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Final Report

Westinghouse
Health Systems

Systems Analysis Study Towards a New Generation of Military Hospitals

Volume 5
Data Inventory

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SYSTEMS ANALYSIS STUDY TOWARDS
A "NEW GENERATION" OF MILITARY HOSPITALS
VOLUME V: DATA INVENTORY

24 November 1970

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PREFACE

This is Volume V, Data Inventory, of a five-volume final report submitted by the Westinghouse Electric Corporation to the Department of Defense for work performed on Contract Number DAHC15 69 C 0354, Systems Analysis Study Towards a "New Generation" of Military Hospitals.

The primary task of this study was to develop alternative hospital system designs, using current state-of-the-art concepts, technology, and management procedures with the objective of designing the most effective hospital for construction commencing in mid-1972. The secondary task was the definition of system improvements arising from R&D opportunities available in time for prototype construction in the 1975-1980 period.

The remaining four volumes contained in this final report are:

VOLUME	TITLE
I	Executive Summary
II	Systems Analysis
III	Medical Health Care Review
IV	State of the Art

ACKNOWLEDGEMENT

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Westinghouse wishes to acknowledge and thank each member of the project team for his outstanding contribution and dedication to the project. Special thanks go to all the military personnel at each of the Base Level Health Care Systems studied for their cooperation and effort, and to the Department of Defense personnel who monitored this project.

Westinghouse also wishes to acknowledge the valuable contributions of the Veteran's Administration, Kaiser Foundation Hospitals, Public Health Service-Health Education and Welfare and the Bethlehem Steel Corporation and the United States Steel Corporation.

ABSTRACT

The data collected by Westinghouse study teams during on-site visits to the three primary Base Level Health Care Systems (Walson Army Hospital, Malcolm Grow Air Force Medical Center and Beaufort Naval Hospital) and the six secondary Base Level Health Care Systems (Wilford Hall Composite, Womack Army Hospital, Jacksonville Naval Hospital, DeWitt Army Hospital, Oakland Naval Hospital, and March Composite) is summarized in this volume in the form of matrices, tables and figures. The data presented forms a major data resource for the Systems Analysis volume of this final report.

The data inventory focused on the following hospital functions:

- Information Flow
- Patient Flow
- Materiel Flow
- Medical Records Summary
- Education and Training
- Clinical Laboratories
- Dietary
- Dentistry
- Dispensaries
- Medical Records
- Pharmacy
- Outpatient Department
- Radiology
- Registrar
- Ward Management

Due to a limitation of space in this volume, the following Appendices will be submitted on microfilm to the DoD Project Officer on 2 November 1970:

Appendix I Information Systems *

Appendix II Work Sampling *

Appendix III Medical Records Summaries *

Appendix IX Work Sampling Graphics

Appendix XII Materiel Flow Study Data

Appendix XIII Study Questionnaire Forms

* Computer runs

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- G.S. Lerman, M.D. - Radiology

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* On Microfilm

1. INTRODUCTION

In accordance with the orighal proposal to the Department of Defense (DoD), Westinghouse devoted 40 percent of its total effort to collecting data on the Base Level Health Care Systems (BLHCS). This data gathering effort had three primary objectives:

1. To characterize the current operations of BLHCS, focusing particularly upon operational problems -- not only to define them, but also to determine their causes.
2. To gather functional cost data on existing military health care systems in direct response to the RFQ request.
3. To establish a broad and flexible data base which could be decomposed and reaggregated in various ways for analyzing and justifying improvement alternatives.

To collect data which satisfied these objectives, three three-man study teams expended approximately one-and-a-fourth man-years of study effort in the three primary systems (Dix, Andrews, and Beaufort) and 12 man-weeks of study effort in the six secondary systems.

During this four-month on-site collection phase the Westinghouse teams conducted in-depth studies of the following 14 functions:

1. Information Flow
2. Ward Management
3. Outpatient Departments
4. Medical Records
5. Maintenance
6. Education and Training
7. Registrar
8. Radiology
9. Clinical Laboratories
10. Patient and Materiel Flows
11. Dietary
12. Dentistry
13. Pharmacy
14. Dispensaries .

These functions were chosen for detailed study for two reasons: together, they are the primary cost contributors in the BLHC System; and each exhibits a high potential for improvement. The first ten were identi-

fied by Westinghouse in its original proposal. The latter four -- dietary, dentistry, pharmacy, and dispensaries -- were subsequently added after analyzing data supplied by DoD on the nine BLHC Systems.

Data collection was geared to the "Network Approach to Systems Analysis" which focuses upon the flow of information within an organization. This approach is described in the following section. Techniques consisted primarily of semi-structured interviews with key staff members in each function and direct observation of various activities to record system dynamics.

As a result of the cooperation of the DoD BLHCS personnel and the effort of the Westinghouse study teams, an excellent data base for the three primary systems has been established. This data base details, among other items, functional costs, information flow, resource utilization, operational characteristics, materiel flows, patient flows, health care demands and costs expressed in terms of the level of care given each patient -- intensive, heavy, moderate, or light -- for each day of his hospital stay. The data base also contains supporting data from the six secondary hospitals on such items as materiel flows, problem areas, and missions.

This volume presents the data gathered by the study teams and is divided into two sections: Technical Approach and Data Presentation. The first section outlines the Westinghouse data collection approach and techniques, as well as this study's specific data collection plan and procedures. The second section summarizes the actual data.

Since the data base is so extensive, the most significant data has been extracted and presented in matrices; the remainder are contained in appendices to this volume. These appendices, because their size prohibited inclusion in this report, are reproduced on microfilm and issued separately with instructions for their use.

This volume, along with the State-of-the-Art and Medical Health Care Review volumes, forms the data base of the total study.

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2. TECHNICAL APPROACH

NETWORK APPROACH TO HOSPITAL SYSTEMS ANALYSIS

The data collection effort was keyed to the "Network Approach to Systems Analysis" previously developed by the Westinghouse Information Systems Laboratory. This unique concept visualizes an organization's communication system as a network of interconnected information-processing functions. The Westinghouse approach defines these functions not in terms of the formal organizational structure, but by the kinds of information they receive, process, store, and distribute. Functions are seen as being connected by communication links, or channels, through which information flows; links are commonly referred to as inputs and outputs, depending upon whether the information is received by, or sent from, the respective function. Repositories or files, in which information is stored and from which it is retrieved when needed, are also part of the system. By tracing the information flow according to its source, destination, volume, frequency, schedule, and purpose, and by defining the activity it generates when received, Westinghouse can focus on the key elements within an organization and their intricate interrelationships.

As a result, although the "Network Approach" was developed primarily for the study of information systems, it has proven an invaluable tool for gaining in-depth understanding of how an organization operates, the demands placed upon it, its procedures, decision points, missions, workloads, objectives, and various traffic flows. This approach was selected because:

1. Information flow is unmistakably tied to all other flows including patient, materiel, and personnel.
2. Information catalyzes an organization's activity since its receipt creates action.
3. Since functions are interconnected by information flows,

knowledge of one function's inputs and outputs as well as their relative importance leads the analyst to other key functions. This makes it possible to study functions in random sequence without sacrificing either the study's continuity or a clear view of the organization's total structure and operational requirements.

4. By tracing information flow, key decision points not designated on the organizational chart can quickly be recognized and key people identified for interview with minimum delay. For example, by determining the sources of calls scheduling outpatient appointments at BLHCS, Westinghouse identified areas and personnel which were responsible for deciding appointment times by the degree of medical urgency. Such decisions are important because they not only affect the hour-by-hour facility load, but also the interval before the patient receives proper medical attention.

Applied successfully to many studies over the past four years, the "Network Approach" eliminates two dangers inherent in the more conventional industrial engineering study approach. The conventional approach isolates a function, studies it in depth, and recommends improvements before considering the next function. However, this method may result in subsystem optimization at the expense of the total system and inappropriate recommendations due to an incomplete understanding of why the function operates, or reacts, as it does.

The Westinghouse study approach, which combines network analysis with analyses of individual functions, gives the clearest possible perspective for determining where the problems originate and what improvement alternatives optimally upgrade and balance the quality, efficiency, and economy of the entire system.

DESIGN AND EXECUTION OF DATA COLLECTION PLAN

The Proposed Plan

Since a comprehensive and flexible data base is essential to the "Network Approach to Systems Analysis," Westinghouse stated as part of its proposal that 40 percent of the total project effort would be allocated to data collection. The on-site collection was to be conducted primarily in three military hospitals ranging in size from 250 to 750 inpatient beds and handling from 300,000 to 600,000 outpatient visits annually. This capacity range was stipulated by DoD in its RFQ. In addition, Westinghouse agreed to conduct brief but intensive studies in six secondary hospitals to collect supporting data. When the proposal was prepared, none of the study hospitals had been identified, but were subsequently designated by DoD. The three primary hospitals were:

1. Walson Army Hospital (750 beds), Fort Dix, New Jersey;
2. Malcolm Grow Medical Center (350 beds), Andrews Air Force Base, Washington, D.C.;
3. Beaufort Naval Hospital (280 beds), Beaufort, South Carolina.

The six secondary hospitals were:

1. Wilford Hall Air Force Hospital, Lackland Air Force Base, Texas;
2. March Composite Medical Center, March Air Force Base, Riverside, California;
3. Womack Army Hospital, Fort Bragg, North Carolina;
4. Dewitt Army Hospital, Fort Belvoir, Virginia;
5. Jacksonville Naval Hospital, Jacksonville, Florida;
6. Oakland Naval Hospital, Oakland, California.

In its proposal, Westinghouse defined ten functions for in-depth study in the three primary hospitals:

1. Ward Management
2. Outpatient Department
3. Medical Records
4. Registrar
5. Radiology
6. Clinical Laboratories
7. Maintenance
8. Education and Training
9. Information Flow
10. Patient and Materiel Flows.

Westinghouse selected these functions because its prior experience in civilian hospital studies coupled with the advice of two military health care consultants indicated they not only represented the highest operating costs but had the greatest potential for improvement in military hospital systems.

To collect the data, Westinghouse proposed sending a three-man collection team to each of the primary hospitals and a two-man team to each secondary hospital. The "primary" study teams would "live in" for a period of three to four months, spending eight to ten hours a day collecting, reconciling, and recording data. The two-man study teams would then visit each secondary hospital for one week to expand and verify the existing data base.

Team members would be chosen for their knowledge and skills in industrial engineering, data processing, and health care systems. Prior to the on-site collection phase, they would be oriented to the project and trained in the specific data-collection and coding techniques.

The collection techniques outlined in the proposal consisted primarily of pre-interview questionnaires, semi-structured interviews, and direct observations.

In addition, Westinghouse proposed using consultants for specialized data collection: the Sybron Corporation to collect data on materiel flows; the Westinghouse Learning Corporation to study the education and training of military health care personnel; and a team from the University of Michigan School of Public Health to study the role of physicians and nurses in the military hospital organization. A special medical health care review team composed of professionals in various medical specialties would study the effectiveness with which health care was delivered in the existing BLHCS, offer recommendations, and provide a cross check for validating the data gathered by the Westinghouse study teams.

PRELIMINARY DATA INVENTORY PHASE

The proposal had outlined the tentative Westinghouse plan for data collection. These plans were not only subject to DoD approval, but contingent upon information received after contract award. The original plan was revised several times. For example, instead of performing ten in-depth function studies in all nine BLHCS, both Westinghouse and DoD agreed to confine in-depth studies to the three primary systems. In addition, it was decided that DoD, and not Westinghouse, would select the hospital systems for study. Other important revisions are discussed below. Westinghouse, however, alerted DoD to all proposed changes and, when necessary, formally negotiated such changes with DoD.

Preparation for On-Site Data Collection

In July, several weeks after contract award Westinghouse started preparations for the on-site collection, which involved:

1. preparing a definitive list of functions for concentrated study.
2. specifically defining each type of data to be collected.
3. modifying existing as well as designing new pre-interview questionnaires and interview guides and creating or modifying computer programs and coding systems for this specific study.

4. making final selections of study team members and preparing them for their on-site visits.

5 testing and confirming that the proposed collection procedures, used previously in civilian hospital studies, would also apply to military hospitals.

Final List of Functions for Study

When DoD announced it would select the study hospitals, it also agreed to supply Westinghouse with the information necessary for their preliminary collection preparation in the form of Data Packs for each of the nine BLHC Systems. Analysis of these Data Packs, which contained specific cost information, showed that with four functions -- Dietary, Dentistry, Pharmacy, and Dispensaries -- added to the original ten, more than 85 percent of total BLHCS operating costs would be captured. The addition of these functions brought the total number to fourteen.

Defining the Specific Types of Data to be Collected

In addition to completing the list of functions for study, the following types of data needed to meet the contract objectives outlined in the RFQ were specifically defined during this phase:

1. Functional cost data
2. Demands on BLHCS
3. Information system characteristics
4. Functional operating characteristics
5. Workload data
6. Resource utilization levels.

Also during this phase, members of the Sybron Corporation, Westinghouse Learning Corporation, University of Michigan, and Medical Health Care Review teams -- the study consultants -- expressed their data needs and suggested specific areas of information for exploration by the study teams.

Modifying and Creating Questionnaires, Computer Programs, and Coding Systems

Decisions on the specific data to be collected directly influenced the design and revision of questionnaires, computer programs, and coding systems employed in this study. Most had been used in prior hospital studies and needed only slight modification to make them applicable to a military environment. However, questionnaires were developed for both resource utilization and communication input data, and computer programs were created for problem, trend, and suggestion analyses as well as for extracting communication volumes by source and destination, mode, purpose, and type. Coding entries were added for functions not included in prior hospital studies, and new structures were created for the data to be gathered in interviews and on questionnaires concerning problems, trends, suggestions, resources, and communication inputs.

Selecting and Orienting the Data Collection Teams

Final selection of team members was made shortly after contract award. As outlined in the proposal, team members were chosen not only for their data collection experience but also for their expertise in areas related to this study -- industrial engineering, data processing, and health care systems. The team composition was interdisciplinary. One member was assigned to conduct interviews, another to directly observe a function's operations, and a third to function in a dual role as interviewer/observer. The following table shows the team composition for each BLHCS.

Hospital	Specialty	On-site Collection Assignment
Beaufort	Bio-medicine	Interviewer
	Engineering	Observer
	Data Processing	Interviewer/Observer

Malcolm Grow	Bio-Medicine	Interviewer/Observer
	Industrial Engineer	Observer
	Data Processing	Interviewer
Walson	Hospital Administration	Interviewer/Observer
	Industrial Engineering	Observer
	Data Processing	Interviewer

Team members were given copies of the proposal to review, after which they attended a number of formal orientation sessions. The total training and orientation period lasted for approximately one month. During this period, two to three weekly sessions, from one to four hours in length, covered the following topics:

- scope and purpose of the study;
- operating characteristics of the BLHCS and differences between military and civilian hospitals;
- role and responsibilities of data collection teams and tools and techniques to be used;
- military health care delivery principles and procedures (conducted by military health care consultants);
- interview techniques and form completion and data recap procedures;
- direct observation and format techniques;
- systems analysis methodology (conducted by systems analysts involved in the project);
- overall study objectives.

One session was conducted with each of the four consultant groups to review their data requirements and areas of particular importance to their part of the study.

Testing and Verifying Collection Techniques

To ensure that collection techniques were applicable to military hospitals as well as to the project's overall objectives, Westinghouse designated one of the three teams as a "scouting" team. This team was to begin on-site data collection before the other two, return to Pittsburgh after three weeks, and report problems and/or recommend adjustments in the data collection process. The Beaufort team was selected: since Beaufort was the smallest of the three BLHCS, it was felt this team could acquire an overview for evaluating the collection procedure more quickly than could the other two.

ON-SITE COLLECTION

The experimental Beaufort study team began its investigation on August 11, 1969. They returned to Pittsburgh after three weeks, as planned, and reported that the overall approach and methodology were quite successful, but that they had slightly modified the original plan to expedite data collection. They found that capsule interviews, conducted first with top administrative personnel, were extremely useful in directing teams to the proper sources of information and recommended this technique be included in the other studies. They also discovered additional sources of information, such as log books showing patient arrival and admittance times and level of care classifications, to which they alerted the other teams. The debriefing and final instructions for all study teams were completed on September 5. On September 8, the Andrews team initiated their study, and the Beaufort team resumed theirs. The Fort Dix team started on-site collection on September 15. All three major studies were completed by December 20, 1969. The one-week studies of the six secondary BLHCS were conducted from November through January after the primary studies had been completed.

On-site Collection Procedure

The Beaufort, Andrews, and Dix teams followed roughly the same format in collecting and recording data, although some tasks were performed simultaneously and other tasks, such as work sampling studies, were performed only when they were deemed useful in a given situation. These tasks are listed below in the general sequence in which they were conducted, followed by a detailed description of each.

1. Conducting capsule interviews
2. Distributing pre-interview questionnaires to key personnel
3. Interviewing key personnel in depth
4. Directly observing functional activities to perform
   a. Resource utilization studies
   b. Work sampling studies
   c. Patient flow studies
   d. Surveys and samplings of log books and statistical reports
5. Distributing and administering organizational structure questionnaires
6. Reconciling and recording data for input to specially designed computer programs.

Capsule Interview

The capsule interview was approximately 30 minutes long, and was conducted with top administrative personnel at the outset of each study to obtain an overview of the organization's operation. Although the interview was unstructured, the interviewer guided the discussion, questioning interviewees on decision areas, problems, trends, concepts, and the general operational aspects of individual functions or departments. This quickly provided the study team with:

1. the identity of key personnel sufficiently acquainted with specific functions to provide the most detailed and accurate information.
2. enough information to determine problem areas as well as areas that should be directly observed.
3. the ability to begin the in-depth study phase with a minimum of misdirected effort.
4. data for immediate recording and feedback to the Pittsburgh office.

Pre-interview Questionnaires

Pre-interview questionnaires were given to key function personnel identified during the capsule interviews, and were usually distributed during a brief orientation session in which interviewees were shown how to complete them. Completed questionnaires were returned to the study team and any inconsistencies reconciled during the in-depth interview.

These forms consisted of function questionnaires which formed the basis for determining functional costs, and communications questionnaires covering the flow, storage, and retrieval of information. Function questionnaires included:

1. Personal Data Questionnaire -- pertinent information concerning the interviewee.
2. Departmental Personnel Questionnaire -- all personnel in a specific department, including their title, pay grade, hours worked per week, and hours spent per week working in other functions.
3. Departmental Equipment Questionnaire -- the department's capital equipment.
4. Departmental Supplies Questionnaire -- the type of supplies used by the department, including where they are obtained, how much is used, the inventory level, and how they are transported.

The three communications questionnaires -- "Communications Input," "Communications Output," and "Files, Records, or Book Entries" -- were designed to define the function's role in the information system. The following table summarizes the type of data generated by these questionnaires.

DATA REQUESTED ON EACH COMMUNICATION QUESTIONNAIRE

For Communication Inputs from Each Source	For Communication Outputs to Each Destination	For Each File, Record, or Book Entry
Source of the communication.	Destination of the communication.	Name of the file.
The type of communication.	The type of communication.	Purpose of the file.
Purpose of the communication.	Purpose of the communication.	How the file is maintained and referenced.
Sample and identification number of the communication form (if available).	Sample and identification number of the communication form (if available).	Volume and frequency of usage.
Number of copies of each communication received.	Preparation mode.	Usage Schedule.
Communication mode used.	Preparation time of each communication by destination.	Peak usage periods.
Volume and frequency of information.	Number of copies of each communication sent.	Preparation time of file inputs.
Receipt schedule.	Volume and frequency of dispatch.	Other functions using the file.
Queue times.	Dispatching schedule.	File sequence.
Peak receipt periods.	Communication mode used.	Size in information volume.
Comments.	Comments.	Physical characteristics.
		File purge data.
		Comments.

Copies of all the function and communications questionnaires are included in Appendix XIII.

In-depth Interviews

After key function personnel had completed and returned the questionnaires, they were interviewed in-depth by two members of the study team. These interviews lasted about an hour and, although there was a formal interview format, it was used only as a guide to permit branching off in the questioning until sufficient information was obtained. Questions concerned all aspects of the function's operations including how the resources were utilized, problem areas, suggestions for improvements, projections of future trends, and as much data on information, materiel, and other flows as could be gathered in an interview. These interviews provided the study team with:

1. more detailed understanding of a function's operations.
2. further identification and clarification of mission, problems, and trends.
3. leads for additional questions and observations
4. identification of functional records (log books, statistics) for sampling.
5. refinement of functional cost and information system communications data.

The interview format along with the forms used to record these data appear in Appendix XIII.

Direct Observation

This technique was applied when the data required was too complex to be described during an interview, or when a finer delineation of activities and associated costs was needed. Direct observation involved standard industrial engineering techniques such as work samplings or continuous cycle observation to record and chart flows of patients and staff, sketch the facilities layout, determine resource utilization levels, and document obvious problems, such as large queues. A description of the direct observation

techniques used in this study were:

1. Resource Utilization Studies. Resources, including equipment, facilities, and personnel, are continuously observed to determine resource utilization levels. The observer notes the sequence in which resources are used as well as the duration of their usage.

2. Work Sampling Studies. Work sampling, a specific type of resource utilization study, involves observing and categorically noting the activity, location, condition, and status of personnel, facilities, or other resources at random times throughout the day. When such observations are made over a period of time and the results tabulated, a determination can be made, for example, of the percentage of time that personnel spend in a given task or that a part of the facility is used for a given purpose.

3. Patient Flow Studies. Studies of patient flow are generally designed to measure the patient flow rate in and out of an area and the size and causes of significant patient queues. These measurements are best made through direct observations consisting of:
   a. continuously counting the number of patients entering and leaving the area.
   b. obtaining demographic information on these patients by examining department logs or records.
   c. counting (sampling), at random times, the number of patients waiting.
   d. inquiring about the causes of large or time-consuming queues.

The data generated -- patient flow diagrams, queue times, peak patient load periods, and traffic problems -- provide the basis for justifying facilities designs to minimize patient travel and waiting time.

Direct observations were made primarily by one team member usually at the same time the other two were conducting interviews. When pertinent, interview data were fed to the "observer" team member, and vice versa, to catch inconsistencies or items of interest that needed clarification, reconciliation, or further study.

Work sampling studies were generally started first to get an overview of the workings of a department or area. Resource utilization and patient flow observations were made at approximately the same time. Samplings of log books, reports, and medical records were made at various convenient times between interviews and observations. Most of these data were immediately recorded and coded.

Organizational Structure Questionnaires

At the conclusion of each primary study, the Westinghouse teams distributed and administered the two Organizational Structure Questionnaires. Designed by University of Michigan consultants, one questionnaire, "Form T," was addressed to physicians and the other, "Form N," to Nursing Service personnel. Both questionnaires probed the role of physicians and nurses in relationship to the total organizational structure particularly in terms of administration and decision making. "Form N" was the more detailed since, in addition to their administrative roles, nurses and staff were questioned on management styles, quality of care on the wards, and their own nursing experience in the armed services. As a result "Form T" was distributed to the physicians and were picked up when completed. Study team members administered "Form N" to Nursing Service personnel during a formal session lasting about two hours.

Completion of On-Site Data Collection at the Three Primary BLHC Systems

The Beaufort study was completed in November, and the Fort Dix and Andrews studies, in mid-December. Each team returned to the Health Systems offices in Pittsburgh to complete the sorting, recording, and final reconciliation

of the data. At the end of two weeks, one or two members from each team returned to their respective BLHCS to gather additional data and to complete reconciliation.

Secondary BLHCS Studies

The six secondary studies conducted from November through January at Wilford, March, Womack, DeWitt, Jacksonville, and Oakland, were initiated as the primary BLHCS studies were nearing completion. This made it possible to recruit a veteran member from each primary study team to serve as one of the two secondary team members. The second member of each team was a systems analyst, selected from among Westinghouse personnel already engaged in analyzing the BLHC System. Three secondary teams were formed and each team conducted capsule and in-depth interviews for a one-week period in two of the BLHCS. Their study verified information gathered at the primary systems on problem areas, missions, workload demands, and resource utilization.

Medical Records Summaries

Data summarizing medical records by levels of care (intensive, heavy, moderate, and light) required by patients for each day of stay were collected by Westinghouse Health Systems Department personnel. To avoid inconsistencies in interpretation of the meanings assigned to these various care levels, this collection effort was confined to Beaufort and Jacksonville, the two study hospitals already maintaining their records in the desired form. These Health Systems Department personnel recorded and totaled the number of days a patient stayed in the hospital, the care and services he required during his stay, and the progress of his recovery.

On-site Visits by Consultants

As previously stated, four consulting groups conducted specialized on-site studies. The Sybron Corporation performed materiel flow studies, the

Westinghouse Learning Corporation collected data on education and training, University of Michigan consultants studied the role of the physician and nurse in BLHCS, and a special Medical Health Care Review team studied quality of patient care.

The consultants visited each primary BLHCS for one to three days, after study teams had completed their data collection efforts but before they had left the site. As a result, team members were able to brief the consultants on the overall hospital operation as well as identify those areas and personnel most useful for their specific data collection efforts. Upon completing their studies, consultants returned to their respective agencies to formulate their reports.

Final Recording, Reconciling, and Coding of Data for Input to Computer

All data collected by the study teams were reconciled, a process which was particularly important for data obtained in interviews. These data had to be checked to ensure that input communication flow data matched output in terms of volume, type, and mode and that personnel and equipment totals tallied with those reported in the observations data.

Computer Programs

Reconciled data were either included in flow charts, graphs, and functional costs profiles or keypunched and input into the following computer programs.

1. Documentation of Data. This program categorizes by function all missions, decisions, resources, suggestions, problems, trends, and data on information inputs, outputs, and files. It permits a comprehensive listing of all data gathered and recorded by the study team.

2. Data Check Programs. These programs can determine both syntax and logical errors in the information flow data. They are used to check each communication dispatched by a function against each communication identified as received by a function. Their purpose is to "close loops" in the information flow and to preclude input/output errors in the data base.

3. Communications Identification. One program lists all functions, communications, and files alphabetically by name and references their code numbers. Another lists all forms used in the system to determine the degree of form standardization and use.

4. Statistical Averages. One program gives the number of functions, communications, and files in the information system. Another shows a statistical distribution of high and low volume functions in terms of information input/output and file usage.

5. Summary Averages. One program reports statistical data on each file in the system, including size and amount of usage. Another reports statistical data concerning each function's outputs, inputs, and file information.

6. Categorization of Qualitative Data. These programs extract qualitative data from the data base, interpret codes which categorize each type of data, and list the data by category for such analyses as correlations, recurrences, and applicability. These are separate reports on decisions, problems, resources, suggestions, and trends.

7. Work Sampling Analysis. This program accepts coded random observations of resource activity and reports them as percentages of time the resource is utilized in various tasks.

8. Organization Structure Evaluation. This program enables the processing of Form "N" and Form "T" questionnaires to permit a comparison of similar data gathered in previous studies of 11 civilian hospitals (over 70 functions and areas) conducted by the University of Michigan consulting team to evaluate the effect of organization structure on operational effectiveness.

9. Resource Allocation vs. Workload. This program identifies all personnel, equipment, facilities, and supplies for each function and compares them to the function's workload as an aid in determining functional costs and resource utilization levels.

10. Information System Parameters. The volume of communication in the information system is characterized in these programs by:

- Transportation mode
- Source of communication
- Destination of communication
- Type of communication
- Purpose of communication
- High volume areas.

11. Functional Relationships. This program enables the construction of an information flow matrix wherein the source functions are listed on one axis, the destination functions on the other, and communication parameters such as volume, purpose, and mode, in the intersections of one function with another. Where a function intersects itself, file parameters are listed.

12. Medical Record Summaries. This program gives various statistical interpretations of the information coded from medical records at Beaufort and Jacksonville.

Programs one through eight were existing Westinghouse programs requiring only minor modifications while programs nine through twelve were created specifically for the "New Generation" of Military Hospitals Study.

3. CONCLUSIONS AND RECOMMENDATIONS

The cooperation of DoD personnel combined with the Westinghouse data collection approach have resulted in an excellent and substantial data base which may be used for projects far beyond this specific study. Therefore, action should be initiated within DoD to keep this data base current for continued use in systems planning.

As previously mentioned, a data recording system which relates post-admission days to level of care received by each patient is not available in all BLHC Systems. Since it may be possible to characterize all health care resources by the number of days patients spend at a particular level of care, such data could provide the best comparative measure of the effectiveness of various BLHC Systems in terms of costs of services, efficiency of operation and resource utilization, and patient turnover rate. For this reason, we recommend DoD's extending this data recording system, perhaps by establishing a sampling procedure at a number of BLHCS. In such a procedure, data on a statistically reliable percentage of patients flowing through the system would be summarized in the recommended form.

Similarly, a system summarizing resource utilization in outpatient departments, relating resources required to a specific clinic or unit visit (first and return) may also be useful. Although the multitude of outpatient clinics and their present complex organization of records may make implementing this system difficult, the potential value of the data gained to systems planning and control is great enough to justify the attempt.

4. DATA PRESENTATION

GENERAL CHARACTERIZATION OF BLHCS

In gathering the data, Westinghouse study teams observed several general characteristics applicable to all BLHC Systems. Military BLHCS, for example, can be described as true systems, since all functions are highly organized and coordinated to provide good health care to all beneficiary groups within the base complexes. These systems, moreover, exhibit clearly-established lines of authority.

High turnover of medical personnel -- doctors and nurses as well as corpsmen -- is a major problem in the delivery of health care at these complexes. The most serious result can be a lack of continuity in supervision and administration. To compensate, BLHCS not only provides intensive on-the-job training augmented by formal classes, but makes a significantly greater use of technicians and paramedical personnel in the delivery of health care than do civilian hospitals.

Preventive medicine, in the form of regular check-ups and mass innoculations, is an extensive and highly effective BLHCS program. BLHCS, however, can be faced with epidemic problems, such as upper respiratory infections (URI's), of a magnitude rarely seen in civilian hospitals. This phenomena is created by the rigorous basic training which lowers recruit resistance to illness as well as communal barracks for recruits which foster the spread of infection.

Although these ailments may reach epidemic proportions, the majority of patients hospitalized do not require continous heavy, or even moderate care. Consequently, the patient load is predominantly ambulatory light care, resulting in a heavy patient flow between wards and dietary.

Finally, BLHCS can be characterized as a labor intensive system since the continual influx of semi-skilled recruits makes it possible to use manpower to transport 90 percent of hospital communications and most materiel.

The following sections present the data collected by the Westinghouse study teams and consultants at the three primary systems and subsequently verified at the six secondary systems. Data summarizations are presented, first for the intrahospital functions -- Information Flow, Patient Flow, Materiel Flow, Medical Records Summaries, and Education and Training. The ten

selected functions follow in alphabetical order; each consisting of a general discussion of mission and problems and matrices containing operations, resource utilization, and functional cost data. Detailed data compilations will be found in the various microfilmed appendices (to be issued separately) noted in the text.

INFORMATION FLOW

COMMUNICATIONS

The data documenting the information systems in each of the three primary hospitals is contained in Appendix I. The structure of this sizable communications data base permits its decomposition and reaggregation in the variety of ways necessary for comprehending and comparing the three systems' operating characteristics and parameters.

Figure 4-1 represents one way in which data were aggregated for meaningful analysis. It is a matrix presenting the overall communications profile for each of the three primary hospitals. In the matrix, the top chart profiles outgoing documents, showing the percent of total hospital communication traffic which each of the ten major functions contributes to the information system. These major functions account for 70 to 90 percent of the hospital's total communication outputs. In the same manner, the second chart profiles incoming documents, showing, once again, that the major functions receive 70 to 90 percent of the hospitals' total communication volume. However, of the ten functions, the outpatient departments, wards, and clinical labs account for the greatest proportion of the total communication volume.

The bottom chart graphs the total hospital communications (combined inputs and outputs) by type of communication, that is, whether it concerns patient care directly and whether it is urgent or non-urgent. This chart reveals that as high as 85 percent of the communications are patient oriented, with "important but non-urgent" patient care communications as high as 74 percent.

The monthly volume of communication flow between major functions at each hospital is recorded in Tables 4-1, 4-2, and 4-3 for Dix, Andrews, and Beaufort, respectively. The ten functions appear as communication sources on the vertical axis and as destinations on the horizontal axis. As these tables show, the largest volumes at Dix (79,900) and Beaufort (12,921) flow from Medical Records to the Outpatient Department (OPD) and, at Andrews, from the laboratories to OPD (44,410).

Data gathered by the Westinghouse study teams also revealed that 75 to 85 percent of each function's communications are hand-carried, and that

most of the remaining communications are by telephone. The above data -- along with communication volume, source, destination, and type -- are further detailed in the operation matrices for each function.

INFORMATION STORAGE AND RETRIEVAL

In the three primary BLHC Systems, data were collected on all files maintained and/or referenced by the functions studied. These data concentrate on the individual files' characteristics -- their size, sequence, etc. -- as well as their relationship to the total information system in terms of how often they are used, and when, and how long it takes to prepare file inputs.

System characteristics noted by the study teams which are unique to information storage and retrieval in military hospitals include:

1. In addition to necessary hospital files, each function must maintain separate files for military purposes. This adds to preparation time and the storage area required.
2. Patient medical record files are not centralized: military and civilian outpatient records are generally separated; and inpatient records are always stored separately from outpatient records. Although justified by particular military hospital characteristics, this practice makes retrieval of complete data on a given patient, or set of patients,extremely difficult and time-consuming.
3. Preparation, storage, retrieval, transmission, and display of filed information is generally performed manually by clerks, with the exception of departments such as administration, accounting, property management, and personnel, which, in some instances, have been automated.
4. Military hospital systems for file input are highly standardized, simplifying retrieval. This includes color coding of records, standard service-wide and hospital-wide identification numbers, and use of terminal digit-type filing systems.

All data collected on all files examined in the primary hospital studies, including folders, documents, cards, log books, or bulletin boards, are documented, in Appendix I. Report 011 of this appendix shows all information for each file; report O5 examines each file individually in terms of size and volume of usage.

Additional data on those files which, because of their importance and size, are critical to the total information system, are included in the Dispensaries, Medical Records, Registrar, and Radiology data presentation sections.

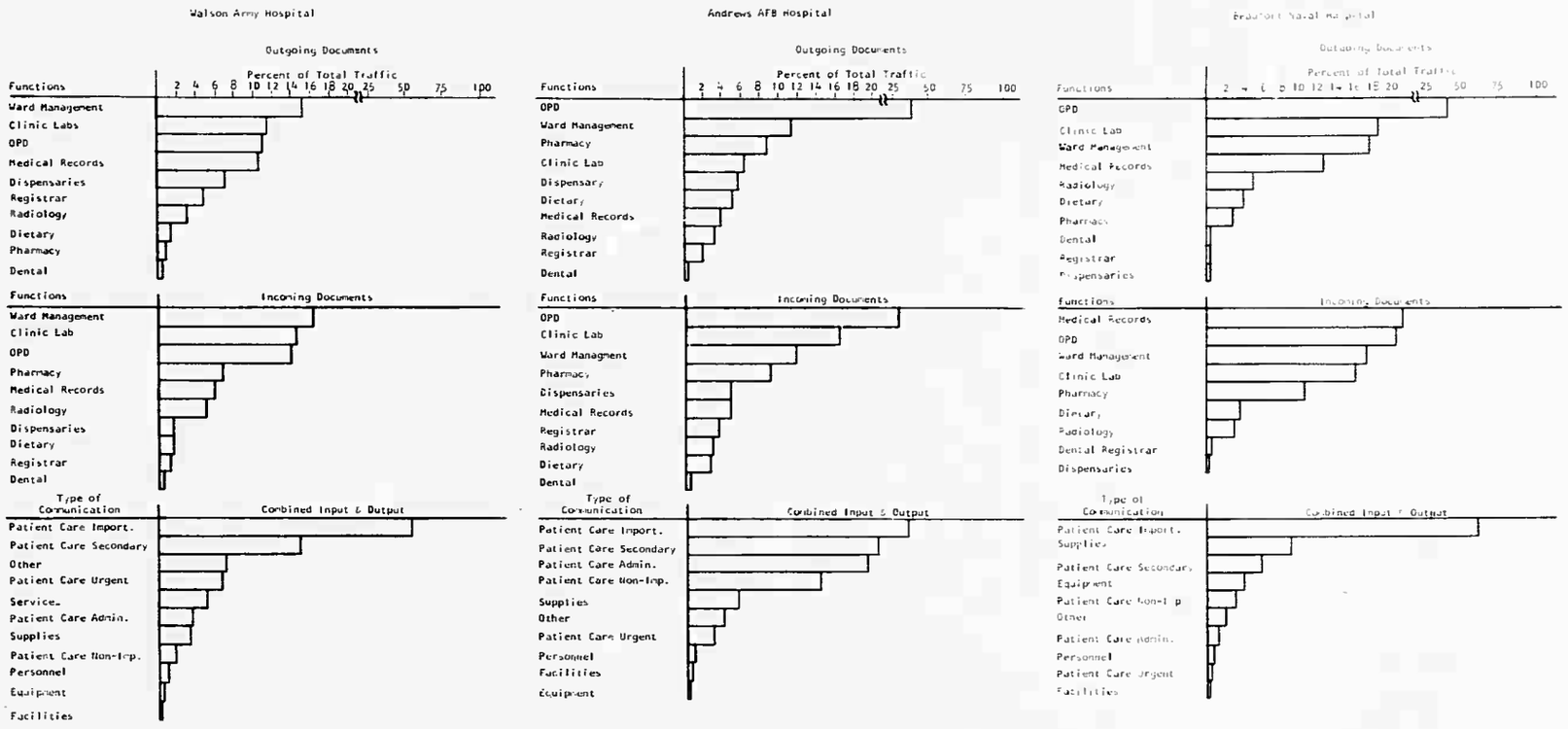

FIGURE 4-1. COMMUNICATIONS PRO FILES

Data Summary
Information Flow

TABLE 4-1
MONTHLY COMMUNICATION VOLUME -- 10 FUNCTIONS
WALSON ARMY HOSPITAL

	Dental	Dietary	Dispensary	Laboratory	Medical Records	Outpatient Dept.	Pharmacy	Radiology	Registrar	Wards	Total
Dental				48	98	400		600	15		1161
Dietary				4					404	13132	13540
Dispensary	40			19080		5260	25344	4600	2726		57050
Laboratory			4378		2930	2200			400	70004	79912
Medical Records	640			1500		79900		1000	1561	200	84801
Outpatient Dept.	88		1383	9752	29740		20997	13884	1520	2033	79397
Pharmacy	20		2160		120	560		4	514	1360	4738
Radiology			4329		100	9464			498	9805	24196
Registrar		60		1552	6340	1582		2770		20554	32858
Wards		12136		68600	4320	8165	1092	14788	927		110028
Total	788	12196	12250	110536	43648	107531	47433	37646	8565	117088	497681
Percent of Total	0.04	2.45	2.46	22.23	8.78	21.53	9.54	7.57	1.72	23.55	
Maximum Single Volume	640	12136	4378	68600	29740	241460	25344	14788	2726	131820	

Data Summary
Information Flow

TABLE 4-2
MONTHLY COMMUNICATION VOLUME --10 FUNCTIONS
MALCOLM GROW HOSPITAL

	Dental	Dietary	Dispensary	Laboratory	Medical Records	Outpatient Dept.	Pharmacy	Radiology	Registrar	Wards	Total
Dental			300			20				60	380
Dietary						168				2964	3132
Dispensary	450					1164	4		80	132	1830
Laboratory						44410	2		235	12355	57002
Medical Records						13320			800	100	14220
Outpatient Dept.	240		87	14496	16226		1358	7281	9006	3573	52267
Pharmacy						30486				310	30296
Radiology						8865	4		20	1243	10132
Registrar					800	3415	4			17899	22118
Wards	40	2376	58	2654		6704	1135	3161	4859		36505
Total	730	2376	445	17150	17026	108552	2507	10442	15000	38636	212864
Percent of Total	0.34	1.11	0.20	8.05	7.99	50.99	1.17	4.90	7.04	18.15	
Maximum Single Volume	450	2376	300	14496	16226	44410	1358	7281	9006	17899	

Data Summary
Information Flow

TABLE 4-3
MONTHLY COMMUNICATION VOLUME -- 10 FUNCTIONS
BEAUFORT NAVAL HOSPITAL

	Dental	Dietary	Dispensary	Laboratory	Medical Records	Outpatient Dept.	Pharmacy	Radiology	Registrar	Wards	Total
Dental				24					40	20	84
Dietary					2					2744	2746
Dispensary											
Laboratory	24					7170		925		3959	12078
Medical Records	25	1		3		12921		925	21	915	14811
Outpatient Dept.				8374	5829		5	496	57	660	15421
Pharmacy	394					7098				858	8350
Radiology					925	920				648	2493
Registrar				3	1						4
Wards		2180			1477	529	1642	904			6732
Total	443	2181		8404	8234	28638	1647	3250	118	9804	62719
Percent of Total	0.7	3.47		13.39	13.12	45.66	2.62	5.18	0.18	15.63	
Maximum Single Volume	394	2180		8374	5829	12921	1642	925	57	3959	

PATIENT FLOW

Figures 4-2, 4-3, and 4-4 represent overall patient flows at each of the primary BLHC Systems studied.

These data clearly demonstrate the volume of ambulatory health care services being provided compared to inpatient care. The ratio of annual outpatient visits to inpatient admissions in the systems studied ranged as high as 30 to 1. The emergency facilities function very much like walk-in clinics and the dispensaries play a significant role as satellite diagnostic and referral units which help to filter and control the flow of patients into the central BLHC facilities. Additional data presented in the section on Medical Records Summaries show that the primary demand for health care is the non-military beneficiary population. Of the three primary BLHC Systems studied the non-military beneficiary population receives from two-thirds to three-quarters of the outpatient services.

Tables 4-4, 4-5, and 4-6 show major patient flows between functions for Fort Dix, Andrews, and Beaufort respectively. The Patient Flow Chart for Fort Dix, which characterizes the flow of patients between wards, clinics, and other services, shows that the largest patient flow is from the wards to dietary and from clinics to pharmacy.

Beaufort's patient flow parallels that at Fort Dix since the heaviest flows are also from the wards to dietary and from clinics to pharmacy.

At Andrews, patient flow centers around Immunization, the emergency room, and the outpatient departments, with significant flows occurring between the emergency room, the outpatient departments, radiology, and pharmacy. In all three systems, however, the significant patient flows reflect the predominance of movement by light-care, ambulatory patients among various hospital departments.

Additional patient flow data is included in the operations matrices in the discussions of each of the ten functions.

