nonphysician Providers
- Utilizing Written Protocols
- In-Barracks Screening Programs
- In-Barracks Treatment & Screening Programs
- Centralize Resources Devoted to Recruit Sick Call
- Decentralize Resources Devoted to Recruit Sick Call
- Stagger Sick Call Hours
- Appointment System for Recruit Sick Call
- Afternoon Recruit Sick Call
- Evening Recruit Sick Call
- Improve Transportation System for Recruit Sick Call

Table 11, Alternative Sick Call Strategies
for MCRD, Parris Island

DECISION MAKING PROCESS

Recruit sick call for recruits in the second phase of recruit training at MCRD, Parris Island will continue to be conducted at the two remaining BASs. The BASs at the Weapons Training Battalion and the Field Training Unit were strongly

supported by the Marine Corps personnel interviewed.⁵³ Additionally, both the Commanding Officer of Naval Hospital, Beaufort and the Officer-in-Charge of the Branch Medical Clinic, MCRD, Parris Island strongly support the BASs.⁵⁴ The existence of the BASs at MCRD, Parris Island has been legitimized and accepted by the upper echelons of the Naval Medical Command, though they clearly do not meet the letter of the requirement for physician supervision of nonphysician providers.

To determine the best way to minimize lost training time due to recruit sick call during the first and third phase of recruit training at MCRD, Parris Island a decision making process was used to evaluate the alternative sick call strategies. The decision making process had to take into consideration diverse criteria/constraints, and facilitate comparison of the alternative sick call strategies based on quantitative versus qualitative data. The decision making process consisted of:

- (1) identifying the criteria/constraints, and
- (2) evaluating each of the alternative sick call strategies against the criteria/constraints.

The decision as to which of the alternative sick call strategies is the "best way" to minimize lost training time due to recruit sick call during the first and third phase of recruit training at MCRD, Parris Island, is bounded by a set of existing constraints. The existing constraints are imposed by higher authority, the nature of basic training,

and the quest to provide the highest quality medical care possible. The existing constraints are the criteria against which the alternative sick call strategies will be judged. The alternative sick call strategy determined to be the "best way" must:

1. produce the minimal amount of lost training time due to recruit sick call achievable within existing constraints.
2. provide for conducting recruit sick call "with available personnel resources" at the Branch Medical Clinic, MCRD, Parris Island and Naval Hospital, Beaufort.
3. not compromise the quality of medical care available at recruit sick call.
4. meet the requirements of DOD, Navy, and Marine Corps directives.
5. be affordable; ie. within the financial resources of Naval Hospital, Beaufort.
6. be acceptable to the Commanding General, MCRD, Parris Island and the Commanding Officer, Naval Hospital, Beaufort.

Though most of the criteria above are self explanatory, the following paragraphs provide a brief explanation to clarify the meaning of those constraints/criteria that may be unclear. To be considered for use at MCRD, Parris Island a sick call strategy had to meet all the constraints/criteria defined below.

The quality of medical care available at recruit sick maintain the current quality of medical care available at recruit sick call. Two indicators of the quality of medical care available at recruit sick call were used as benchmarks to test the alternative sick call strategies against. First, access to recruit sick call was used as an indicator of the quality of care. A sick call strategy that decreased the recruit's access to recruit sick call from the current level was deemed unacceptable. Second, the level of training of the health care provider evaluating and treating recruits at recruit sick call was used as an indicator of the quality of care. The level of training of the physician or nonphysician provider at recruit sick call could not be less than that currently available level.²²

The current Navy requirement for physician supervision of nonphysician providers. The alternative sick call strategy had to meet the current Navy requirements for adequate supervision of nonphysician providers; ie. a physician can supervise no more than three nonphysician providers located in the same building as the supervising physician.

Table (12), in the form of a matrix displays the relationship of the alternative sick call strategies to the constraints/criteria listed above.