Data Summary
Patient Flow

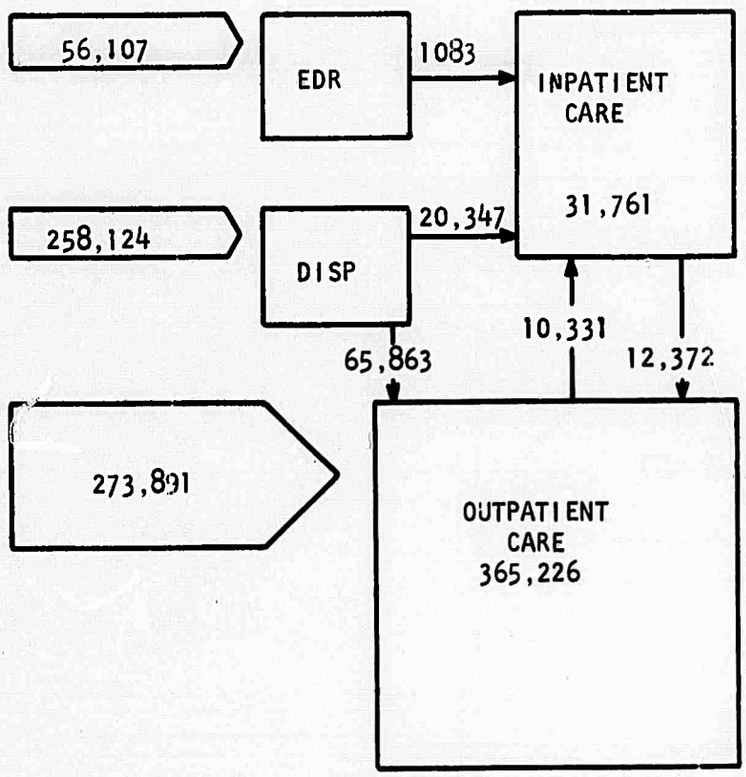

Fig. 4-2—Walson Army Hospital (1000 Beds)
Annual Patient Flow

Data Summary
Patient Flow

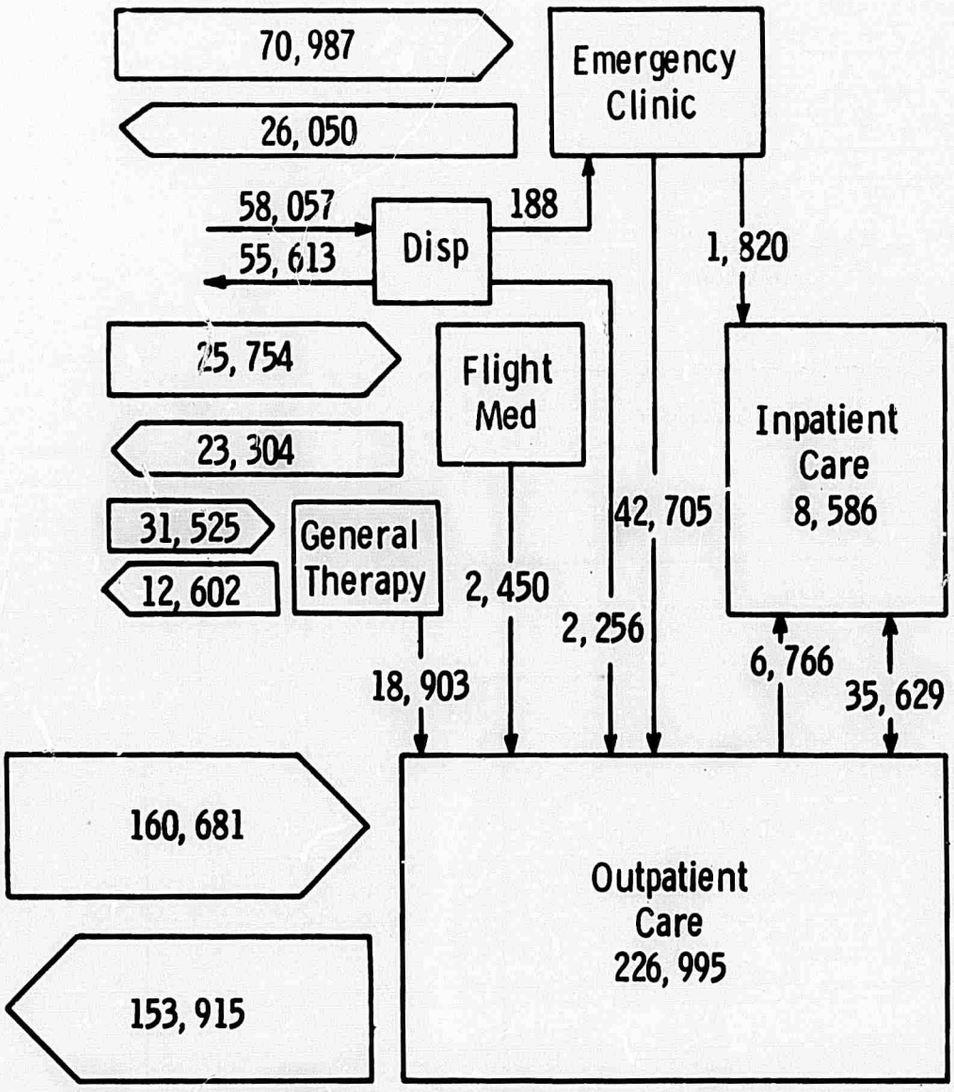

Fig. 4–3– Malcolm Grow Composite (350 Beds)
Annual Patient Flow

Data Summary
Patient Flow

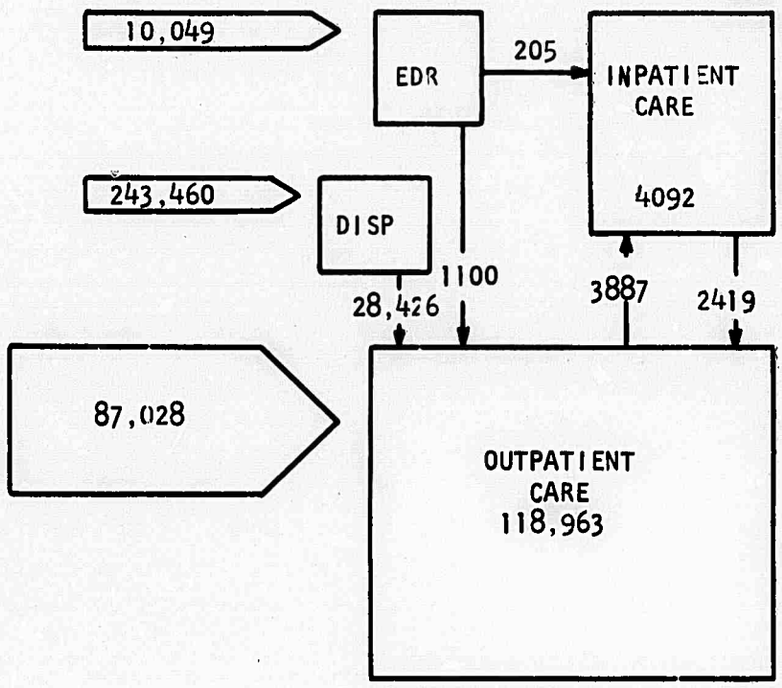

Fig. 4-4—Beaufort Naval Hospital (280 Beds)
Annual Patient Flows

TABLE 4-4

WALSON ARMY HOSPITAL

PATIENT FLOW

Patient Flow To

Patient Flow From

	Wards	Food Serv.	OR	Ortho. Clinic	Lab.	P.T.	X-ray	Cardio.	URI Annex	Ent. Clinic	Eye Clinic	Pharm.	OT	Derm.	Allergy	Peds.	Urology	Cast Room	Brace Shop
Wards	31,761	826,794	3,597	1,869	36,326	27,600	25,814	817	12,669	2,458	510	0	7,376	308	822	2,958	430	2,260	0
Allergy Cl.	10	0	0	0	590	0	722	0	0	0	0	15,038	0	0	13,268	0	0	0	0
Cardiac Cl.	25	0	0	0	853	0	649	3,037	0	0	0	1,999	0	0	6	0	0	0	0
Dental Cl.	14	0	6	0	0	28	481	0	0	0	0	0	0	0	0	0	0	0	0
Med. Cl.	1,438	0	0	3	2,232	100	2,848	0	0	0	0	14,197	0	0	0	0	0	0	0
Dermat. Cl.	20	0	0	0	0	28	73	0	0	0	0	22,750	0	7,719	0	0	0	0	0
Ent. Cl.	171	0	0	0	82	0	167	0	0	21,000	0	8,352	0	0	0	0	0	0	0
Eye Cl.	22	0	0	0	0	0	0	0	0	0	5,104	0	0	0	0	0	0	0	0
Emerg. Room	1,083	0	2	0	5,745	186	2,586	0	0	0	0	2,331	0	0	0	0	0	0	0
Gu. Cl.	61	0	0	0	5,318	0	3,173	0	0	0	0	11,752	0	0	0	0	-	0	0
Meddac	18,643	0	0	0	9,964	229	638	0	0	0	0	0	0	0	0	0	0	0	0
Med. Proc.	-	0	0	0	1,444	0	2,597	0	0	6	0	0	0	0	0	0	0	0	0
Neurol. Cl.	80	0	0	0	672	186	722	0	0	0	0	0	0	0	0	0	0	0	0
OB-Gyn	1,929	0	0	0	7,895	0	890	0	0	0	0	25,445	0	0	0	0	0	0	0
OPC	41	0	0	0	15,364	208	9,278	0	0	0	0	56,767	0	0	0	-	0	0	0
Ortho. Cl.	481	0	0	32,432	164	5,716	15,143	0	0	0	0	2,744	0	0	0	0	0	12,706	5,701
Pediat. Cl.	1,130	0	0	0	2,397	50	2,115	0	0	0	0	65,264	0	0	0	50,072	0	0	0
Prevent. Med.	0	0	0	0	0	0	3,330	0	0	0	0	0	0	0	0	0	0	0	0
Surgical Cl.	1,349	0	0	0	853	122	1,298	0	0	0	0	18,161	0	0	0	0	0	0	0
MHCS	195	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 4-5

MALCOLM GROW PATIENT FLOW

PATIENT FLOW FROM

Patient Flow To:

	Patient's Home	Inpatient Wards	Radiology	Clin. Lab.	Pharm.	O.R.	Labor-Delivery	Diet.	OPD	Flight Med.	Gen. Therap.	Allergy	Cardiology	Derm.	Int. Med.	Hemat.	Peds.	Psych.	Pulmon. Lab.	GYN	OB	EENT	Ortho.	Gen. Surg.	Urology	Phys. Therap.	Radiation	Neuro.	E.R.	Immun.	Oral Surg.
Patient's Home	"	4766	"	"	"	0	1470	0	355,429	25,754	31,505	22,395	4,934	14,489	10,579	3,314	54,153	12,172	1,971	17,249		16,330	[illegible]	12,391	[illegible]	10,375	3,224	4,748	71,175	67,643	13,[illegible]
Inpatient Wards	"	6766	11,646	"	"	3940	0	0	0	0	0	49	165	1,164	37[illegible]	6[illegible]	0	13,755	[illegible]	21	0	237	1,774	217	954	11,[illegible]76	[illegible]9	4,[illegible]0	0	"	"
Radiology	0	"	[illegible]101,[illegible]03	0	0	0	0	0	0	0	0	0	0	0	0	[illegible]	0	0	"	"	0	0	0	"	0	"	"	"	0	"	0
Clinical Labs	"	0	"	330,129	0	0	0	0	0	0	0	0	0	0	0	0	0	"	0	0	0	0	0	0	0	"	"	"	0	"	0
Pharmacy	"	"	"	0	466,246	0	0	[illegible]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	"	0	"	"	0	0	0
O.R.	0	"	"	0	0	3440	0	0	0	0	0	0	"	0	0	"	0	0	0	"	"	0	0	0	"	"	"	"	0	0	0
Labor & Delivery	"	1470	0	"	"	"	1470	0	0	"	0	0	0	0	0	0	"	0	0	0	0	0	0	0	0	"	"	"	"	"	0
Dietary	"	"	"	0	0	0	0	649,60[illegible]	0	0	0	0	0	0	0	"	0	0	0	0	0	"	0	0	"	"	"	"	0	"	0
Out-Patient Dept.	"	"	64,214	0	0	0	0	0	355,429	0	0	0	0	0	0	0	0	"	0	0	0	0	0	"	"	0	"	"	0	"	0
Flight Medicine	"	"	9,096	0	13,977	"	0	0	2450	26,100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	"	"	0	"	0
General Therapy	"	"	"	0	13,752	0	0	0	14,903	0	31,505	0	0	0	0	0	0	0	0	"	0	0	0	0	0	"	"	0	"	0	0
Allergy	"	"	449	0	17,916	0	0	0	0	0	0	22,443	0	0	0	0	0	0	3	0	0	0	0	0	0	"	"	"	0	0	0
Cardiology	"	"	2445	0	3947	0	0	0	0	0	"	"	6,009	"	0	0	0	0	0	0	"	0	0	0	"	"	"	"	0	"	0
Dermatology	"	"	313	"	11,591	0	0	0	"	0	0	0	0	15,653	0	"	0	"	0	"	"	"	0	0	"	"	"	"	"	0	0
Internal Med.	"	"	[illegible]97	"	[illegible]462	0	0	0	"	"	0	"	0	0	10,957	0	"	0	"	0	"	0	0	0	0	"	0	0	"	"	0	0
Hematology	"	"	1416	"	2651	"	0	0	0	0	"	0	"	"	"	3314	0	0	"	0	"	"	0	"	"	"	"	0	0	"	0	0
Pediatrics	"	"	3[illegible]3	"	44,346	0	0	"	0	0	"	0	0	0	"	"	54,153	0	0	0	0	"	0	0	"	"	"	"	"	0	"	0
Psychiatry	"	"	259	"	9737	0	0	0	0	0	0	0	0	0	"	"	0	22,927	0	0	0	-	0	0	"	"	0	"	0	0	0
Pulmonary Lab.	"	"	563	0	1996	0	0	0	0	"	"	0	"	0	0	"	6	"	1374	"	0	0	0	0	"	"	"	"	6	6	0
Gynecology	"	"	1731	0	11,410	0	0	"	0	0	"	"	0	"	0	"	"	0	0	17,310	0	0	0	0	"	0	"	"	0	0	0
Obstetrics	"	"	1306	0	10,777	"	0	0	0	"	6	0	"	0	0	"	"	0	"	0	16,330	0	0	0	0	"	"	"	0	"	"
ENT	"	"	1089	"	11,936	0	0	0	0	0	0	0	"	0	"	"	"	"	"	0	[illegible]0	[illegible],314	0	0	0	0	0	0	"	"	0
Orthopedics	"	"	6933	0	9,[illegible]4	0	0	0	0	0	0	0	"	0	"	"	0	0	"	"	0	0	12,737	0	0	"	"	"	0	0	0
General Surgery	"	"	4432	"	[illegible]951	0	0	0	0	0	"	0	0	0	0	0	0	"	0	0	0	0	0	12,41[illegible]	0	0	0	"	0	"	0
Urology	"	0	307	0	[illegible]46	0	0	0	"	"	0	"	0	"	0	0	"	"	0	0	0	0	0	0	67[illegible]0	0	0	0	"	"	0
Physical Therapy	"	"	0	"	"	0	0	0	0	0	0	0	0	0	"	0	0	0	0	0	"	0	0	0	0	22,349	"	0	"	"	0
Podiatry	"	"	"	"	0	0	0	"	0	"	0	0	0	0	0	0	0	0	"	0	0	0	0	"	0	"	3311	0	0	"	0
Neurology	"	"	641	"	0	"	"	"	0	0	"	0	0	0	0	"	"	"	"	0	"	0	0	0	0	0	"	[illegible]53	"	"	"
Emergency Room	"	[illegible]50	22,776	0	35,[illegible]47	"	1470	"	42,785	"	0	"	0	0	"	"	"	0	"	0	"	"	0	"	0	0	0	"	71,175	"	0
Immunization	"	"	"	0	"	"	"	"	0	0	0	"	0	0	0	"	"	0	"	0	"	0	0	0	"	0	0	"	0	67,643	0
Surgery	"	"	"	0	"	0	0	"	0	"	0	"	0	"	"	"	0	0	"	"	0	"	0	"	"	0	0	"	0	0	13,[illegible]
TOTAL																														

TABLE 4-6
BEAUFORT NAVAL HOSPITAL PATIENT FLOW

PATIENT FLOW FROM	PATIENT FLOW TO																	
	Wards	Food Serv.	OR	Peds. Clinic	Surg. Clinic	Urology	Dental Clinic	Emerg. Room	Derm. Clinic	EENT Clinic	Male Med. Clinic	Female Appt. Clinic	Female Walk-in Clinic	OB/GYN Clinic	Ortho. Clinic	[illegible]	[illegible]	Clin. Lab.
Wards**	1,102	173,112	1,241	0	97	167	1,101	0	71	508	648	0	0	0	337	3,117	0	6,[illegible]
Peds. Clinic	970***	0	0	16,992	0	0	0	0	0	0	0	0	0	0	0	127	23,[illegible]	0
Surgical Clinic	920	0	0	0	3,712	0	0	0	0	0	0	0	0	0	0	179	3,304	0
Urology Clinic	112	0	0	0	0	1,924	0	0	0	0	0	0	0	0	0	153	1,672	0
Dental Clinic	17	0	0	0	0	0	1,681	0	6	0	0	0	0	0	0	43	0	0
Emerg. Room	0	0	0	0	0	0	0	10,369	0	0	0	0	0	0	0	1,218	3,344	0
Derm. Clinic	19	0	0	0	0	0	0	0	3,120	0	0	0	0	0	0	0	3,344	0
EENT Clinic	28	0	0	0	0	0	0	0	0	4,206	0	0	0	0	0	1[illegible]	3,344	0
Male Med. Clinic		0	0	0	0	0	0	0	0	0	1,523	0	0	0	0		3,344	0
Female Appt. Clinic	910	0	0	0	0	0	0	0	0	0	0	3,693	0	0	0	3,344	0,[illegible]	0
Female Walk-in Clinic		0	0	0	0	0	0	0	0	0	0	0	8,229	0	0		15,[illegible]	0
OB/GYN Clinic	1,104	0	0	0	0	0	0	0	0	0	0	0	0	13,927	0	0	21,[illegible]	0
Ortho. Clinic	465	0	0	0	0	0	0	0	0	0	0	0	0	0	6,[illegible]	1,[illegible]	1,672	0

MATERIEL FLOW

The Castle Automated System Division of the Sybron Corporation, a Westinghouse consultant, gathered the materiel flow data in all primary and secondary hospitals. The data included on Wilford Hall at Lackland Air Force Base was obtained from a prior Sybron Corporation study.

These data revealed that military hospitals depend exclusively upon manual methods for materiel distribution, using personnel to push carts, carry packages, and generally act as carriers and transporters. The heaviest materiel flow was in waste, linens, and food.

Data also indicated that the layout and the number of floors in the hospitals affected the volume, frequency, and timing of the materiel flows studied, and revealed multiple interconnections among the various communication and distribution systems (food, charts, medications, etc.) which contribute to patient support.

The data summaries on daily volume of materiel flow are presented in Appendix XII. These reports give a breakdown of the hospital departments receiving as well as those sending materiel, the amount of materiel (in cubic feet), and the number and times of daily deliveries. The original data generated described the materiel volume in terms of the size of their containers. To achieve a more precise measurement, Sybron reaggregated these figures and converted them to cubic feet.

Based upon these data, labor and equipment requirements for materiel movement were estimated and compared with current market values. The results provided a basis for cost recommendations included in the Systems Analysis volume.

MEDICAL RECORDS SUMMARIES

In addition to patient data collected by the three three-man study teams, specialized medical records data relating the levels of care administered -- intensive, heavy, moderate, and light -- to each patient by beneficiary type were collected at Beaufort and Jackson naval hospitals.

The random sampling, representing 5 percent of the two systems' annual admissions, consisted of medical records for 581 patients: 52 recruits, 162 active duty personnel, 299 dependents of active duty personnel, 34 retirees, 21 retiree dependents, and 11 others.

Reaggregated data from these records, grouping patients into various comparative categories, revealed:

1. The length of stay for the total sample was 9,620 days, and the average stay per patient was 16.56 days.
2. The average length of stay for military personnel was much higher than for any other beneficiary group: 30 days for non-Vietnam military; 37 for military recruits; and 42 for Vietnam military.
3. Male patients between the ages of 18 and 44 had the longest average stay -- 33.35 days.
4. Of the total sample, 50 percent had been discharged after one week; 75 percent, after 15 days; and 90 percent, after 40 days.
5. The need for intensive care was relatively rare.
6. Male military personnel generally required only light care, while their dependents needed moderate care in the majority of cases.
7. Males as a group needed light care primarily and females, moderate.
8. Retired patients received an inordinate number of X-ray and laboratory examinations, 1.6 and 11.0, respectively; however, the average was approximately one X-ray and three laboratory examinations per stay per patient.

Tables 4-7 through 4-10 and Figures 4-5 and 4-6 further detail these data. Table 4-7 categorizes patients by beneficiary type and sex and shows the number as well as percent of patient days spent at each level of care.

Table 4-8 shows the same type of data by patient age and sex. Table 4-9 regroups patients by beneficiary type to show the percentage discharged at various intervals after admission. Table 4-10 lists laboratory and X-ray examinations and the average number given per patient. Figures 4-5 and 4-6 categorizing patients as non-surgical and surgical respectively, illustrate the total number as well as the percentage of patients at each level of care on specific days after admission. The complete medical records summaries data is contained in Appendix III.

TABLE 4-7

LEVELS OF PATIENT CARE BY TYPE

OF PATIENT

BENEFICIARY TYPE BY SEX		NO. OF ADMIS.	TOTAL DAYS	AVER. LENGTH OF STAY.	NO. OF DAYS OF CARE TYPE ICU		HEAVY		(% OF TOTAL DAYS) MODERATE		LIGHT	
Military (Vietnam)	Male	10	415	41.50	0	0	15	(4%)	37	(9%)	363	(87%)
	Female	0	0	0	0	0	0	0	0	0	0	0
Military (Recruit)	Male	51	1900	37.25	16	(1%)	77	(4%)	705	(37%)	1102	(58%)
	Female	1	5	5.00	0	0	0	0	2	(40%)	3	(60%)
Military (Not Vietnam	Male	151	4499	29.79	23	(1%)	127	(3%)	1300	(29%)	3049	(68%)
	Female	3	36	12.00	0	0	0	(22%)	19	(53%)	9	(25%)
Dependents of Active Duty	Male	74	399	5.39	4	(1%)	29	(7%)	214	(54%)	152	(38%)
	Female	225	1450	6.44	9	(1%)	194	(13%)	990	(68%)	257	(17%)
Retired	Male	33	592	17.94	14	(2%)	201	(34%)	247	(42%)	130	(22%)
	Female	1	10	10.00	0	0	0	0	10	(100%)	0	0
Dependents of Retired	Male	1	2	2.00	0	0	2	(100%)	0	0	0	0
	Female	20	168	8.40	5	(3%)	27	(16%)	134	(80%)	2	(1%)
Other	Male	4	63	15.75	19	(30%)	9	(14%)	35	(56%)	9	(11%)
	Female	7	81	11.57	25	(31%)	2	(2%)	45	(56%)	9	(11%)

Data Summary
Medical Records

TABLE 4-8

LEVELS OF CARE BY AGE/SEX

PATIENTS BY AGE/SEX		NO. OF ADMIS.	TOTAL DAYS	AVER. LENGTH OF STAY	NO. OF DAYS OF CARE TYPE (% OF TOTAL DAYS) ICU		HEAVY		MODERATE		LIGHT	
Totals Male:	(age)											
	0-1	47	266	5.66	2	(1%)	13	(5%)	97	(36%)	154	(58%)
	2-4	9	45	5.00	2	(4%)	3	(7%)	40	(89%)	0	0
	5-17	32	361	11.28	23	(6%)	24	(7%)	204	(57%)	110	(30%)
	18-44	195	6504	33.35	16	0	214	(3%)	1886	(29%)	4388	(67%)
	45-46	35	568	16.23	33	(6%)	185	(33%)	244	(43%)	106	(19%)
	65-99	6	126	21.00	0	0	21	(17%)	67	(53%)	38	(30%)
Subtotal		324	7870	24.29	76	(1%)	460	(6%)	2538	(32%)	4796	(61%)
Totals Female:	(age)											
	0-1	43	220	5.12	0	0	12	(5%)	15	(7%)	193	(88%)
	2-4	8	45	5.63	1	(2%)	16	(36%)	26	(58%)	2	(4%)
	5-17	19	89	4.68	0	0	13	(15%)	69	(78%)	7	(8%)
	18-44	153	983	6.42	0	0	150	(15%)	768	(78%)	65	(7%)
	45-64	31	364	11.74	12	(39%)	24	(7%)	315	(87%)	13	(4%)
	65-99	3	49	16.33	26	(53%)	16	(33%)	7	(14%)	0	0
Subtotal		257	1750	6.81	39	(2%)	231	(13%)	1200	(69%)	280	(16%)
Grand Total		581	9620	16.56	115	(1%)	691	(7%)	3738	(39%)	5076	(53%)

TABLE 4-9

LENGTH OF STAY BY TYPE OF PATIENT

Beneficiary Type	Total Patients	Average Stay	5%	10%	50%	75%	90%	95%	99%
Military Vietnam	10	41.5	7th	7th	24th	51st	51st	51st	51st
Military Recruit	52	36.6	4th	5th	28th	47th	51st	51st	51st
Military Not Vietnam	154	29.4	2nd	4th	13th	30th	51st	51st	51st
Dependent of Active duty	299	6.2	2nd	3rd	5th	7th	9th	14th	35th
Retired	34	17.7	2nd	4th	10th	17th	27th	50th	51st
Dependent of Retired	21	8.1	2nd	2nd	6th	9th	16th	23rd	29th
Other	11	13.1	1st	5th	7th	23rd	24th	32nd	32nd
Grand Total	581	16.6	2nd	3rd	7th	15th	39th	51st	51st

TABLE 4-10

LAB AND X-RAY EXAMS BY TYPE OF PATIENT

Beneficiary Type	Total Patients	Average Stay	Hematology No.	Hematology Aver.	Urology No.	Urology Aver.	Misc. No.	Misc. Aver.	Rad. Maj. No.	Rad. Maj. Aver.	Rad. Min. No.	Rad. Min. Aver.
Military Vietnam	10	41.50	14	1.4	13	1.3	4	0.4	5	0.5	2	0.2
Military Recruit	52	36.63	96	1.8	107	2.1	177	3.4	3	0.1	59	1.1
Military Not Vietnam	154	29.45	231	1.5	191	1.2	204	1.3	49	0.3	120	0.8
Dependent of Active duty	299	6.18	355	1.2	341	1.1	314	1.1	29	0.1	103	0.3
Retired	34	17.71	160	4.7	69	2.0	155	4.6	24	0.7	28	0.8
Dependent of Retired	21	8.10	50	2.4	29	1.4	55	2.6	2	0.1	11	0.5
Other	11	13.09	43	3.9	13	1.2	34	3.1	8	0.7	6	0.5
Grand Total	581	16.56	949	1.6	763	1.3	943	1.6	120	0.2	329	0.6

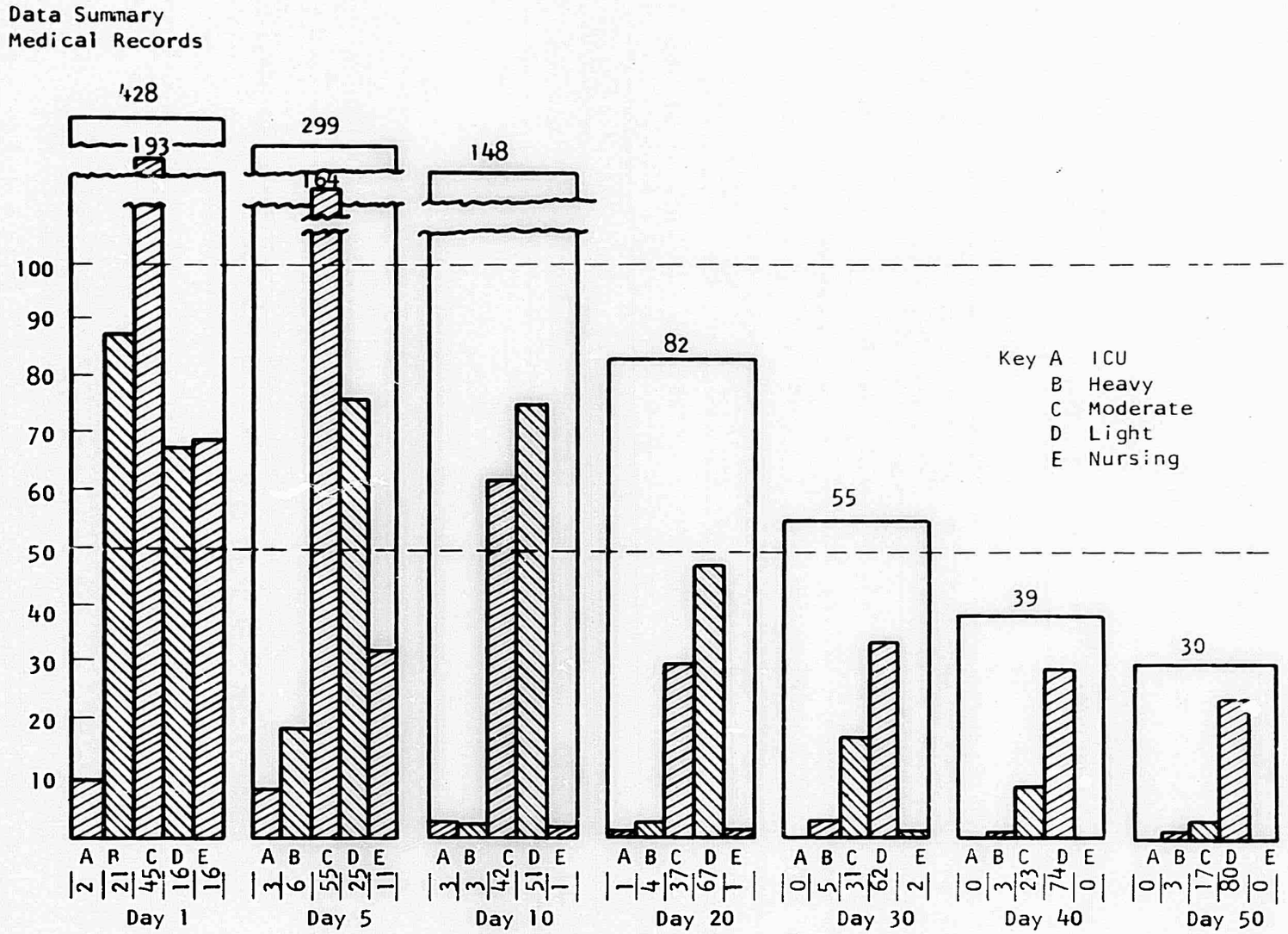

Fig. 4.5—Levels of care vs time after admission, non-surgical

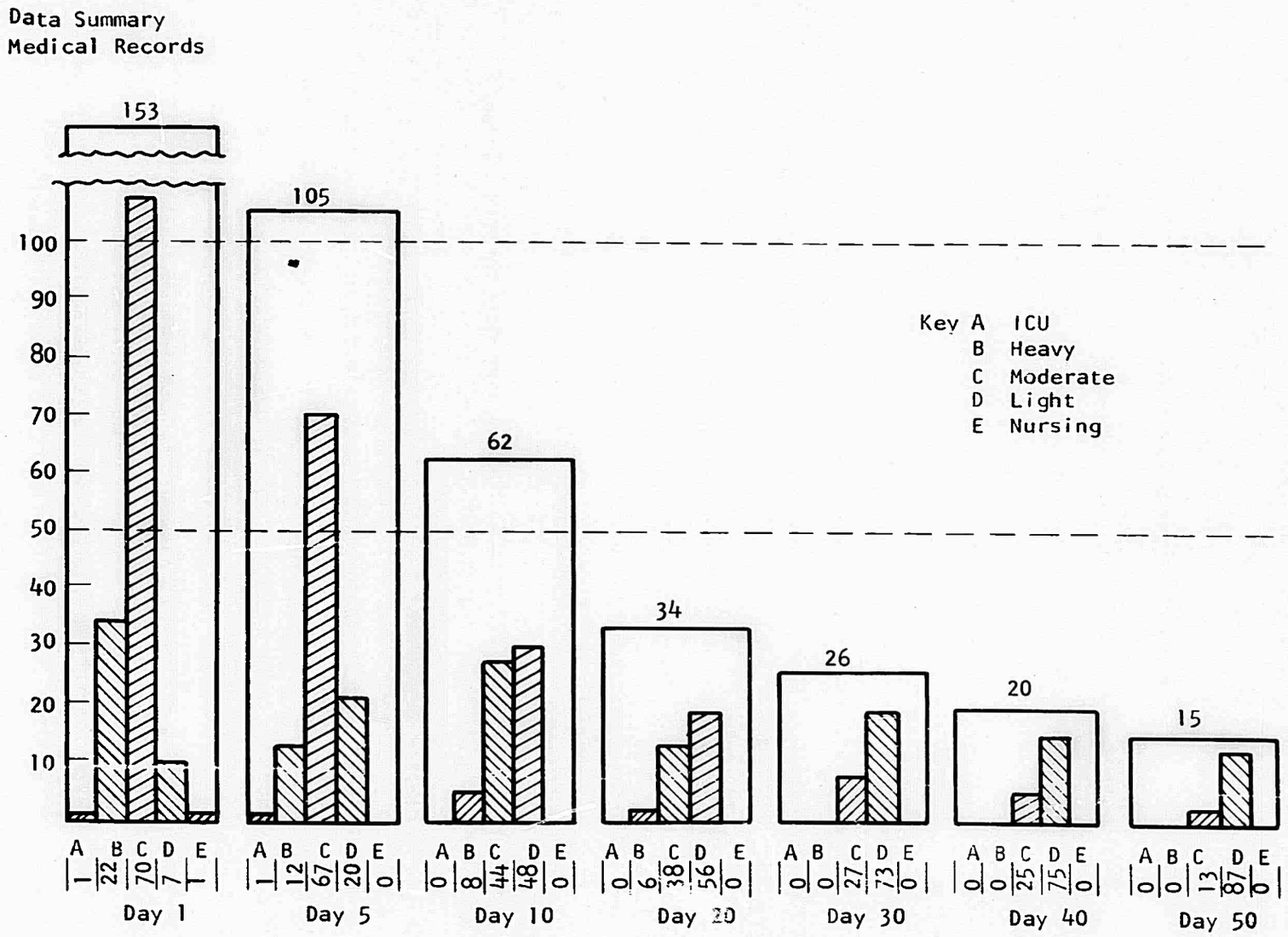

Fig. 4.6—Levels of care vs time after admission, surgical

EDUCATION AND TRAINING

Westinghouse personnel surveyed departments and services providing medical training at the Dix, Andrews, and Beaufort BLHCS sites. To further substantiate data collected at these sites, they also visited March Composite Medical Facility at March Air Force Base and the Oakland Navy Hospital, both located in California. In addition, although the RFQ stated that only the BLHC Systems were to be studied, the following service training schools for beginning and advanced corpsmen were visited since it was important to determine how their training programs interfaced with those at BLHCS:

1. Navy Hospital and Training School, San Diego, California
2. Balboa Naval Hospital, San Diego, California.
3. School of Aerospace Medicine, Brooks Air Force Base, Texas.
4. Air Force Medical Service Training School, Sheppard Air Force Base, Texas.
5. Army Medical Field Service School, Fort Sam Houston, Texas.

SERVICE TRAINING SCHOOLS

The military service schools provide excellent basic medical training for corpsmen, and each of the service's programs are tailored to the basic BLHCS requirements. The Navy program is conducted over a 14-week period* with 190 hours of the total 560 devoted to teaching nursing skills. The Army provides a basic 10-week program consisting of 440 hours of instruction, including 104 hours in nursing procedures. The basic 428-hour Air Force program for corpsmen is presented over a period of 14 weeks. Two hundred and ten of those hours are devoted to specific nursing care procedure instruction. Practical experience in the principles

* Temporarily shortened from 16 weeks due to SEASIA.

and techniques of patient care is offered only in the Navy service training school program -- during the last two weeks of instruction. This practicum is conducted in the various nursing care areas of the Balboa Naval Hospital. Army and Air Force corpsmen obtain their practical nursing experience at the BLHCS level.

Teaching methods employed at the service training schools include standard lecture/discussion and demonstration/return/demonstration using commonly available audio-visual aids. In addition, closed circuit television is used extensively at the Naval Hospital Corps School, San Diego, California; the U.S. Army Medical Field Service School, Fort Sam Houston and the Aerospace School of Medicine.

Although the training provided at the service training schools is basically effective, program coordination between these schools and BLHCS could be improved. At present, there is no formal feedback mechanism from the BLHCS to the training schools on BLHCS educational requirements for corpsmen. Most personnel interviewed at the training schools recommended that such a feedback system be established so that their trainees would be immediately functional on the job. Another commonly-voiced suggestion was to form training school review committees -- one for each service -- to visit all BLHC Systems on a regular basis. These committees would assess corpsmen job performance and report discrepancies in skills and/or knowledge to the service schools for remedial action. To further improve BLHCS/training school program coordination, the training schools, particularly Brooke Army, plan to duplicate existing programs for distribution to their BLHC Systems. Personnel interviewed stated that 90 percent of their videotape libraries could be used for BLHCS in-service training programs and refresher courses. To implement this plan, however, training schools would require additional personnel, dubbing equipment, and funds.

BLHC SYSTEMS TRAINING PROGRAMS

BLHCS training programs, both medical and non-medical, are generally administered and coordinated by a central training office. Depending upon the specific BLHC System, these offices plan and administer education programs, schedule classroom usage, provide training materials and equipment, and maintain software library facilities. They also administer all advancement examinations for corpsmen, maintain training records, and provide clerical assistance for training programs. Their involvement in medical training per se , however, varies widely from system to system.

At Fort Dix, the Plans, Operations, and Training Office fulfills this function. Although the focus is on planning and administering the general military training program, it does schedule facilities usage and provide training films and materials for the medical program. The three-man staff is presently investigating the use of television as the instruction medium for all base training programs.

Andrews' central training office is the Professional and Technical Training Board, staffed by two sergeants in the medical administration field and one civilian. Primarily an administrative and support function, it does provide some instructional services including:

1. the scheduling and presentation of general military training for enlisted personnel.
2. clerical support for TDY programs for officers.
3. administrative, clerical, and overall monitoring for the enlisted career development course program.
4. scheduling and audio-visual support for education and training activities within the hospital.

The Instruction and Education Office at Beaufort coordinates overall training activities. The corpsman in charge is responsible for administering formal educational programs for enlisted personnel including USAF1

correspondence and self-study courses, as well as for maintaining a training-aid library. His specific medical training functions include:

1. collecting and disseminating information about events and publications of special interest to hospital personnel.
2. procuring films and operating projectors at the request of hospital personnel.
3. showing a two-film series to expectant mothers in conjunction with the prenatal program administered by the OB/GYN service.

The training programs at Balboa Naval Hospital, March Composite, and Oakland Naval Hospital are similarly administered.

BLHC System Medical Training

Medical education and training programs at the primary BLHCS can be categorized as either "interdepartmental," "intradepartmental," or "special" programs. Interdepartmental programs include continuing medical education for the professional and nurse corps staffs; intradepartmental programs consist of orientation, formal in-service, and on-the-job training (OJT) for corpsmen as well as any programs directed to hospital patients, and special programs include internship and residency programs and any special interest courses provided. Each of the six secondary BLHC Systems have similar programs which vary only according to the size, and thus the needs, of the given system.

Interdepartmental Programs

All three primary BLHCS offer continuing medical education opportunities for the medical staff in the form of staff conferences, and lectures. The Fort Dix and Andrews programs, however, offer a wider range of educational activities involving in-house staff consultations with professional and civilian medical specialists. Both, in addition, have excellent medical library facilities.

The continuing education of the nurse corps staff in all three systems is generally informal with orientation, in-service programs, and refresher courses offered. However, uniformity in nurses' training is difficult to maintain because of the high turnover of personnel.

The personnel responsible for in-service education coordination at the BLHC Systems have dual supervisory and administrative duties. Consequently, they cannot devote as much time as would be desirable to the in-service training programs. The coordinator at Fort Dix is attempting to improve the situation by working more closely with the Chief of Nursing and nursing supervisors to keep them informed of educational programs and activities both in the hospital and outside. She has also established a two-week training program for medical corpsmen assigned to the hospital after basic military training.

The interdepartmental programs for professional and nurse corps staffs at each of the three primary systems are further detailed in the following matrix. This matrix describes the content of these programs and contains observations on their effectiveness as well as on areas which could be improved.

INTERDEPARTMENTAL EDUCATIONAL ACTIVITIES AT THE PRIMARY BLIC SYSTEMS

	Walson Army Hospital (WAH) -- Fort Dix	Malcolm Grow Hospital -- Andrews AFB	U.S. Naval Hospital - Beaufort
I. Continuing Medical Education for Professional Staff			
A. Training Activities	1. Weekly staff conferences and/or clinical pathology conferences.	1. Weekly professional staff conferences on Thursday afternoons in which medical, surgical, radiology, and clinical laboratory staffs make semi-formal presentations on a rotating basis.	1. Medical conferences and ward rounds on alternate Saturday mornings.
	2. Monthly consultations (except in radiology), with civilian consultants, mostly from the Philadelphia area.	2. Weekly Tumor Board conferences in which tumor patient cases are presented, discussed, and diagnosed. Recommended treatment and follow-up are evaluated.	2. Lectures by members of the house staff on subjects of mutual interest every third Friday afternoon.
	3. Regular (either daily or weekly) intradepartmental meetings and conferences in which interesting cases are discussed and professional activities reviewed.	3. "Commanders Call" one afternoon each month generally devoted to procedural matters and news items of interest to the professional staff.	3. A lecture series every third Tuesday evening at Beaufort Memorial Hospital featuring speakers from the Medical University of South Carolina.
		4. Regular (either daily or weekly) intradepartmental meetings and conferences in which interesting cases are discussed and professional activities reviewed.	1. Regular (either daily or weekly) intradepartmental meetings and conferences in which interesting cases are discussed and professional activities reviewed.
B. Problems and/or Comments	1. Number and composition of the staff, volume and variety of pathologies encountered provide raw material needed for excellent hospital program.	1. The range and experience of senior medical staff, the variety of pathologies encountered, and the regularly scheduled educational activities contribute to a well-balanced, continuing education for the professional medical staff.	1. Conferences and lectures only of occasional interest to experienced staff members. Staff would prefer greater access to special consultants and professional association meetings — now limited by budgetary restrictions.
	2. Special education committees, the availability of facilities and the use of audio-visual aids makes presentations more effective and insures continuity.	2. Well-stocked medical library and access to consultants and professional association meetings in the metropolitan Washington area aid professional development.	2. Participation of the medical staffs assigned to the Marine Corps Air Station and Recruit Depot in ward rounds and clinical conferences at the Naval Hospital is limited, ostensibly by schedule conflicts (Saturday morning sick call).
	3. Films from professional medical associations and slide presentations prepared by staff, lend added quality to the program.		3. Data from medical support areas (laboratory, pharmacy, and radiology) indicate interest in ongoing, in-house program, but journal articles and association meetings are the only primary sources for advances in their fields at present.
			4. Few opportunities for career development for the professional staff in the administrative and ancillary support areas at the hospital level. Most of these officers have advanced through the ranks, however, and have considerable practical experience.