The following sick call strategies meet the criteria/constraints defined above:

Preventing Illness and Injury

THIS
PAGE
IS
MISSING
IN
ORIGINAL
DOCUMENT

Using Nonphysician Providers in Sick Call

Use of Algorithm-Based Triage or Written Protocols

Centralized Troop Medical Clinic

Afternoon Sick Call

Staggering Sick Call Hours

In-barracks screening programs and in-barracks treatment and Screening programs are not currently feasible at MCRD, Parris Island because they could not be implemented without additional medical personnel resources, and due to the current Navy requirement for physician supervision of nonphysician providers. The DON requirement that the supervising physician be in the same building as the nonphysician providers they are supervising rules out any type of in-barracks program.

Multiple free-standing medical clinics are not feasible at MCRD, Parris Island due to: lack of additional medical personnel resources, the current Navy requirement for physician supervision of nonphysician providers, and it is not affordable due to the cost of construction and medical equipment. In addition, it would not be feasible to establish a full service laboratory, pharmacy, and radiology area in each of the decentralized medical clinics. Thus, recruits would have to travel to another clinic after being initially evaluated to have laboratory tests performed, x-rays taken, or to get medications. Unless an effective transportation system was available for recruits, this

"bouncing" of patients between decentralized medical clinics would increase lost training time. Decreasing lost training time is one of the primary justifications reasons given for Consolidated Troop Medical Clinics in the U.S. Army."⁶⁶

An appointment system for recruit sick call was not approved by the Commanding Officer, Naval Hospital, Beaufort. The Commanding Officer, Naval Hospital, Beaufort withheld his approval due to the lack of an effective recruit transportation system at MCRD, and the rigidity of the recruit training schedule."⁶⁷

Operating an evening sick call is not feasible at MCRD, Parris Island because the Commanding Officer would not approve it because it could not be implemented without additional medical personnel resources. Establishing an evening sick call at MCRD, Parris Island without additional personnel resources would most likely require the PCMOs and PAs to stand an onboard watch, and would requiring lengthening the work day of many of the medical staff (ie. go to twelve hour shifts). The potential adverse effect of both of these actions on morale at the Branch Medical Clinic was a key factor in the Commanding Officer's decision."⁶⁸

Improving the transportation system at MCRD, Parris Island used to transport recruits to an from recruit sick call is not currently feasible due to fiscal and manpower constraints at both Naval Hospital, Beaufort and MCRD, Parris Island."⁶⁹

- ¹ Burke, LTCOL James, USMC, Asst. G-4, MCRD, Parris Island, personal interview, 4 December 1987
- ² Morning Report, Recruit Administration Center, MCRD, Parris Island 1 January 1987 to 31 December 1987
- ³ Morning Report, Recruit Administration Center, MCRD, Parris Island 1 January 1987 to 31 December 1987
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CHAPTER 3

CONCLUSION

CONCLUSION

The best way, within existing constraints, to minimize lost training time due to recruit sick call at MCRD, Parris Island is to combine the following sick call strategies during the first and third phases of recruit training:

Prevent Illness and Injury

Use Nonphysician Providers in Sick Call

Use of Algorithm-Based Triage or Written Protocols

Centralize Recruit Sick Call

Operate an Afternoon Sick Call

Stagger Sick Call Hours by Phase of Training

Preventing Illness and Injury

Preventing illness and injury from occurring is the foundation upon which all other sick call strategies build upon. The adage, 'an ounce of prevention is worth a pound of cure', is most applicable when discussing sick call.

Using Nonphysician Providers in Sick Call

The current and projected shortage of military physicians in all specialties, including Primary Care Medical Officers (PCMOs), requires nonphysician providers be utilized to the maximum extent possible to meet the health care needs of the beneficiary population. Nonphysician providers, such as PAs and enlisted physician extenders, are uniquely suited for use in the primary care setting of recruit sick call.

Due to their limited numbers, PAs and Independent Duty Technicians alone cannot meet the demand for primary medical care at recruit sick call at Navy Recruit Training Centers and Marine Corps Recruit Depots. Junior enlisted physician extenders, such as Field Medical Technicians and General Duty Hospital Corpsmen, must be better utilized in the area of recruit sick call.

Algorithm-Based Triage and Written Protocols

Algorithms, or written protocols, should be used by enlisted physician extenders to guide their evaluation and treatment of patients presenting at recruit sick call.

Algorithms and written protocols are an aid in preventing errors of omission by health care providers. The Army's ADTMC is an excellent example of the institutional use of algorithms in a sick call environment.

Junior hospital corpsmen and other health care providers in the Navy Medical Department, by virtue of their training and experience are much more familiar with the use of written protocols than the use of algorithms. For that reason, written protocols should be developed for use by junior hospital corpsmen to guide their evaluation and treatment of patients. Algorithms, such as those used in the ADTMC, can be converted into written protocols. The advantage here is that the algorithms in the ADTMC have been extensively tested and proven in use over the last decade by the U.S. Army.

Centralize Resources Devoted to Recruit Sick Call

Recruit sick call for recruits in the first and third phase of recruit training at MCRD, Parris Island is centralized at the Branch Medical Clinic. The centralization of medical resources devoted to recruit sick call for first and third phase recruits has advantages arising from economies of scale in medical personnel, equipment, ancillary support, (ie. laboratory, radiology, pharmacy) and physical plant. The economies of scale and characteristics of the recruit population favors centralization of the medical resources at MCRD, Parris Island for recruits in the first and third phases of recruit training.

However, recruit sick call in the second phase of recruit training at MCRD, Parris Island is best conducted at the Battalion Aid Stations. The nature of the second phase of recruit training (ie. marksmanship, weapons training, and field training), the absence of an effective transportation system to transport recruits to and from recruit sick call, and the strong support of the BASs from the Marine Corps favors decentralization of the medical resources at MCRD, Parris Island for recruits in the second phases of recruit training.

Centralizing recruit sick call for recruits in the first and third phase of recruit training at the Branch Medical Clinic allows the most efficient and effective use of existing medical personnel resources. In the words of Captain Baldwin, Commanding Officer of Naval Hospital,

Beaufort, "In times of personnel shortages, functions such as recruit sick call should be centralized to get the best use of personnel. Decentralizing recruit sick call does not make sense when you don't have enough corpsmen to go around as it is." Centralizing recruit sick call also allows better control of staffing of PFT coverage, graduation coverage, etc.

Centralized recruit sick call at the Branch Medical Clinic also allows the best use of ancillary support personnel and equipment. All laboratory, pharmacy, and radiology technicians assigned to support recruit sick call are located in the Branch Medical Clinic. All laboratory, pharmacy, and radiology equipment and supplies used to support recruit sick call are located in the Branch Medical Clinic. This permits multiple use of the personnel and equipment, in that they not only support recruit sick call but also support permanent party sick call, recruit inprocessing, and other functions.

Operating an Afternoon Recruit Sick Call

Operating an afternoon recruit sick call diverts some recruits normally seen at morning recruit sick call into evaluations later in the work day. This spreads the health care providers work throughout the day, thus serving to decrease lost training time.

Stagger Sick Call Hours

Staggering recruit sick call hours based on the recruit's phase of training has significant potential for reducing lost training time at MCRD, Parris Island. This strategy also spreads the health care providers work throughout the day, keeps the first phase and third phase recruits separated.

¹ Baldwin, personal interview 15 February 1988

CHAPTER 4

EPILOGUE

PILOT STUDY

In March 1988, the Commanding Officer of Naval Hospital, Beaufort directed a pilot study be conducted to test an idea to decrease lost training time due to recruit sick call at MCRD, Parris Island.¹ The purpose of the pilot study was to determine the impact of allowing hospital corpsmen, following written protocols adopted from the U.S. Army's Algorithm Directed Troop Medical Care (ADTMC) program, to treat recruits with common over-the-counter (OTC) medications. Though this pilot study was not conducted specifically as part of my GRP, it was inspired by the literature review and my research in this area. I was tasked to coordinate this pilot study with the Officer-in-Charge of the Branch Medical Clinic, MCRD, Parris Island. The following paragraphs provide an overview of how the pilot study was conducted, the results observed, and action taken.