Interdepartmental Educational Activities - (Cont'd)

	Ft. Dix	Andrews	Beaufort
II. Nurse Corps Staff			
A. Training Activities	1. Nursing service staff education meetings, held on the third Wednesday of every month, consist of presentations by members of medical and nursing staffs on topics of special interest to the nurse corps.	1. A monthly in-service meeting, organized by a committee of young charge nurses, typically offers panel discussions and formal presentations by members of the medical staff.	1. A regularly scheduled in-service program for the nurse corps is held once a month, where members of the medical and nursing staffs discuss requested topics.
	2. Orientations for newly assigned nurse corps personnel are conducted jointly by the in-service coordinator and the chief nurse on assignee's unit.	2. Intraunit education and training is informal except in the surgical suite and recovery room. Refresher training and updating on standard operating procedures is routine for all personnel assigned to that unit.	2. Newly assigned nurses are given four-week, rotating assignments on various nursing units where they are introduced to standard operating procedures, patient care practices, and equipment operation by experienced staff nurse on an informal basis.
	3. Informal instruction is provided on most of the nursing units by staff nurses, and supervisory personnel. Ward rounds and transcriptions of doctors' instructions offer further opportunities for professional staff development.		3. Ward conferences are held on an as-needed basis. Individual learning is monitored, reinforced, and extended through close supervision by charge nurse and supervisory staff. No formal training records kept.
			4. Regularly scheduled (daily or weekly) ward conferences where a physician, nurse, or corpsman presents a topic related to continuing education, such as a new procedure or technique of interest to staff and/or patients.
B. Problems and/or Comments	1. The size of the hospital, the frequent turnover of personnel and the heavy workload seriously hamper the development of an on-going in-service program which meets the needs of both civilian and military nursing staff.	1. Inadequacy of training subsystem for nurse corps personnel is caused by shortages of experienced staff nurses, frequent turnover of supervisory personnel, as well as lack of agreement on who should assume primary responsibility for unit level education and training in the hospital.	1. Since the education coordinator performs supervisory and administrative duties in addition to overseeing the in-service program, her direct involvement in education and training is limited.
	2. In addition to coordinating formal in-service programs, the education coordinator performs administrative duties, such as alerting the nursing staff to in-hospital and outside educational events, and coordinating in-service programs for student nurses affiliated with the nearby Trenton State and Ocean County Colleges.	2. The present education coordinator, who also functions as an assistant to the Chief Nurse, performs various administrative and supervisory duties in addition to managing the in-service program.	2. Primary responsibility for the in-service education of nurses has been assumed by the recently assigned chief nurse. A new two-week orientation program is planned, to be followed by one-month rotations in a minimum of four wards.

Interdepartmental Educational Activities - (Cont'd)

		Ft. Dix	Andrews	Beaufort
B.	Problems and/or Comments (Cont'd)	3. Assisted by an enlisted man, the education coordinator initiated a two-week training program to orient medical corpsmen assigned to the hospital after basic military medical training. 1. The coordinator's responsibilities also include: coordinating of phase II (practical experience) training for holders of the 91B-3 (special forces aidman) military occupational specialty; and co-ordinating in-service and practical training for reserve units assigned to Walson during the summer.	3. To reduce staff time devoted to orientation of nurses and enlisted personnel, the education coordinator has suggested forming a procedures committee to develop standard hospital operating procedures.	3. Because of the range and experience of senior nurse corps personnel, day-to-day instruction provided for new nurses and corpsmen is good. However, with the frequent rotation or reassignment of personnel, the instruction must be continually repeated resulting in a loss in content uniformity.

Intradepartmental Training

The intradepartmental training for enlisted and civilian support personnel consists of basic orientation, formal in-service education, on-the-job training, and patient education.

Orientation is informal since workload and scheduling problems demand flexibility. The content and type of training varies according to the department and the hospital.

All three BLHCS offer training for nurses and corpsmen in the form of formal in-service education and on-the-job training (OJT). However, OJT is currently the basic method of training support personnel at the three primary hospitals. This training is heaviest in radiology, pharmacy, and the clinical laboratories, and is characterized as semi-structured and semi-formal, with the weight of the training load falling on supervisory personnel.

Rotation through several services which provides excellent cross training, and formal meetings and classes complete the training profile. These methods are employed in conjunction with OJT. For example, in addition to OJT, corpsmen at Beaufort's Marine Corps Air Station Dispensary attend formal classes and are rotated throughout the various dispensary departments. And, although the Parris Island Dispensary system lacks a coordinated training program,* individual dispensaries offer varying degrees of in-service, OJT, and formal training. All training personnel interviewed at the three primary BLHCS expressed a need for more formal in-service classes to supplement OJT. Although attempts are being made at Andrews and Fort Dix to expand classroom training, personnel there feel more is still required.

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* At the time of the Westinghouse on-site visit, a coordinated training program was being initiated by two nurses just assigned to Parris Island.

Intensive formal education courses for corpsmen in such areas as radiology, surgery, and laboratory work that are not part of in-service training are generally confined to the larger BLHCS. Balboa Naval Hospital, for example, the largest, with approximately 2,000 beds -- offers the widest course variety for technicians in addition to their in-service training.

Patients education is provided at each of the primary hospitals. These programs are usually informal and conducted by the medical personnel directly involved with the patient's care. Programs for expectant mothers at the three hospitals includes films and lectures.

Fort Dix has recently instituted a more detailed slide/tape presentation conducted by their public health nurses for new mothers and surgical patients. Beaufort plans to expand its current program for expectant mothers (now handled by the I and E office) by transferring control of the program to the SDQ Nursing Supervisor and adding tours of areas such as the Delivery and Labor rooms.

In the following matrix the intradepartmental programs offered at each BLHC System are detailed. Patient education programs have not been included since they have been sufficiently described in the above discussion.

INTRADEPARTMENTAL TRAINING AT THE PRIMARY BLHC SYSTEMS

	Walson Army Hospital (WAH) -- Fort Dix	Malcolm Grow Hospital -- Andrews AFB	U.S. Naval Hospital -- Beaufort
I. Orientation	1. New assignees are briefed on standard operating procedures and oriented to tasks to be performed by an experienced officer or an NCO.	1. Informal orientation, routinely conducted by NCOIC's and section supervisors, consists of an explanation of standard operating procedures, a brief tour of physical facilities, introduction to staff, and a brief "breaking in" period when the assignees work under the supervision of a more experienced staff member.	1. Orientation of new assignees to the hospital and to component departments is conducted on an informal basis. Introduction to facilities, equipment, and supplies, and briefing on standard operating procedures is handled by the officer or non-commissioned officer in charge. During this familiarization period, each new assignee works with a more experienced staff member to whom he or she can turn for guidance, directions, or additional information.
	2. Formal classes for unskilled personnel, held for two weeks on a rotating basis include orientation and tour of the hospital and cover basic techniques and procedures used in the nursing service. This provides uniformity in basic instruction and permits staff nurses to focus teaching time on skills more directly related to effective performance on the unit.	2. Orientation periods vary from several days for skilled personnel to four to six weeks for the unskilled personnel assigned to the nursing service and specialized administrative support positions.	2. Orientation varies from several days to four to six weeks depending upon whether the assignee is a professional or non-professional.
II. Formal In-service Education	1. Formal instruction used in both the medical support and nursing service areas.	1. Little formal instruction at Malcolm Grow, partly due to understaffing (shortages of experienced personnel coupled with increasing workloads) and to increasing use of self-study courses in most medical occupational specialties.	1. Formal in-service education activities vary from department to department depending upon the experience of the staff, the supervisor's perception of individual needs, and time available for such activities.
	2. Most wards hold weekly in-service staff classes where new procedures are explained and the use of special equipment is demonstrated. The Standard Operating Procedures Manuals, prepared by unit head nurses, assigning specific responsibility for various tasks, often list prerequisite background knowledge, and contain usable instructional materials. Records of ward teaching classes are submitted to the Chief Nurse on monthly activities resume.	2. In the nursing service, with the exception of the surgical suite and recovery room, formal instruction is limited to occasional impromptu staff meetings to explain new procedures, introduce new equipment, or correct glaring errors in performance.	2. In the medical support areas in general, particularly in radiology and the laboratory, formal instruction supplements semi-structured on-the-job training and structured rotations through the various sections.
	3. Ward classes supplemented by individual demonstrations, explanations, and conferences, as needed.	3. Formal knowledge required for advancement as a Medical Service Specialist is derived from a two-volume career development course which airmen are expected to study on their own time.	3. In the nursing service, formal instruction is provided for both officers and enlisted personnel by experienced nurses and corpsmen. Ward teaching classes and impromptu conferences are held weekly and/or daily to explain special treatments, procedures, diseases, etc.

Intradepartmental Training - (Cont'd)

	Ft. Dix	Andrews	Beaufort
II. Formal In-service Education (Cont'd)	1. Refresher training and preparatory classes provided in some administrative areas before taking the examination required for advancement in rate. Although more training is required, understaffing, volume of work, and personnel turnover limit the possibility of a sustained formal training program in any of these areas.	1. Some formal instruction is provided for unskilled clerical personnel assigned in the registrar office. Career Development Curricula (CDC) are available for semi-skilled personnel. They free NCOIC's from the responsibility of having to provide formal training.	4. Correspondence courses are offered through the Armed Forces Institute as well as a self-study manual entitled Handbook of the Hospital Corps. 5. Almost no formal training conducted for enlisted and civilian support personnel in the administrative and ancillary support areas.
III. On-the-Job Training	1. Most instruction is OJT to develop the practical skills needed on the job. Structured programs are provided for enlisted personnel in such areas as the clinical laboratory, radiology, and the pharmacy.	1. Practical skills development through a sophisticated on-the-job training program is a routine feature in most hospital departments. Using job training standards or job proficiency guides prepared by the Air Training Command, senior enlisted personnel monitor job performance and provide demonstrations and "hands-on" training as required to help airmen develop additional skills. This means that the amount of skills training the NCOIC's must include in their day-to-day supervision of individual performance is reduced.	1. OJT, under the supervision of experienced personnel, is the primary means of developing unskilled and semi-skilled personnel in the medical support, nursing service, and administrative and ancillary support areas of the hospital. In radiology, pharmacy, and the clinical laboratory the usual procedure is to rotate new personnel through each of the work stations that make up the department. The dental clinic at both Parris Island and the Marine Corps Air Station provide excellent in-service and OJT programs for the dental technicians. This training is further extended by a rotation program through the various divisions within the clinics. In the nursing service, most new assignees require up to four weeks of OJT on a single station before they become fully competent to perform the tasks associated with their job descriptions without close supervision. Actual practice varies with the workload and the number of experienced staff available.
	2. On-the-job training on most nursing units is the responsibility of an NCOIC or Wardmaster, but staff nurses generally assume an active role in any remedial instruction needed to improve skills or increase knowledge of individual corpsmen. Few records are kept causing lack of standardization from one unit to another or even within units from one month to the next. 3. Better organization and greater accessibility to supplementary training materials could be used to improve the OJT programs presently found in the administrative and ancillary support areas, particularly in medical records and dietary.	2. Record keeping is simplified and standardized using the service-wide Air Force Form 623, Consolidated Training Record, which is maintained by section supervisors. This form shows training received, upgrade proficiency training provided, and USAFI and other technical and/or specialty training courses taken. It also facilitates job performance evaluation and aids career counseling and job placement.	2. Except in the nursing service, where there is a clinical nursing experience record for each corpsman and corpswave, no formal records are kept of experience acquired or special skills developed.

Special Programs

The special education and training offered by the three hospitals varies according to the size and type of facility, the size and experience of their senior staffs, and opportunities they can provide for study in medical specialty areas. Beaufort offers no special training programs at all, while both Fort Dix and Andrews offer residencies and internships. WAH's residency and internship program is more extensive, with pre-specialty residencies available in surgery, general dentistry, and preventive medicine and two-year rotating post internships offered in the various medical and surgical specialties.

At Andrews the most active of the residency and internship programs are in the dental service, with medical programs limited to family practice and dietary residencies.

These special programs at Dix and Andrews are further described on the following matrix.

SPECIAL PROGRAMS

	Walson Army Hospital (WAH) -- Fort Dix	Malcolm Grow Hospital -- Andrews AFB	U.S. Naval Hospital -- Beaufort
I. Internship and Residency Programs	1. Pre-specialty residencies in surgery (orthopedics, OB-G, neuropsychiatry, and EENT).	1. Medical programs are presently limited to a family practice and a dietary residency program. Each of the physicians interviewed felt that a more active teaching program would further enhance staff development at Malcolm Grow.	
	2. A general practice medical residency -- a two-year rotating post internship program in the various medical and surgical specialties.	2. Dental service has a more active internship and residency program, consisting of formal lectures and extensive opportunities for clinical experience.	
	3. Combined professional-administrative internships in radiology and clinical laboratory.	3. A one-year residency program for clinical pathologists provides practice experience in the management and administration of the laboratory service in addition to thorough training in the various lab procedures.	
II. Special Programs for Nurse Corps Personnel	1. A hospital-based training program for operating room nurses.		
	2. An intensive orientation program for newly enlisted nurses whose next assignment will be Vietnam.		
III. Special Programs for Enlisted Personnel	1. Phase II (practical, in-hospital) training for Special Forces Aidmen (91B-3 mos).	1. Phase II training programs offered for semi-skilled (3 level AFSC) personnel in the clinical laboratory and radiology areas. They were introduced because the formal training at Sheppard, even though it includes practical exercises, was found to be insufficient preparation for medical support specialists assigned to large Air Force hospitals. The trainees are assigned in groups for an intensive period of training combining formal instruction and closely monitored on-the-job training. Once they have completed the Phase II programs, trainees are not retained but are routinely assigned to other Air Force facilities.	
		2. Advanced individual training program as cardio-pulmonary technicians; for those carefully selected from among semi-skilled (5 level) personnel in the 902X0 career field. They are given a month-long introduction to the cardio-pulmonary field (inhalation therapy, cardiology, and pulmonary functions) followed by 3-month assignments in each of these three areas.	
		3. A recent innovation, likely to be repeated was a residency program in forensic medicine.	

FUNCTIONAL COSTS

Although none of the three systems had a precise breakdown of education and training costs, Westinghouse established functional costs from estimates of the number of hours personnel spent in instruction, the number of trainee hours, and cost of materials if applicable. The following tables contain a breakdown by function of instructional hours and costs for Dix, Andrews, and Beaufort. They show the approximate number of trainees flowing through the system per year, the average hours of instruction given each, the average hourly wage for each instructor, and the average cost per hour per trainee. Additional cost information will be found in the functional cost matrices for the ten individual functions.

TABLE 4 - 11

EDUCATION AND TRAINING COSTS

FORT DIX

Function	Trainees per Year	Instructor Hrs. per Trainee	Trainee $ per Hr.	Instructor Hrs.	Instructor $ per Hr.
Ward Management	360	64.43	3.13	15.40	5.21
Outpatient Department	234	61.06	3.28	9.28	5.25
Clinical Laboratories	53	80.53	2.54	40.41	4.41
Radiology	23	73.76	3.01	18.61	4.79
Pharmacy	21	153.90	2.13	7.81	4.77
Registrar	16	52.75	3.62	26.75	5.04
Medical Records	27	65.92	2.53	32.38	5.94
Dietary	33	34.26	2.92	11.99	4.64
Dentistry	108	46.81	4.27	21.21	6.64
Dispensaries	49	58.79	2.84	14.01	5.08
TOTAL	924				
AVERAGE		69.22	3.08	19.79	5.18

TABLE 4 - 12

EDUCATION AND TRAINING COSTS

ANDREWS AIR FORCE BASE

Function	Trainees per Year	Instructor Hrs per Trainee	Trainee $ per Hr.	Instructor Hrs	Instructor $ per Hr.
Ward Management	128	97.4	2.54	21.98	5.64
Outpatient Department	40	256.9	2.70	38.69	4.26
Clinical Laboratories	19	107.05	2.67	45.47	4.05
Radiology	5	806.9	2.48	80.7	3.80
Pharmacy	5	349.5	1.92	39.2	4.28
Registrar	34	310.21	2.29	18.91	3.82
Medical Records	5	75.3	1.58	7.53	3.30
Dietary	19	117.87	2.53	15.36	4.15
Dentistry	57	339.33	1.76	26.09	5.21
Dispensaries	7	42.91	2.21	11.57	3.95
TOTAL	319				
AVERAGE		250.33	2.26	26.22	4.95

TABLE 4-13

EDUCATION AND TRAINING COSTS

BEAUFORT NAVAL HOSPITAL

Function	Trainees per year	Instructor Hrs. per Trainee	Trainee $ per Hr.	Instructor Hrs	Instructor $ per Hr.
Ward Management	130	20	2.63	20	4.70
Outpatient Department	43	10	2.23	10	4.29
Clinical Laboratories	30	100	3.29	100	4.15
Radiology	12	50	2.12	50	3.40
Pharmacy	4	20	2.70	20	3.45
Registrar	20	8	2.66	8	3.14
Medical Records	9	3	2.55	3	2.55
Dietary	46	5	2.23	5	2.87
Dentistry	174	14	2.22	14	5.15
Dispensaries	232	16	2.57	16	2.83
TOTAL	700				
AVERAGE		25	2.52	25	3.65

CLINICAL LABORATORIES

WALSON ARMY HOSPITAL (WAH) -- FORT DIX

Mission

The mission of the Army Pathology Service (clinical laboratories) is to provide complete laboratory service for the hospital, including administration of the section, diagnostic consultation with the medical staff, research, training, and such specialized activities as the following:

Anatomical Pathology -- autopsies, surgical pathology, cytology, histopathology, and tissue reporting and indexing.

Clinical Pathology -- urinalysis, bacteriology, hematology, parasitology, serology, chemistry, and transfusion services.

Medical Illustration -- graphics, including medical photography, for educational and review purposes.*

In addition to these definitive functions, the WAH Pathology Service provides the hospital with a fully staffed blood bank and operates the Blood Donor Center in the Medical Processing area where blood is collected and processed. The services of the WAH Blood Donor Center are also extended to McGuire AFB and other BLHCS installations.

Walson Pathology has the distinction, unique among Army Class I hospitals, of being accredited by the American College of Pathology. With a staff of some 75 to 80 full-time employees it is one of WAH's largest services, second only to nursing. An estimated 90 percent of the total laboratory workload is of a routine screening nature, with its accompanying high volume and throughput rate.

Existing Operations

The laboratories' problems, taken individually, are not crucial. Collectively, however, they lead to delays and reduced operations.

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*As stated in AR40-4, paragraph 2-15.

- Localized power failures occur on the average of once a month, and back-up electrical power is not sufficient to meet emergencies. The resulting malfunction of the blood bank refrigerator and various testing devices destroys valuable blood units and results in the need to repeat tests already in progress.
- The present pay grade is not sufficient to attract competent civilian laboratory technicians and technologists. Consequently, the turnover rate among civilians increases while their efficiency decreases. In addition, the 14-week laboratory technicians' course at Fort Sam Houston, Texas, for military personnel, has been found inadequate.
- The WAH policy of minimal price level purchasing has unfortunate consequences when applied to chemicals. Some of the cheaper laboratory reagents, for example, often prove unsatisfactory.
- The term STAT (immediate) indicates emergencies, and tests so designated receive the highest priority. All too frequently, however, physicians use the term indiscriminately to obtain faster processing. As many as 20 percent of all tests performed are marked "STAT."
- The routine used for drawing blood is inefficient. Since requests for blood tests are seldom batched, laboratory technicians must make separate and time-consuming trips to the wards to draw most specimens to order.
- Delays in receiving test results from Fort Meade have forced Walson to extend pathology capabilities to encompass a greater variety of laboratory services, alleviating the need for outside processing.

Following the lead of civilian hospitals, the Walson laboratory is moving toward increased automation. The demand for tests and consultations is growing since physicians are becoming more aware of the diagnostic capabilities of these services. In addition, the increasing use of multiphasic testing as a diagnostic screening tool further augments the laboratory workload.

MALCOLM GROW USAF MEDICAL CENTER -- ANDREWS AIR FORCE BASE

Mission

The mission of the clinical laboratories includes: performing hematology, pathology, bacteriology, serology, parasitology, and biochemistry tests, and collecting and grouping blood; performing procedures supporting epidemiological surveys, the military public health program, and veterinary laboratory activities; performing base-level nuclear, biological, and chemical warfare laboratory procedures required by the medical defense program; establishing operating procedures for each subsection of the laboratory; providing on-the-job orientation and training of assigned personnel; preparing and maintaining required reports and records; and providing laboratory consultant services.

In addition to the stated mission, the Malcolm Grow Clinical Laboratories Department performs several special functions. As a consultant center (AFR160-51) in the Continental United States (CONUS), it is responsible for providing histopathology services for its geographic area. It carries out an Air Force Training mission which consists of a one-year program to train laboratory officers as 2nd Lieutenants, and a technicians' program which may involve 30 to 40 students at a time. All military air crashes on the Eastern seaboard are investigated by a three-man Air Crash Investigation Team from the Malcolm Grow Laboratory. Laboratory personnel also type, test, and pack all blood bank donations from Andrews destined for Southeast Asia.

Existing Operations

From observations and interviews, the Westinghouse study team identified three major problems. The facilities are inefficiently situated in two locations -- on the first floor and in the basement which is a maze of disconnected corridors and laboratories. The present system of specimen identification results in duplication of effort and the loss of many specimens or their identities. The manpower supply is inadequate even to process the present number of specimens,

*As stated in AFM-168-4H Section N.

much less handle the additional training workload. Although supplementary student manpower is used, the long hours and night calls lower the morale of both students and permanent technicians.

U.S. NAVAL HOSPITAL -- BEAUFORT

Mission

The mission of the clinical laboratories is to "conduct studies, investigations, and examinations in clinical pathology and anatomic pathology."* More specifically, the laboratories at Beaufort have been organized into six basic sections, each with its own separate laboratory space and designated responsibilities.

- Administrative -- coordination of pathology, blood bank, and Blood Donor Center functions; quality control of all procedures; supervision of statistical reporting.
- Chemistry -- routine and special chemistries on blood, serum, urine, and spinal fluid.
- Hematology/Urinalysis -- supervision of the central blood drawing area; hematology and urinalysis tests.
- Bacteriology/Parasitology -- culture examinations for C&S on throat, sputum, blood, spinal fluid, urine, and pus; examinations of stool specimens for parasitic ova.
- Blood Bank/Serology -- cross-matching and antibody screening for emergency and inpatients; drawing blood units for emergency transfusions; mailing out all biological specimens for examination and testing; all serological tests.
- Histology -- preparation of surgical tissues and specimens from wards, clinics, and dispensaries; preparation of all autopsy specimens for histological procedures, routine and special.
- Blood Donor Center -- collecting, typing and processing whole blood for Beaufort inpatients, WESTPAC, and civilian institutions (in order of priority).

*Beaufort Orgainzational Manual NAVHOSPBFT INST P-5400, pp. C-10 and C-11.

Laboratory tests are generally performed manually. For the large volume of weekly Parris Island blood donations, an automated blood typing instrument is used.

Existing Operations

Several problems interfere with effective operations within the clinical laboratories. Division of the total facility into individually enclosed laboratory areas precludes personnel and equipment sharing. Additional equipment is needed, such as a hood for the chemistry section, a hoist for the morgue, a better tissue incinerator, and a microscope camera attachment for teaching purposes.

Graduates of the training schools are difficult to assimilate because they require a great deal of additional on-the-job training before they are able to make any significant contribution in the laboratory. Furthermore, the rate of turnover is high, which results in a lack of continuity and stability in the laboratory and increases the training burden.

There are filing system inadequacies: no cross-index by disease or condition exists for paraffin blocks, slides, or laboratory chits. In addition, laboratory chits are filed in their own separate sections with no attempt at consolidation or centralization.

Beaufort plans to increase automation of laboratory test procedures. The anticipated availability of more qualified laboratory equipment repairmen should facilitate such a conversion. Also planned is a frozen blood program.

DATA PRESENTATION MATRICES

The following matrices and charts detail the data gathered by the Westinghouse teams on the three hospitals' clinical laboratory services. The first matrix delineates clinical laboratory operations; the second, resource utilization; and the third, functional costs.

I. CLINICAL LABORATORY -- OPERATIONS

Walson Army Hospital (WAH) -- Fort Dix

A. Services Rendered

1. General: [1]

a. performing routine, emergency (STAT), and administrative emergency (ASAP) lab tests for outpatients, ambulatory inpatients, and non-ambulatory patients;

b. collecting appropriate samples from non-ambulatory patients;

c. reporting results of all tests to Medical Records and other concerned parties;

d. consulting with MD's on wards, in clinics, and in the OR.

2. Blood Bank: [1]

a. storing, crossmatching, typing, and distributing
- routine blood components which include packed red cells, fresh-frozen plasma, liquid plasma, subdivided units of whole blood or packed cells
- special request blood components which include platelet-rich plasma, platelet concentrates, cryoprecipitates, leukocyte concentrates, leukocyte-poor plasma, heparanized whole blood, washed red blood cells
- $Rh_0(D)$ immune globulin;

b. operating special equipment
- blood warming bath
- blood warming coils
- leukocyte filters.

Malcolm Grow Hospital -- Andrews AFB

1. General:

a. clinical lab and anatomical pathology labs
- performing routine and special lab procedures and providing support in clinical and anatomical pathology specialty areas at Malcolm Grow Medical Center
- providing Phase II training of clinical lab specialists
- providing manpower for air crash investigation team;

b. Central Operations
- manning reception desks and telephones
- logging and routing requests, specimens, and results to appropriate labs
- filing and forwarding lab results to clinics and ward areas
- general supervision of clinical and pathology lab operations
- supervising and instructing Phase II students and OJT of permanent party technicians
- dispatching technicians to wards for inpatient specimen collection in the morning
- collecting blood from ambulatory outpatients and inpatients in blood drawing room.

2. Blood Bank:

a. storing, crossmatching, typing, and distributing
- routine blood components which include packed red cells, fresh-frozen plasma, liquid plasma, subdivided units of whole blood or packed cells
- special request blood components which include platelet-rich plasma, platelet concentrates, cryoprecipitates, leukocyte concentrates, leukocyte-poor plasma, heparanized whole blood, washed red blood cells
- $Rh_0(D)$ immune globulin;

b. operating special equipment
- blood warming bath
- blood warming coils
- leukocyte filters;

c. collecting, providing temporary storage for, crossmatching, typing, and shipping whole blood to McGuire AFB for DOD blood drive.

U.S. Naval Hospital -- Beaufort

1. General:

a. performing routine, emergency (STAT), and administrative emergency (ASAP) lab tests for outpatients, ambulatory inpatients, and non-ambulatory patients;

b. collecting appropriate samples from non-ambulatory patients.

2. Blood Bank:

a. storing, crossmatching, typing, and distributing routine blood components, including heparanized whole blood, packed red cells, and plasma;

b. performing special coagulation tests.

	Ft. Dix	Andrews	Beaufort
A. Services Rendered (cont'd)	3. Urinanalysis lab -- tests performed:[1] a. routine urinanalysis; b. prenatal tests for routine albumin and sugar; c. pregnancy test (UCG); d. urinary amino acid screening; e. urine cultures; f. special tests with consultation • renal function • PSP • urobilinogen • addis counts.	3. Urinalysis lab -- tests performed: a. routine urinanalysis; b. prenatal tests for routine albumin and sugar; c. pregnancy tests (UCG); d. urinary amino acid screening; e. urine cultures; f. microscopic examinations of urine; g. special tests with consultations.	3. Urinalysis lab -- tests performed: a. routine urinalysis; b. prenatal test for routine albumin and sugar; c. pregnancy test (UCG); d. urinary amino acid screening; e. special test with consultation • renal function • PSP • urobilinogen • calcium • potassium • sodium • microscopic counts • semen analysis.
	4. Hematology lab -- tests performed:[1] a. complete blood counts (CBC) • hematocrits • white blood cell counts • differential blood cell counts • blood morphology determinations; b. platelet determinations; c. bone marrow studies; d. other routine studies • reticulocyte counts • lupus tests • bleeding and coagulation times • malaria smears; e. special tests • sperm counts • red cell fragility tests • leukocyte alkaline phosphate tests.	4. Hematology lab and special hematology lab -- tests performed: a. complete blood count (CBC) • hematocrits • white blood cell counts • differential blood cell counts • blood morphology determinations; b. platelet determinations; c. bone marrow studies; d. other routine studies • reticulocyte counts • lupus tests • bleeding and coagulation times • malaria smears; e. special tests • red cell fragility tests • leukocyte alkaline phosphate tests • prothromoin time tests • immunohematology studies • special coagulation studies.	4. Hematology lab -- tests performed: a. complete blood counts (CBC) • hematocrits • red blood cell counts • white blood cell counts • differential blood cell counts • blood morphology determinations; b. platelet determinations; c. bone marrow studies; d. other routine studies • reticulocyte counts • bleeding and coagulation times; e. special tests • red cell fragility tests • spinal fluid tests (cell count and differential, chemistry, bacteriology, and serological examinations) • sickle cell counts • thromboplastin time.
	5. Blood chemistry lab -- tests performed:[1] a. liver function tests; b. glucose tolerance tests;	5. Chemistry lab and special chemistry lab -- tests performed: a. liver function tests: b. glucose tolerance tests;	5. Blood chemistry lab -- tests performed: a. liver function tests: b. glucose tolerance tests;

f. Clinical Laboratory -- Operations (cont'd)

	Ft. Dix	Andrews	Bamfort
A. Services Rendered (cont'd	c. blood alcohol tests; d. BUN tests; e. serum electrolytes tests; f. special chemistry tests (performed at First U.S. Army (FUSA) Headquarters Lab, Ft. Meade, Md., due to lack of facilities at WAH) • gonadothropin assays • urinary steroid determinations • PBI's • toxicological assays.	c. blood alcohol tests; d. BUN tests; e. serum electrolytes tests; f. special chemistry tests • gonadothropin assays • urinary steroid determinations • PBI's • toxicological assays • spinal fluid chemistry exams.	c. Blood alcohol tests (LiOH, MeOH); d. BUN tests; e. serum electrolytes tests; f. special chemistry tests • acetone determinations • lipase determinations • PBI's.
	6. Serology lab -- tests performed: a. slide (microflocculation) test for syphilis; b. other syphilis tests (Ft. Meade); c. premarital tests (microflocculation); d. viral studies; e. prothrombin times; f. partial thromboplastin times; g. special coagulation workups.	6. Microbiology lab -- tests performed: a. serology -- microscopic examination of specimens and cultures • slide (microflocculation) test for syphilis • other syphilis tests • premarital tests (microflocculation) • prothrombin times • partial thromboplastin times • spinal fluid exams;	6. Serology lab -- tests performed: a. slide (microflocculation) test for syphilis; b. V.D.R.L.; c. premarital tests (microflocculation; d. prothrombin times; e. partial thromboplastin times;
	7. Bacteriology lab -- tests performed:[1] a. nose and throat cultures; b. TB cultures (sputum, fungus, gastric washings, and urine); c. cerebrospinal fluid; d. blood cultures; e. gonorrhea cultures and smears; f. fungus; g. stool cultures; h. wound, abscess, and drainage cultures; i. darkfield exams; j. URI throat cultures; k. positive meningococcal serum studies.	b. bacteriology -- microscopic examination of bacteriological specimens and cultures • nose and throat cultures • TB cultures (sputum, fungus, gastric washing, and urine) • cerebrospinal fluid • blood cultures • urine cultures • gonorrhea cultures and smears • fungus • stool cultures • wound, abscess, and drainage cultures • darkfield exams • URI throat cultures • positive meningococcal serum studies • sperm counts • spinal fluid cell counts and differentials; c. virology studies.	7. Bacteriology lab -- tests performed: a. nose and throat cultures; b. TB cultures (sputum, fungus, gastric washings, and urine); c. cerebrospinal fluid; d. blood cultures; e. urine cultures; f. gonorrhea cultures and smears; g. fungus; h. stool cultures; i. wound, abscess, drainage cultures; j. darkfield examinations; k. URI throat cultures;

L. Clinical Laboratory -- Operations (cont'd)

	Ft. Dix	Andrews	Beaufort
A. Services Rendered (cont'd)	8. Spinal fluid -- tests performed: a. cell count and differential b. chemistry; c. bacteriology; d. serological examinations (Ft. Meade).		
	9. Parasitology lab -- tests performed:[1] a. stool examined for ova and parasites; b. occult blood in stool; c. pinworm preps; d. stool for culture; e. trypsin tests; f. pH tests.	7. Mycology - parasitology lab -- tests performed: a. stoolexamined for ova and parasites; b. occult blood in stool; c. pinworm preps; d. trypsin tests; e. pH tests; f. fungus.	8. Parasitology lab -- tests performed: a. stool examined for ova and parasites; b. occult blood in stool; c. fat stain; d. scotch tape tests; e. malaria tests.
	10. Histopathology -- tests include:[1] a. surgical specimen analyses; b. frozen section analyses; c. cytology (pap smears) analyses (Ft. Meade); d. buccal smears; e. examinations to provide evidence in alleged rape and child molesting charges.	8. Histopathology lab -- preparation, examination, documentation of findings, and referrals to AF Institute of Pathology (as necessary): a. surgical specimens analyses; b. frozen section analyses; c. cytology (pap smears) specimen analyses; d. buccal smears; e. autopsies and cadaver specimens.	
		9. Cytogenetics lab: a. research and clinical studies of genetic disorders using cytological (microscopic) techniques; b. genetic counseling; c. investigations of family history of mongolism; d. investigations of history of habitual abortions; e. investigation of family history of infertility; f. preparation of cell cultures; g. preparation, microscopic examinations, and documentation of genetic material and structures.	

I. Clinical Laboratory -- Operations (cont'd)

	Ft. Dix	Andrews	Beaufort
A. Services Rendered (cont'd)		10. Photography lab and medical illustrations: a. photographic and hand-sketched visual documentation of pathological or anatomical structures and findings, unusual growths, deformities, or interesting cases. b. photographic and illustrative services for other hospital functions.	
		11. Morgue -- autopsies performed.[1]	9. Anatomic pathology (morgue): a. providing for the examination of surgical specimens and specimens for exfoliative cytology; b. preparing specimens for shipment to Bethesda, Md. for special examinations; c. operating the morgue; d. performing post-mortem examinations in authorized cases; e. providing for the custody of the remains of the dead until disposition.
		12. Blood Donor Center:[1] a. collection of blood for storage in WAll blood bank, shipment overseas via McGuire AFB Armed Services Whole Blood Processing Lab (ASWBPL), or use at other hospitals. Blood is routinely collected, typed, and crossmatched daily.	10. Blood Donor Center: a. scheduling donors for the Recruit Depot at Parris Island and providing for procurement of blood (using corpsmen to draw blood from entire hospital on a rotation schedule); b. supplying blood to civilian institutions such as Red Cross and the local hospital.
		13. Training and orientation:[1] a. OJT of military technicians; b. orientation of staff physicians to lab operations and routines.	11. Training and orientation: a. OJT of military technicians by rotation through all sections; b. orientation of new staff physicians to lab operations and routines.

	Ft. Dix	Andrews	Beaufort
B. Hours of Operation	1. Normal duty hours:[1] a. 0830 to 1630 hrs. Monday thru Friday. 2. Special duty hours:[1] a. weekends -- a small no. of technicians available 0830 to 1630 hrs. to perform STAT tests and limited procedures on new admissions (to include URI admissions); b. 1630 to 2300 hrs. 7 days a week, a maximum of 3 technicians provide coverage for all sections; c. 2300 to 0800 hrs., one technician for emergency coverage of the entire laboratory.	1. Normal duty hours: a. 0800 to 1700 hrs. 7 days a week. 2. Special duty hours: a. 24-hour emergency service.	1. Normal duty hours: a. 0730 to 1600 hrs. Monday thru Friday. 2. Special duty hours: a. at least one technician on duty 1600 to 0700 hrs. and on weekends to do STAT requests and ward rounds.
C. Workload Flow	1. Workload units -- 1,931,452 annually;[2] these workload units figured on the no. of tests performed weighted by degree of difficulty of each test type.	1. Total BLIICS lab procedures FY69[1] -- 365,438: a. inpatients -- 108,485 (29.7%); b. outpatients -- 256,953 (70.3%).	1. Total lab procedures FY69[1] -- 384,119: a. inpatients -- 59,499; b. outpatients -- 324,620 (For the tests by type and the monthly workload of BNH, compiled from monthly worksheets for January thru December, 1968, see Table I-B-1).
	2. Number of lab procedures -- 1,059,536 annually:[3,4] a. Table I-W-1 gives breakdown of annual no. of tests by type of tests performed; b. Table I-W-2 shows time taken to do various tests; "test time" is actual test run time, while "to get out" indicates time from receipt of test order to sendout of results and includes delays caused by queuing.[5]	2. Total lab procedures for hospital FY69[1] -- 313,110:[2] a. inpatients -- 107,817 (34.4%); b. outpatients -- 205,273 (65.56%).	2. Patients entering lab to have samples drawn FY69:[2] a. total -- 13,190; b. outpatients -- 6352; c. inpatients -- 6838.
	3. Patient flow -- Blood Donor Center: a. Figure I-W-2 charts the flow of personnel giving blood at the Ft. Dix Blood Donor Center;[6] b. Figure I-W-3 profiles the time spent in various procedures for 55 donors[6] ● time to collect one pint of blood from donor sample low -- 4 minutes high -- 19 minutes median -- 8.7 minutes mean -- 8 minutes	3. Patient flow:[2] a. outpatient and ambulatory inpatient processing procedures ● physician orders lab tests ● patient presents himself to lab control desk ● lab slip time stamped and placed in wairing box ● technician receives slip, calls patient from waiting area ● specimen taken ● patient leaves ● specimen processed and results recorded ● lab time stamped out ● results sent to physician on ward or in clinic.	3. Patient flow: a. outpatients and emergency patients on a walk-in basis; b. ambulatory inpatient processing: told by nurse to go to lab to have blood drawn; patient arrivals not coordinated with queues; c. non-ambulatory inpatients processing: clinical lab corpsman on night duty travels to wards between 0530 and 0600 hrs. to draw blood samples.

	Ft. Dix	Andrews	Beaufort
C. Workload Flow (cont'd)	• time to perform steps involved stripping collection bags -- 1.5 minutes taking hemo check -- one minute filling out forms for batch of 55 donors -- 39 minutes.	b. Non-ambulatory inpatient processing procedures • physician orders tests • test requisition slip sent to lab by messenger (ambulatory patient) or via intrahospital distribution system from ward • lab technician team makes rounds each morning to collect routine specimens, but STAT ward or ER specimens are collected by the requesting physicians • specimen taken to lab by technician or messenger • lab slip time stamped in and specimen given identification number • processed and recorded • lab slip time stamped out • results sent to ward via distribution system or phone • completed slip sent to ward via distribution system.	
	4. Peak periods: a. 0800 to 1500 hrs. (as measured by patient arrival times for chemistry lab);[5] b. Figure I-W-1 shows number of outpatient and ambulatory inpatient arrivals to chemistry lab by hour of day[5].	4. Peak periods:[2] a. general peak load in number of tests processed falls on Monday morning, approx. 0900 hrs. except for bacteriology, in which peak in test runs delayed approx. 24 to 48 hours (specimen incubation time). The lab area hardest hit by peak workload is the specimen collection area; b. VIP workload consists of lab tests for senior ranking officers, high government officials, diplomats, etc. These tests generate a workload of approx. 3 or 4 procedures per day; peaks in August and January to February, when all USAF generals eligible for retirement take required retirement physicals; c. DOD Blood Drive Program every Friday -- blood collection and typing must be done by lab personnel.	4. Peak periods: a. heaviest workload times for drawing blood -- from 0900 to 1030 hrs., when inpatients arrive to have blood drawn; outpatients arrive after clinic visits; b. lesser peak 1330 to 1430 hrs., from afternoon clinics; c. Blood Donor Center -- draws blood every Monday afternoon, when 6 lab personnel leave lab at 1200 hrs. and draw blood until 1600 to 1700 hrs. • blood typed at the hospital in the Blood Donor Center until approx. 1930 hrs. Monday • packing, labeling, and shipping of blood on Tuesday morning creates another workload.
D. Information Flow	1. For monthly volume of clinical lab communications, broken down by communication mode according to source or destination, refer to Table I-W-3. 2. For monthly volume of communication inputs and outputs according to the type of communication, refer to Table I-W-1.	1. For monthly volume of clinical lab communications, broken down by communication mode according to source or destination, refer to Table I-M-1. 2. For monthly volume of communication inputs and outputs according to the type of communication, refer to Table I-M-2.	1. For monthly volume of clinical lab communications, broken down by communication mode according to source or destination, refer to Table I-B-2. 2. For monthly volume of communication inputs and outputs according to the type of communications, refer to Table I-B-3.

Walson Army Hospital
Clinical Labs. Operations

TABLE I-W-1

TYPE AND NUMBER OF TESTS PERFORMED

NAME OF TEST	FAC-TOR	TEST MONTH				POINTS MONTH			
		April	May	June	SUM	April	May	June	SUM
Acetone	2	4	8	4	16	8	16	8	32
Albumin	3	301	337	252	890	903	1011	756	2670
Alcohol	5	10	10	7	27	50	50	35	135
Amino Acids, paper chrom	27								
Barbiturates, qualitative	3								
Bilirubin, automated	1	682		639	1954	682	633	639	1954
Bilirubin, non-automated	3	100	267	210	577	300	801	630	1731
Bromsulfalein	1	20	24	14	58	20	24	14	58
Calcium, automated	1	240		230	470	240	0	230	470
Calcium, non-auto	4	2	218	0	228	8	872		880
Calculi analysis, qual	6	1	0	0	1	6	-	-	6
Cephalin Flocculation	1	30	30	34	94	30	30	34	94
Chloride, automated	1	524	454	418	1396	524	454	418	1396
Chloride, non-auto	2	52	39	49	140	104	78	98	280
Cholesterol	4	178	152	168	498	712	608	672	1992
Creatine	4	0		3	3			12	12
Creatinine, automated	1	419	418	436	1273	419	418	436	1273
Electrophoresis, hemo	6	30	11	24	65	180	66	144	390
Electrophoresis, prot.	6	30	34	53	117	180	204	318	702
Enzymes, Amylase	3	70	58	93	221	210	174	279	663
" , LDH	4	488	375	379	1242	1952	1500	1516	4968
" , Lipase	3	0		0			-		
" , Alk Phos, auto	1	822	917	731	2470	822	917	731	2470
" , Acid Phos, n-a	4	48	45	47	140	192	180	188	560
" , SGOT, auto	1	822	917	731	2470	822	917	731	2470
" , SGPT, n-a	4	542	564	547	1652	2168	2256	2188	6612
" , other, auto	1	50	0	0	50	50	0	0	50
" , other, n-a	3								
Gases, carbon dioxide, auto	1	524	454	418	1396	524	454	418	1396
Gases, carbon dioxide, n-a	2	52	39	49	140	104	78	98	280

Walson Army Hospital
Clinical Labs - Operations

TABLE I-W-1 (cont'd.)