The pilot study was inspired by research conducted by the U.S. Army, and the Command's experience with both permanent party and recruit sick call, that suggested a significant number of recruits reporting for sick call could be safely and rapidly treated with common OTC medications. The Army's research found that making common over-the-counter (OTC) medications available in the barracks decreased the number of personnel reporting for sick call by 20 to 25 percent, thus significantly reducing the amount of training time lost.²

The pilot study differed from the Army's research in several ways. In its research, the Army used specially trained enlisted medical personnel to conduct "in-barracks" screening of the personnel before they went to the TMC for sick call. Due to the previously mentioned requirements for physician supervision of Navy enlisted medical personnel, shortages of Navy enlisted medical personnel assigned to the Branch Medical Clinic, MCRD, and logistical problems, such an "in-barracks" program was not feasible. Instead, the pilot study was conducted at the Branch Medical Clinic. The Army used the algorithms contained in the ADTMC manual (HSC PAM 40-7-21) to screen the personnel. In the pilot study, only a subset of the algorithms were used and these were modified into a protocol format.

The protocols used during the pilot study were derived from the algorithms found in the ADTMC manual (HSC PAM 40-7-21). Of the 97 algorithms found in the ADTMC, only 24 that terminated in Self-Care Protocols using common OTC medications were used during the pilot study. These 24 algorithms were modified into a protocol format that was more familiar to the Navy enlisted medical personnel that would be using them. These protocols were reviewed and approved by members of medical staff of Naval Hospital, Beaufort and the Branch Medical Clinic, MCRD. These protocols were overprinted onto SF-600s (Chronological Record of Medical Care) to facilitate documentation of the patient's chief complaint, the recruit's vital signs, the recruit's responses

to specific questions, and the medications dispensed or other disposition.

Prior to initiation of the pilot study, the Navy enlisted medical personnel that would be directly involved were oriented to the protocols and given an overview of the pilot study. The Commanding General, MCRD, Parris Island was informed of the pilot study, and a briefing was presented to the Commanding Officer, Recruit Training Regiment and the Commanding Officers of the Recruit Training Battalions. A Naval Hospital, Beaufort Notice was promulgated announcing the pilot study.

The pilot study was conducted from 25 April to 20 May 1988. During the pilot study recruits reporting for sick call at the Branch Medical Clinic with a chief complaint that could safely be treated with an OTC medication were sent to a designated Screening Area. In the Screening Area specially trained hospital corpsmen, supervised by an Independent Duty Corpsmen, followed written protocols to guide their evaluation, treatment, and documentation of the recruit's complaint. The recruits were then either treated with an OTC medication(s) and returned to training, or were referred for further evaluation and treatment in Recruit Sick Call.

Copies of the SF-600s and the daily log sheets from the Screening Area were analyzed weekly during the course of the pilot study. Table 13 is a summary of results.

During the four weeks of the pilot study, 259 recruits were seen in the Screening Area. These 259 recruits represented 25 percent of the total number of recruits that reported to Recruit Sick Call for initial evaluation and treatment of a chief complaint. Of the 259 recruits seen in the Screening Area, 77 (or 30%) were referred to the Recruit Sick Call area for further evaluation and treatment by a physician or physician assistant. Of the 259 recruits seen in the Screening Area, 182 (or 70%) were treated with common OTC medications and returned to training. These 182 recruits represented 18 percent of the total number of recruits that reported to Recruit Sick Call for initial evaluation and treatment of a chief complaint.

During the pilot study, the mean treatment time of all recruits seen in the Screening Area was 11 minutes. The mean treatment time of the recruits seen in the Screening Area, treated, and returned to training was 11.4 minutes. The median treatment time of the recruits seen in the Screening Area, treated, and returned to training was 8.4 minutes. The mean treatment time of recruits treated in the Recruit Sick Call Area was 108 minutes. Thus for each recruit that was seen in the Screening Area, treated, and returned to training an average of 96.6 (108-11.4) minutes of training time was saved. During the course of the four week pilot study, a total of 25,019.4 (96.6*259) minutes or 417 hours of training time was saved. This represents a potential savings of 5004 hours of training time saved per year.

The rapid return to training of a significant percentage of the recruits that reported to Recruit Sick Call during the pilot study did not go unnoticed. There were many positive comments from personnel at the Branch Medical Clinic and the Drill Instructors from the Recruit Training Regiment.

Summary

During the pilot study 18 percent of the recruits that reported to Recruit Sick Call for initial evaluation and treatment of a chief complaint were treated with common OTC medications and returned to training in an average of 10 minutes. The procedures tested during the pilot study have been implemented at the Branch Medical Clinic, Marine Corps recruit Depot, Parris Island. The use of OTC medications by hospital corpsmen following written protocols will be closely monitored as a quality assurance item.

PILOT STUDY - SUMMARY

	Week 1	Week 2	Week 3	Week 4	Total
a) Number of patients seen at Desk #1	201	220	193	241	855
b) Number of patients seen in Screening Area	84	73	42	60	259
c) Number of patients seen in Screening Area referred to Sick Call	38	25	9	5	77
d) Number of patients seen in Screening Area treated and returned to training	46	48	33	55	182
e) Mean treatment time for all patients seen in Screening Area	10.8	10.7	9.7	12.6	11.0
f) Mean treatment time for patients treated and returned to training	12.1	10.6	9.3	12.8	11.4
g) Median treatment time for patients treated and returned to training	6.0	9.0	8.0	10.0	8.4
Percent of Desk 1 patients seen in Screening Area (b/a+d)	34%	24%	16%	22%	25%
Percent of Desk 1 patients seen in Screening Area that were treated and returned to training (d/a+d)	23%	18%	14%	25%	18%
Percent of patients seen in the Screening area that were referred to Sick Call (c/d)	45%	34%	21%	8%	30%
Percent of patients seen in the Screening area that were treated and returned to training. (d/b)	55%	66%	79%	92%	70%

Table 13: Summary of Pilot Study

¹ Baldwin, personal interview 17 March 1988

² Wolcott, LTC Barry W. and 1LT Robert E. Steineker. "The Use of In-Barracks Screeners to Improve Military Sick Call." Military Medicine February 1979: 99-102

Hinkle, CPT David A. "The Optimal Primary Health Care System for Basic Trainees." GRP, Baylor U, 1983

APPENDIX B

TELEPHONE SURVEY QUESTIONNAIRE

1. Basic training site: _____

2. MTF responsible for recruit sick call: _____

3. Point of contact. Name: _____

Title: _____

Phone #: _____

4. How is recruit sick call conducted? _____

5. Recruit sick call hours: M-F _____

S-S _____

6. Sick call strategies used:

	Now	Before
- Preventing illness and injury	---	---
- Nonphysician providers	---	---
- Algorithm-based triage	---	---
- Decentralizing sick call resources	---	---
- Staggering sick call hours	---	---
- Appointment system for sick call	---	---
- Operating an afternoon sick call	---	---
- Operating an evening sick call	---	---
- Other _____	---	---

7. Comments: _____

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Smyer, CDR Theodore, USN, Senior Medical Officer, Branch Medical Clinic, MCRD San Diego, CA, telephone interview on 5 April 1988

Stalvey, SGT Robert, USMC, Marine Corps Liaison, Branch Medical Clinic, MCRD, Parris Island, personal interview on 3 December 1987

Stobaugh, SSGT Gary, USMC, Marine Corps Liaison, Naval Hospital, Beaufort, SC, personal interview 15 January 1988

Terry, MSGT Robert, USA, Non-Commissioned Officer-in-Charge, McWethy CTMC, Fort Jackson, SC, personal interview on 3 December 1987

GOVERNMENT CORRESPONDENCE

Chief, Bureau of Medicine and Surgery, letter dated 15 October 1982, Subj: In-Barracks Medical Screening Program; establishment of

Commander, Naval Medical Command, Washington, DC teletype message of 19 November 1985

Officer-in-Charge, Branch Medical Clinic, MCRD, Parris Island letter dated 8 DEC 1986, Subj: Sick Call for Female Recruits Billeted at Weapons Battalion

Commanding Officer, Naval Hospital, Beaufort, SC letter dated 9 December 1985, Subj: Unauthorized Clinics

Inspector General, U.S. Navy, letter dated 25 July 1986, Subj: Inspection of the Naval Medical Command, Mid-Atlantic Region, and Selected Subordinate Medical and Dental Treatment Facilities

Commanding Officer, Naval Hospital, Beaufort, SC letter dated 13 February 1987, Subj: Closure of Recruit Training Regiment Battalion Aid Stations

Commanding Officer, Naval Hospital, Beaufort, SC, letter 1 December 1987 Subj: Primary Care Medical Officer and Physician Assistants Staffing

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