TYPE AND NUMBER OF TESTS PERFORMED

NAME OF TEST	FAC-TOR	TEST MONTH				POINTS MONTH			
		April	May	June	SUM	April	May	June	SUM
Gastric analysis	2	17	5	25	47	34	10	50	94
Glucose, automated	1	2029	2106	1709	5844	2029	2106	1709	5844
Glucose, non-auto	3	63	74	55	192	189	222	165	576
Globulins, ab screen (cryo)	1	5	5	2	12	5	5	2	12
pH	2	2	0	2	4	4		4	8
Phosphorus	1	240	218	230	688	240	218	230	688
Potassium	2	524	454	425	1403	1048	908	850	2806
Protein, total	2	341	337	279	957	682	674	558	1914
Salicylates	2	8	6	10	24	16	12	20	48
Sodium	2	524	454	425	1403	1048	908	850	2806
Toxicological screen	4	1	0	0	1	4			4
Thymol turbidity	2	28	31	39	98	56	62	78	196
Urea nitrogen, auto	1	1829	1446	1444	4719	1829	1446	1444	4719
Urea nitrogen, non-auto	3	11	21	25	57	33	63	75	171
Uric acid	1	421	418	436	1275	421	418	436	1275
Chemistry, other	3	6	42	9	57	18	126	27	171
Chemistry, Quality control	1	2000	2000	2000	6000	2000	2000	2000	6000
Chemistry, packing	2	296	273	236	805	592	546	472	1610
Urine, calcium sulkowitch	1								
Urine, Diagnex gastric ac.	2	1	0	0	1	2	-		2
Urine, PSP	3	0	2	1	3	0	6	3	9
Fibrinogen determination	3	7	1	10	18	21	3	30	54
G-6-PD	4	11	4	9	24	44	16	36	96

TABLE I-W-1 (cont'd.)

TYPE AND NUMBER OF TESTS PERFORMED

JAN-FEB-MARCH 1969	
Routine Urinalysis w/o Micro	7782
w/ Micro	21705
Sen.en Analysis	32
Bile in Urine	2749
Bence Jones Protein	3
Urobilinogen	49
Other quantities in Urine	148
Bleeding Time	36
Bone Marrow	13
Lee & White Clotting Time	76
Clot Retraction	11
Differential	11884
CNS	198
Eosinophile	253
RBC Counts	48
WBC Counts	14764
Phase Platelet Count	257
Reticulocyte	235
Hematocrit	11886
Hemoglobin	353
Lee Prep.	138
Prothrombin Time	1224
Prothrombin Consumption Test	4
RBC Fragility	2
Sedimentation Rate	2183
Sickle Cell	168
Heinz Bodys	2
Hemotology (other)	72
Thromboplastin Generator Test	2
PTT	104
Quality Count Hemo	671
Bacterial Sensitivity	3185
Coagules Test	1523
Fungus Smear	2952
Urine Colony Count	2784

TABLE I-W-1 (cont'd.)

TYPE AND NUMBER OF TESTS PERFORMED

JAN-FEB-MARCH 1969

Culture Primary	25073
Culture with Syncologic Typing	2917
Culture Definitive with subs to Biochem	423
QC Serology	745
Blood Packaging for Shipment	189
Antibody identification by Panel Cells	12
Antigen Screen	5000
Antibody Titre	17
iso-Antibody Screen	32
Direct Coombs	74
indirect Coombs	12
Completed Cross Match	1169
Donor Blood	5923
Group and Type	40248
Antibody Screen	1852
Pack Cell	54
RH Subtyping	71
Q.C. on Blood Bank	9745
Ship Blood	5192 pints
Cytology Screen	1473
Smear Stain	1473
Cytology Concentration	48
Frozen Sections	64
Tissue Preps	5603
Special Stains	310
Tissue Block Prep	2040
Other Tests in Histology	377
Packing Autopsy Specimens	23
Packing Surgical Specimens	2276
Sterility Tests	79
Beta Ship	2964
Micology Culture	324
Packing for Shipment Bacteriology	800
Concentration Stools for OSP	409
Direct Stool	409
Fat Stain Stool	2
Malaria Thick or Thin	444
Occult Blood Stool	464
Pin Worm	
Trophozoite Stool	40
Other Parazitology	21
Virology	38
Cold Agglutination	116
Antistrep	289
C-Reactive Protein	66
VDRL	14568
VDRL Quantitation	57
Heterophile Con.	84
Screen	671
UCG Slide Test	50
UCG Tube Test	640
RA Factor Slide	191
RA Factor Tube	42

Walson Army Hospital
Clin. Labs. Operations

TABLE I-W-2

TEST TIME

	TEST TIME	TO GET OUT
Acetone	15 min.	15
Albumin		
Lee & White	10 min. -60 min.	
Differential	8 min.	2 hrs.
Spinal Fluid	15 min.	4 hrs. day 20 min. night
White WD Count	30 sec.	2 hrs. day
Platelet Count	30 min.	4 hrs.
Hematocrit	4 min.	2 hrs. day 5 min. night
Hemoglobin	45 sec.	6 hrs. day 2-3 min. night
Pro Time	1 min. av.	1 hr.
Sedimentation Rate	1 hour	do 3 times a day in batches
Throats (sputum) neg.		1 day
pos.		2 days
Urine neg.		1 day
pos.		3-4 days
Wounds neg.		1 day
pos.		4-5 days
Blood Cultures neg.		21 days
pos.		1 day
Gram Stain		1/2 day
Stool Parasites		1/2 day
Malaria Smear	1 hour	8 hours
VDRL	1 1/2 hour	2 days
Pregnancy Test	2 hours	4 hours
Blood Type & Grouping	5 min.	8 hours
Blood Cross Match	45 min.	45 min.
Autopsy	4 hours	same day or following day
Acetone	5 min.	in before 9 out by 4:30
Albumin	80 min.	
Alcohol	60 min.	in after 9 out next day

TABLE I-W-2 (cont'd.)

TEST TIME

	TEST TIME	TO GET OUT
Bilirubin Auto	30 min. usually 30 + 15 min. to make curve run 15-20 at a time one per minute	
Manual	30 min	takes 15 min. to spin
Brown sulfalen	5 min.	down for syron. added to
Calcium Auto	5-10 minutes to set up marks	all chem.
Manual	30 min.	
Chloride Auto		
Manual	10 min.	
Cholesterol Manual	30 min.	
Creatine & Urine Acid Auto	45 min.	
Hemoglobin Electro	90 min.	
Protein Phoresis	90 min.	
Armlase Manual	15 min.	
Tactic Dehydrogen	80 min.	
Phosphatase (auto) & Transaminase	60 min. & then 1 min.	
Transaminase Manual	70 min.	
Phosphatase Non-Aut	60 min.	
CO_2 Auto	30 min.	
Manual	10 min.	
Gastric Analysis	30 min.	
Glucose Auto	45 min.	
Manual	20 min.	
Globulin Manual	10 min.	
Phosphorus run at same time as calcium		
Porphobilinogen Qualitative		
Uroporphyrin Quantitative		
Potassium Manual	15 min.	
Protein Manual	45 min.	
Salicylate Manual	30 min.	
Sodium Manual	15 min.	
BUN same as glucose run at same time on Auto.		

Walson Army Hospital
Clinical Labs - Operations

TABLE I-W-3 NUMBER OF COMMUNICATIONS BY MODE ACCORDING TO SOURCE/DESTINATION

SOURCE/ DESTINATION	RECEIVED BY LAB						SENT BY LAB					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION				3	14			119				
AIR EVACUATION												
DENTAL SERVICE				48								
DISPENSARIES				19080						4378		
FLIGHT MEDICINE												
FOOD SERVICE												
HOUSEKEEPING												
LABORATORIES						200						
MAINTENANCE										10		
MEDICAL RECORDS				1500						2930		
NURSING SERVICE				117		1						
OPERATING ROOM												
OUTPATIENT DEPT.				9740		12				4288		
OUTSIDE WORLD				168			180					
PERSONNEL	4			37		4				9		24
PHARMACY												
PHYSICAL THERAPY												
PREVENTIVE MED.				5720						4658		
PROFESSIONAL SERV												
REGISTRAR	20			1550						374		
SUPPLY				4008						21	1	4
VETERINARY MED.												
WARD MANAGEMENT				43700						72248		
RADIOLOGY												

TABLE I-W-4
NUMBER OF COMMUNICATIONS BY TYPE
ACCORDING TO INPUT AND OUTPUT

FUNCTION	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Patient Secondary	Patient Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
INPUT											
Volume of Communications	5121	84,031	12		20		1		77	86	89,348
# of Communications	4	234	1		1		1		14	6	261
OUTPUT											
Volume of Communications		87240		374		10	21	5	10	40	87,700
# of Communications		17		5		1	5	2	6	6	42

Malcolm Grow Hospital
Clinical Labs. - Operations

TABLE I-M-1
NUMBER OF COMMUNICATIONS BY MODE ACCORDING TO SOURCE/DESTINATION

SOURCE/ DESTINATION	RECEIVED BY LABORATORIES						SENT BY LABORATORIES					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION												
AIR EVACUATION												
DENTAL SERVICE												
DISPENSARIES				640		40		350				
FLIGHT MEDICINE				820		100						
FOOD SERVICE												
HOUSEKEEPING												
LABORATORIES												
MAINTENANCE										11		
MEDICAL RECORDS												
NURSING SERVICE												
OPERATING ROOM												
OUTPATIENT DEPT.		120		33073		1692		800		5254		800
OUTSIDE WORLD				1416	300	46		298		200		440
PERSONNEL												
PHARMACY		1								8		
PHYSICAL THERAPY												
PREVENTIVE MED.												
PROFESSIONAL SERV												
REGISTRAR										35		
SUPPLY		2						88		412		2
VETERINARY MED.												
WARD MANAGEMENT		2000	6992			1031		400		730		778
RADIOLOGY												

TABLE I-M-2

NUMBER OF COMMUNICATIONS BY TYPE ACCORDING TO INPUT AND OUTPUT

FUNCTION	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Patient Secondary	Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
INPUT											
Clinical Labs. (3061)	5911	45421	10304	168	2		7				61813
Anatomical Pathology (3062)		327	16		3						346
Illustration (3064)		1	5	4							10
OUTPUT											
Clinical Labs. (3061)	24	17963	3764	316	302	2	434		2		22807
Anatomical Pathology (3062)			12								12

Beaufort Naval Hospital
Clin. Labs. - Operations

TABLE I-B-1

MONTHLY WORK LOAD

TEST	IN PATIENT	OUT PATIENT	TOTAL
Bacteriology:			
Acid fast stains	17.7	7.5	25.2
Antibiotic sens.	54.5	88	142.5
Colony count urine	16	66	82
Culture primary	214	299	513
Subcult and stain	32	32	64
Dark field	.1	.1	.2
Other	2	1	3
Total	337	493	
Chemistry:			
Acetone	1	0	1
Albumin	35	31	66
Alcohol ETOH, MEOH	.5	.2	.7
Amylase	10.8	6.0	16.8
Bilirubin	97	59	156
B.S.P.	9.5	1.4	10.9
Calcium	19	23	42
Ceph. Flocc.	12.4	6.3	18.7
Chloride	36.9	22.4	58.3
Cholesterol	21.8	46	67.8
CO_2 (Van Slyke)	30	13	43
Creatinine	37	38	75
C-reactive protein	1.4	1.2	2.6
Gastric Acidity	1.3	0	1.3
Glucose	138	406	544
Globulin	17.3	15.5	32.8
Glucose tolerance	7	25	32
L.D.H.	44	9	53
Lipase	1	.25	1.25
P.B.I.	14	39	53
Phosphorous, inorganic	21	23	43
Phosphatase	38	34	72
Porphobilinogen	1.3	.3	1.6

TABLE I-B-1 (cont'd.)

MONTHLY WORK LOAD

TEST	IN PATIENT	OUT PATIENT	TOTAL
Porphyrins	.3	2.2	2.5
Potassium	40	22	62
Protein	41	37	78
Quality control	126	46	172
Salicylates	1.2	.6	1.8
Sodium	37	21	58
Thymol turb.	14	8	22
Transaminase	105	45	150
Blood Bank:			
Antibody titers	0	133	133
Iso antibody group	0	792	792
Coombs dir.	8	.6	8.6
Coombs indic	17	17	34
Cross match	78	0	78
Donor bleed	9.8*	867	867.8
Group and type	59	2336	2395
Irregular antibody screen	68	1705	1773
Pack cell prep.	3.5	.5	4
Rh subtype	9	1333	1342
Pack for ship	0	739	
Quality control	4.3	.3	4.6
Agglut. cold	1	0	1
Agglut. test for anti G	0	521	521
Total	231	7578	

* Not included in total

TABLE I-B-1 (cont'd.)

MONTHLY WORK LOAD

TEST	IN PATIENT	OUT PATIENT	TOTAL
Trypsin	4.2	2.2	6.2
Urea	68	72	140
Uric acid	28	43	71
Pack for ship.	18.5	36	54.5
Total	1078	1133	
Hematology			
Bleeding time	7	1	8
Clot time	16	1	17
Clot retraction	1.2	.5	1.7
Cell count and diff.	146	94	240
Cell count, spinal fluid	5	2	7
Cell count (R.B.C.)	4	4	8
Cell count WBC	368	203	571
Cell count platelet	11.8	14	25.8
Cell count ret.	14.8	10	24.8
Hematocrit	527	432	959
Hemoglobin	504	415	919
L.E. prep.	12	11	23
Prothrombin time	65	25	90
Sed. rate	48	46	94
Sickle cell prep.	2	1	3
Thromboplastin time	1	.6	1.6
Blood drawn (Jan. & Feb.) Average only	1215	428	1643
Eosinophile count	1	1	2
R.B.C. indices	.3	.2	.5
R.B.C. fragil.	0	.3	.3
Marrow collection and slide prep.	1	.4	1.4
Quality control (3 months average)	35	0	
G-6-Poy dehydrogenase	.5	.4	.9
Total	1772	1273	

TABLE I-B-1 (cont'd.)

MONTHLY WORK LOAD

TEST	IN PATIENT	OUT PATIENT	TOTAL
Serology:			
Antistreptolysin O titre	12.3	13.2	25.5
Davidsohn presump.	19.6	18.5	38.1
Febrile agglut.	3.3	5	8.3
R.A. slide (2 months only)	8	18	26
V.D.R.L. quant. (7 months)	30	102	132
Agglutin. latex coat	10	13.5	23.5
C-reactive protein	9	7.8	16.8
Heterophile confirm	2	0	2.0
Preg. serol	1.6	34	35.6
Rheumatoid factor	2	6	8
Flocc. qual. (7 months)	50	2175	2225
Agglutin cold	3	3	6
Pack for ship	2	2	4
Total	153	2398	
Histology; Cytology; Autopsy:			
Smear cytology	12	378	380
Stain special	101	0	101
Tissue block surg.	91	44	135
Cytol conc.	1	.3	1.3
Slide tissue prep.	145	80	225
Autopsies (1 month average)	5	0	5
Frozen sections	3	1	4
Pack specimens for ship	3	1	4
Prep. addit slides (2 months average)	26	0	26
Total	287	504	

TABLE I-B-1 (cont'd.)

MONTHLY WORK LOAD

TEST	IN PATIENT	OUT PATIENT	TOTAL
Parasitology:			
Conc. stool for O & P	9	13.5	24.5
Direct smear stool	8	12	20
Malaria	4	1	5
Occult blood in stool	20	8	28
Pack for test elsewhere	2	3	5
Fat stain	.5	.6	1.1
Scotch tape test	0	2	2
Total	44	41	
Urinalysis:			
Bence Jones proteins	.5	0	.5
Bile	4	2	6
Creatine	6	0	6
Creatinine (1 month)	9	5	14
Calcium	1	.5	1.5
Potassium	1	0	1
Preg. serol. (Jan. only)	3	36	39
Preg. A-Z (Feb. only)	2	44	46
PSP	3	.2	3.2
Semen analysis	0	3	3
Sodium	1	0	1
5-OH Indol A.A.	.5	.5	1
Steroids	1	1	2
Urinalysis routine	0	518	518
Urinalysis with microscopic	440	402	842
Urobilinogen	4	1	5
Other	2	1	3
Total	479	1015	

TABLE 1-B-1 (cont'd.)

MONTHLY WORK LOAD

TEST	IN PATIENT	OUT PATIENT	TOTAL
	AVERAGE		
West End Dispensary:			
Chemistry	0	2	
Hematology	221	352	
Serology	3	60	
Urinalysis	31	234	
Bacteriology	78	372	
Blood bank	5	5	
Parasitology	3	23	
Total	341	1048	
West End Dispensary:	SEPTEMBER 1969 AVERAGE		
Alcohol	0	2	2
Urinalysis - qual. tests	10	74	84
Differential	98	129	227
R.B.C. Non auto	1	1	2
Hematocrit	93	137	230
Sed. rate	0	17	17
V.D.R.L.	0	90	90
Mono quick	4	14	18
Pack specimens - outside	1	116	117
Total	207	580	787
West End Dispensary:	OCTOBER 1969 AVERAGE		
Routine urinalysis with microscopic	35	340	395
Bile	8	21	29
Acetone	10	32	42
Bleeding time	1	3	4
Clotting time	1	3	4
Differential	80	160	240
WBC count	80	160	240
Platelet count	1	3	4
Hematocrit	86	158	244
Sed. rate	1	31	32
Sickle cell prep.	0	2	2
Sensitivity (bact.)	15	24	39
Gram stain	16	89	105
Primary culture (bact.)	47	247	294
Serological typing and grouping	9	10	19
Dark field exam.	0	5	5
Hanging drop	0	7	7
Concentration O & P	6	34	40
Occult blood in stool	0	11	11
Mono. quick test	3	16	19
Group and type	0	1	1
Total	399	1357	1776

Beaufort Naval Hospital
Clinical Labs - Operations

TABLE I-B-2 NUMBER OF COMMUNICATIONS BY MODE ACCORDING TO SOURCE/DESTINATION

SOURCE/ DESTINATION	RECEIVED BY CLINICAL LAB						SENT BY CLINICAL LAB					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION												
AIR EVACUATION												
DENTAL SERVICE				24						24		
DISPENSARIES												
FLIGHT MEDICINE												
FOOD SERVICE												
HOUSEKEEPING				28						20		
LABORATORIES												
MAINTENANCE												
MEDICAL RECORDS										3		
NURSING SERVICE				3754		84				4688		
OPERATING ROOM				121								
OUTPATIENT DEPT.				6494						8064		
OUTSIDE WORLD												
PERSONNEL										3		
PHARMACY												
PHYSICAL THERAPY				28						20		
PREVENTIVE MED.												
PROFESSIONAL SERV												
REGISTRAR												
SUPPLY										4		
VETERINARY MED.												
WARD MANAGEMENT												
RADIOLOGY				925								
EMERGENCY				340		336				310		

Beaufort Naval Hospital
Clinical Laboratories - Operations

TABLE I-B-3

NUMBER OF COMMUNICATIONS BY TYPE ACCORDING TO INPUT AND OUTPUT

FUNCTION	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Patient Secondary	Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
INPUT											
Clinical Labs Administrative (0060)		1,014			1	5	28			84	1,132
Chemistry (0061)		1,802								112	1,914
Hematology (0062)		6,279								140	6,417
Bacteriology (0063)		1,170									1,170
Blood Bank (0064)	2	961									963
Histology (0065)		635									635
Blood Donor Center (0066)		140									140
OUTPUT											
Clinical Labs Administrative (0060)		1842			1		24				1867
Chemistry (0061)		1938									1938
Hematology (0062)		6742									6742
Bacteriology (0063)		1305									1305
Blood Bank (0064)		707									707
Histology (0065)		585									585
Blood Donor Center (0066)		236									236

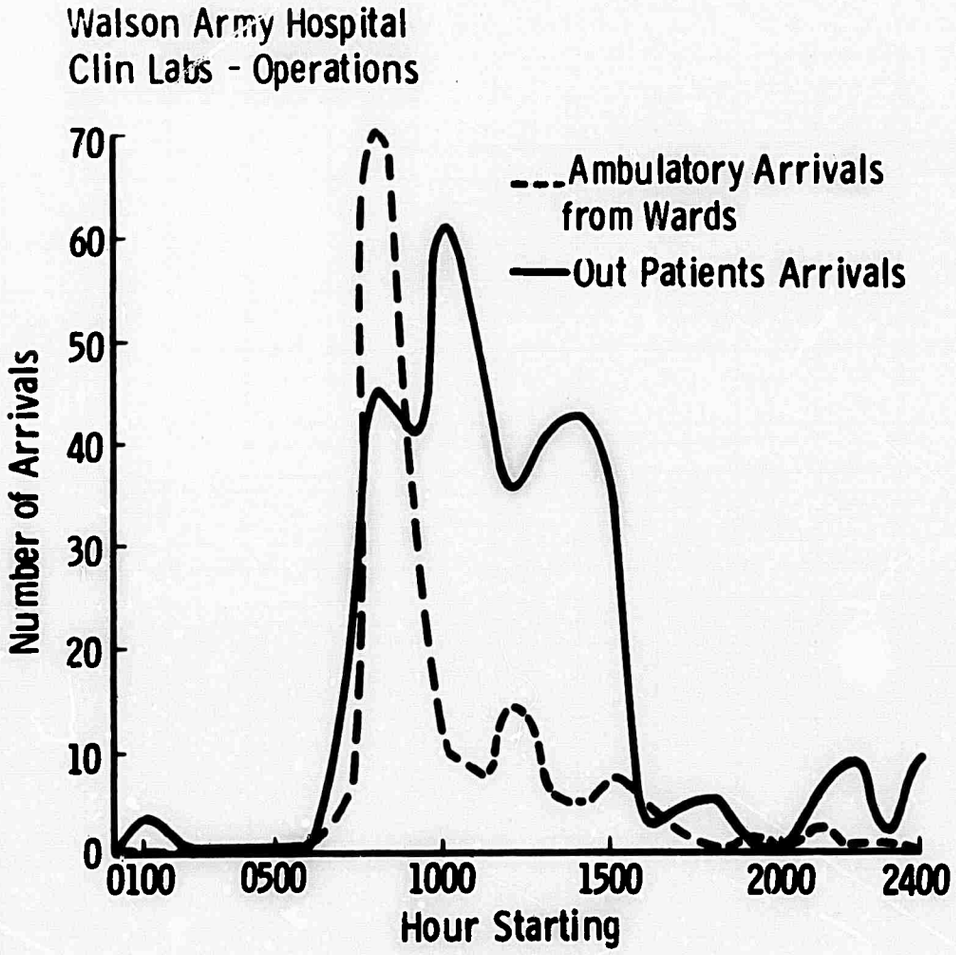

Fig. I-W-1—Patient arrival times

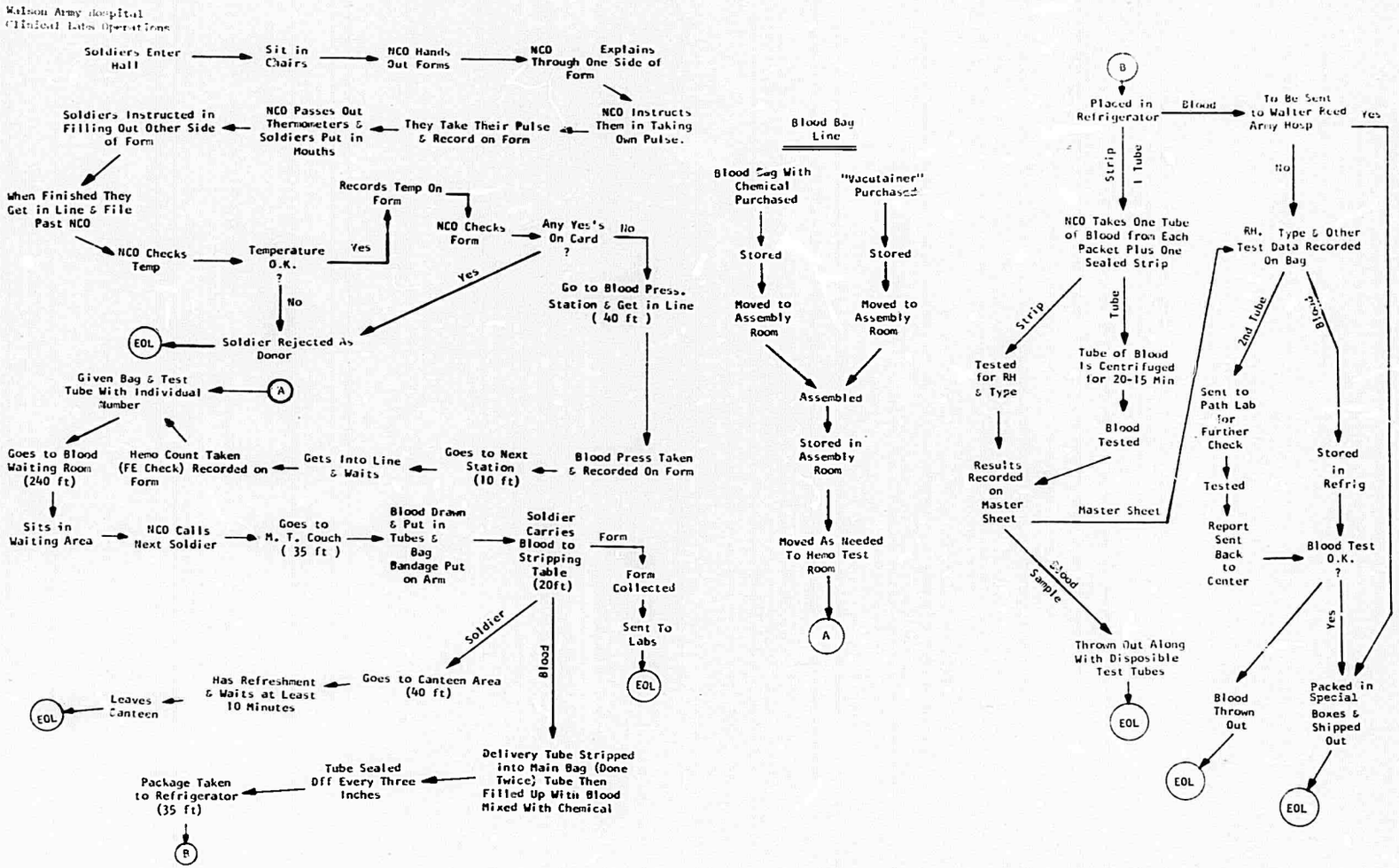

Fig. 1-W-2-Blood Donor Flow

Walson Army Hospital
Clin Labs - Operations

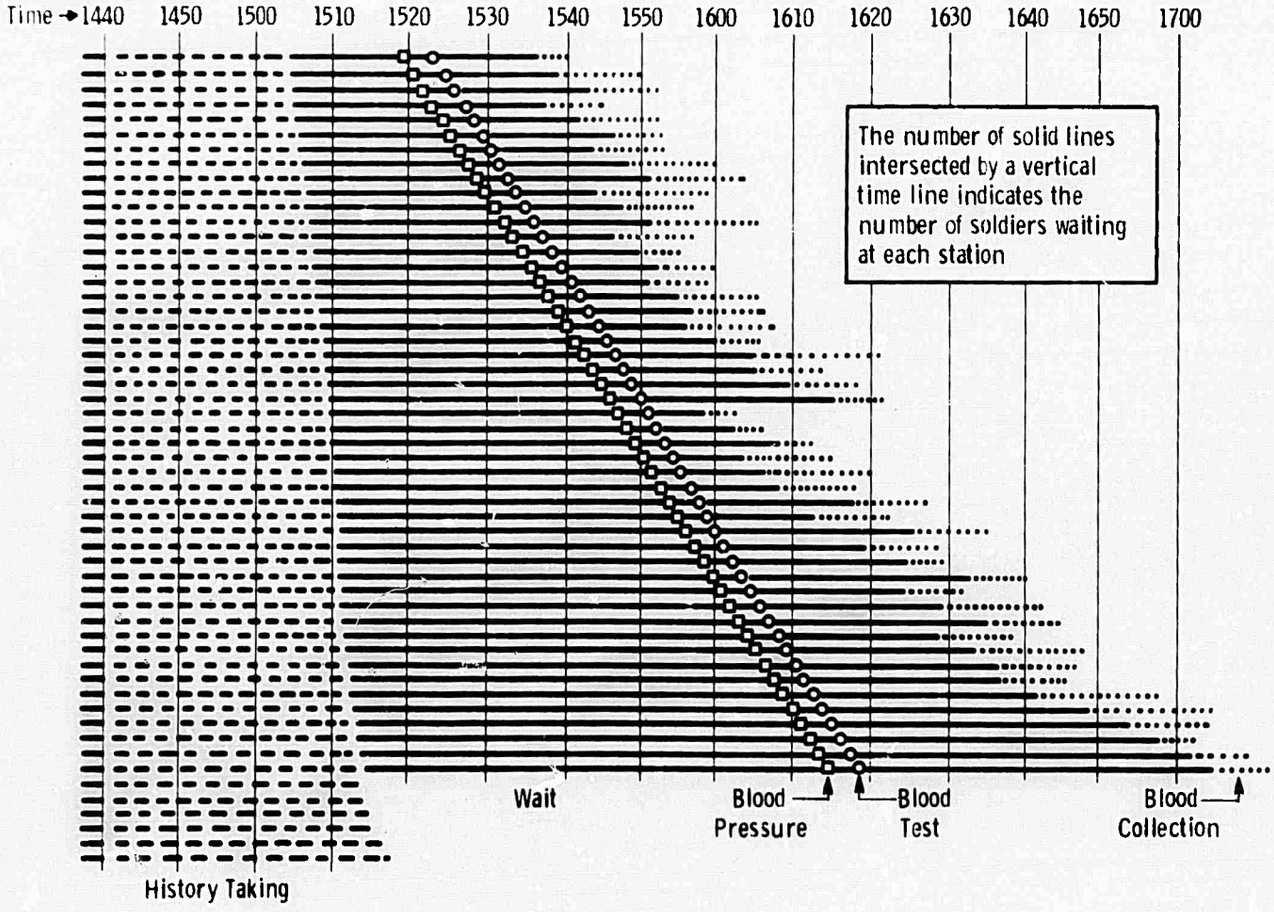

Fig. I-W-3—Blood donation time

II. CLINICAL LABORATORY -- RESOERCE UTILIZATION

	Walson Army Hospital (WAH) -- Fort Gix	Malcolm Grow Hospital -- Andrews AFB	U.S. Naval Hospital -- Beaufort
A. Personnel	1. One hundred nine employees. Refer to Table II-W-1 for listing of clinical lab personnel and positions. No breakdown available allocating personnel to individual lab sections except as noted on Table II-W-1.[1,2]	1. Ninety-three employees,[1] including 29 student technicians and 15 volunteer workers. Table II-M-1 lists all clinical lab personnel by job description, pay rate, and hours worked per week.	1. Twenty military employees; one part-time civilian secretary. For clinical lab personnel breakdown by occupation, pay grade, and hours worked per week, refer to Table II-B-1.
	2. Lab staffed totally by GI's on weekends.[2]	2. Additional responsibilities of personnel (rotated on an irregular schedule):[1] a. lab superintnedents (E-8, E-9) have no extra duty; b. NCO's in charge of services (E-7) draw NCOD from 1600 to 0700 hrs.; c. pathology and central operation technicians (E-4) man the hospital information desk from 1600 to 2400 hrs.; d. student technicians (E-3) take charge of quarters (CQ) duty from 1600 to 0800 hrs.; e. volonteers (E-1, E-2) act as CQ runners 2 hours per night for one week.	2. Senior technicians are permanently assigned to their section of the lab except when on duty watch; the other technicians rotate among all sections of the lab.
	3. Military personnel rotate among all lab sections and thus become proficient in all jobs; this rotation is for night staffing purposes when the technician on duty must staff all lab functions.[2]		3. Senior enlisted man in charge (E-7) supervises all technicians.
	4. Pathologists spend 70% of their time in professional duties, 30% in administrative duties; for technicians this breakdown is about 80% to 20%; for administrative officers it is 70% administrative, 30% training.[1,2]		
	5. The Administrative Officer supervises all civilian personnel in the lab. The NCOIC supervises all enlisted personnel.[2]		
	6. Most lab enlisted staff have B.S. degrees.[2]		
B. Facilities	1. Location: a. clinical labs -- first floor of WAH in the clinic area. All labs are distinct facilities but are located together in a general lab area;[3] b. Blood Donor Center -- located in the Hospital Annex (Medical Processing area) approximately one-half mile from the hospital.[4]	1. Location: a. The clinical lab area is located in the basement and first floor of Malcolm Grow Hospital (MGH).	1. Location: a. clinical labs -- second floor, main corridor next to outpatient medical records and across the corridor from dental clinic; b. Blood Donor Center -- packing, labeling, and shipping in hospital basement; drawing of blood takes place at East End Dispensary, Parris Island.

	Ft. Dix	Andrews	Beaufort
B. Facilities (cont'd)	2. Floor space:[3,4] a. total floor space -- approx. 12,940 sq. ft.; b. for breakdown by room of each unit's sq. footage and percentage share of total space, refer to Table II-W-2.	2. Floor space:[1] a. total floor space -- approx. 16,204 sq. ft.; b. for breakdown by room of each unit's sq. footage and percentage share of total space, refer to Table II-M-2.	3. Floor space:[1] a. total floor space -- 3,050 sq. ft. (clinical labs only; does not include Blood Donor Center); b. for breakdown by room of each unit's sq. footage and percentage share of total space, refer to Table II-B-2.
C. Equipment	1. Refer to Appendix I, Report 011 for a complete list of all equipment in the lab and Blood Donor Center, including quantity and dollar values worth over $200.[5] 2. Equipment on request from lab for FY70 includes:[6] a. SMA 12/60 Auto Analyzer for performing high volumes of chemistry tests; b. Beckman DB-G Spectrophotometer for precision analyses; c. Technicon photo-tube tubular flow-cell colorimeter for enyzme analysis with the auto analyzer; d. atomic absorption spectrometer for measuring serum calcium and magnesium; e. digital flame photometer for back-up; f. refrigerator/freezer for replacement; g. freezing point osometer for diagnosing renal disease; h. mierospectrophotometer to add to lab flexibility; i. constant temperature bath for use with spectrophotometers; j. rectangular bath-circulator; k. automatic diluters; l. dual viewing mieroscope for teaching; m. cytoecntrifuge for spinal fluid. 3. No equipment is ever overloaded; some, especially chemistry equipment, is not fully utilized during summer months, but is needed for the influx of tests during URI season.[1,2,7]	1. Refer to Appendix I, Report 011 for a complete list of all equipment including quantity, operating hours, loading, purchase price, description, and whether portable or fixed. 2. Special equipment comments: a. Malcolm Grow has had a dual channel auto-analyzer for automated routine blood chemistries for 12 years; b. equipment repaired by medical maintenance and contracted maintenance firm.	1. Refer to Table II-B-3 for list of all equipment worth over $200.
D. Work Sampling Study	1. No work sampling was conducted in the WAH Clinical Labs.	1. No work sampling was conducted in the Malcolm Grow Clinical Labs.	1. No work sampling was conducted in the Beaufort Clinical Labs.

TABLE II-W-1

STAFF BREAKDOWN

POSITION	PAY GRADE	QUANTITY	HOURS/WEEK
Chief, Pathology	O-4	1	40
Pathologists	O-4	2	40 + ER duty
Admin. Officer	O-3	1	50 + AOD duty
Chemistry Supv.	O-3	1	50 + AOD duty
Pathologists	O-3	2	50 + ER duty
NCOIC	E-7	1	50 + SDNCO
Technician	E-7	1	50 + SDNCO
Technicians	E-6	3	50 + SDNCO
Technicians	E-5	4	50 + CQ
Technicians	E-4	10	50
Clerks	E-4	11	50 + ACO
Technicians (OJT)	E-3	3	50
Clerks	E-3	7	50 + DRO
Bacteriology Supv.	GS-9	1	40
Technician	GS-9	1	40
Urinalysis Supv.	GS-8	1	40
Blood Bank Supv.	GS-7	1	40
Hematology Supv.	GS-7	1	40
Histopathology Supv.	GS-7	1	40
Technicians	GS-7	5	40
Technicians	GS-6	12	40
Technicians	GS-5	3	40
Clerks	GS-5	3	40
Clerks	GS-4	2	40
Clerks	GS-3	2	40
Supv. Blood Donor Center	E-6	1	44
Blood Donor Center	E-3	21	44
Medical Holds & Other Attached Personnel	E-1 thru E-4	7	28

TABLE II-W-2

FACILITIES BREAKDOWN

DESCRIPTION	AREA IN SQUARE FEET	PERCENT
Waiting Area	224	1.73
Reception Area	230	1.78
Secretaries' Office	294	2.27
Blood Bank Room	392	3.03
Chief Pathologist's Office	294	2.27
Classroom	540	4.17
Pathology Photographic Area	756	5.84
Blood Chemistry Lab	2025	15.65
Utility Room Autoclaves	448	3.46
Bacteriology Lab	1960	15.15
Serology Lab	1064	8.22
Pathologists' Offices	294	2.27
Hemotology Lab	378	2.92
Histopathology Lab	441	3.41
Blood Donor Clerical Area	1350	10.43
Blood Donor Processing Area	2250	17.39
TOTALS	12940	99.99

Sub Totals	Sq. Ft.	%
Blood Donor Center	3600	27.82%
Clinical Labs	9340	72.17%

TABLE II-M-1

STAFF BREAKDOWN

DESCRIPTION	PERSONNEL CODE	PAY GRADE	QUANTITY	HOURS/ WEEK
Chairman Dept. of Pathology	A	0-6	1	40
Chief Clinical Pathology Service	C,A	0-5	1	40
Chief Immunohematology Service	C,A	0-5	1	40
Chief Microbiology Service	C,A	0-4	1	40
Chief Chemical Pathology Service	C,A	0-4	1	40
Chief Anatomical Pathology Service	C,A	0-5	1	40
Chief Central Operations	C,A	0-4	1	40
Consultant Hematology Service	C	0-4	1	40
Pathologists	C	0-3	2	40
Lab Superintendent	B	E-8, E-9	2	50
NCOIC of Services	B	E-7	4	50
Technician Chemistry	D	E-5	4	56
Technician Hematology	D	E-5	6	56
Technician Bacteriolcgy	D	E-5	5	56
Technician Pathology	D	E-4	2	52
Technician Central Operations	D	E-4	3	50
Secretaries	E	GS-5	7	40
Volunteer Worker	H		2	15
Civilian Lab Technicians	D	GS-9	6	40
Phase II Student Lab Technicians	H	E-3	29	46

NCOIC of OJT sets up schedule of training assignments for students in each lab area according to time block allotments set by the training manuals.

Malcom Grow Hospital
Clin. Labs - Resource Utilization

TABLE II-M-2

FACILITIES BREAKDOWN

DESCRIPTION	PERCENTAGE	FACILITIES CODE	TOTAL SQUARE FEET	QUANTITY	LOCATION
Waiting Room	1.03	A	168	1	F
Control Desk	.77	B	126	1	F
Chief's Office	.77	B	126	1	F
Secretary & NCO Office	1.56	B	254	2	F
Blood Drawing Room with Beds	1.86	A	302	2	F
Storage Room	.83	C	136	2	F
Special Coagulation Lab	1.22	G	199	1	F
Stat Lab	1.20	G	195	1	F
Physicians' Offices	2.57	B	418	3	F
Pathologists' Offices	1.60	B	260	2	F
Genetics Lab.	.80	G	130	1	F
Administration Steno Pool	2.41	B	391	1	F
Other Departments	6.80	H	1102	4	F
Blood Drawing with Chairs	1.05	A	171	1	F
Hematology Lab	1.52	G	247	1	F
Urinalysis Lab	1.95	G	316	1	F
Janitors' Closet	.27	E	44	2	F
Toilets - for Specimens	.59	A	96	2	F
Toilets - Other	.56	E	91	2	F
Blood Bank & Cross Matching Lab	1.87	G	304	1	F
Stairwell	.89	E	144.5	1	F
Hallways	6.08	E	986	2	F
Tissue Process Lab	1.01	G	165	1	B
Pathology Lab	.78	G	128	1	B
Histology Preparation Lab	2.81	G	456	1	B
Storage	1.79	C	291	2	B
Stairs	1.87	D	304	2	B

TABLE II-M-2 (Cont'd.)

FACILITIES BREAKDOWN

DESCRIPTION	PERCENTAGE	FACILITIES CODE	TOTAL SQUARE FEET	QUANTITY	LOCATION
Shipping Dock	.88	E	144	1	B
Janitors' Closet	.09	E	16	1	B
Special Chemistry Lab	3.44	G	557.56	1	B
Quarantine	.89	H	145	1	B
Sterilization Room	.69	D	112	1	B
Glassware Washing Room	.74	E	120.75	1	B
Autopsy Room	1.72	G	280	1	B
Storage	1.35	C	220	1	B
Morgue Viewing Room	.91	A	148	1	B
Vestibule	1.69	H	274	1	B
Mortuary Refrigerator	.34	D	56	1	B
Hallways	7.77	E	1260	6	B
Immunology Lab	.73	G	119	1	B
Other Departments	.49	H	80	1	B
Toilets	.35	E	58	2	B
Staff Pathologists' Offices	1.03	B	168	2	B
Mycology Lab	1.01	G	164.5	1	B
Dark Room	.89	G	145	2	B
Photo Studio	3.35	G	543	1	B
NCOIC Office Photo Lab	.48	B	78	1	B
Artists Room	.46	B	76	1	B
Cytology Lab	.82	G	134	1	B
Histopathology Specimen File, Shipping & Receiving Room	1.76	G	286	1	B
Incubators	.67	D	109	2	B
Virology-Serology Lab	2.22	G	361	2	B
Auto Clave	.21	D	35	1	B
Media Preparation Room	.77	G	125	1	B
Bacteriology Lab	3.19	G	518	1	B
Media Refrigerator	.85	D	138	1	B
Chief and NCOIC of Microbiology Offices	1.09	B	178	2	B
Barbituates Test Lab	.56	G	91	1	B
Chief of Chemical Pathology Services Ofc.	.55	B	90	1	B
Chemistry Lab	10.23	G	1659	1	B

Beaufort Naval Hospital
Clin. Labs - Resource Utilization

TABLE II-B-1
STAFF BREAKDOWN

SECTION	POSITION	PAY GRADE	QUANTITY	HOURS/ WEEK
Administration	Pathologist	O4	1	50
	Medical Technologist	O2	1	50
	Senior Enlisted in Charge	E7	1	40
	Secretary	GS5	1	26
Chemistry	Senior Chemistry Technician	E6	1	40
	Chemistry Lab Technician	E6	1	40
	Lab Technician	E4	1	40
	Sr. Special Chemistry Technician	E7	1	40
Hematology-	Senior Technician	E5	1	40
Urinalysis	Lab Technician	E4	3	40
Bacti-Parasiti	Senior Bacti Technician	E7	1	40
	Lab Technician	E4	1	40
Blood Bank-Serology	Blood Bank-Serology Technician	E6	1	40
	Lab Technician	E4	1	40
Histology	Lab Technician	E4	1	40
Blood Donor Center	Chief of Blood Donor Center	E7	1	40
	Senior Technician	E6	1	40
	Lab Technician	E4	2	40

TABLE II-B-2
FACILITIES BREAKDOWN

DESCRIPTION	AREA IN SQUARE FEET	PERCENTAGE
Office Space	328	11
Bacti-Parisiti	176	6
Histology	272	9
Blood Bank & Serology	208	7
Blood Drawing	396	13
Autoclave & Glass Cleaning	200	6
Hematology & Urinalysis	360	12
Blood Chemistry	324	10
Corridors & Waiting	816	26
TOTAL	3080	
Blood Donor Center	675	

Beaufort Naval Hospital
Clin. Labs - Resource Utilization

TABLE II-B-3

EQUIPMENT LIST

Section	Total $ Value	Equipment Code	Fixed Portable	Quantity	Operating Hours	Loading	Purchase Price	Description
Administrative 0060	3,096							
		F	P	2	8	N	450	Transcribers
		G	F	1	8	N	655	Balance
		K	P	1	8	N	691	Microscope
							850	Autoclave
Chemistry 0061	11,798							
		K	F	1	0	F	441	Anaerobic Incubator
		K	P	3	8	N	1291	Centrifuge
		P	F	1	8	N	296	Distiller H20
		K	P	2	8	N	400	Flame Photometer
		O	F	1	24	N	232	Upright Freezer
		K	P	1	8	N	395	Microgasometer
		K	P	1	8	N	518	Chloridometer
		K	P	1	8	N	592	Analyzer Cystic Fib
		K	P	1	8	N	278	Voltage Transformer
		K	P	1	8	N	625	Coleman Spectrophotometer
		K	P	2	8	N	324	Autodilutor Spenser
		H	P	1	8	N	683	Calculator
		K	P	1	8	N	419	PBI-Hyeed
		K	F	1	8	N	410	Sterilizer
		K	F	1	8	N	698	Oven Dryer
		K	F	1	24	N	860	Refrigerator
Hematology 0062	13,086							
		K	P	1	8	N	282	Prothrobin Test
		K	P	1	8	N	391	Vitatrom Hemoglobin Photometer
		K	P	2	8	N	275	Auto Dilutor
		K	P	1	8	N	4042	Coulter Counter
		K	P	1	8	N	2595	Blood Gas Analyzer
		K	P	1	8	N	495	Fibrometer
		O	P	1	8	N	1326	Refrigerator
		K	P	1	0	U	635	Beckman Ph Meter
		K	P	2	8	N	691	Microscope
		K	F	2	24	N	569	Refrigerator
		K	P	1	B	N	250	Leitz Colorimeter
Bacti-Parisiti 0063	5,858							
		K	P	2	8	N	691	Microscope
		K	P	1	0	U	1150	CO_2 Incubator
		O	F	2	24	N	1064	1 & 2 Door Ref.
		O	P	1	24	N	205	Large Incubator
		O	F	1	8	N	993	Fume Hood
Blood Bank 0064	4,323							
		O	F	1	24	N	730	Jewett Refrig.
		K	P	1	8	N	208	Serological Water Bath
		O	F	1	24	N	860	Refrigerator
		K	P	1	8	N	691	Microscope
		K	P	3	8	N	678	Centrifuge

TABLE II-B-3 (Cont'd.)

EQUIPMENT LIST

Section	Total $ Value	Equip-ment Code	Fixed Portable	Quantity	Operating Hours	Loading	Purchase Price	Description
Histology 0065	30,424							
		K	F	1	24	N	205	Incubator
		K	P	3	8	U	210	Microtome
		K	F	1	24	N	23990	Mono Autotechnician
		K	P	1	8	N	381	Plastic Sealing Unit
		K	P	1	24	N	1725	Cryostalic Microtome
		K	P	2	8	N	691	Microscope
		K	P	1	8	N	519	Microtome Knife Sharpener
		K	P	1	8	N	389	Hematron Pielectric
		K	P	1	8	N	548	Thermoelectric Center
		O	F	1	24	N	860	Refrigerator
Blood Donor Center 0066	9,835							
		L	P	1	8	N	1998	Autoanalyzer for Typing
		L	P	1	8	N	730	Large Centrifuge
		L	P	1	8	N	2746	Ref. Centrifuge
		O	F	2	8	N	730	Jewett Ref.
		O	F	1	8	N	860	Regular Ref.
		O	F	1	8	N	205	Freezer-Chest
		K	P	1	8	N	691	Microscope
		L	P	1	8	N	540	Mettler P1000 Bal.
		I	P	1	8	N	347	SMI Centrifuge
		L	P	1	8	N	208	Water Bath
TOTAL	78,620							

III. CLINICAL LABORATORY -- FUNCTIONAL COSTS

	Walson Army Hospital (WAH) -- Fort Dix	Malcolm Grow Hospital -- Andrews AFB	U.S. Naval Hospital -- Beaufort
A. Total			
1. Cost:	$730,156 annually.	$825,530 annually.	$147,858 annually.
2. Source:	a. refer to Tables III-W-1 and III-W-2 for elemental figures from which total cost was derived, and to Appendix VII for functional cost breakdown summary sheet.	a. refer to Appendix VII for functional cost breakdown summary sheet.	a. refer to Appendix VII for functional cost breakdown summary sheet.
B. Personnel			
1. Cost:	$582,031; military -- $358,696; non-military -- $223,335; function cost -- $561,442; non-function -- $20,589.	$683,718 annually; function cost -- $611,625; non-function cost -- $72,093.	$124,725 annually; function cost -- $38,658; non-function cost -- $26,067.
2. Source:	a. See Table III-W-1 for the staffing figures used in calculating personnel costs for labs. Cost includes all labs, but not Blood Donor Center, medical illus., or McGuire AFB (ASWB #L). b. (W) determined the number of employees via observations in the department. Other pertinent data such as time allocations and hours worked per week were obtained in an interview with the lab's Administrative Officer (AO). c. (W) obtained pay rates for each labor grade from "Standard Rates for Military Personnel Services," AFM 177-10 (C91) for Military Personnel and schedule established by DoD (5 June 1968) directive 5120.39 for civilian personnel, and added 7.8% fringe benefits for civilian labor.	a. function cost -- the number of personnel assigned to clinical labs was determined from interviews with NCOIC of clinical labs; pay rates for military personnel were taken from AFM 177-101 (C91); civilian rates were extracted from USAF salary rates July 1968 (Appendix IX); benefits for civilians were determined from information given in interview with (W) military consultant. b. non-function cost -- time spent by employees outside the function. • housekeeping -- from hours spent by personnel in housekeeping chores, estimated by interviewee. • formal training -- TDY time for training purposes from Professional Activities Report FY69. • OJT -- from hours per trainee and instructor, estimated by interviewee. Changeover rate by function from business office. (Refer to Appendix VI for costs.)	a. Beaufort name list for October 1969 (computer run for payroll account), checked against interviews and observations.
C. Supplies			
1. Cost:	$128,694 annually; medical -- $128,694; non-medical -- 0.	$116,514 annually.	$20,866 annually.
2. Source:	a. cumulative cost run for FY69 received by Management Services Division from Post Data Processing, showing resource cost by item of expense by function.	a. from Report of Medical and Nonmedical Supply Expense FY69. b. Central Sterile Supply (CSS) -- added into medical -- prorated from annual CSS cost for entire medical center given in Report of Medical and Non-medical Supply Expense FY69; 2 months' clinical lab orders and direct issues data used as the basis for calculations.	a. FY69 Cost Account 310 listing from Fiscal and Supply. T1 and T7 codes for supplies under SFC 4E10, Clinical Labs.

	Ft. Dix	Andrews	Beaufort
D. Maintenance			
1. Cost:	$2,622 annually: WAH medical -- $18; Post Engineering -- $2,604.	$16,506 annually: medical -- $6,990; non-medical -- $9,516.	$1,105 annually: medical -- $210; non-medical -- $895.
2. Source:	a. medical -- request slips from November 1968 to November 1969 were reviewed to determine charges to functions for parts and labor; these charges were used for medical maintenance costs. b. Post Engineering -- total annual costs of labor and material obtained in an interview with Post Engineering; estimate then obtained on percent of their total work performed for WAH; 3-month sample of Post Engineering requests taken to distribute the percentage of cost allocated among WAH functions. See Appendix IV for all calculations.	a. medical -- labor and parts from medical maintenance chits for entire FY69. b. non-medical -- prorated from annual non-medical maintenance costs for entire medical center given in Medical Expense Report CY69; one month's clinical lab chits used as the basis for calculations.	a. medical -- estimated by counting a 12-month sampling of medical repairman's chits for parts costs, and by prorating salary. b. non-medical -- prorated by total square footage as a percentage of Account 310, SFC Code 7150, which lists total maintenance costs for the hospital building only (e.g., excludes grounds, housing, medical maintenance, etc.).
E. Housekeeping			
1. Cost:	$16,809 annually: contracted housekeeping -- $16,809; staff housekeeping -- $0.	$24,680 annually: janitorial -- $13,417; staff housekeeping -- $10,956.	$1,977 annually (all housekeeping done by clinical lab staff).
2. Source:	a. civilian housekeeping ageney's contract with WAH for FY69. b. total annual cost to WAH ($431,000 for FY69) was distributed among functions on a basis of percentage of total sq. ft. cleaned (clinical labs = 3.8%). c. See Appendix V for all calculations.	a. janitorial -- cost of janitor service prorated for function from percentage of total hospital floor space. b. staff -- time spent by staff of clinical labs in housekeeping, estimated by NCO.	a. staff -- estimated from interviews and observation.
F. Training			
1. Cost:	$20,589 annually: all OJT.	$62,205: formal -- $5,422; OJT -- $55,705; training dept. -- $1,078.	$22,252 annually: formal -- $855; OJT -- $20,235; training dept. -- $1,162.
2. Source:	a. a portion of the total function personnel cost was allocated to OJT on the basis of estimates made by observers of the amount of time needed for a student to reach 90% efficiency in each job class; these estimates were factored into a learning curve equation to arrive at OJT costs (see Appendix VI, OJT Costs). All WAH clinical lab training was considered OJT.	a. formal -- see Personnel, formal training. b. OJT -- see Personnel, OJT training. c. training dept. -- the cost of training dept. administrative personnel allocated to each function was determined first by finding the percentage of the total training staff allocated to a given function and then by calculating this percentage of administrative personnel salaries.	a. formal -- from announcements of training sessions, lectures, schedules, etc. b. OJT -- from interviews and observation. c. training dept. -- prorating the salary of the corpsman in charge of training among the functions according to the no. of corpsmen receiving training in each function.

III. Clinical Laboratory -- Functional Costs (cont'd)

	Ft. Dix	Andrews	Beaufort *
G. Capital Equipment			
1. Cost:	$150,801: standard -- $48,322; non-standard -- $102,482.	$300,918.	$78,620
2. Source:	a. survey of WAH property book taken December 8, 9, and 10, 1969, in which two types of equipment were tallied • equipment with a unit price greater than $200 • equipment with a unit price less than $200, but for which the number of units in the function brought the total dollar figure above $200. b. there are two types of WAH equipment price records • standard equipment, in which the price on file represents current market value • non-standard equipment, in which the price on file is the original purchase price.	a. refer to computer run PCN E3165A 30 SEP 69 (inventory of total hospital equipment with purchase price over $200).	a. cost of equipment over $200, from Beaufort Property Control Listing (August 14, 1969) (computer run), verified by observation.

* **Functional cost back-up data for Beaufort is presented in Appendix XIV, page 103.**

TABLE III-W-1

FUNCTIONAL COSTS

ITEM	DETERMINED COSTS
Direct Charges	
Mil. labor	358,696
Civil. labor	223,335
Supplies - medical	128,694
Supplies - non-medical	2,604
Maintenance	
Misc. charges	6,250*
Prorated Charges: Housekeeping	16,809
Equipment	
Cost of standard	$ 48,322
Cost of non-standard	$102,482
Total Charges	$730,156

* not included in functional cost.

TABLE III-W-2

FUNCTIONAL COSTS

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NO.	GRADE	NO.	GRADE	ITEM	COST
3	04	3	04	Equipment	4,094
3	03	4	03	Other Contractual	372
1	E7	2	E7	Utilities	772
6	E3	10	E3	Travel	1,012
8	E4	21	E4		
4	E5	4	E5		
1	E2				
1	E6	3	E6		
9	GS5	6	GS5		
11	GS7	8	GS7		
3	GS3	2	GS3		
11	GS6	12	GS6		
		2	GS9		
		2	GS4		
		1	E6		
		21	E3		

Mil.:	$178,585.00	Mil.:	$358,696.00
Civ.:	$226,972.00	Civ.:	$217,258.00

I. CLINICAL LAB -- OPERATIONS SOURCE SHEET

Walson Army Hospital

1. Formal Standard Operating Procedures (SOP) Document for 1969 furnished by Administrative officer, WAH Pathology Division.
2. Outpatient Report, DD-444, FY69.
3. Sample of 3 months' laboratory request slips (SF-514 Series) furnished by WAH Pathology Administrative personnel.
4. WAH labs. log book, January to September, 1969.
5. Observation of clinical labs, October 14 and 15, 1969.
6. Observation of Blood Donor Center, October 13, 1969.

Malcolm Grow Hospital

1. AF 235 FY69, line 70.
2. Interview with NCOIC, Clinical Laboratories.

Beaufort Naval Hospital

1. Tabulated from a computer run of laboratory procedures, CY68.
2. From NAVMED 1454, line 45, "Hematology".

II. CLINICAL LAB -- RESOURCE UTILIZATION SOURCE SHEET

Walson Army Hospital

1. Interview with Acting Chief, WAH Pathology.
2. Interview with Administrative Officer, WAH Pathology, October 2, 1969.
3. Scaled photographs of WAH floor plans, provided by Chief of Registrar Div.
4. Observation of Blood Donor Center, October 13, 1969.
5. See Functional Costs, Equipment.
6. Copy of cost justification for requested equipment, furnished by Administrative Officer, WAH Pathology.
7. Interview with Supervisor, WAH Chemistry.

Malcolm Grow Hospital

1. Interview with NCOIC, Clinical Laboratories.

Beaufort Naval Hospital

1. From Beaufort Hospital blueprints, 1/4" = 1'.

DENTISTRY

WALSON ARMY HOSPITAL (WAH) -- FORT DIX

Mission

The Army Dental mission* is separated into two areas: dental service for the entire installation (post), and services for hospital treated patients. Post dental activities involve overall administration, planning, control, and supervision of all MEDDAC dental activities. This includes establishing and operating dental clinics for authorized patients, oral examination and treatment planning, and supervising all oral surgery, general dentistry, prosthodontia, peridontia, endodontia, orthodontia, pedodontia, and preventive dentistry performed at the installation.

A hospital dental activity provides dental care and treatment for dental admissions and other inpatients; outpatients referred by other hospital departments or services when dental treatment or consultation is an adjunct to treatment provided by those services; outpatients referred by the installation dental activity for special consultation or treatment available only at the hospital; and hospital personnel.

At Fort Dix, mission requirements are fulfilled via the Post Dental Activity and the Walson Army Hospital Department of Dentistry. The Post Dental Activity consists of the administrative section, for administration of all four post dental clinics: Mills Dental Clinic, for active duty military, mainly trainees; Marshall Dental Clinic, for active duty military, dependents, and retirees which also serves as headquarters for the Fort Dix dental residency program; Dental Clinic Three, for active duty military, particularly permanent party troops; Dental Clinic Four, for dependents. In addition, Dental Clinic Four includes Preventive Dentistry and the Dental Examining Service.

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*As stated in AR40-4, paragraphs 3-5 to 3-8 and 2-13.

The Walson Army Hospital Department of Dentistry provides those services defined in the mission statement plus all major oral surgery for the Fort Dix post.

Existing Operations

A number of problems were present in the WAH dental operation. For example, the Chief of the Department of Dentistry estimated that 85 percent of the hospital's dental clinic space is wasted due to poor design. This same clinic is open all night to provide emergency dental service and consequently loses approximately $300 worth of equipment per month to pilferage.

Although the MEDDAC organization should have a positive effect on overall Army dental efficiency, it hampers operation of the Post Dental Activity. The post does not have complete control over personnel and supply functions and has only administrative responsibility, not line authority, for remote MEDDAC dental installations.

Because of its large number of recruits and the shortage of qualified dentists, Fort Dix has been forced to reduce treatments. All inductees are screened and only the most serious cases declared eligible for extensive treatment. In addition, Post Dental Activity discourages dependents and retired personnel from using Fort Dix dental facilities. Dependents are limited to four visits every six months, with one visit restricted to examination and counseling and another to flouride treatment and cleaning.

On a national basis, the number of qualified practitioners is steadily declining in proportion to the number of patients. This trend is reflected at Fort Dix as an overall decline in the quality of service. A contributory factor is the tendency of Army dentists to leave the Dental Corps in favor of civilian practice. To compensate, training programs at Fort Dix are on the increase. There are currently six residents in the WAH dental program, and by 1970 there will be eight. The increased utilization of paradental personnel should alleviate the situation, particularly if given greater treatment responsibility.

MALCOLM GROW USAF MEDICAL CENTER -- ANDREWS AIR FORCE BASE

Mission

The mission of the Dental Services at Malcolm Grow USAF Medical Center* is to support the military organization in the greater Washington, D.C. area in all matters of dental health. Specifically, the Dental Service units provide: complete dental health care for Air Force active duty and retired personnel and for Air Force Reserve personnel as time and space permit; limited dental health care for local dependents, X-ray examinations for all dependents, and preventive dentistry for dependent children; complete dental health care for other active duty military tenant organizations on Andrews AFB; an accredited post-graduate dental residency program for approximately four resident dentists per year in prosthetics and peridontics; an accredited dental internship program; dentalhealth care for the Secretary of Defense, the Secretary of the Air Force, and designated civilians, such as congressmen, ambassadors, and foreign dignitaries.

Dental Services are divided into seven separate units, each with its own facilities and its own area of responsibility.

- Dental Clinic Number One (the largest) -- preventive, restorative, peridontic, endodontic, and prosthetic dentistry.
- Dental Clinic Number Two -- preventive, restorative and prosthetic dentistry.
- Dental Clinic Number Three -- preventive and restorative dentistry for hospital personnel, the dental portion of all physical examinations, and all major oral surgery for the entire Medical Center.
- Bolling AFB Dental Clinic -- preventive, restorative, periodontic, endodontic, and prosthetic dentistry.
- Fort Myers Air Force Dental Clinic -- preventive and restorative dentistry.
- Pentagon and Forrestal Building Air Force Dental Clinics -- preventive

*As stated in AFM 162-1, page 1-1, paragraph 1-2.

and restorative dentistry for Air Force personnel of colonel or general officer rank.

- Area Dental Laboratory -- supplies partial and complete dentures to all dental clinics and other Air Force hospitals and clinics located in the region from Westover AFB in New England to Langley AFB in Virginia, and from overseas bases to Wright-Patterson AFB in Ohio.

Existing Operations

Shortage of technicians is the principle problem in each dental clinic in the Malcolm Grow USAF Medical Center. The technicians/dental-officer ratio is now one-to-one. The work flow could easily be increased if this ratio were two-to-one or higher. The antiquated equipment now in use also contributes its share of problems. Not only are breakdowns frequent, but the traditional inflexible design prevents adaptation to today's more efficient sit-down and four-handed dentistry techinques.

U.S. NAVAL HOSPITAL -- BEAUFORT

Mission

Dental services are performed at four different locations in the Beaufort Base Level Health Care System. Each clinic has its own capability and responsibility for mission objectives.*

Beaufort Hospital Clinic provides dental care for inpatients and the hospital staff, for dependents and retired personnel in the immediate hospital area, and for patients from Parris Island and the Marine Corps Air Station who require surgical consultation. The Beaufort dentist treats the more serious problems, especially those such as jaw fractures and infections and other abnormal conditions requiring hospital treatment.

Parris Island Dental Clinic is a large facility responsible for the dental care of all recruits, permanent personnel, and dependents residing on Parris Island. In compliance with regulations, recruits are seen a minimum of two times during their eight weeks on the Island. The first visit is for initial screening, basic X-rays, and topical application of stannous flouride. The second, three days later, is for charting and any additional X-rays needed. Any oral surgery required is performed one week after the second routine examination, while special procedures are usually during the sixth week of basic training.

Parris Island Dental Annex is a five-chair clinic near the Women's Marine barracks. It provides complete dental care for the women marines during their stay at Parris Island and also area dependents and retirees, since the location qualifies as a remote area. Dependents account for three-fourths of actual chair use.

Marine Corps Air Station Dental Clinic located in a relatively new, well-equipped and maintained building, attends to the dental needs of active duty personnel at the Air Station. All care is initiated on a sick call basis, with

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*As stated in the Beaufort Organization Manual, NAVHOSPBFT INST. P-5400.

further work scheduled as necessary. The clinic also offers limited dental care to Air Station dependents, a maximum of two visits per year.

Existing Operations

Problems noted included scheduling difficulties, failures by patients to keep appointments, delays in obtaining appointments (up to three months on Parris Island during the peak month of September), and the necessity for some restrictions on total appointments made by dependents. Beaufort has difficulty maintaining adequate day-to-day dental care of ward patients, and Parris Island is faced with too many recruits to treat in too short a time. With the staff composed almost entirely of two-year reservists, the Marine Corps Air Station Clinic is obliged to deal with a consistently high rate of personnel turnover.

DATA PRESENTATION MATRICES

The following matrices and charts detail the data gathered by the Westinghouse teams on the three hospitals' dental services. The first matrix delineates dental operations; the second, resource utilization; and the third, functional costs.

Walson Army Hospital (WAH) -- Ft. Dix

A. Services Rendered

1. Dental Headquarters (HQ):[2]

   a. administers entire dental care program at Fort Dix, including 4 dental clinics, a residency program, and support for (but not command of) the WAH Dental Service;

   b. administers and supports Ft. Dix MEDDAC, controlling personnel, supplies, equipment, and statistics for dental clinics at locations including
   - Tobyhanna Army Depot
   - Fort Wadsworth, N.J.
   - 90 Church Street, N.Y.C.
   - Ft. Hamilton, N.Y.
   - U.S. Army Support Center, Philadelphia
   - Picatinny Arsenal;

   c. commanding officer acts as Post Dental Surgeon and Assistant Director, Ft. Dix MEDDAC.

2. Dental clinics (DC) -- Mills, Marshall, No. 3, and No. 4:[2,3]

   a. conserve oral health, specifically prevent and treat oral diseases, injuries, and deficiencies among active duty military personnel (also retired personnel at Marshall, dependents included at DC No. 4);

   b. conduct dental sick call for troops;

   c. perform the following procedures

Malcolm Grow Hospital -- Andrews AFB

1. All dental clinics (DC) -- general services:

   a. administrative management of patients, records, reports and supplies, as follows
   - receive patients and direct them to proper care
   - arrange appointments
   - maintain, process, and file dental records
   - request and issue supplies and equipment
   - maintain official files of correspondence and publications; prepare correspondence; perform administrative functions;

   b. elements of professional care of patients
   - examination and treatment
   - preventive dentistry
   - exposing and processing X-rays
   - specialties -- oral surgery, periodontics, orthodontics, endodontics
   - fabrication and repair of dental prostheses;

   c. the area dental lab's primary responsibility is is to support all USAF dental facilities in the Northeastern Region with the manufacture of full and partial dentures; it is also responsible for the parent base (Andrews -- DC No. 1, DC No. 2, DC No. 3 [hospital, oral surgery]) and satellite bases (Bolling AFB, Ft. Myers, Pentagon Surgeon's General Office DC's.

2. Services rendered by facility:

   a. DC No. 1
   - administrative support services and command responsibility for all DC's in Andrews dental care program
   - operates a resident and intern program
   - general dentistry examinations and treatments

U.S. Naval Hospital -- Beaufort

1. Beaufort Naval Hospital Dental Clinic (DC):

   a. dental care for inpatients, staff, retired, and their dependents including dental surgery;

   b. consultation service for difficult dental surgery for Parris Island and Marine Corps Air Station (MCAS) patients.

2. Parris Island DC:

   a. dental care for permanent personnel and (at the Dental Annex) dependents, retired, and women Marine recruits;

   b. care of recruits, including
   - initial screening of platoon -- initial oral diagnosis, X-rays, and stannous fluoride treatment (refer to flow process chart, Figure I-B-1).

I. Dentistry -- Operations (cont'd.)

	Ft. Dix	Andrews	Beaufort
A. Services Rendered (cont'd.)	• restorative (fillings, etc.) • making and fitting -- fixed prosthetics (false teeth) • making and fitting - removable prosthetics (false teeth) • minor oral surgery (pulling teeth) • endodontics • oral hygiene (cleaning teeth) • oral diagnosis and treatment planning, including X-ray • periodontics (Marshall, DC No. 3, DC No. 4) • orthodontic treatment (Marshall, DC No. 4); d. train residents in conjunction with Ft. Dix Dental Residency Program, of which Marshall DC is the base and teaching center; e. instruct patients in oral hygiene (DC No. 4 practices and teaches preventive dentistry by conducting mass patient fluoride treatments); f. DC No. 4 serves as Dental Examining Center for Ft. Dix Medical Processing Center, giving all inductees preliminary dental examinations (oral diagnosis and treatment planning only).	• specialty treatments in periodontics, endodontics, and orthodontics • preventive dentistry program • X-ray exposures and processing • refers oral surgery to the hospital (DC No. 3) • fabricates and repairs dental prostheses • prosthodontics and periodontic services; b. DC No. 2 • administrative duties for the clinic • operates a resident and intern program • general dentistry examinations and treatments • preventive dentistry program • X-ray exposures and processing • refers oral surgery to the hospital (DC No. 3) • fabricates and repairs dental prostheses • prosthodontics and periodontic services; c. Bolling AFB DC • administrative responsibility within clinic • operates a resident and intern program • examinations and treatment • preventive dentistry program • X-ray exposures and processing • refers oral surgery to the hospital (DC No. 3) • fabricates and repairs dental prostheses • prosthodontics and periodontic services; d. Ft. Myers -- for active duty Air Force personnel; dependents only on emergency basis • administrative responsibility within clinic • operates resident and intern program • examinations and treatments • preventive dentistry program • X-ray exposures and processing • refers oral surgery to hospital (DC No. 3) • fabricates and repairs dental prostheses • limited lab work referred to DC No. 1; e. Pentagon DC and Surgeon General's Office DC -- these two facilities have very limited services;	• charting -- determination of minor oral surgery required, fillings needed, and additional X-rays if necessary (refer to flow process chart, Figure I-B-2). operative -- for recruits needing minor oral surgery, restorative, and prosthetic work. • prosthodontic lab -- includes work for Beaufort Naval Hospital • endodontics.

1. Dentistry -- Operations (cont'd)

	Ft. Dix	Andrews	Beaufort
A. Services Rendered (cont'd.)		f. hospital (oral surgery) DC No. 3 • administrative services within clinic • operates intern program • examination and treatment of hospital personnel, inpatients, and flying status personnel • no preventive dentistry program • X-ray exposures and processes • oral surgery referral service for all DC's at Andrews and satellite clinics • all dental lab work referred to DC No. 1 • treatment of emergency cases.	
	3. WAH Dental Service:[2;4] a. care for general dental needs of hospital inpatients; ambulatory patients come to DC located in the hospital and non-ambulatory patients cared for in the wards; b. care in hospital DC for general dental needs of hospital military and civilian staff; c. perform all major oral surgery for Ft. Dix on the basis of referrals from ER or the on-post DC's; d. provide general dentistry, oral surgery and hospital training as part of Ft. Dix Dental Residency Program; e. coordinate details of formal resident training such as lectures, consultants, teachers, etc.; f. perform as a hospital department with all associated responsibilities.		3. MCAS: a. dental care for all flight squadrons stationed on the base, all permanent personnel, and limited care to dependents; b. capabilities and duties include • oral X-ray examination and film development • prostnetics laboratory • preventive dentistry programs • oral surgery • dental records storage for personnel based at MCAS • dental examination of personnel undergoing physical exams at MCAS Medical Dispensary.
B. Hours of Operation	1. Normal duty hours:[2,3,4] a. all clinics -- 0800 to 1700 hrs. Monday thru Friday. 2. Special duty hours:[4] a. one Dental Officer staying in the WAH DC is on call 1700 to 0800 hrs. Monday thru Friday and 24 hours a day on weekends; another officer works dental sick call in DC No. 4, 0800 to 1200 hrs. Saturday.	1. Normal duty hours:[1] a. all clinics -- 0800 to 1700 hrs. Monday thru Friday. 2. Special duty hours: a. hospital has 24-hour, 7 days a week, emergency service; b. Bolling AFB DC has a night technician plus one dentist on call after normal duty hours.	1. Normal duty hours: a. Beaufort Hospital DC -- 0800 to 1600 hrs. Monday thru Friday by appointment; b. Parris Island DC -- 0730 to 1600 hrs. Monday thru Friday (platoons scheduled 10 days in advance by Marine recruit training and receiving); c. MCAS: • 0715 to 1130 hrs. and • 1300 to 1600 hrs. Monday thru Friday, by appointment • active duty sick call each morning, 0730 hrs. • dependent sick call 1300 to 1400 hrs. Tuesday and Thursday.

I. Dentistry -- Operations (cont'd.)

	Ft. Dix	Andrews	Beaufort
C. Workload Flow	1. Dental HQ -- workload measure not generally applicable.[2]	1. DC No. 1:[1] a. approx. 100 patients a day -- 2 to 5 are emergencies, 10 are check-ups, 85 to 90 are for dental work. (Table I-M-1 shows total procedures by beneficiary. Procedures per patient is 6.75 for dependents).	1. Beaufort Hospital DC:[1] a. total procedures FY69 -- 5,272; b. total sittings -- 2,782 • inpatients -- 1,101 • outpatients -- 1,681; c. No. of oral surgeries -- 340; d. No. of admissions -- 53.
	2. DC's: a. number of patients -- approx. 480,750 annually[1] (Table I-W-1 shows annual number of treatments (visits) at Fort Dix DC's for the period April, 1969 through September, 1969, broken down by type of patient and of treatment; Tables I-W-2 through I-W-7 show comparable figures for each of the clinics involved); b. patient flow[5,6] • typical DC oral diagnosis and treatment planning -- soldier logs in at desk, goes to waiting room, called for exam, exam made, diagnosis made and treatment decided on (refer to Figure I-W-1 for detailed process chart of patient management system at "typical" clinic); c. peak periods and queues • Figure I-W-2 shows number of patients waiting to see dentist at Mills DC by time of day on October 22, 1969.[5]	2. DC No. 2:[1] a. 2,600 dental records maintained; b. sick call is held one hour in morning, and one hour in afternoon; c. approx. 7 people per day attend sick call with 5 to 10 emergencies per month; d. Table I-M-1 shows total patients and procedures; the procedure per patient ratio for dependents is 14. 3. Hospital (oral surgery) DC No. 3:[1] a. emergency cases -- approx. 6 patients per night come in on emergency basis; approx. 2 fractures and lacerations per month; b. scheduling • oral surgery does its own scheduling; 15-minute appointments -- 0800 to 1000 hrs.; 1300 to 1400 hrs; and 1600 to 1700 hrs. one-hour surgeries -- 1000 to 1200 hrs. and 1400 to 1600 hrs. • general practice dentist schedules 45- to 60-minute appointments -- 0800 to 1600 hrs. • Table I-M-1 shows the total procedure and patient workload for FY69. 4. Bolling AFB DC:[1] a. approx. 2,700 patients per month -- 20 of these are emergencies; b. 7,000 dental records maintained; c. 4,000 to 4,500 radiographs taken each month; d. appointments are made at 45-minute intervals.	2. Parris Island DC: a. Total procedures, FY69[2] -- 501,347; b. Total sittings -- 220,606 (breakdown into specialty areas shown in Table I-B-1).

[redacted]

	[redacted]	[redacted]	[redacted]
c. Workload flow description	b. [redacted] a. approx. 2,100 to 2,200 family treatment patients annually;[2] b. patient flow refer to Figure 3-W-2 for process chart of walk-in examination, and treatment for 20 records and Figure 3-W-4 for sampling of waiting, treatment, examination time ● preliminary dental exam — group of subjects split in half, each man examined by a dentist and a technician ● examination time no longer than one minute ● subjects then line up for treatment, which lasts approx. 20 minutes; c. peak periods and queue ● subjects dental exams and fluoride treatments conducted with large groups and therefore every group arrived at a peak period ● queue times before exam range from 7 to 20 minutes (25 minute mean) and before treatment from 27 to 35 minutes (30 minute mean).	b. [redacted] a. approx. 900 patients per week each month — 25 of these are emergencies; b. each split often to make two further treatments scheduled at the time (Table 3-W-3 shows total patients by beneficiary class and total procedures by beneficiary class. Procedures per patient noted for dependents in 11.33); c. most lab work sent to Area Dental Lab. c. Area Dental Lab.[3] a. of 300 cases a month, there are at most one such order and 25 local orders from dentures or the exhibitors, the remainder are from base-wide dentures; b. it takes approx. 5 working days to process a denture from request to finished denture; c. our plate also manufactured here — approx. 200 sets annually, requiring 2 man-hours per set; d. summer is a slack period because of changes of station and leaves; e. Table 3-W-2 shows total procedures for dentures and the 23 items supported by the Area Dental Lab.	b. [redacted] a. [redacted] a. Total procedures [redacted] — 21,000.
d. Information flow	1. For monthly volume of dentistry communications, broken down by communication mode according to source or destination, refer to Table 3-W-1. 2. For monthly volume of communication inputs and outputs according to the type of communication, refer to Table 3-W-3.	1. For monthly volume of dentistry communications, broken down by mode according to source or destination, refer to Table 3-W-1. 2. For monthly volume of communication inputs out outputs according to type of communication, refer to Table 3-W-3.	1. For monthly volume of dentistry communications at Beaufort DC, broken down by mode according to source or destination, refer to Table 3-W-2. 2. For monthly volume of communication inputs and and outputs at Beaufort DC according to type of communication, refer to Table 3-W-3. (The other dental clinics function separately from the hospital, except for consultation services to the Beaufort Hospital dental.

[redacted]

Walson Army Hospital
Dental Operations

TABLE I-W-1

TOTAL ANNUAL PATIENT TREATMENT*

DESCRIPTION	ARMY	NAVY	AIR FORCE	DEPENDENTS	RETIRED	HOSPITAL INPATIENTS
Restorative	38,099	6	6	261	778	104
Fixed Prosthodontic	3,193			96	406	4
Removable Prosthodontic	5,123		4	165	1409	6
Oral Surgery	24,117		172	756	317	2654
Periodontics	1,590			176	1092	
Endodontics	4,395			224	361	6
Oral Hygiene	10,013		6	126	364	190
Orthodontic Treatment	712			7	4	
Oral Diagnosis + Treatment Planning	135,283		50	376	726	276
Total	223,525	6	242	2389	5669	3353

*Includes: W.A. Hosp., Mills D.C., D.C. #2, Marshall D.C. #4, (Dent. Exam. Ctr., and Prevnt. D.C.)

TABLE I-W-2

WALSON ARMY HOSPITAL DENTAL CLINIC

6 MONTH AVERAGE

DESCRIPTION	ARMY	NAVY	AIR FORCE	DEPENDENTS	RETIRED	HOSPITAL INPATIENTS
Restorative	136	.5	.5	19	1.33	9.66
Fixed Prosthodontic	9	0	0	.33	0	.33
Oral Surgery	492	9	14	62	4.66	236
Periodontics	7	0	0	16	0	0
Endodontics	9	0	0	3	0	.50
Oral Hygiene	75	0	.66	9.50	1.33	9.33
Oral Diagnosis Treatment Planning	207	0	4	26	6	23
Removable Prosthodontic	4	0	.16	.50	26.66	.33

Walson Army Hospital
Dental Operations

TABLE I-W-3

PREVENTIVE DENTAL CLINIC - DEPENDENTS ONLY

DESCRIPTION	MONTHLY TOTALS 1/69	2/69	3/69	4/69	5/69	6/69	7/69	8/69	9/69
Restorative	1301	947	533	548	514	599	611	692	582
Fixed Prosthodontic	36	23	18	14	28	9	17	27	20
Removable Prosthodontic	0	0	0	10	31	6	0	0	0
Oral Surgery	208	254	208	219	227	244	269	174	208
Periodontics	3	12	1	1	2	2	3	1	2
Endodontics	23	1	22	29	33	12	16	7	20
Oral Hygiene	293	426	397	340	466	430	327	378	406
Orthodontic Treatment	48	24	72	35	40	49	65	65	79
Oral Diagnosis + Treatment Planning	550	409	647	699	616	900	743	655	553
Total Patient Treatment	2462	1195	2038	2096	1958	2251	2051	1999	1870

TABLE I-W-4

MARSHALL DENTAL CLINIC

DESCRIPTION	9 MONTH AVERAGE ARMY	DEPENDENTS	RETIRED
Restorative	277	2	85
Fixed Prosthodontic	99	5	122
Removable Prosthodontic	96	10	143
Oral Surgery	128	1	23
Periodontics	97	7	38
Endodontics	84	21	33
Oral Hygiene	84	.66	24
Orthodontic Treatment	6	.66	.66
Oral Diagnosis and Treatment	311	1	17

WALSON ARMY HOSPITAL
DENTAL OPERATIONS

TABLE I-W-6

DENTAL EXAM CENTER

ARMY ONLY

DESCRIPTION	MONTHLY TOTALS								
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total Diagnosis + Treatment Planning	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

TABLE I-W-

MAIN DENTAL CLINIC

ARMY ONLY

DESCRIPTION	MONTHLY TOTALS								
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Examinations	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Fixed Prosthodontics	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Removable Prosthodontics	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Oral Surgery	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Endodontics	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Oral Hygiene	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total Diagnosis + Treatment Planning	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total Patient Treatment	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

TABLE I-W-

DENTAL CLINIC #3

ARMY ONLY

DESCRIPTION	MONTHLY TOTALS								
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Examinations	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Fixed Prosthodontics	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Removable Prosthodontics	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Oral Surgery	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Endodontics	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Endodontics	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Oral Hygiene	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total Diagnosis + Treatment Planning	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total Patient Treatment	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Walson Army Hospital
Dental Operations

TABLE I-X-6
NUMBER OF COMMUNICATIONS BY MODE ACCORDING TO SOURCE/DESTINATION

SOURCE/ DESTINATION	RECEIVED BY DENTAL						SENT BY DENTAL					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION		144		47		4	1			525	1	52
AIR EVACUATION												
DENTAL SERVICE												
DISPENSARIES				40								
FLIGHT MEDICINE												
FOOD SERVICE												
HOUSEKEEPING												
LABORATORIES										45		
MAINTENANCE												
MEDICAL RECORDS				640						98		
NURSING SERVICE												
OPERATING ROOM												
OUTPATIENT DEPT.				96						400		
OUTSIDE WORLD				9492		1000	240			72		1020
PERSONNEL												
PHARMACY				20								
PHYSICAL THERAPY					4					1		
PREVENTIVE MED.												
PROFESSIONAL SERV				2						49		
REGISTRAR										15		
SUPPLY											234	23
VETERINARY MED.												
WARD MANAGEMENT												
RADIOLOGY				20,000						116		

Watson Army Hospital
Dental Operations

TABLE I-W-9

TYPE OF COMMUNICATIONS BY INPUT & OUTPUT

FUNCTION	Personal Care Original	Personal Care Information	Personal Care Non-Emergency	Personal Care Emergency	Personal Administrative	Supplemental	Supplies	Facilities	Personnel	Other	Total
Mills Dental Clinic Input											
Volume of Communications				4000					41		4161
Number of Communications				3					2		5
Output											
Volume of Communications	332			4							336
Number of Communications	6			1							7
Marshall Dental Clinic Input											
Volume of Communications				2000					41		2161
Number of Communications				2					2		4
Marshall Dental Clinic Output											
Volume of Communications	332			4							336
Number of Communications	6			1							7
Dental Clinic #3 Input											
Volume of Communications				3000					41		3161
Number of Communications				2					2		4
Output											
Volume of Communications	332			4							336
Number of Communications	6			1							7

Watson Army Hospital
Dental Operations

TABLE I-W-9 (Cont'd.)

TYPE OF COMMUNICATIONS BY INPUT & OUTPUT

FUNCTION	Patient Care Logged	Patient Care Interpreted	Patient Care Non-Interpreted	Patient Screening	Administrative	Supplies	Facilities	Personnel	Other	Total
Dental Clinic #1 Input										
Volume of Communications				1000						1000
Number of Communications				1						1
Output										
Volume of Communications		112								112
Number of Communications		2								2
Headquarters Input										
Volume of Communications						9		43	65	117
Number of Communications						2		10	6	18
Headquarters Output										
Volume of Communications				13	10	21		73	420	531
Number of Communications				3	1	5		6	6	21
Watson Army Hospital DC Input										
Volume of Communications	696	20146				[illegible]			73	20970
Number of Communications	2	9				2			7	20
Output										
Number of Communications		166		99	10	261	5	2	22	564
Volume of Communications		8		3	1	3	2	1	3	19

Malcolm Grow Hospital
Dental Operations

TABLE I-M-1

DENTAL SERVICE
FOR FY '69*

	ARMY	NAVY-MARINE	AIR FORCE	DEPENDENTS	OTHERS
ANDREWS MSDC #1					
Total Procedures [lines 1-5]	1,207	343	83,204	34,963	24,253
Total Patients Treated	313	122	19,768	5,167	5,928
Procedures/Patient	3.86	2.81	4.24	6.75	4.10
ANDREWS MSDC #2					
Total Procedures [lines 1-50]	1,348	1,227	34,237	8,933	1,252
Total Patients Treated	456	362	11,355	639	1,171
Procedures/Patient	2.95	3.40	3.02	14.0	1.07
(HOSPITAL) ANDREWS MSDC #3					
Total Procedures [lines 1-50]	468	686	22,650	7,647	10,568
Total Patients Treated	268	378	9,691	3,154	2,096
Procedures/Patient	1.74	1.81	2.34	2.42	5.04
FORT MYER USAF					
Total Procedures [lines 1-50]			4,575	4,458	6,271
Total Patients Treated			6,441	386	1,544
Procedures/Patient			7.11	11.55	4.12

*(Report Control Symbol I - HAF - M5)

TABLE I-M-2

TOTAL PROCEDURES OF AREA DENTAL LAB AND 21 BASES FOR FY69 •

PERIOD	ANDREWS	ALL BASES
1st Quarter of FY69	5,842	33,387
2nd Quarter of FY69	4,652	33,284
3rd Quarter of FY69	5,990	39,717
4th Quarter of FY69	5,454	35,839
TOTALS	21,938	174,614

• Source: Remarks DD 477

Malcolm Grow Hospital
Dental - Operations

TABLE I-M-3

NUMBER OF COMMUNICATIONS BY MODE ACCORDING TO SOURCE/DESTINATION

SOURCE/ DESTINATION	RECEIVED BY DENTAL						SENT BY DENTAL					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION												
AIR EVACUATION												
DENTAL SERVICE												
DISPENSARIES	450							300				
FLIGHT MEDICINE												
FOOD SERVICE												
HOUSEKEEPING												
LABORATORIES												
MAINTENANCE										1		
MEDICAL RECORDS												
NURSING SERVICE												
OPERATING ROOM												
OUTPATIENT DEPT.		240										20
OUTSIDE WORLD	252	81		1		41	24	122		80		5002
PERSONNEL												
PHARMACY		1										
PHYSICAL THERAPY												
PREVENTIVE MED.												
PROFESSIONAL SERV												
REGISTRAR												
SUPPLY		104				2		183		808		6
VETERINARY MED.												
WARD MANAGEMENT						40				4		56
RADIOLOGY												

Malcom Grow Hospital
Dental Operations

TABLE I-M-4

TYPE OF COMMUNICATIONS BY INPUT - OUTPUT

FUNCTIONS	Patient Care Reports	Patient Care Interfacility	Patient Care Intrafacility	Patient Care Supply/Equipment	Patient Accounting	Patient Administration	Personnel	Supplies	Facilities	Procurement	Others	Total
Area Dental Lab												
Input												
Volume of Communication			120	120	2		1		16	20		279
No. of Communications			1	1	1		1		4	1		9
Output												
Volume of Communication			200	12	1		499		2			713
No. of Communications			1	1	1		3		1			9
Dental Clinic #1												
Input												
Volume of Communication		200	12	120	2		132		7	102		555
No. of Communications		2	1	1	1		3		3	3		14
Output												
Volume of Communication		315	90	12	20		495		14			936
No. of Communications		5	1	1	1		3		3			16

TABLE I-B-1

PARRIS ISLAND DENTAL CLINIC -- PROCEDURES, FY69[1]

PROCEDURES	NUMBER	PERCENT
Operative, Crown and Bridge	124,362	25%
Prosthodontics	4,815	1%
Oral Surgery	32,312	6%
Periodontics and Oral Hygiene	80,714	16%
Radiodontics	143,162	29%
Other	115,982	23%
Total	501,347	100%

1 From DD 477.

Beaufort Naval Hospital
Dental Operations

TABLE I-B-2 NUMBER OF COMMUNICATIONS BY MODE ACCORDING TO SOURCE/DESTINATION

SOURCE/ DESTINATION	RECEIVED BY DENTAL						SENT BY DENTAL					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION												
AIR EVACUATION												
DENTAL SERVICE												
DISPENSARIES												
FLIGHT MEDICINE												
FOOD SERVICE												
HOUSEKEEPING										20		
LABORATORIES				24						24		
MAINTENANCE												
MEDICAL RECORDS												
NURSING SERVICE												
OPERATING ROOM				20								
OUTPATIENT DEPT.												
OUTSIDE WORLD												
PERSONNEL				40								
PHARMACY										384		
PHYSICAL THERAPY												
PREVENTIVE MED.												
PROFESSIONAL SERV												
REGISTRAR												
SUPPLY/STORAGE				12						24		
VETERINARY MED.												
WARD MANAGEMENT												
RADIOLOGY												

Beaufort Naval Hospital
Dental Operations

TABLE I-B-3

TYPE OF COMMUNICATIONS BY INPUT AND OUTPUT

DENTAL OPERATIONS	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Patient Secondary	Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
INPUT											
Dental (0080)		44		20	20		12				96
OUTPUT											
Dental (0080)		441					46				487

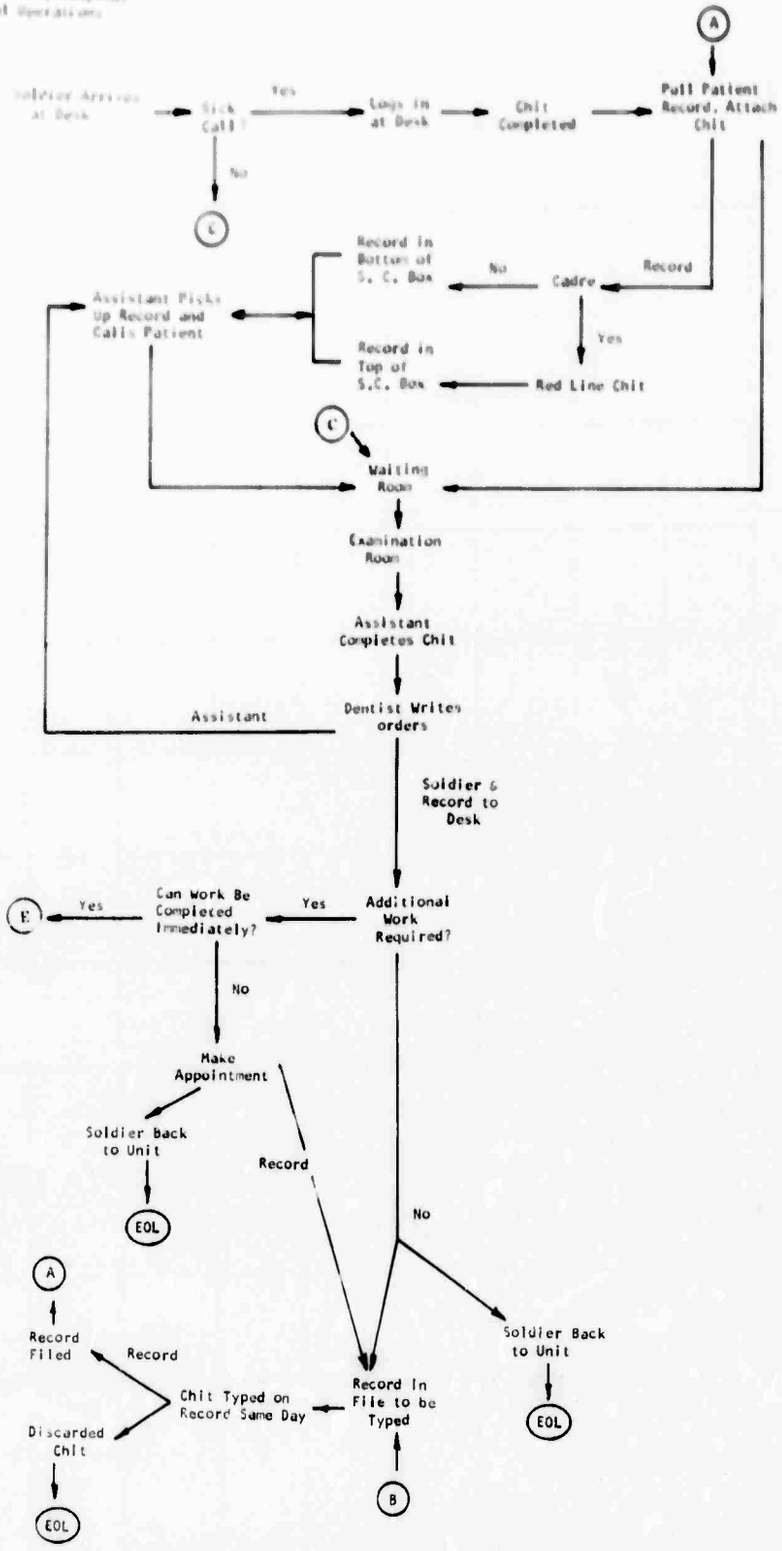
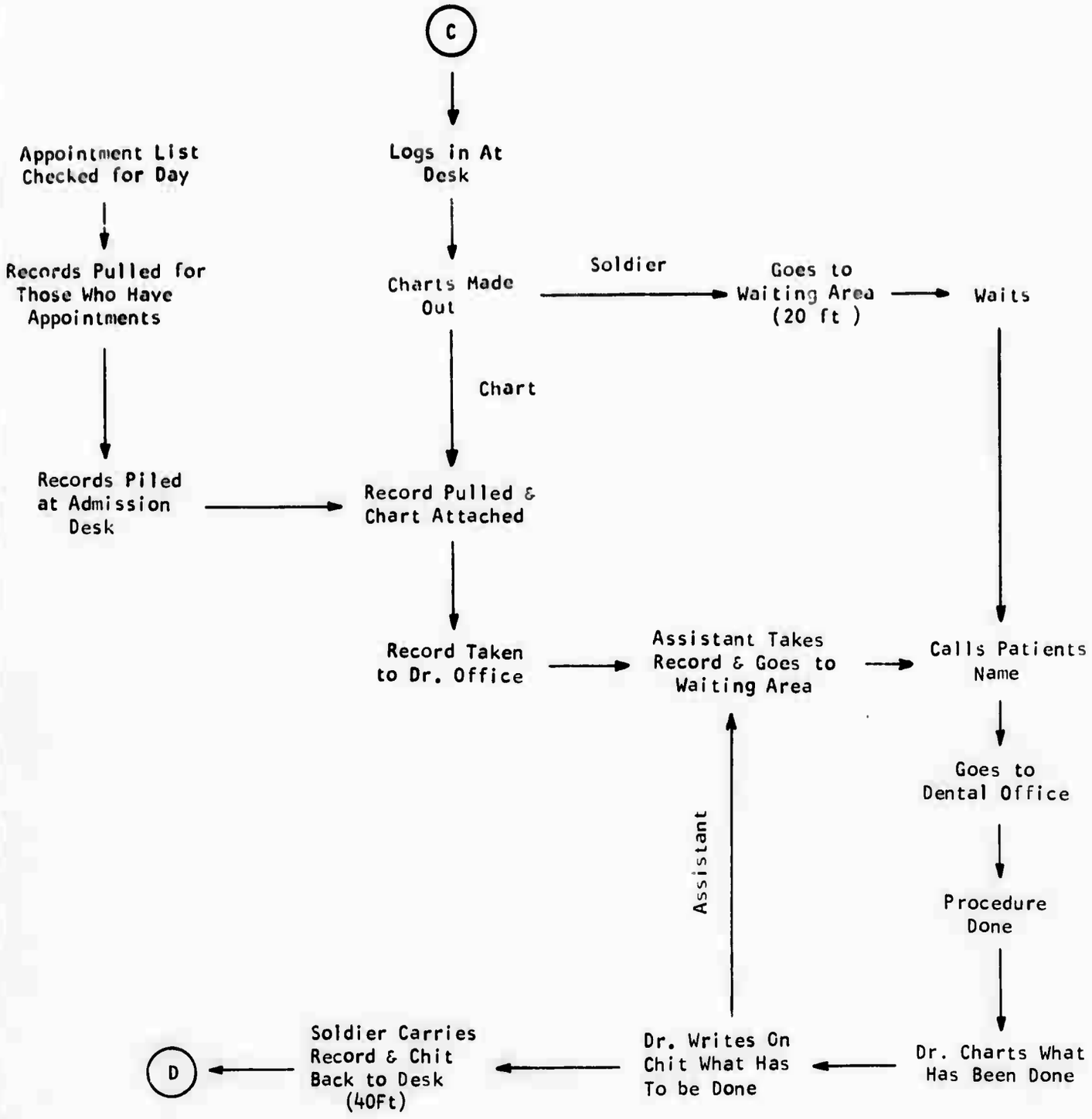


Fig. I-W-1—Process chart of typical patient management system



Source: Created From Observations of "Typical" Days at Mills and No. 3 DC's.

Fig. I-W-1—Process chart of typical patient management system

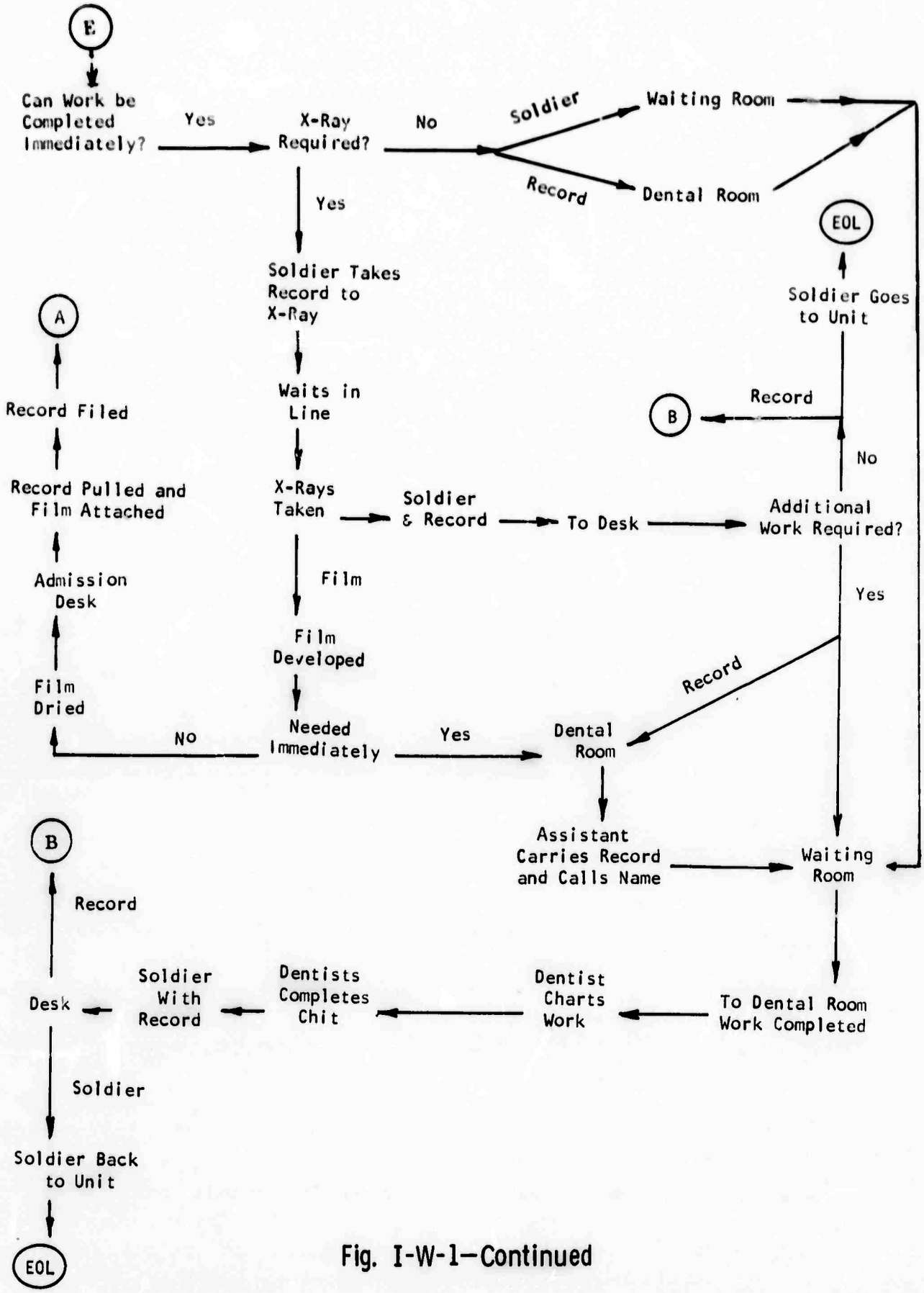


Fig. I-W-1—Continued

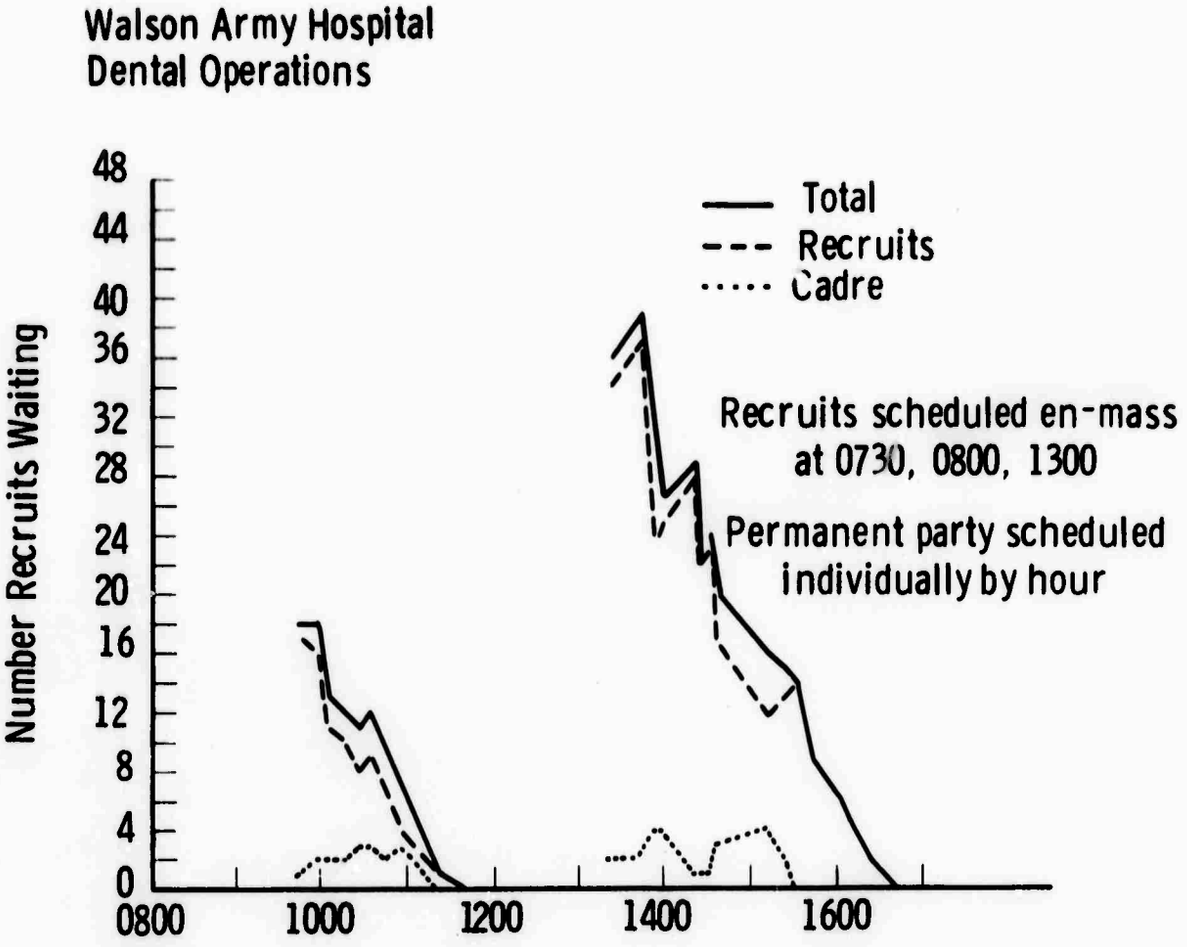


Fig. I-W-2—Soldiers waiting at Mills Dental Clinic—Oct. 22, 1969

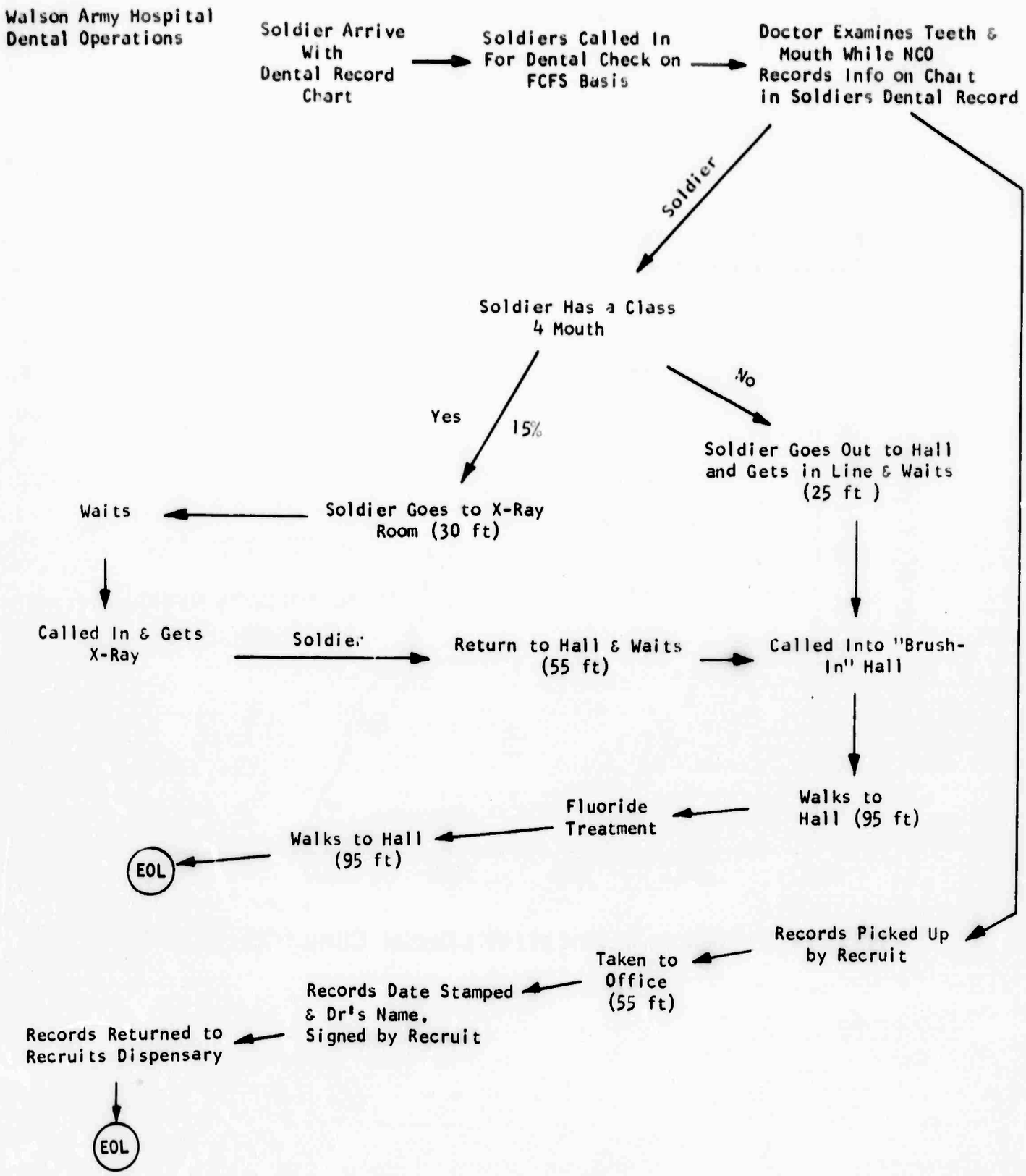


Fig. 1-W-3—Process Chart for Waiting, examination and fluoride treatment for 28 recruits

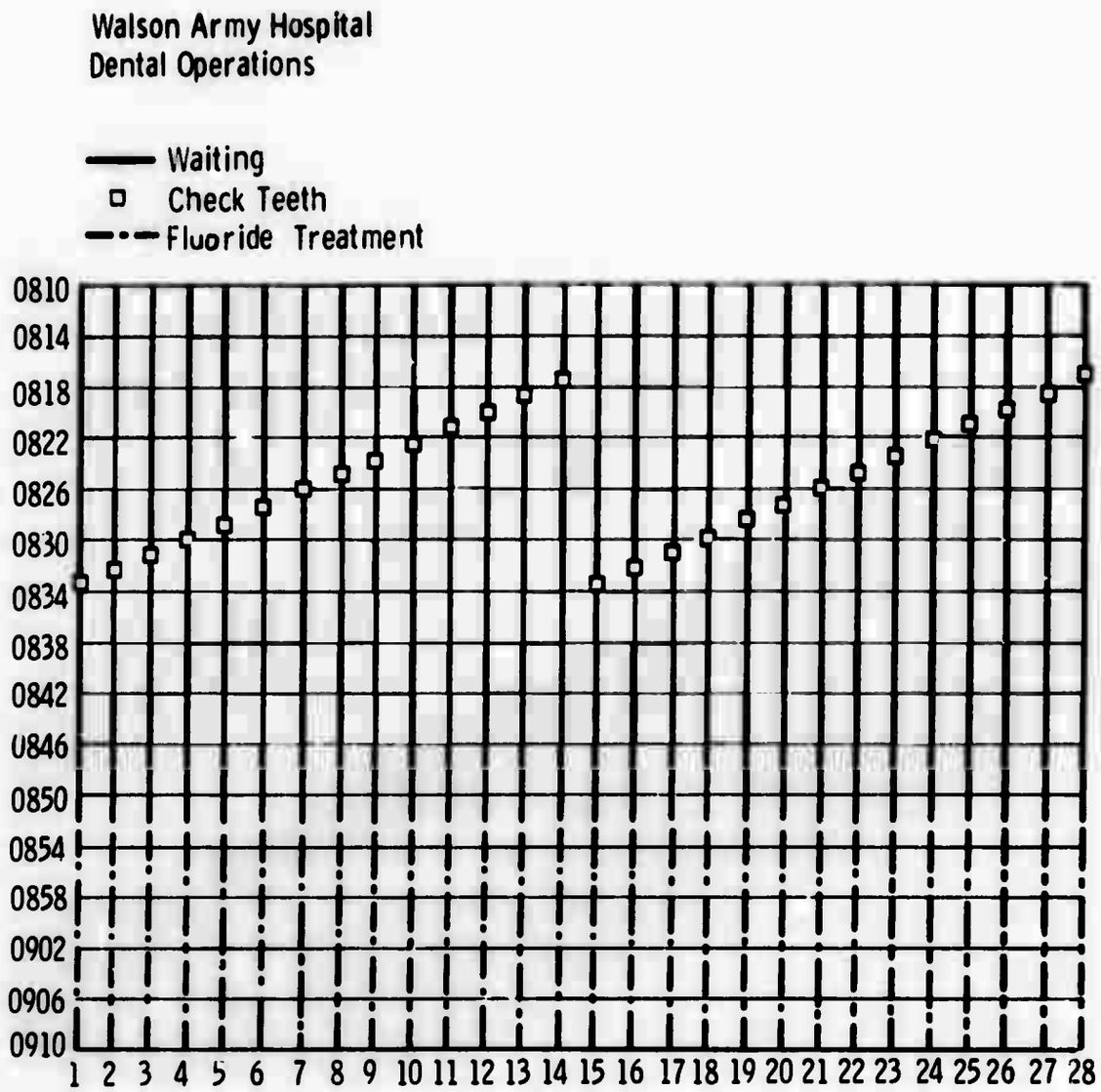


Fig. I-W-4—Sampling of waiting, treatment, examination time spent for 28 recruits

Beaufort Naval Hospital

Dental Operations

FIGURE I-B-1

HOSPITAL FLOW PROCESS CHART

Dwg. 859A533

Pg. of

Subject Charted Recruit screening -- Parris Island Dental Clinic

Chart Begins _____ Chart Ends _____

Present Method _____ Proposed Method _____ Date _____

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist	TIME Oper	TIME Delay	TIME Storage	NOTES
1. Recruits enter at back door						One dentist can do one
2. Checked by dentist -- Periodontal work separated out						platoon in approx. 10 min.
3. To X-ray						Second floor
4. Recruits with periodontal work X-rayed first						11 periodontals for one platoon on observation day - normally approx. 20
5. Each recruit X-rayed Takes 20 min. for one platoon						3 corpsmen and 2 recruits; one corpsman assigns numbers;one inserts shield in mouth; one takes X-rays;one
6. Periodontals to ultrasonic cavitron						recruit collects numbered
7. Regular line up at stannous fluoride station						mouth guard; one collects records; one corpsman handled all 11 in 1 hr. 8 min.
8. When all X-rays completed, stannous fluoride procedures started						One corpsman gives direction for entire platoon on pumice
9. Go to mobile unit for fluoride treatment						brushing-takes 15 min. Three corpsman with three recruits assisting takes 25 min.

Beaufort Naval Hospital

Dental Operations

FIGURE I-B-2

Dwg. 859A593

HOSPITAL FLOW PROCESS CHART

Pg_ of_

Subject Charted Routine charting - recruits -- Parris Island Dental Clinic

Chart Begins _____ Chart Ends _____

Present Method _____ Proposed Method _____ Date _____

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist	TIME Delay	NOTES
1. Recruits line up outside by number				
2. Recruits given records, with				
X-rays (from screening) and an				
allergy questionaire				
3. Fill out questionaire				
4. First 30 called inside				
5. Line up outside 3 rooms				Processed by 3 dentists,
(in corridor)				3 technicians, and 3 re-
				cruits. Takes approx. 2 min.
6. Called in				
7. Examined and charted				
8. Privates needing X-rays given				
record; if none - leave				
9. Line up inside X-ray number 2				
10. X-ray taken				
11. Recruit leaves building - waits				As waiting line is
until all are processed				depleted more recruits
				from outside are called
				in until all are processed
				One platoon processed
				in 52 minutes --
				Allotted 1 hour

	Walson Army Hospital (WAH) -- Ft. Dix	Mahaden Green Hospital -- Andrews AFB	U.S. Naval Hospital -- Newport
A. Personnel	1. 177 employees: a. Table II-W-1 lists all Ft. Dix dental personnel broken down by location, position, number of personnel, pay grade, and hours worked per week. Locations include Post Dental Hq, DC's (Marshall, Mills, Sec. 3, Sec. 4, and WAH Dental Service and Clinic. [1])	1. Dental Clinic No. 1: [1] a. Table II-M-1 lists the personnel hours spent in this function and job description. The Hq Command Dental Surgeon, the officer-in-charge of DC No. 1 and a dental officer are included in the first line of Table II-M-1.	1. Newport Hospital is a. 3 employees (refer to Table II-N-1 for breakdown).
	2. Post Dental Command (Dental Hq and 4 clinics: [2, 6] a. C.O. of Post Dental Command is also Post Dental Surgeon; b. 6 dentists from entire staff devote full time to care of dependents (refer to Table II-W-2 for listing of required, authorized, and assigned personnel strengths for Dental Command and to Table II-W-3 for dental clinics' personnel allocations and job duties; c. 6 dental residents FY 1970 is expected for 1970 -- 4 first year, 2 second year of 2-year program.	2. Dental Clinic No. 2: [1] a. Table II-M-2 shows the staff hours spent in this function and job description.	2. Puerto Rican [illegible] a. 144 employees • 36 officers • 60 enlisted men.
	3. WAH Dental Service: [5] a. WAH Chief of Dentistry (in charge of WAH DC) • has department chief status and therefore spends time on many committees • performs surgery one day per week • spends one morning per week in clinic practicing general dentistry • lectures to all residents one day per week • supervises training in general dentistry; more than 50% of his and his secretary's time spent in training; b. all other WAH DC personnel participate in the Ft. Dix Dental Residency Program in addition to regular duties.	3. Hospital oral surgery: DC No. 1: [1] a. The staff for oral surgery at the hospital is listed on Table II-M-3.	3. Puerto Rican Dental Annex: a. 11 employees.
		4. Ft. Myers DC: [1] a. Table II-M-4 lists the personnel at Ft. Myers DC.	4. NCAS DC: a. 23 employees.

	Ft. Dix	Andrews	Beaufort
A. Personnel (Cont'd.)		5. Bolling AFB DC: [1] a. Table II-M-5 shows staff and job descriptions for this facility; b. this clinic also supplies one man to Base Engineers for details (cut grass, shovel snow); c. this clinic works in teams of one dentist and 2 technicians. 6. Other DC's: [1] a. The Surgeon General's Office and Pentagon DC's have 3 dental officers and 3 dental technicians manning chairs in Army dental clinics.	
B. Facilities	1. Location: [3] a. Dental HQ -- located in its own building approximately 600 yards from the hospital; b. Mills DC -- approx. 1 1/2 miles from the hospital in its own building on 18th St. in the 2nd BCT Brigade housing area; c. Marshall DC -- approx. 1/2 mile from the hospital in its own building on 8th St; d. DC No. 3 -- approx. 3/4 mile from the hospital in its own building on Penn Ave. in the 3rd BCT Brigade housing area; e. DC No. 4 -- approx. 1/2 mile from the hospital, in the Medical Processing Building complex, Hospital Annex area; f. WAH Dental Service and Clinic -- located in building addition to first floor of WAH, in clinic area.	1. Location: a. DC No. 1 -- approx. one mile from hospital on Andrews AFB; b. DC No. 2 -- approx. 4 miles from hospital on Andrews AFB; c. DC No. 3 (oral surgery) -- in Malcolm Grow Hospital first floor; d. Area Dental Lab -- approx. 1 miles from hospital on Andrews base; e. Bolling AFB -- approx. 25 miles from base; f. Ft. Myers -- approx. 20 miles from base; g. Pentagon -- approx. 20 miles from base; h. Forrestal Building (S.G.O. DC) -- approx. 20 miles from base.	1. Location: a. Beaufort Hospital DC -- hospital second floor, main corridor, at intersection of ward wings, opposite clinical laboratory; b. Parris Island DC -- a separate building on Parris Island, approx. 7 miles from the hospital; c. Parris Island Dental Annex -- near Women's Dispensary on Parris Island, approx. 3/4 mile from main P.I. DC; d. MCAS DC -- in the same building as the Air Station Medical Dispensary, approx. 7 miles from the hospital.
	2. Total Floor space -- approx. 14,337 sq. ft. [1,3,6,7,8] (refer to Table II-W-4 for breakdown).	2. Total Floor space: [1] a. Total floor space -- approx 19,871 sq. ft.;	2. Floor space: a. Beaufort Hospital DC -- approx. 1,214 sq. ft. [1], comprised of 2 operatories, an office, waiting and storage space;

	Ft. Dix	Andrews	Beaufort
B. Facilities (cont'd)		b. Table II-M-6 lists the rooms of DC No. 1 and the Area Dental Lab by sq. ft. The total sq. ft. for the function is included with the percentage of the total function for each clinic.	b. Parris Island DC -- 2-floor building of 40 operatories including areas for periodontics, prosthetics fitting (with lab), charting, surgery, and endodontics, with associated waiting, storage, and X-ray space (total square footage not known); c. Parris Island Dental Annex -- one-half of a one-story building containing 4 operatories, 2 orthodenture rooms, an X-ray room, and associated waiting and storage rooms (total square footage not known); d. Marine Corps Air Station DC -- a one-story building with 12 dental chairs, a prosthetics office and lab, an X-ray room, administrative offices and associated waiting and storage areas (total square footage not known).
C. Equipment	1. Refer to Appendix I, Report 011, for a complete list of all dentistry equipment with quantities and dollar values, worth singly or in total over $200. All post dental equipment is currently regulated by WAH Supply and Service Division, Property Management Branch and budgeted through WAH Management Service Division.[9]	1. Refer to Appendix 1, Report 011 for detailed list of equipment.	1. The list of equipment for Beaufort Hospital DC is shown in Table II-B-2; an itemized list of equipment at the dispensary dental clinics is not available other than for total cost.
D. Work Sampling Studies	1. Observation Period a. Mills DC: • one full day (October 22, 1969) devoted to interviewing personnel and observing layout, personnel tasks and workload and information flow • one-day period (October 22, 1969) 0945 to 1650 hrs. devoted to observing 29 employees and patients in 9 job categories and facilities related to each task performed; b. DC No. 3: • 1/2 day (November 3, 1969) devoted to observing layout, personnel tasks, and workload flow • one-day period (November 4, 1969) devoted to observing 39 employees and patients in 8 job categories and facilities related to each task performed.	1. No work sampling done in Dental Clinics.	1. No work sampling was done in the Dental Clinics.

	Ft. Dix	Andrews	Beaufort
D. Work Sampling Studies (cont'd)	2. Steps in recording and analyzing data: a. task performed by each employee and area of facility in which each task is performed recorded at random times on special data sheets; b. tasks and areas then grouped and coded for meaningful analysis; c. data keypunched and processed by computer for analysis (refer to Appendix X for graphic display of data showing percent of time spent by employee type according to task or room, and to Appendix II for processing results which yielded these percentages).		

TABLE II-W-1

FORT DIX DENTAL PERSONNEL

FUNCTION	POSITION	PAY GRADE	QUANTITY	HOURS/WK.
Dental Headquarters	CO, Dental Command	O-6	1	40
(11)	Post Dental Surgeon			
	Administrative Officer	CWO-4	1	40
	Chief Dental NCO	E-8	1	44
	Training NCO	E-7	1	44
	Assistant NCOIC	E-6	1	44
	Clerks	E-3	2	44
	Accounts Maintenance Clerk	GS-5	1	40
	Mil. Personnel Clerk	GS-5	1	40
	Mil. Personnel Clerk	GS-4	1	40
	Secretary	GS-5	1	40
Mills Dental Clinic	Chief	O-6	1	40
(65)	Dental Officers	O-5	3	40
	Dental Officers	O-3	30	40
	Dental Lab NCO	E-7	1	44
	Dental Assistant	E-5	1	44
	Dental Assistant	E-4	3	44
	Dental Hygenist	E-5	3	44
	Dental Assistant	E-3	2	44
	Dental Lab Assistant	E-2	1	44
	Dental Lab Technician	GS-8	1	40
	Dental Technician	GS-6	2	40
	Dental Hygenist	GS-5	1	40
	Dental Assistant (X-ray)	GS-4	1	40
	Dental Assistant	GS-4	6	40

TABLE II-W-1 (cont'd.)

FORT DIX DENTAL PERSONNEL

FUNCTION	POSITION	PAY GRADE	QUANTITY	HOURS/WK.
	Dental Assistant	GS-3	6	40
	Clerk (typing)	GS-4	2	40
	Clerk (typing)	GS-3	1	40
Marshall Dental Clinic	Chief	O-6	1	40
(33)	Dental Officers	O-5	2	40
	Resident	O-5	1	40
	Dental Officers	O-4	3	40
	Residents	O-4	3	40
	Dental Officer	O-3	1	40
	Dental Lab NCO	E-7	1	44
	Dental Prosthetic Dev. Spec.	E-6	1	44
	Dental Hygenist	E-5	1	44
	Dental Assistant	E-3	3	44
	Dental Assistant	E-2	1	44
	Dental Lab. Tech.	GS-8	1	40
	Dental Technician	GS-6	3	40
	Dental Hygenist	GS-5	1	40
	Dental Assistant (X-ray)	GS-4	1	40
	Dental Assistant	GS-4	7	40
	Dental Assistant	GS-2	1	40
	Clerk (typing)	GS-4	1	40
Dental Clinic #3	Chief	O-6	1	40
(43)	Dental Officers	O-5	2	40
	Dental Officers	O-4	1	40
	Dental Officers	O-3	18	40
	Chief Dental NCO	E-7	2	44
	Dental Hygenist	E-6	1	44
	Dental Assistant	E-4	3	44
	Dental Assistant	E-3	3	44
	Dental Assistant (X-ray)	GS-4	1	40
	Dental Assistant	GS-4	7	40
	Dental Assistant	GS-3	1	40

TABLE II-W-1 (cont'd.)

FORT DIX DENTAL PERSONNEL

FUNCTION	POSITION	PAY GRADE	QUANTITY	HOURS/WK.
	Dental Assistant	GS-2	3	40
Dental Clinic #4	Chief	O-5	1	40
(21)	Dental Resident	O-4	1	40
	Dental Officers	O-3	2	44
	Chief Dental NCO	E-7	1	44
	Dental Hygenist	E-6	2	44
	Dental Assistant	E-5	1	44
	Dental Assistant	E-4	3	44
	Dental Assistant	E-3	2	44
	Dental Assistant (X-ray)	GS-4	2	40
	Dental Assistant	GS-4	4	40
	Clerk (typing)	GS-4	2	40
WAH Dental Clinic	Chief	O-5	1	40
(4)	Resident	O-5	1	40
	Dental Officers	O-3	1	40
	Secretary	GS-5	1	40

Walson Army Hospital
Dental Resource Utilization

TABLE II-W-2

ASSIGNED PERSONNEL STRENGTH
FOR DENTAL HEADQUARTERS

	REQUIRED	AUTHORIZED	ASSIGNED	Ⓦ
Dental Officers	85	59	60	76
Enlisted Men	65	56	45	41
Civilian Empls.	81	54	68	63

Source: Figures were related in interview with CO, Ft. Dix Dental; according to a recent (1969) manpower survey.

TABLE II-W-3

ALLOCATING OF PERSONNEL TO
DENTAL CLINICS

Allocations of personnel to tasks in a Dental Clinic is as follows (source - interview with Chief, Mills Dental Clinic):

- Officers:
  - 1 Oral Surgeon
  - 1 Prosthodontist
  - 1 Chief
  - 1 Assistant Chief
  - Remainder are General Dentists
- Lab technicians make prosthetics
- Dental technicians assist dentists at chairs
  (Enlisted men dental technicians are currently assigned to clinics on a basis of 1 technician per 3 dentists according to Chief of Mills Dental Clinic.)
- X-ray technicians take and develop radiographs
- 1 enlisted man totally involved with supply
- Civilians:
  - 1 Cleans teeth
  - 2 Prosthetic assistants
  - 2 Surgical assistants
  - 1 Office administrator
  - 1 Chief clerk
  - 1 X-ray tech
  - 11 Chair assistants

TABLE II-W-4

FLOOR SPACE BREAKDOWN
BY FACILITY

DESCRIPTION	SQ. FEET	%	DESCRIPTION	SQ. FEET	%
WALSON ARMY HOSPITAL DENTAL CLINIC			**MILLS DENTAL CLINIC**		
waiting area	96	8.01	procedural room	70	2.21
reception area	144	12.02	waiting room	600	18.98
office	64	5.34	reception & admin. area	300	9.49
operating rooms	112	9.34	X-ray and dark room	110	3.48
dental hygiene room	64	5.34	clean up room	70	2.21
lockers	168	14.02	surg. recovery and waiting room	80	2.53
male latrine	32	2.67	lounge	240	7.59
female latrine	40	3.33	equipment rooms	80	2.53
surg. rooms	100	8.34	supply closets	50	1.58
recovery room	72	6.01	prosthetics lab.	500	15.82
sterilizing room	48	4.00	female latrine	120	3.79
dark room	20	1.66	male latrine	120	3.79
X-ray room	70	5.84	supply room	200	6.32
prosthetics lab	80	6.67	doctors latrine	120	3.79
supply room	72	6.01	clinic chiefs office	100	3.16
cleaning closet	16	1.33	utility and air cond. rooms	400	12.65
MARSHALL DENTAL CLINIC			**DENTAL CLINIC #3**		
waiting area	150	7.42	procedural rooms	70	2.31
reception and admin.	160	7.92	waiting areas	300	9.91
female latrine & locker room	120	5.94	recept. desk and admin. area	200	6.60
male latrine & locker room	120	5.94	X-ray room and dark room	150	4.95
doctors latrine & locker room	120	5.94	sterilization & storage room	60	1.98
supply room	200	9.90	male latrine	50	1.65
X-ray and dark room	110	5.44	clinic chiefs office	100	3.30
procedural room	70	3.46	office	140	4.62
			lounge	96	3.17

TABLE II-W-4 (cont'd.)

FLOOR SPACE BREAKDOWN
BY FACILITY

DESCRIPTION	SQ. FEET	%
MARSHALL DENTAL CLINIC (cont'd.)		
clean-up room	70	3.46
clinic chiefs office	100	4.95
doctors office	90	4.45
RR - surgical	80	3.96
conference room	160	7.92
utility rooms	70	3.46
utility and air cond. rooms	400	19.80
DENTAL HEADQUARTERS BUILDING		
Chief's Office	240	17.71
Foyer	15	1.11
Large staff office area	1000	73.79
Storage	100	7.38

DESCRIPTION	SQ. FEET	%
DENTAL CLINIC #3 (cont'd.)		
utility room	70	2.31
doctors locker room & latrine	150	4.95
female latrine	150	4.95
supplies	120	3.96
utility room heating	120	3.96
bullpen dental area 14 chairs	1250	41.30
DENTAL CLINIC #4		
procedural rooms	48	1.34
X-ray rooms	56	1.56
dark room	48	1.34
supply room	80	2.23
male latrine	48	1.34
NCO admin. room	160	4.47
office	48	1.34
brush-in bull pen	1800	50.30
solarium waiting room	300	8.38
procedural rooms	70	1.95
X-ray	56	1.56
dark room	48	1.34
male latrine	48	1.34
female latrine & lounge	120	3.35
doctors latrine	120	3.35
lounge	120	3.35
clinic chiefs office	88	2.45
office	80	2.23
reception area & admin.	120	3.35
waiting area	120	3.35

Walson Army Hospital
Dental Resource Utilization

TABLE II-W-4 (cont'd.)

SUB TOTALS	SQ. FEET	%
Walson Army Hospital	1198	8.35
Mills	3160	22.04
Marshall	2020	14.09
Dental Clinic #3	3026	21.11
Dental Clinic #4	3578	24.96
Headquarters	1355	9.45
Total	14337	100.00

TABLE II-M-1

DENTAL CLINIC #1 PERSONNEL

PERSONNEL CODE	PAY GRADE	QUANTITY	HOURS	POSITION
B	O6	3	40	Dental Officer
C	O5	1	40	Dental Officer
C	O4	4	40	Dental Officer
C	O4	3	40	Dental Officer - Resident
C	O3	5	40	Dental Officer
C	O3	5	56	Dental Officer - Resident Intern
B	E8	1	40	Dental Supt.
D	E6	2	44	Dental Technicians
D	E5	2	44	Dental Technicians
D	E7	1	44	Dental Technicians
D	E6	2	44	Dental Technicians
D	E5	5	44	Dental Technicians
F	E3	1	44	Dental Specialist
F	E4	3	44	Dental Specialist
F	E3	13	44	Dental Specialist
F	E2	2	44	Dental Specialist
D	E7	1	44	Preventive Dental Technicians
D	E6	2	44	Preventive Dental Technicians

TABLE II-M-2

DENTAL CLINIC #2 PERSONNEL

POSITION	PERSONNEL CODE	PAY GRADE	QUANTITY	HOURS
OIC, Clinic	B	O5	1	40
Dentist, Operative	C	O4	1	40
Dentist, Operative & Prosthodontics	C	O3	2	40
Dentist, Operative & Periodontics	C	O3	1	40
NCOIC, Clinic	B	E-6	1	40
Hygenist	D	E-5	1	40
Lab Technician	D	E-5	1	40
Admin Clerk	E	E-4	1	40
Dental Technician	D	E-4	1	40
Dental Assistant	F	E-2	2	40

TABLE II-M-3

DENTAL CLINIC #3
(HOSPITAL) PERSONNEL

POSITION	PERSONNEL CODE	PAY GRADE	QUANTITY	HOURS
Chief of Oral Surgery	A,C	O6	1	45
Oral Surgeons	C	O3	2	45
Intern	C	O3	1	45
General Dentist	C	O4	1	40
Flight Surgeon Officer	C	O4	1	40
NCOIC	B	E-5	1	45
Assistant NCOIC	D	E-5	1	45
Technicians	F	E-3	3	40
Dental Technician	D	GS-5	1	40
Receptionist	E	GS-4	1	40

TABLE II-M-4

FT. MYERS DENTAL CLINIC
PERSONNEL

POSITION	PERSONNEL CODE	PAY GRADE	QUANTITY	HOURS
OIC Clinic	B	O4	1	40
Dental Officers	C	O3	3	40
NCOIC Clinic	B	E-8	1	40
Lab Technician	D	E-5	1	40
Dental Specialist	D	E-4	1	40
Dental Specialist	F	E-3	4	40

TABLE II-M-5

BOLLING AFB DENTAL CLINIC PERSONNEL

POSITION	PERSONNEL CODE	PAY GRADE	QUANTITY	HOURS
OIC, Dental Clinic	A	O6	1	40
Oral Surgeon	C	O5	1	40
OCI, Prosthetics	B	O5	1	40
Dentist	C	O3	1	40
Periodontist	C	O4	1	40
Periodontist	C	O3	1	40
General Dentist	C	O3	5	40
Dental Superintendent	B	E-8	1	40
NCOIC, Clinic	D	E-6	1	40
Floor Supervisor	D	E-5	1	40
Hygenist	D	E-5	2	40
Supply Sgt.	D	E-5	1	40
Dental Technician	D	E-6	1	40
Dental Technician	D	E-5	2	40
Dental Technician	F	E-3	6	40
Dental Assistant	F	E-2	3	40
Assistant Technician	D	GS-4	1	40
Clerks	E	GS-4	2	40
Hygenist	D	GS-6	1	40
Hygenist	D	GS-4	1	40
Lab Technician	D	GS-8	1	40

Malcolm Grow Hospital
Dental Resource Utilization

TABLE II-M-6

BREAKDOWN BY SQ. FEET OF AREAS OF
DENTAL CLINICS & COMPONENTS OF DENTAL
CLINIC #1 AND DENTAL LAB

DENTAL CLINIC #1	SQ. FEET	% OF TOTAL
Admin. office area	1700	
Restrooms	450	
Prosthetic labs	600	
Library	300	
Equipment rooms	600	
Waiting area	1000	
Supply & gen. storage	500	
General operative suites	600	
Hygiene suite	600	
Periodontic suites	800	
Endodontic suites	400	
Oral surgery	300	
Prosthetic suites	1000	
Sterilization room	50	
X-ray development room	275	
Orthodontist suite	200	
Storage closets	80	
Total	9455	39.1%
AREA DENTAL LAB		
Acrylic procedure area	320	
Duplicating room	344	
Storage room	250	
Chief dental lab room	80	
Men's toilets	64	
Block up and wax up work area	180	
Chrome finish area	203	
Total	1441	5.6%
Dental clinic #2	2560	10.6%
Bolling dental clinic	4508	18.6%
SGO dental clinic	200	0.8%
Ft. Myer dental clinic	3510	14.5%
Hosp. oral surgery	2301	9.5%
Pentagon	200	0.8%
Total for Function	24,184	

Beaufort Naval Hospital

Dental Resource Utilization

TABLE II-B-1

PERSONNEL BREAKDOWN -- BEAUFORT

HOSPITAL DENTAL CLINIC

DESCRIPTION	PERSONNEL CODE	PAY GRADE	QUANTITY	HOURS/WEEK
Chief dental services	C	O-5	1	44 hrs.
Dental technician 1st class	D	E-6	1	40 hrs.
Dentalman	D	E-3	1	40 hrs.

TABLE II-B-2

EQUIPMENT LIST -- BEAUFORT HOSPITAL

DENTAL CLINIC

DESCRIPTION	CODE	FIXED/PORTABLE	QUANTITY	PURCHASE PRICE
Dental surgical drill	J	P	1	$ 595
Dental operating unit	P	F	2	800
Dental cabinets	O	P	4	242
Dental chair	P	P	2	1090
Dental air-drive	P	F	1	255
Calculator	H	P	1	474
Microscope	K	P	1	400
Portable X-ray shield	P	P	1	303
Weber dental X-ray	K	F	1	975
Vacudent oral evacuator	P	P	1	207
X-ray developer tank	P	F	1	318
Utensil sterilizer	P	P	1	410
Electrosurgical equipment	J	P	1	280
Resuscitator, electric	J	P	1	500

III. DENTISTRY -- FUNCTIONAL COSTS

	Walson Army Hospital (WAH) -- Fort Dix	Malcolm Grow Hospital -- Andrews AFB	U.S. Naval Hospital -- Beaufort
A. Total			
1. Cost:	$1,786,451 annually.	$1,723,130 annually.	$1,187,388 annually.
2. Source:	a. includes both Post Dental Command (4 dental clinics and Dental HQ) and WAH Dental Service. Refer to Tables III-W-1 thru III-W-7 for elemental figures from which total cost derived, and to Appendix VII for functional cost breakdown summary sheet.	a. refer to Appendix VII for functional cost breakdown summary sheet.	a. refer to Appendix VII for functional cost breakdown summary sheet.
B. Personnel			
1. Cost:	$1,616,101 annually: military -- $1,255,485; civilian -- $355,973; misc. (travel exp., etc.) -- $4,648; function cost -- $1,536,727; non-function cost -- $33,334.	$1,558,970 annually; function cost -- $1,475,636; non-functional cost -- $83,331.	$1,070,763 annually: function cost -- $1,037,179; non-functional cost -- $33,584.
2. Source:	a. see Tables III-W-2 thru III-W-7 for the staffing figures used in calculating personnel costs for dentistry by facilities' locations.	a. function cost (refer to Appendix IX for breakdown) -- the number of people assigned to dentistry was determined from interviews with the NCOIC of Dentistry; pay rates for military personnel were taken from AFM 177-101 C91; civilian rates were extracted from USAF salary rates July 1968 (Appendix IX); benefits for civilians were determined from information given in interview with Ⓩ military consultant.	a. Beaufort Hospital DC -- Beaufort name list for October 1969 (computer run for payroll accounting), checked against interviews and observations.
	b. staffing figures determined by observation in Dental HQ, Mills DC, and DC No. 3 to verify correctness of rosters furnished by the C.O. of Dental Command; Ft. Dix rosters were used for staffing figures for Marshall DC and DC No. 4; WAH DC figures obtained in an interview with Chief, WAH Dental Service.	b. non-function cost -- time spent by employees outside the function • housekeeping -- from hours spent by function personnel in housekeeping chores, estimated by interviewee. • formal training -- TDY time for training purposes, from Professional Activities Report FY69. • OJT -- from hours per trainee and instructor, estimated by interviewee; changeover rate by function from business office. (Refer to Appendix VI for OJT costs.)	b. Parris Island DC -- work roster board posted at the dental clinic.
	c. since the verified rosters were used for staffing figures, Ⓩ-determined personnel count coincided with WAH-determined count.		c. MCAS DC -- work roster board posted at the dental clinic.
	d. Ⓩ obtained salary figures from "Standard Rates for Military Personnel Services," AFM 177-10 (C91) for Military Personnel and schedule established by DoD (5 June 1968) directive 5120.39 for civilian personnel, and added 7% fringe benefits for civilian employees.		

III. Dentistry -- Functional Costs (Cont'd)

	Ft. Dix	Andrews	Beaufort
C. Supplies			
1. Cost:	$133,681 annually: medical -- $83,765; non-medical -- $47,263; Central Material Supply (CMS) (sterile) -- $2,656.	$132,826 annually.	$96,606 annually.
2. Source:	a. medical and non-medical expenses from cumulative cost run for FY 69, received by Management Service Division from Post Data Processing showing resource cost by item of expense for each function. b. CMS expense prorated as percentage of total cost of CMS supplies and equipment, based on a 2-day study done in CMS. The study determined percentage of volume of one year's requests coming from each hospital function. All CMS expense incurred by WAH Dental Service. See Appendix XI for CMS cost allocation calculations.	a. From Report of Medical and Non-medical Supply Expense FY69. b. Central Sterile Supply (CSS) -- prorated from annual CSS cost for entire medical center given in Report of Medical and Non-medical Supply Expense FY69; 2 months' dentistry orders and direct issues data used as the basis for calculations.	a. Beaufort Hospital DC -- FY69 Account 310 listing from Fiscal and Supply; T1 and T7 codes under SFC Code 4000, Dental. b. Parris Island DC -- from FY69 budget. c. MCAS DC -- from estimate by Administrative Chief, based on second quarter FY70 budget.
D. Maintenance			
1. Cost:	$18,909 annually: Ft. Dix Post Engineering -- $1,405; medical, hospital maintenance -- $14,504.	$17,111 annually: medical -- $14,504; non-medical -- $2,607.	$19,864 annually: medical -- $9,033; non-medical -- $10,831.
2. Source:	a. Post Engineering -- total annual cost of labor and materiel obtained in an interview with Post Engineering; estimate then obtained on percent of their total work performed for WAH; 3-month sample of Post Engineering requests taken to distribute percent of cost allocated among WAH functions; see Appendix IV for all calculations.	a. medical -- labor and parts costs from medical maintenance chits for entire FY69.	a. Beaufort • medical -- from 12-month sample of medical repairman's chits for parts costs and prorated salary. • non-medical -- calculated by multiplying percentage share of total hospital sq. footage by total maintenance costs for the hospital only (e.g. excludes grounds, housing, medical maintenance, etc.) listed in Account 310, SFC Code 7150.
	b. WAH medical maintenance costs allocated by recording source and cost charged for parts and labor from all request slips, 11-68 through 11-69.	b. non-medical -- prorated from annual maintenance costs for entire medical center given in Medical Expense Report CY69; one month's dentistry chits as percentage of chits for entire medical center used as the basis for calculations.	b. Parris Island • medical -- salary of one full-time repairman, who goes to MCAS on occasion for minor repairs • non-medical -- estimate by officer in charge of maintenance at Parris Island, based on FY69 expenditures.
			c. MCAS • medical -- as described above, Section D-2-b. • non-medical -- prorated, taking the no. of chairs at Parris Island vs. no. of chairs at MCAS and using P.I. costs.

	Ft. Dix	Andrews	Beaufort
E. Housekeeping			
1. Cost:	$17,757 annually.	$14,223 annually: janitorial services -- $14,223; staff housekeeping -- $0.	$8,516 annually -- all staff housekeeping.
2. Source:	a. civilian housekeeping agency's contract with WAH for FY 69. b. total annual cost to WAH ($431,000 for FY 69) allocated to dentistry on a basis of percentage of total sq. ft. cleaned (4.12% = $17,757). c. see Appendix V for all calculations.	a. janitorial -- cost of janitor services prorated for department from percentage of total hospital floor space.	a. Beaufort Hospital DC -- estimated during interview. b. Parris Island DC -- done by recruit platoons; no charges assigned. c. MCAS DC -- estimated during interview.
F. Training			
1. Cost:	$83,334 annually: OJT -- $40,647; formal -- $42,697.	$83,334 annually: formal -- $42,697; OJT -- $40,637.	$25,223 annually: formal -- $2,255; OJT -- $22,813; training dept. -- $155.
2. Source:	a. a portion of the total function personnel cost was allocated to training on the basis of estimates made by observers of the amount of time needed for a student to reach 90% efficiency in each job class. These estimates were factored into a learning curve equation to arrive at OJT costs (see Appendix VI -- OJT Costs). b. formal training is annual cost of dental residency program at Ft. Dix, derived from interview with C.O., Post Dental Command.	a. formal -- see Personnel, formal training. b. OJT -- see Personnel.	a. formal • Beaufort -- from posted schedules • Parris Island -- from interview estimate • MCAS -- from interview estimate. b. OJT -- interview estimates (all 3 dental facilities). c. training department • Beaufort -- prorating the salary of the corpsman in charge of training among the functions according to the number of corpsmen receiving training in each function. • Parris Island -- interview estimate. • MCAS -- interview estimate.
G. Capital Equipment			
1. Cost:	$429,433: standard -- $315,581; non-standard -- $112,365; miscellaneous -- $1,487.	$393,874.	$270,191.
2. Source:	a. survey of WAH property book taken December 8, 9, and 10, 1969, in which two types of equipment were tallied • equipment with a unit price greater than $200 • equipment with a unit price less than $200 but for which the number of units in the function brought the total dollar figure above $200.	a. refer to computer run PCN 43165A, September 30, 1969 (inventory of total hospital equipment).	a. Beaufort -- cost of equipment over $200, from • Beaufort Property Control Listing (August 14, 1969) (computer run), verified by observation.

III. Dentistry -- Functional Costs (Cont'd)

	Ft. Dix	Andrews	Beaufort
G. Capital Equipment (cont'd)			
2. Source: (cont'd)	b. there were 2 types of WAH equipment price records • standard equipment, for which the price on file represents current market value • non-standard equipment, for which the price on file is original purchase price.		b. Parris Island -- reported from acquisition list by administrative officer.
	c. miscellaneous items ordered from supply considered as expendable equipment and not carried on the property book appeared as a separate expense item in the Management Service cumulative cost run (see Supplies).		c. MCAS -- reported from acquisition list by assistant administrative officer.

WALSON ARMY HOSPITAL
DENTAL FUNCTIONAL COSTS

TABLE III-W-1

FUNCTIONAL COSTS FOR POST DENTAL (including WAH Clinic)

ITEM			Ⓦ DETERMINED COSTS
Direct Charges			
Mil. labor			$1,255,485
Civil. labor			355,973
Supplies - Medical			83,765
Supplies - Non-medical			47,263
Maintenance			18,909
Post	4,405		
Medical	1,203	P	
	13,301	L	
Misc. Charges			
Travel exp			4,643
Misc. equipment			1,487
Prorated Charges: Housekeeping			17,757
CMS			2,656
Equipment			
Cost of Standard	315,581		
Cost of Non-std.	112,365		427,946
Total Charges			1,786,451

TABLE III-W-2
DENTAL HEADQUARTERS

PERSONNEL					
ASSIGNED		ACTUAL		MISCELLANEOUS	
NO.	& GRADE	NO.	& GRADE	ITEM	COST
1	O6	1	O-6	Personnel	
		1	CW4	Travel (people)	1,797
1	E8	1	E8	Travel (things)	32
		1	E7	Contractual	2,814
2	E6	1	E6	Post Maint.	2,607
1	E3	2	E3		
2	GS5	4	GS5		
		1	GS4		
1	O2				
Mil.: $60,753.00		Mil.: $69,733.00			
Civ.: $12,996.00		Civ.: $31,650.00			

WALSON ARMY HOSPITAL
DENTAL RESOURCE UTILIZATION

TABLE III-W-3

MILLS DENTAL CLINIC

PERSONNEL					
ASSIGNED		ACTUAL		MISCELLANEOUS	
NO.	& GRADE	NO.	& GRADE	ITEM	COST
1	O5	3	O5		
3	O4				
22	O3	30	O3		
2	E7	1	E7		
3	E6				
5	E4	3	E4		
9	GS4	9	GS4		
14	GS3	7	GS3		
9	E5	4	E5		
4	GS6	2	GS6		
1	GS5	1	GS5		
1	GS8	1	GS8		
		1	O6		
		2	E3		
		1	E2		
Mil.: $437,368.00		Mil.: $488,549.00			
Civ.: $160,716.00		Civ.: $113,303.00			

TABLE III-W-4

MARSHALL DENTAL CLINIC

1	O6	1	O6		
1	E8				
3	E4				
12	GS4	9	GS4		
2	GS3				
11	O3	1	O3		
1	E6	1	E6		
3	E5	1	E5		
1	GS5	1	GS5		
2	O5	3	O5		
4	O4	6	O4		
1	GS8	1	GS8		
1	GS6	3	GS6		
		1	E7		
		3	E3		
		1	E2		
		1	GS2		
Mil.: $294,114.00		Mil.: $208,238.00			
Civ.: $ 99,210.00		Civ.: $ 89,858.00			

TABLE III-W-5

DENTAL CLINIC #3

PERSONNEL					
ASSIGNED		ACTUAL		MISCELLANEOUS	
NO.	& GRADE	NO.	& GRADE	ITEM	COST
2	O5	2	O5		
1	E7				
2	E6	3	E6		
8	E4	3	E4		
9	GS4	9	GS4		
19	O3	18	O3		
11	E5				
1	GS5				
8	GS3	1	GS3		
2	O4	1	O4		
		1	O6		
		3	E3		
		3	GS2		
Mil.: $413,516.00		Mil.: $333,693.00			
Civ.: $ 96,676.00		Civ.: $ 68,945.00			

TABLE III-W-6

DENTAL CLINIC #4

1	O5	1	O5		
1	O4	1	O4		
11	O3	2	O3		
1	E7				
1	E6	3	E6		
3	E5	1	E5		
6	E4	3	E4		
7	GS4	8	GS4		
2	GS3				
1	GS5				
		2	E3		
Mil.: $224,241.00		Mil.: $105,094.00			
Civ.: $ 55,918.00		Civ.: $ 45,264.00			

WALSON ARMY HOSPITAL
DENTAL RESOURCE UTILIZATION

TABLE III-W-7

WAH DENTAL CLINIC

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NO.	& GRADE	NO.	& GRADE	ITEM	COST
2	O5			Post Maint.	1,798
1	O3			CMS	2,656
		1	O5	Standard Eqt.	6,558
		1	O4	Non-standard Eqt.	27,514
1	E6	2	E6		
		1	E2		
2	GS5	1	GS5		
1	GS4				
1	GS3				
Mil.: $ 54,913.00		Mil.: $ 50,178.00			
Civ.: $ 18,654.00		Civ.: $ 6,498 ≈ 6,953			

I. DENTISTRY -- OPERATIONS SOURCE SHEET

Walson Army Hospital

1. Statistics kept in Ft. Dix Dental HQ.
2. Interview with Post Dental Commander.
3. Interview with Chief, Mills Dental Clinic.
4. Interview with Chief, Hospital Dental Service.
5. Observation of Mills Dental Clinic.
6. Observation of Dental Clinic No. 3.
7. Observation of Dental Clinic No. 4.

Malcolm Grow Hospital

1. Interview, NCOIC of Dentistry.

Beaufort Naval Hospital

1. Beaufort Morbidity/Mortality Statistics FY69.
2. DD 477, FY69.
3. Data Pack.

II. DENTISTRY -- RESOURCE UTILIZATION SOURCE SHEET

Walson Army Hospital

1. Scaled photograph of WAH floor plans provided by Chief of Registrar Div.
2. Personnel Rosters furnished by Post Dental Commander.
3. Interview with Post Dental Commander.
4. Interview with Chief, Mills Dental Clinic.
5. Interview with Chief, Hospital Dental Service.
6. Observation of Mills Dental Clinic.
7. Observation of Dental Clinic No. 3.
8. Observation of Dental Clinic No. 4.
9. Walson Army Hospital Property Book.

Malcolm Grow Hospital

1. Interview, NCOIC of Dentistry.

Beaufort Naval Hospital

1. From hospital blueprints, scale: 1/4" = 1', 0".

DIETARY

WALSON ARMY HOSPITAL (WAH) -- FORT DIX

Mission

The mission of the Food Service Division* is "to prepare and serve palatable and nutritionally adequate diets, within the established monetary limitations, to patients and personnel . . . ." This necessitates an administrative branch to plan, budget, control and supply the operation; a diet therapy branch to establish dietary regimens and ensure patient service and standards; and a production and service branch to carry out the total operation.

The duties of Walson's Food Service Division include: administrative and budgetary control over all WAH food service functions; diet therapy services; food preparation (cooking, baking, meat processing, etc.); dining hall food service for WAH patients and personnel; preparation and delivery of ward inpatient trays; inventory control; cleaning food service wares, utensils, and facilities; and operation of an additional kitchen in the hospital annex from about November to March during the URI season.

Existing Operations

Problems in the WAH Food Service Department focus on two areas, personnel and equipment. This department is primarily staffed by civilian personnel to free the military personnel for duty in Vietnam. Job control with a civilian staff is considerably more difficult than with a military staff, particularly in terms of wages, hours, and turnover rate.

Equipment is outdated and in poor condition. Repairs are usually delayed because the post engineers have a work backlog. New equipment cannot be purchased because funds are not available to cover installation.

The general trend in most hospital food services, and at WAH particularly, is toward increased utilization of convenience systems. Pre-cut meat, for

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*As stated in AR 40-4, paragraph 2-26, pp. 0-9 and 0-10.

example, will eventually replace the hospital butcher; also under consideration is the use of contract service to supply frozen and semi-prepared foods. At present, however, there is no local supplier with sufficient capability to make the latter economically feasible.

MALCOLM GROW USAF MEDICAL CENTER -- ANDREWS AIR FORCE BASE

Mission

The Food Services Department* is responsible for: kitchen, dining hall, and ward food service for patients and duty personnel; preparation of standard and modified diets; determination of food requirements; procurement, storage, preparation, and serving of food; collection of monies received for meals served on a cash basis; preparation of meals for Casualty Staging Flight patients, both resident and transit; internship training programs for dietitians; and catering services for ranking military personnel.

Existing Operations

Two major problems confront the Food Services Department. Poor working conditions and wage scales contribute to high personnel turnover rates. Inadequate kitchen equipment hampers tray assembly and delivery, and patients in the wards often get their meals cold.

Convenience, automation, and flexibility are the key words in the new language of the dietary function. At Malcolm Grow Hospital they are likely to mean: mobilization of cafeteria equipment; expansion of refrigeration capabilities to meet the needs of increased utilization of convenience foods; increased utilization of disposables, specifically utensils; centralization of food service operations within prescribed geographic boundaries; and the adoption of a five-meals-per-day dietetic plan.

*As stated in AFM 168-4H, Section J, paragraphs 1-18.

U.S. NAVAL HOSPITAL -- BEAUFORT

Mission

To carry out its mission -- to administer and coordinate the hospital food service program* -- Beaufort's Food Service Division is divided into three major branches. The Administrative and Store Branch is responsible for storing, issuing, and maintaining data on subsistence items; administrating military personnel assignments to the Food Service Division; and planning hospital menus. The Therapeutic Diet Branch prepares and distributes special diets, consulting periodically with a graduate dietitian at U.S. Naval Hospital, Charleston, S.C. The Production and Service Branch is responsible for feeding hospital patients, personnel, and visitors. It prepares the meals, and serves them in the cafeteria, or delivers them to non-ambulatory patients in the wards.

All food is ordered and obtained through Parris Island. Items such as bread, dairy products, and ice cream are obtained from local suppliers by open purchase. Hospital food stocks, with the exception of wet stores, are released to the Food Service Division via a requisition procedure devised for accounting purposes. Requests are made daily and accompanied by a list of items needed for the next day's meals.

Existing Operations

Problems affecting food service efficiency exist in the areas of facilities and supplies.

The special diet facility, as originally designed, is too large for present requirements. As a result, it is now used for food cart storage, while special diets are prepared in what was once a scullery area. The unused space, however, requires daily cleaning adding to the personnel's overall workload.

The mandatory use of Parris Island as a supplier has its drawbacks. Since supplies must be ordered four months in advance, quantities often do not reflect the actual needs of the day. Furthermore, there is no guarantee that items on

*As stated in AR 40-4, paragraph 2-26, pp. D-9 and D-10.

the Parris Island list will be available when needed. Beaufort Food Service has had to make arrangements with two local wholesalers to make up deficits in Parris Island stocks. Local purchasing generally, however, is prohibited; supplies must be procured through Parris Island channels even when local prices are lower. To alleviate some of the problems, Beaufort is moving toward the adoption of disposables as well as convenience foods -- refrigerated, frozen, or freeze dried.

DATA PRESENTATION MATRICES

The following matrices and charts detail the data gathered by the Westinghouse teams on the three hospitals' dietary services. The first matrix delineates dietary operations, the second, resource utilization; and the third, functional costs.

I. DIETARY -- OPERATIONS

	Walson Army Hospital (WAH) -- Ft. Dix	Malcolm Grow Hospital -- Andrews AFB	U.S. Naval Hospital -- Beaufort
A. Services Rendered	1. Serving meals in the dining hall (3 per day, standard and special diets) to ambulatory inpatients, hospital military staff, civilian guests, and other civilian agencies' employees at the hospital (i.e. Red Cross, etc.).	1. Operating kitchens, dining hall, and ward food service for patients and hospital personnel.	1. Serving meals (3 per day, standard and special diets) in the dining hall to ambulatory inpatients, hospital staff, and civilian guests.
	2. Delivering meals to the wards (3 per day, standard and special diets) for non-ambulatory inpatients.	2. Preparing standard and modified diet menu meals.	2. Delivering meals to the wards (3 per day, standard and special diets) for nonambulatory inpatients.
	3. Cooking, baking, and other preparation of all food served.	3. Supervising the procurement, storage, preparation, and serving of food, all butchering, baking, etc. done by staff.	3. Cooking, baking, and other preparation of all food served.
	4. All housekeeping responsibilities for the Food Service Department.	4. Collecting monies received for meals served on a cash basis.	4. Planning and coordinating regular menus.
	5. Cleaning all serving and eating utensils.	5. Special services: a. Preparing special patient diets and crew meals for AIREVAC flights. b. catering service for medical support functions, picnics, and social functions.	5. Preparing and serving therapeutic diets with periodic and on-request consultation service with the graduate dietitian, USNH, Charleston, South Carolina.
	6. Maintaining and controlling food supplies for the hospital.		6. All housekeeping for the Food Service Department.
	7. Budgetary control over Food Service.		7. Cleaning all serving and eating utensils.
	8. Maintaining contact with inpatients to ensure adequate nourishment and proper allocation of special diets.		8. Maintaining and controlling food supplies for the hospital.
	9. Meeting on request with outpatients for counseling purposes.		9. Issuing consumable supplies, linen, and employees' clothing.
	10. Routine preventive maintenance of Food Service equipment.		10. Interviewing and instructing patients needing therapeutic diets to ensure adequate nourishment.
	11. Training of administrative residents in Food Service operation; training of Food Service personnel in military medical units attached to the Ft. Dix post (e.g. 4th Field Hospital 556th Ambulance Train, etc.)		11. Maintaining food service data for local use or reports to higher authority.
	12. Orienting other hospital personnel to operation of Food Service.		12. Consulting with professional staff concerning therapeutic diets.[1]
	13. Conducting diet instruction classes.[1,8]		

1. Dietary -- Operations (Cont'd.)

	Ft. Dix	Andrews	Beaufort
B. Hours of Operation	1. Dining hall:[1] (serve) a. breakfast -- 0630 to 0745 hrs.; b. lunch -- 1130 to 1245 hrs.; c. dinner -- 1630 to 1745 hrs.	1. Dining hall[1] (serve) a. breakfast -- 0630 to 0730 hrs.; b. lunch -- 1130 to 1300 hrs.; c. dinner -- 1645 to 1800 hrs.	1. Dining hall: (serve) a. breakfast -- 0630 to 0730 hrs.; b. lunch -- 1130 to 1230 hrs.; c. dinner -- 1700 to 1800 hrs. d. snacks -- 0900 hrs. -- delivered by cart to SDQ and picked up by ambulatory patients for other wards.
	2. Wards:[1,8] (deliver) a. breakfast -- 0630 to 0730 hrs.; b. lunch -- 1130 to 1220 hrs.; c. dinner -- 1620 to 1720 hrs.	2. Wards:[1] (deliver) (pickup) a. breakfast -- 0645 to 0715 hrs., 0800 to 0830 hrs.; b. lunch -- 1115 to 1145 hrs., 1230 to 1300 hrs.; c. dinner -- 1745 to 1800 hrs., 1900 to 1930 hrs.	2. Wards: (deliver) (pickup) a. breakfast -- 0600 hrs., 0750 hrs.; b. lunch -- 1100 hrs., 1300 hrs.; c. dinner -- 1645 hrs., 1800 hrs.
			3. One mess attendant prepares snacks for duty corpsmen from 2230 to 2300 hrs.
C. Workload Flow	1. Total meals FY 60 -- 407,580:[2] a. delivered to wards -- approx. 163,440 or 40.1%[3] (refer to Figure I-W-2 for number of ward meals served per day during one month period).[3] b. served in dining hall -- approx. 244,141 or (59.9%)[3] • staff -- 106,512 • guests -- 34,212 • inpatients -- approx. 112,664[3] (refer to Table I-W-1 for breakdown of meals served by type[2] and to Figure I-W-1 for number of dining hall meals served per day during one month period).[6]	1. Total meals -- approx. 650,000 per year (Table 1-M-1 shows the workload for both an average weekday and weekend): a. meals delivered to wards -- 600 regular trays daily; 250 special trays daily; b. meals served in dining hall -- 1700 to 1800 (1% are box lunches); approx. one-third of inpatients eat in dining hall.	1. Total meals served FY68 -- approx. 265,320:[2] a. inpatients -- 173,112; b. others -- (includes meals served in dining hall for staff and support, cash sales and payroll verifications -- 92,208; c. special trays -- approx. 30,600 annually.[3]
	2. Meal preparation procedures:[4] a. food service personnel do all the food preparation, i.e., cooking, baking. No food is prepackaged; b. meals require 2 1/2 hours for preparation and serving.	2. Meal preparation procedures:[1] a. dietitians plan daily menu 3 months in advance and put in requisitions for raw food; b. raw food from government-contracted vendors arrives at base commissary warehouse weekly; c. Veterinary Services inspects shipments; d. hospital kitchen draws food from warehouses and prepares meals according to daily menus.	2. Meal preparation procedures: a. menus prepared one month in advance by Foreman commissary; meat and pastry requirements given to butcher and baker one week in advance. See Figure I-B-1 for flow chart detailing supply procedure for special diets; b. all meals completely prepared in the kitchen; c. provisions come from Parris Island, requiring a pick-up trip by dietary personnel on the following schedule • Monday -- vegetable order -- every week • Thursday -- dry stores (ordered Tuesday) -- twice monthly. • Friday -- wet stores -- every week.
	3. Ward meal distribution procedures:[1,8] a. special menu selection -- Diet Therapy dietitians go to wards to take down diet information for menus.	3. Ward meal distribution procedures:[1] a. [illegible] tients on regular diet select choices from next day's menu;	3. Ward meal distribution procedures: a. menus brought down to kitchen after patients fill them out;

	Ft. Dix	Andrews	Beaufort
C. Workload Flow (Cont'd)	b. special menus brought to kitchen by dietitians and trays made up; c. trays sent to wards on carts, delivered by food service personnel; individual trays taken to patients by nurse or ambulatory patient; d. ward distribution workload hrs.[4,5] (includes preparation and cleanup times.) • breakfast -- 0530 to 0800 hrs. • lunch -- 1030 to 1250 hrs. • dinner -- 1530 to 1750 hrs.	b. night shift charge nurse on each ward sends completed menus and a Ward Meals Report, indicating number and types of meals required, to food service by 0500 hrs.; c. trays prepared according to reports and menu selections; d. dietary personnel take trays to wards on large heated carts via main elevators; e. ward nursing personnel distribute trays to patients and gather trays after the meal; f. dietary personnel retrieve carts and trays from wards about one hour after mealtime; g. peak ward meal workload hours[2] • 0545 to 0900 hrs. • 1015 to 1330 hrs. • 1645 to 2000 hrs.	b. trays prepared; c. carts (approx. 6) delivered to wards by dietary personnel; d. trays taken to patients by ward personnel or ambulatory patients; e. pickup of empty trays from wards after meal finished. Refer to Figure I-B-2 for flow chart detailing distribution procedure); f. peak ward meal workload hours[4] • breakfast -- 0500 to 0800 hrs. • lunch -- 1000 to 1330 hrs. • dinner -- 1545 to 1830 hrs.
	4. Dining hall distribution procedures:[1] a. menu determined 6 months in advance; b. serving cafeteria style; c. peak dining hall workload hrs.[4,5] (includes preparation and cleanup time) • breakfast -- 0530 to 0815 hrs. • lunch -- 1030 to 1315 hrs. • dinner -- 1530 to 1845 hrs.	4. Dining hall distribution procedures:[1] a. serving cafeteria style for ambulatory patients, visitor, and non-commissioned staff, with same choice of entrees as served in wards; b. staff officers mess separately • select soup and salad cafeteria style and choose entree, vegetable, beverage, and dessert from a menu slip • mess attendents pick up slips, assemble orders, and bus food items to the table. c. peak dining hall periods -- approx. 70% of dining hall load occurs in the first half-hour of each meal, i.e. • 0630 to 0700 hrs. • 1130 to 1215 hrs. • 1700 to 1730 hrs.	4. Dining hall distribution procedure: a. serving cafeteria style; b. all ambulatory patients eat in dining hall; c. peak dining hall workload hours[4] • breakfast -- 0530 to 0800 hrs. • lunch -- 1030 to 1300 hrs. • dinner -- 1600 to 1830 hrs.
	5. Special trays and meals: a. special restricted diets comprise approx. 23% of trays sent to wards;[2,6]	5. Special trays and meals:[1] a. special restricted diets comprise approx. 30% of trays sent to wards;	5. Special trays and meals distribution procedure: a. special diets ordered by phone from ward;

1. Dietary -- Operations (Cont'd)

	Ft. Dix	Andrews	Beaufort
C. Workload Flow (Cont'd)	b. modified meals served in the dining hall average approx. 13 per day;[6] or 4,745 annually.	b. approx. 600 to 700 special restricted diet meals packed for AIREVAC patients per month; c. approx. 30 to 180 special meals are packed daily for AIREVAC personnel; one percent of these are box lunches.	b. trays prepared according to procedures shown in Figures I-B-3 and I-B-4 flow charts: c. trays delivered to wards for nonambulatory patients, picked up in dining hall by ambulatory patients.
D. Information Flow	1. For monthly volume of dietary communications broken down by communication mode according to source or destination, refer to Table I-W-2. 2. For monthly volume of communication inputs and outputs according to type of communication refer to Table I-W-3.	1. For monthly volume of dietary communications broken down by communication mode according to source or destination, refer to Table I-M-2, 2. For monthly volume of communication inputs and outputs according to type of communication, refer to Table I-M-3.	1. For monthly volume of dietary communications broken down by communication mode according to source or destination, refer to Table I-B-1. 2. For monthly volume of communication inputs and outputs according to type of communication, refer to Table I-B-2.

Walson Army Hospital
Dietary Operations

TABLE I-W-1

PERCENTAGES OF MEALS SERVED BY TYPE

	BREAKFAST	LUNCH	DINNER	NIGHT SNACK	TOTAL
Army Staff	19.7%	21.0	17.4	66.1	20.2
Mil. Staff on Sep. Rations	.9%	2.4	.3	0	1.3
Auth. Off., Civ., Red Cross	4.0%	8.7	2.0	6.8	5.2
Total Staff	24.6%	32.1	19.7	72.8	26.6
Army Guests	2.4%	6.4	2.9	3.4	4.0
Total Guests	2.4%	6.4	2.9	3.4	4.0
Total Non-patients	27.0%	38.5	22.6	76.3	30.6
Patients Served in Dining Hall	30.4%	27.3	31.6	6.8	29.3
Total Dining Hall Meals	57.4%	65.8	54.2	83.1	59.9
Ward Meals	42.6%	34.2	45.8	16.9	40.1
Total DH and Ward Meals	100.0%	100.0	100.0	100.0	100.0

Walson Army Hospital
Dietary Operations

TABLE I-W-2 NUMBER OF COMMUNICATIONS BY MODE ACCORDING TO SOURCE/ DESTINATION

SOURCE/ DESTINATION	RECEIVED BY FOOD SERVICE						SENT BY FOOD SERVICE					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION		92		15		4	1			542		28
AIR EVACUATION						35						
DENTAL SERVICE												
DISPENSARIES												
FLIGHT MEDICINE												
FOOD SERVICE												
HOUSEKEEPING												
LABORATORIES										4		
MAINTENANCE												
MEDICAL RECORDS												
NURSING SERVICE						20				4		
OPERATING ROOM				20								
OUTPATIENT DEPT.												
OUTSIDE WORLD				60			1			60		220
PERSONNEL												
PHARMACY												
PHYSICAL THERAPY												
PREVENTIVE MED.												
PROFESSIONAL SERV										16		
REGISTRAR		21				20				404		
SUPPLY												4
VETERINARY MED.												
WARD MANAGEMENT				11120						14220		
RADIOLOGY												

Watson Army Hospital
Dietary Operations

TABLE I-W-3
NUMBER OF COMMUNICATIONS BY TYPE ACCORDING TO INPUT AND OUTPUT

DIETARY OPERATIONS	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Patient Secretary	Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
Office of Chief INPUT - 6580											
Volume of Communication		8600		35	40		1		31	75	8786
Number of Communication		17		2	2		1		10	7	39
OUTPUT - 6580											
Volume of Communication		448				10	21	5	101	831	1489
Number of Communication		16				1	6	2	11	11	66
Diet Therapy INPUT - 6581											
Volume of Communication		2520									2520
Number of Communication		47									47
OUTPUT - 6581											
Volume of Communication		112									112
Number of Communication		32									32
Production & Serv INPUT - 6584											
Volume of Communication							48			12	60
Number of Communication							1			1	2
OUTPUT - 6584											
Volume of Communication							280				280
Number of Communication							3				3
Food Procurement INPUT - 6585											
Volume of Communication											0
Number of Communication											0
OUTPUT - 6585											
Volume of Communication		11536							448		11984
Number of Communication		16							16		32

TABLE I-M-1

DAILY MEAL SERVICE

MEALS	NUMBER SERVED ON WEEK DAY	NUMBER SERVED ON WEEK END
Special Diets	250	250
Tray	615	615
Mess Hall	980	480
AIRVAC Trays	35	35
AIRVAC Box Lunch	5	5
TOTAL	1885	1385

Total Month 52,000 - 54,000

Malcolm Grow Hospital
Dietary Operations

TABLE I-M-2
NUMBER OF COMMUNICATIONS BY MODE ACCORDING TO SOURCE/DESTINATION

SOURCE/ DESTINATION	RECEIVED BY FOOD SERVICE						SENT BY FOOD SERVICE					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION		3		61		60				84		90
AIR EVACUATION												
DENTAL SERVICE												
DISPENSARIES												
FLIGHT MEDICINE												
FOOD SERVICE												
HOUSEKEEPING												
LABORATORIES												
MAINTENANCE												
MEDICAL RECORDS										5		60
NURSING SERVICE		20				120						28
OPERATING ROOM												
OUTPATIENT DEPT.		120		940		1000		660		1260		314
OUTSIDE WORLD		5		3092		73		28		29		122
PERSONNEL												
PHARMACY		1										
PHYSICAL THERAPY												
PREVENTIVE MED.												
PROFESSIONAL SERV												
REGISTRAR												
SUPPLY								20		405		
VETERINARY MED.		4										
WARD MANAGEMENT												
RADIOLOGY												

TABLE I-M-3
NUMBER OF COMMUNICATIONS BY TYPE ACCORDING TO INPUT AND OUTPUT

DIETARY OPERATIONS	Patient Care Urgent	Patient Care Important	Patient Care Nonessential	Patient Secondary	Administrative	Equipment	Supplies	Facilities	Personnel	other	Total
INPUT		28	9836	168	423		256		5	49	10565
OUTPUT			52	17700	75	91	537		52	300	18907

Beaufort Naval Hospital
Dietary Operations

TABLE 1-B-1 NUMBER OF COMMUNICATIONS BY MODE ACCORDING TO SOURCE/DESTINATION

SOURCE/DESTINATION	RECEIVED BY FOOD SERVICE						SENT BY FOOD SERVICE					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-OF-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-OF-MOUTH	TELEPHONE
ADMINISTRATION				2						170		
ALLIED ACTIVITIES												
DENTAL SERVICE												
DISPENSARIES												
FLIGHT MEDICINE												
FOOD SERVICE												
HOUSEKEEPING												
LABORATORIES												
MAINTENANCE												
MEDICAL RECORDS				2						1		
NURSING SERVICE				2784						2180		
OPERATING ROOM												
OUTPATIENT DEPT.												
OUTSIDE WORLD												
PHARMACY												
PHYSICAL THERAPY												
PREVENTIVE MED.												
PROFESSIONAL SERV												
REGISTRAR										3		
SUPPLY												
VETERINARY MED.												
WARD MANAGEMENT												

TABLE 1-B-2
NUMBER OF COMMUNICATIONS BY TYPE ACCORDING TO INPUT AND OUTPUT

DIETARY	Patient Care Ordering	Patient Care Inquiries	Patient Care Notifications	Patient Secretary	Patient Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
INPUT											
Dietary (0300)		196	2130	421	2		12		1		2760
Dietary-Supply (0301)							20				20
TOTAL		196	2130	421	2		40		1		2780
OUTPUT											
Dietary (0300)				2104	40		29		1	43	2297
Dietary-Supply (0301)						1	76		1	20	98
TOTAL				2104	40	1	105		2	63	2395

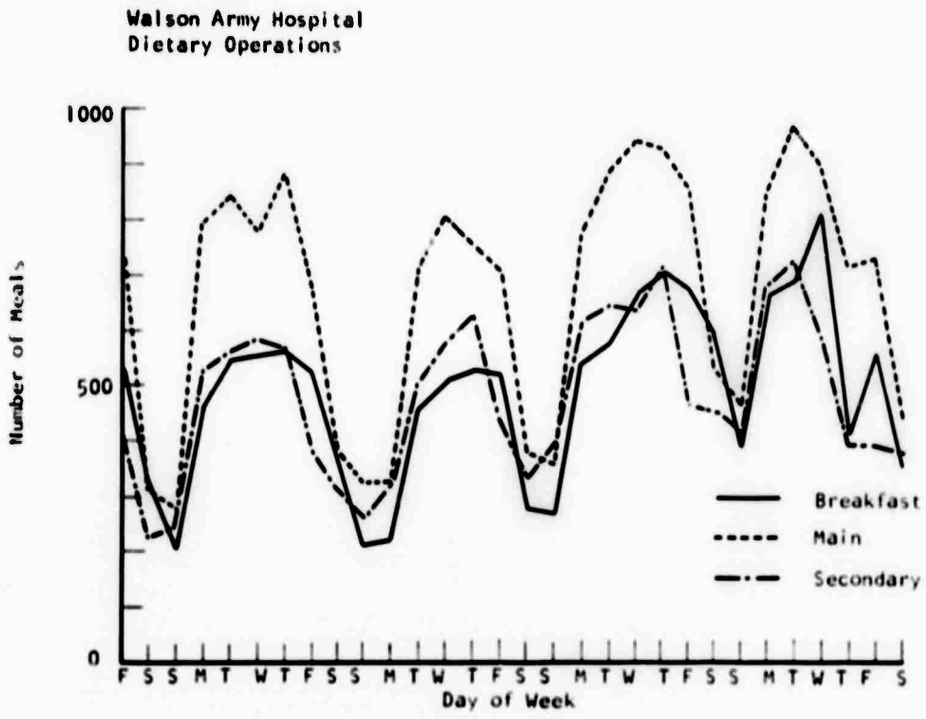


Fig. I-W-1—Dining hall meal service

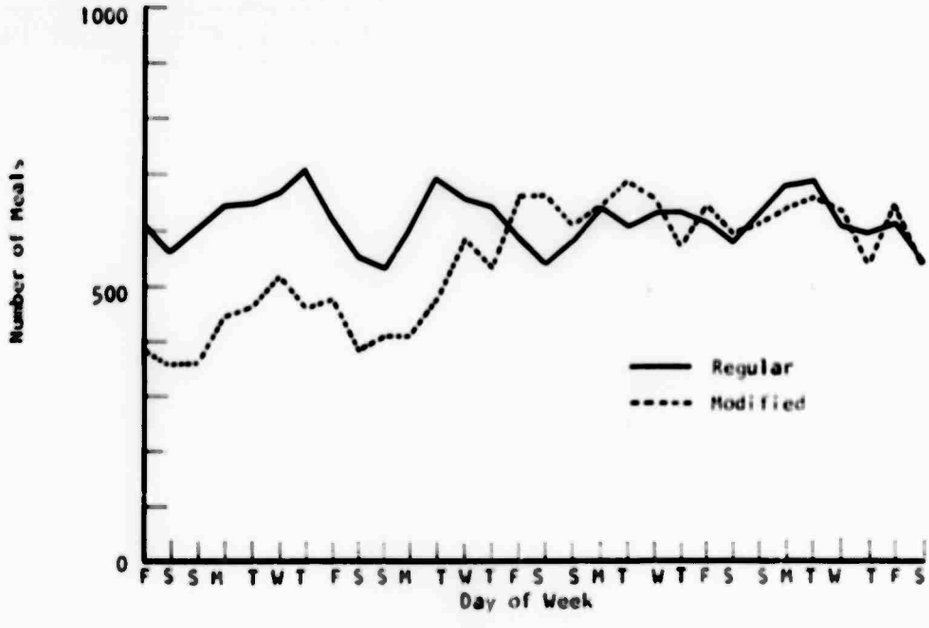


Fig. I-W-2—Ward meal service

Beaufort Naval Hospital
Dietary Operations

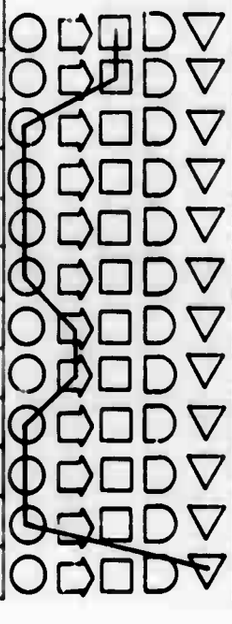
FIGURE I-B-1
SUPPLY PROCEDURE FOR SPECIAL DIETS

Dwg. 859A593
Pg_ of_

Subject Charted _____

Chart Begins _____ Chart Ends _____

Present Method _____ Proposed Method _____ Date _____

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist	TRANSP Time	TIME Delay	TIME Storage	NOTES
1. Review menus of regular patients.						Done every Sunday for entire week.
2. Circle those items which can also be used by special diets.						
3. Modify other items to suit special diet.						
4. Give butcher list of meats needed.						
5. Requisition from supply those items needed which are not part of regularly needed.						
6. Store beside special diet cook.						

Beaufort Naval Hospital
Dietary Operations

FIGURE I-B-2

Dwg. 859A593

Pg _ of _

WARD DISTRIBUTION PROCEDURES

Subject Charted _____

Chart Begins Menu delivered to ward Chart Ends Cart cleaned

Present Method _____ Proposed Method _____ Date _____

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist	TRANSP Time	TIME Delay	TIME Storage	NOTES
1. Menu for the following day's meals is delivered with morning cart.						
2. Filled out by pt.						
3. Stays on ward until someone available to bring it down						Some menus don't return until 2:00 P. M.
4. Brought to bin.						
5. Filed in bin according to ward.						
6. Cart man cuts off (breakfast) portion of menu.						Starts breakfast routine at 6:30 P.M. previous day; lunch at 8:30 AM; supper at 1:30 P.M.
7. Tallies cold portions needed.						
8. Prepares number of trays needed, putting on napkins & silverware.						
9. Puts menus on cart.						
10. Takes another cart to get cold food.						
11. Puts cold food on each tray, according to menu.						
12. Takes menus to hot line						Each cart can hold 20 trays, sometimes more than one cart must go to A-Wing; one cart for B Wing; usually one for SOQ, SIQ & Peds.
13. Selection is called out to servers and tray filled with proper food.						
14. Cartman receives tray at end of line and puts in cart.						
15. Delivers cart to ward.						
16. Pulls out bed tray and places on cold - gives to corpsmen to give to patient.						
17. Leaves cart in ward.						
18. Waits at dietary until meals are completed and c/m has filled tray.						
19. Returns to ward.						
20. Picks up tray.						
21. Takes to scullery.						
22. Unloads at scullery.						
23. Washes cart and wheels back out to mess for next meal.						

Beaufort Naval Hospital
Dietary Operations

Dwg. 859A593

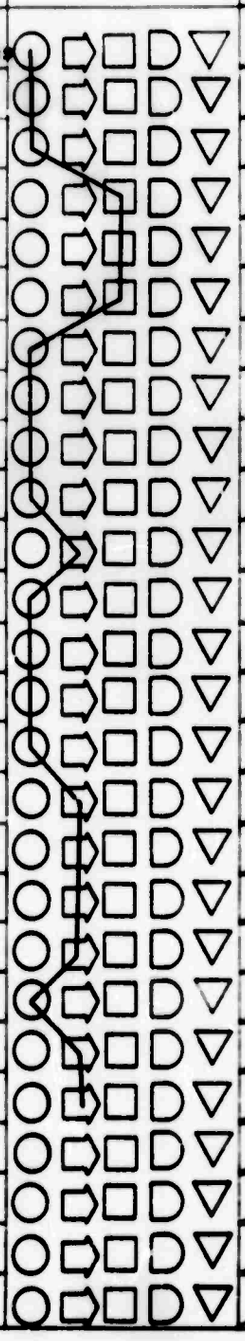
FIGURE I-B-3

SPECIAL DIET TRAY PREPARATION PROCEDURE FOR BEDRIDDEN PATIENTS Pg – of –

Subject Charted _____

Chart Begins _____ Chart Ends _____

Present Method _____ Proposed Method _____ Date _____

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist / Time	TIME Delay / Storage	NOTES
1. Telephone call from ward notifies special diet clerk that pt. is to be put on special.				Either upon admission, or due to change in Drs. orders.
2. Clerk calls all wards at 3:00 to see if wards have admitted any patients.				
3. Types pts. name on special diet list.				Typed once a day; 6-24 special diets - only those pts. who are not ambulatory.
4. Pulls regular diet out of bin.				
5. Destroys.				
6. Goes to cart and pulls menu and meal out (if necessary).				
7. Prepares trays for meals				Evening meal - starts preparing at 3:30.
8. Writes on place mat ward #, pt. name, type of diet.				
9. Special diet cook brings in hot food and loads cart.				
10. Takes cart to wards				At 4:30 for evening meal
11. Returns				
12. Cleans cart if necessary				
13. Empty trays brought back by food service corpsmen				

Beaufort Naval Hospital
Dietary Operations

FIGURE I-B-4

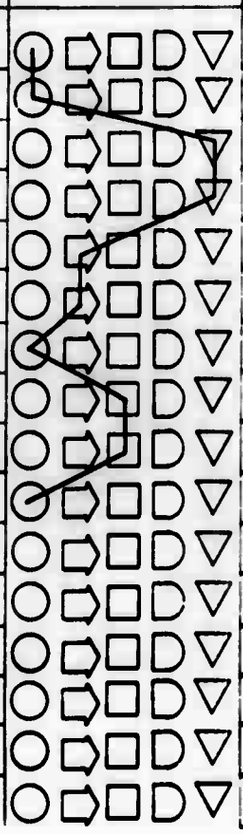
Dwg. 8591393

SPECIAL DIET TRAY PREPARATION PROCEDURE FOR AMBULATORY PATIENTS Pg_ of_

Subject Charted _____

Chart Begins _____ Chart Ends _____

Present Method _____ Proposed Method _____ Date _____

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist / Time	TIME Delay / Storage	NOTES
1. Ward calls in special diet- patient is ambulatory.				
2. Pt. put on list beside special diet oven.				
3. Pt. walks to kitchen, goes through special diet kitchen; asks cook for a certain diet.				
4. Pt. checks his own name off list when he gets meal.				
5. Delinquent pts. who do not check off names or do not pick up meal are denied privileges and meal is brought up to them on special diet tray.				

	Walson Army Hospital (WAH) -- Ft. Dix	Malcolm Grow Hospital -- Andrews AFB	U.S. Naval Hospital -- Beaufort
A. Personnel	1. One-hundred forty five employees in 3 sub-departments (refer to Table II-W-1 for complete staff listing) [1,2,3,4] a. Office of the Chief of Food Service -- 5; b. Food Production and Service -- 133; c. Diet Therapy -- 7 (See Table II-W-1 for Dietary departmental organization).[1] 2. Most employees are civilians; military personnel fill management positions, and available enlisted men perform some clerical and administrative duties.[1] 3. Food Service is not authorized to hire more help, but may pay overtime (i.e., constraint is on staff size, not budget). WAH food service production and service personnel therefore work an unusual two-shift operation because of short staffing. Personnel work 12-hour shifts 3 1/2 days each week, thus receives 4 hours overtime pay per day.[1] (Refer to Table II-W-2 for sample food service personnel schedule).[3]	1. Approx. eighty employees:[1] a. 22 military personnel; b. 55 civil service personnel (refer to Table II-M-1 for breakdown of staff positions). 2. Dietitians -- Chief of Food Services and two resident dietitians. 3. Although personnel are assigned to either dietary or production, most work in both sections.	1. Fifty-one employees: a. 43 civilian; b. 8 military (refer to Table II-B-1 for breakdown of positions, pay grade, and hours worked per week; and to Table II-B-2 for staff strength on shifts).
B. Facilities	1. Location: a. all facilities located in the WAH basement. 2. Floor space: a. total floor space -- approx. 10,244 sq. ft.; b. refer to Table II-W-3 for sq. ft. breakdown by area.[3]	1. Location: a. all facilities (kitchens, dining hall, and storage areas) located in basement. 2. Floor space: a. total floor space -- approx. 18,294 sq. ft.; b. refer to Table II-M-2 for sq. ft. breakdown by area.	1. Location: a. all facilities located on first floor of hospital, at end of main corridor. 2. Floor space [1] a. total floor space -- 13,285 sq. ft. b. refer to Table II-B-3 for sq. ft. breakdown by room.
C. Equipment	1. Refer to Appendix I, Report 011, for complete lists (including quantity and dollar value) of all equipment worth over $200. 2. Maintenance and repair:[1] a. food carts used to take meals to wards are considered medical items and thus are maintained by WAH Medical Maintenance; b. WAH has a contract for dishwashing machine maintenance through Supply and Service Division; c. only 2 food service equipment repairmen for the entire post.	1. Appendix I, Report 011, lists all dietary equipment with quantity, operating hours, load level (normal, overload, underload), portable or fixed nature, and purchase price.	1. Refer to Table II-B-1 for listing of all equipment worth over $200.[2]

	Ft. Dix	Andrews	Beaufort
C. Equipment (cont'd.)	3. Equipment needs[1]: a. replacement of all old ranges with revolving tray or stack ovens; b. 2 microwave ovens for food reconstitution; c. one convection oven for small diet therapy items; d. pot/pan/utensil washing machine (presently done by hand): e. conveyor belt for dishwashing (Table II-W-4 lists equipment formally on requisition by WAll Food Service).[1]		
D. Work Sampling	1. Observation period: a. two days (November 10, 11, 1969) devoted to observing all Food Service employees (approx. 49 in the production and service area, including cooks, mess stewards, bakers, butchers, and those preparing, storing, and serving food). Not included were administrative personnel and diet therapists. Employees were observed without distinguishing their job classification.	1. Observation period: a. one day (October 2, 1969) in Dietary Department to observe and record general procedures (layout, work flow); b. two-day period (October 3 through 4, 1969), devoted specifically to work sampling study in which 53 employees in 7 job categories and the facilities and equipment related to each job were observed.	1. Observation period: a. one day (September 8, 1969) in Dietary Department to observe and record general procedures (layout, work flow); b. the 1030 to 1900 hrs. shift on same day devoted specifically to work sampling study in which 10 food service employees in 10 job categories and the facilities related to each job were observed.
	2. Steps in recording and analyzing data: a. task performed by each employee and the area of facility in which each task is performed recorded at random times on special data sheets; b. tasks and areas then grouped and coded for meaningful analysis; c. data keypunched and processed by computer for analysis (refer to Appendix X for graphic display of data showing percent of time spent by employee type according to task or room, and to Appendix II for data processing results which yielded these percentages).	2. Steps in recording and analyzing data: a. task performed by each employee and the area of facility in which each task is performed recorded at random times on special data sheets; b. tasks and areas then grouped and coded for meaningful analysis; c. data keypunched and processed by computer for analysis (refer to Appendix X for graphic display of data showing percent of time spent by employee type according to task or room, and to Appendix II for data processing results which yielded these percentages).	2. Steps in recording and analyzing data: a. task performed by each employee and the area of facility in which each task is performed recorded at random times on special data sheets; b. tasks and area ten grouped and coded for meaningful analysis; c. data keypunched and processed by computer for analysis (refer to Appendix X for graphic display of data showing percent of time spent by employee type according to task or room, and to Appendix II for data processing results which yielded these percentages).

TABLE II-W-1

STAFF BREAKDOWN *

TITLE	PAY GRADE	NUMBER OF EMPLOYEES	HOURS PER WEEK
Office of the Chief			5
Chief, Food Svc.	O-6	1	
General Foreman	GS-11	1	
Admin. Clerk	GS-05	1	
Clerk Typist	GS-03	1	
Cost Accounting Clerk	GS-03	1	
Food Production and Service			133
Chief, Prod. & Svc.	O-3	1	
Staff Dietician	O-2	1	
Clerks	GS-02	2	
Supv. Supply Clerk	GS-05	1	
Warehousemen	WG-05	1	
Warehousemen	WG-04	2	
Truck Drivers	GS-06	2	
Meat Cutter Leader	GS-08	1	
Meat Cutter Leader	WG-08	2	
Baker Leader	GS-08	1	
Baker	GS-08	2	
Cook Foremen	GS-06	2	
Cook Leaders	GS-08	6	
Cooks	GS-08	19	
Cooks Helpers	GS-05	21	
Tray Svc. Foremen	GS-06	2	
Tray Svc. Attendants	WG-04	31	
Mess Attend. Supv.	GS-08	2	
Mess Attend.	WG-02	34	
Diet Therapy			7
Chief, Diet Therapy	O-3	1	
Staff Dietician	O-2	1	
Diet Aide Supv.	GS-04	1	
Diet Aides	GS-03	4	
Total Empl.			145

* Source: Report by Chief, Food Svc. made in Oct., 1969 showing Authorized personnel (1968, 1969 TDA's), Actual Personnel (1969), Variance, and recommendations of 1969 manpower survey.

Walson Army Hospital
Dietary Resource Utilization

TABLE II-W-2

SAMPLE PERSONNEL SCHEDULE

Cook Foreman	Sun	Mon	Tues	Wed	Thurs	Fri	Sat	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
Cashiers	X	1200	0600	X	0600	X	0600	0600	0600	X	0600	X	0600	X
Tray Service Attendants		1900	1900		1900		1830	1830	1900		1900		1900	
Cooks, Cooks' Helpers	Sun	Mon	Tues	Wed	Thurs	Fri	Sat	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
	X	1130	0530	X	0530	X	0530	0530	0530	X	0530	X	0530	X
		1830	1830		1830		1800	1800	1230		1830		1830	
Mess Attendants	Sun	Mon	Tues	Wed	Thurs	Fri	Sat	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
	X	1230	0630	X	0630	X	0630	0630	0630	X	0630	X	0630	X
		1930	1930		1930		1900	1900	1330		1930		1930	
Night Men	Sun	Mon	Tues	Wed	Thurs	Fri	Sat	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
	X	2355	1830	X	1830	X	1830	1830	1830	X	1830	X	1830	X
		0625	0630		0630		0600	0600	0100		0630		0630	

Clerical and Food Service Supply Personnel, Butchers	0800-1630 Mon thru Fri
One Supply Warehouseman	0700-1530 Mon thru Fri
Bakers	0400-1230 Mon thru Fri
Diet Therapy Supervisor	0800-1630 including every other weekend
Medical Aides (Diets)	Alternate Shifts, work every other weekend
	Early shift 0530-1430
	Standard Shift 0800-1630
	Late shift 0900-1800
	Some Weekends 0500-1400

TABLE II-W-3

FACILITIES BREAKDOWN

FACILITY	AREA IN SQ. FT.	% OF TOTAL	TOTAL AREA	% OF TOTAL
Offices			461	(4.5%)
Chief's Office	105	(1.0)		
Production Office	65	(.6)		
Diet Therapy Office	134	(1.3)		
Butcher's Office	52	(.5)		
Baker's Office	45	(.4)		
Supply Office	60	(.6)		
Storage			1033	(10.1%)
Bakery	45	(.4)		
Supplies	108	(1.1)		
Dry Goods	329	(3.2)		
Freezer	312	(3.0)		
Large Refrig.	106	(1.0)		
Small Refrig.	52	(.5)		
Other Refrig.	81	(.8)		
Production & Service			8182	(79.9%)
Diet Line Area	190	(1.9)		
Meat Processing	151	(1.5)		
Salads	140	(1.4)		
Pot/Pan Washing	94	(.9)		
Cooking	990	(9.7)		
Bakery	353	(3.4)		
Dish Room	140	(1.4)		
Central Dish Room	522	(5.1)		
Mess Hall & Serving Lines	3948	(38.5)		
Tray Service	1281	(12.5)		
Hallway	373	(3.6)		
Miscellaneous (Latrines, Washroom, Grease room)			568	(5.5%)
Total			10244	(100%)

TABLE II-W-4

EQUIPMENT ON REQUISITION

PRIORITY	NOMENCLATURE	STANDARD NON-STAND	QUANTITY	UNIT COST	TOTAL COST
1	Vegetable Peeling Machine	Standard	1	$402.00	$402.00
2	Meat Slicer	Non-Stand	1	920.00	920.00
3	Vegetable Cutting & Slicing Machine	Standard	1	916.00	916.00
4	Typewriter, 13" Carriage	Standard	1	411.00	411.00
5	20-30 qt. Mixing Machine w/ Accessories	Non-Stand	1	1,423.50	1,423.50
6	30-60 qt. Mixer	Non-Stand	1	3,487.50	3,487.50
7	Typewriter, 15" Carriage	Standard	1	459.00	459.00
8	Ice Cube Machine & Dispenser	Non-Stand	2	1,874.00	3,748.00
9	72" Gas Fired Griddles w/ Stainless Steel Stands	Non-Stand	2	1,275.00	2,550.00
10	Convection Oven w/ Warmer Proofer Cabinet	Non-Stand	1	2,435.50	2,435.50
11	Revolving Tray Roast Oven	Non-Stand	2	7,500.00	15,000.00
12	Freezer, Retarder, Proofer	Non-Stand	2	770.00	1,540.00
13	Salad Bar, Set-N-Serve Cart	Non-Stand	2	2,400.00	4,800.00
14	Pot, Pan & Utensil Washing Machine w/ Counter	Non-Stand	1	6,500.00	6,500.00
15	Meat Slicing Machine	Standard	2	256.00	512.00
16	Adding & Subtracting Machine	Standard	1	305.00	305.00
17	Vertical Cutter Mixer	Non-Stand	1	2,085.00	2,085.00

TABLE II-M-1

STAFF BREAKDOWN

TITLE	PAY GRADE	NUMBER OF EMPLOYEES	HOURS PER WEEK
Chief, Medical Food Service Div.	Lt.Col.	1	40
Chief, Ward Food Service Branch	1 Lt	1	40
Chief, Production-Service Branch	2 Lt	1	40
Residents	2 Lt	2	40
Superintendant	CSMGT	1	40
Diet Therapy Supervisor	MSGT	2	40
Shift Leaders	TSGT	2	40
	SSGT	1	40
Diet Cooks	TSGT	1	40
	SSGT	1	40
	SGT	2	40
Cooks	SSGT	5	40
	SGT	1	40
	Amn	1	40
Baker	SSGT	0	
Butcher	TSGT	1	40
Clerk-Typist	GS-4	1	40
Warehouseman	WG-6	1	40
Baker	WG-8	1	40
Cooks	WG-8	5*	40
Cooks	WG-5	6	40
Diet Worker Foreman	F-2	1	40
Diet Worker Leaders	L-4	2	40
Diet Cooks	WG-8	6	40
Diet Workers	WG-4	14*+	40
Mess Attendant Foreman	F-1	1	40
Mess Attendant Leaders	L-2	3	40
Mess Attendants	WG-2	16**	40
Intermittent	-	2	16

*-1 vacancy *+-1 vacancy and 1 pending retirement **-2 vacancies

TABLE II-M-2

FACILITIES BREAKDOWN

% of TOTAL	FACILITIES CODE	TOTAL SQUARE FEET	QUANTITY	DESCRIPTION
9.5	H	1160	1	Officer's Mess
25.3	H	3107	1	Cafeteria
7.1	H	868	1	Serving Area
7.8	H	960	1	Dishwashing Area
6.9	C	848	3	Offices
19.6	H	2400	1	Kitchen Area
4.6	H	570	1	Bakery
2.9	C	360	4	Bakery Storage
2.6	C	320	4	Refrigerator Rooms
1.3	C	160	2	Daily Usage Storage
6.3	C	775	5	Refrigerator Bulk Rooms
1.0	C	100	1	Storage
5.2	H	640	1	Meat Processing Room

TABLE II-B-1

STAFF BREAKDOWN

TITLE	PAY GRADE	NUMBER OF EMPLOYEES	HOURS PER WEEK	HOURS/WEEK OTHER DEPTS.
Foreman Commissary	WS-8	1	40	
Leader Cook	WL-8	3	40	
Foreman Food Service Worker	WS-2	1	40	
Leader Food Service Worker	WL-2	2	40	
Cook	WG-8	13	40	
Asst. Cook	WG-5	1	40	
Baker	WG-8	2	40	
Meatcutter	WG-8	1	40	
Pantryman	WG-3	3	40	
Food Service Worker	WG-2	15	40	
Supply Clerk	GS-5	1	40	
Chief, Food Service Div.	LTJG-02	1	40	
Asst. Chief, Food Service Div.	HMC-E7	1	40	
Stockmen	2nd Class E-5	1	40	Duty Section 1 in 6
Stockmen	3rd Class E-4	1	40	Duty Section 1 in 3
Stockmen	HN E-3	2	40	Duty Section 1 in 3
Diet Corpsmen	HN E-3	2	56	(7 days a week)

TABLE II-B-2

STAFF STRENGTH ON SHIFTS

DAY	A WATCH	B WATCH	C WATCH
M-1	1030-1900	0500-1330	Off
T-2	0500-1330	Off	1030-1900
W-3	1030-1900	Off	0500-1330
T-4	0500-1330	1030-1900	0600-1430
F-5	Off	0500-1330	1030-1900
S-6	Off	1030-1900	0500-1330
S-7	Off	0500-1330	1030-1900
M-8	Off	1030-1900	0500-1330
T-9	1030-1900	0500-1330	Off
W-10	0500-1330	1030-1900	Off
T-11	0600-1430	0500-1300	1030-1900
F-12	1030-1900	Off	0500-1330
S-13	0500-1330	Off	1030-1900
S-14	1030-1900	Off	0500-1330
M-15	0500-1330	Off	1030-1900
T-16	Off	1030-1900	0500-1330
W-17	Off	0500-1330	1030-1900
T-18	1030-1900	0600-1430	0500-1330
F-19	0500-1330	1030-1900	Off
S-20	1030-1900	0500-1330	Off
S-21	0500-1330	1030-1900	Off
M-22	1030-1900	0500-1300	Off
T-23	0500-1330	Off	1030-1900
W-24	1030-1900	Off	0500-1330
T-25	0500-1330	1030-1900	0600-1430
F-26	Off	0500-1330	1030-1900
S-27	Off	1030-1900	0500-1330
S-28	Off	0500-1330	1030-1900
M-29	Off	1030-1900	0500-1330
T-30	1030-1900	0500-1330	Off

Each watch is made up of: 1 Leader Cook, 3 Cooks (except A Watch which had 4), 1 Special Diet Kitchen Attendant, 1 Pantryman, 1 Leader Mess Attendant, 1 Mess Attendant (Heavy Duty), 4 Mess Attendants.
There is an additional Mess Attendant on duty 1600-2400 to prepare snacks for corpsmen on duty watch and do housecleaning chores in preparation for the following day.

TABLE II-B-3

FACILITIES BREAKDOWN

NAME	AREA (SQ. FT.)	USE
Dock	605	Unloading provisions
Garbage Storage	85	Cooled area where garbage is stored prior to collection
Cold Storage	1820	Includes separate rooms for frozen food, flake ice, meat, vegetables, dairy products, and a refrigerated room for storing prepared salads, etc. prior to serving.
Food Preparation	4700	Includes vegetable preparation area, staffed with one man who makes salads, prepares vegetables; pot wash area, a bake shop, the main cooling galley, and a smaller special diet preparation area, which was a former scullery
Dish Washing Areas	2075	Includes space for parking serving carts (from wards) and the scullery area.
Diet Kitchen	1200	No longer utilized since the area was too large for small load of special diets. The area has been transferred to a former scullery area as previously described.
Patient Serving Lines	1540	There are two serving lines, however, only one is used to serve patients. The other is used for initial preparation of trays to wards (e.g. napkins, placemats, silverware). The serving line for patients is also used for loading food onto ward trays. Prior to the opening of the mess hall, the food service men took their

TABLE II-B-3 (cont'd.)

FACILITIES BREAKDOWN

NAME	AREA (SQ. FT.)	USE
		trays through as the foreman reads out what is to be placed on them from the patient's menus. Then the trays are loaded on the carts and taken to the wards.
Enlisted Mess Hall	8736	Enlisted and ambulatory patients eat here.
Officers Mess	1205	Has its own individual serving line for lunches.
CPO Mess	1705	
Dry Provisions Storage	918	Alphabetical stocking of dry stores, used to replenish the galley on a daily basis.
Wet Provisions Storage	390	Vegetables are immediately expended upon delivery; frozen foods have a pre-expended area for immediate usage, and a larger area of stock which is inventoried once a month.
Dietary Supply Office	490	

TABLE II-B-4

EQUIPMENT LIST

EQUIPMENT CODE	FIXED-PORTABLE	QUANTITY	OPERATING HOURS	LOADING	EQUIPMENT
Q	F	1	N	253	Bread Dispenser
Q	F	1	N	265	Meat Tenderizer
Q	F	1	N	675	Meat Cutting Band Saw
Q	F	1	N	1406	Molding Machine
Q	F	1	N	735	Crescer Refrigerator
Q	P	2	N	317	Cart Wet Tray Caddy
Q	F	1	N	215	Mikro Spray Cleaner
Q	F	1	N	936	Cooker Steam Market
Q	F	1	N	894	Vegetable Cutter Slicer
Q	P	1	N	283	Beverage Dispenser
Q	F	1	N	358	Broiler
Q	P	1	N	450	Fairbank Morse Scale
Q	P	1	N	380	Counter Coffee Maker
Q	P	1	U	2000	Counter Toaster
Q	F	2	U	1500	Counter Electric Pol Hemus
Q	F	2	N	316	Electric Savory Toaster
Q	F	1	N	250	Hotpoint Deep Fryer
Q	F	1	U	3500	Diet Kitchen Steam Table
		1	U	1300	Counter PB Pol Hemus
Q	F	1	N	590	Table Bakers
Q	F	8	N	720	Storage Cabinet

TABLE II-B-4 (Cont'd.)

EQUIPMENT LIST

EQUIPMENT CODE	FIXED-PORTABLE	QUANTITY	OPERATING HOURS	LOADING	EQUIPMENT
Q	P	4	N	842	Two 80 Qt. A 20 Qt. A 12 Qt. Mixer
Q	F	3	U	480	Hotpoint Elec. Oven
Q	F	2	N	1279	Cleveland Steamer
Q	P	1	N	452	Meat Grinder
Q	P	2	N	475	Food & Roll Cutting Machine
Q	P	1	N	1025	Donut Machine
Q	P	2	N	500	Filtrine Dispenser
Q	F	1	N	334	Electric Food Conveyor
Q	F	2	N	474	Electric Coffee Urn
Q	F	5	N	275	Kettle Steam Green
Q	P	4	N	504	Bakers Proof Rack
Q	P	2	N	540	Electric Food Cart
Q	P	1	N	258	Salad Bar Table
Q	P	1	N	418	Electric Meat Slicer
Q	F	1	N	8909	Hobart Dishwasher
Q	F	1	N	986	Food Serving Steam Table
Q	F	1	N	4829	Pot & Pan Washer
Q	P	6	N	1160	Electric Food Carts
Q	P	1	N	1247	Jewett Refrigerator
Q	P	1	N	1990	Floor Maintainer
Q	F	1	N	440	Potato Peeler
Q	F	1	N	370	Radio Amplifier Bill
Q	F	1	N	905	Toastmaster
Q	P	1	N	294	Fry Saver Blickman
Q	P	2	N	1080	Food Mixing Machine

	Westinghouse Hospital (250 bed) — 80% occ.	Meadow View Hospital — Current Use	U.S. Naval Hospital — Baseline
A. Total			
1. Cost	$1,542,638 annually	$1,211,400 annually	$1,611,200 annually
2. Source	A. Refer to Table III-W-1 and III-W-2 for personnel figures from which cost derived and to Appendix VII for functional cost breakdown summary sheet.	A. Refer to Appendix VII for functional cost breakdown summary sheet and to Table III-M-1 for personnel figures from which cost derived.	A. Refer to Appendix VII for functional cost breakdown summary sheet.
B. Personnel			
1. Cost	$1,225,500 annually; military = $777,950; civilian = $1,811,000; function = $1,051,200; non-function = $174,250.	$1,211,442 annually; function = $1,211,442; non-function = $174,250 (Refer to Table III-M-2 for personnel cost breakdown).	$1,051,200 annually; function = $877,200; non-function = $174,000.
2. Source	A. Westinghouse personnel cost figures from interview with Chief of Food Service and from special source provided by Sec. Figures adjusted based on observation (Sec. D) and IE. Ibid. B. Westinghouse obtained pay rates for each labor grade from "Standard Rates for Salaried Personnel Services." AFSC 177-80 (CSI) for Salaried Personnel and schedule established by DoD 5 June 1965 (Reserve 5820.8) for civilian personnel, and added 6.7% in fringe benefits for civilian labor. Calculations based on numbers of hours per week worked by different kinds of employees as shown in Table III-W-2. C. WCAM determined costs from MEDDAC TDA for civilian personnel, from DA Form 2662 for enlisted personnel, and from personnel division special staffing report for officers. D. Cost includes extra military labor from Medical Training Co. and 4th Field Hospital.	A. Function cost = the number of people assigned to duties was determined from interviews with the Chief of Nurses. Pay rate for military personnel were taken from AFSC 177-80 (CSI). Civilian rates were extracted from DSSR salary rate tab, Step 4 Appendix 6A. Benefits for civilian were determined from discussion (Step 4) interview with Westinghouse military personnel Appendix 6A. B. non-function cost = Base spent by employee outside the function ● housekeeping = Base hours spent by duties personnel in housekeeping chore, estimated by interviews. ● nursing training = IDA Rate for nursing students from professional services report 1968. ● OJT = Base hours per course and instructor estimated by interviews. Changeover rate by duties from numbers after.	A. Function same like for Westinghouse Step assumptions and for overall accounting. Check B system interviews and observation.
C. Supplies			
1. Cost	$3,750,000 annually; medical = $[illegible]; non-medical = $1,500,000; food = $[illegible].	$310,000 annually.	$1,125,000 annually.

		Ft. Rh	Andrews	Beaufort
C. Supplies (cont'd.)				
2. Source:	a.	medical and non-medical costs from cumulative cost run received by Management Services Division from Post Data Processing showing resource cost by item for each function.	a. from Report of Medical and Nonmedical Supply Expense FY69.	a. FY69 Account 389 listing from Fiscal and Supply 91 and 97 Codes supplies for 98C Codes 8830 (Dietary -- Operations) and 8820 (Dietary -- Provision).
	b.	food costs from DA Form 1828 for FY69.		
D. Maintenance				
1. Cost:		$16,066 annually: WAH medical maintenance -- $0; Ft. Rh Post Engineering -- $16,066.	$36,805 annually: medical -- $0; non-medical -- $36,805.	$29,628 annually: medical -- $0; non-medical -- $29,628.
2. Source:	a.	Post Engineering -- total annual costs of labor and material obtained in an interview with Post Engineering; estimate then obtained on percent of their total work performed for WAH; 3-month sample of Post Engineering requests taken to distribute the percentage of cost allocated among WAH functions; see Appendix IV for all calculations.	a. prorated from annual non-medical maintenance costs for entire medical center, given in Medical Expense Report CY69; one month's costs used as basis for calculations.	a. non-medical -- prorated by total square footage as a percentage of Account 389, 98C Code 8850, which has total maintenance costs for the hospital building only (i.e., excludes grounds, housing, medical maintenance, etc.).
E. Housekeeping				
1. Cost:		$161,127 annually: by staff -- $161,127; on contract -- $0.	$3,125 annually: by staff -- $2,122; janitorial -- $1,302.	$33,365 annually: all housekeeping by staff.
2. Source:	a.	interview with Chief of Food Services. Mess attendants spend 21 man-hours per day cleaning mess hall and dish room. One other mess attendant spends full day (8 man-hours) cleaning kitchen.	a. janitorial -- cost of janitor service prorated for department from percentage of total hospital floor space.	a. staff -- estimated from interviews and observation.
	b.	work sampling study -- yielded percentages of time other personnel spent in housekeeping -- all employees responsible for housekeeping in own areas.	b. staff -- time, estimated by SCO of Dietary, spent by dietary staff in housekeeping.	
F. Training				
1. Cost:		$6,136 annually: formal -- $0; OJT -- $6,136.	$7,336 annually: formal -- $1,611; OJT -- $5,422; training department -- $303.	$1,161 annually: formal -- $0; OJT -- $661; training department -- $500.
2. Source:	a.	a portion of total function personnel cost was allocated to OJT on the basis of estimates made by observers of the amount of time needed for student to reach 90% efficiency in each job class. These estimates were factored into a learning curve equation to arrive at OJT costs (see Appendix VI -- OJT costs). All food service training was considered OJT.	a. formal -- see Personnel, formal training.	a. formal -- from announcements of training sessions, lectures, schedules, etc.
	b.		b. OJT see Personnel, OJT training.	b. OJT -- from interviews and observation.
	c.		c. training department -- the cost of training department personnel allocated to each function was determined first by finding the percentage of the total training staff allocated to a given function, and then by calculating the percentage of administrative personnel salaries.	c. training department -- prorating the salary of the corpsman in charge of training among the functions according to the number of corpsmen receiving training in each function.

III. Dietary -- Functional Costs (Cont'd.)

	Ft. Dix	Andrews	Bragg
C. Capital Equipment			
1. Cost:	$250,689; standard -- $78,930; non-standard -- $171,759.	$86,275.	$69,732.
2. Source:	a. a survey of WAH property book taken Dec. 8-9-10, 1968 in which two types of equipment were tallied • equipment with unit price greater than $200; • equipment with unit price less than $200, but for which the number of units in the function brought the total dollar figure above $200. b. there are two types of WAH equipment price records: • standard equipment, in which the price on file represented current market value; • non-standard equipment, in which the price on file represented original purchase price.	a. refer to computer run DCS [illegible] (inventory of total hospital equipment).	a. cost of equipment over $200, from Property Control Listing 6/30/69 computer run, verified by observation.

WALSON ARMY HOSPITAL
DIETARY FUNCTIONAL COSTS

TABLE III-W-1

FUNCTIONAL COSTS

ITEM	DETERMINED COSTS
Direct Charges	
Mil. labor	77,956
Civilian labor	1,145,951
Supplies - medical	788
Supplies - non-medical	18,422
Maintenance	2,607
Pest	13,159
Misc. charges	14,947
Food	536,653
Prorated charges	
Housekeeping	0
Equipment	
Cost of Standard	78,930
Cost of Non-standard	171,759
Total Charges	$1,840,826

TABLE III-W-2

FUNCTIONAL COSTS

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL (A)			
NO.	& GRADE	NO.	& GRADE	ITEM	COST, $
1	C5	1	O5	Food	536,653
2	O3	2	O3	Transportation	419
2	O2	2	O2	Equipment	14,173
		11	E4	Other contractual	355
		2	E5		
		3	E2		
2	GS5	2	GS5		
7	GS3	4	GS3*		
1	SW9				
1	GS4	1	GS4*		
2	GS2	2	GS2		
3	SW6	2	SW6**		
8	WL8	6	WL8**		
21	WB8	23	WB8		
7	WB5	22	WB5		
4	SW1	4	SW1		
38	WB2	34	WB2		
36	WB4	2	WB4		
2	WB6	2	WB6		
		1	SW11		
		2	WL8		
		1	GS3		
		34	WB4*		

* - 48 hr/wk
** - 43 hr/wk

MALCOLM GROW HOSPITAL
DIETARY FUNCTIONAL COSTS

TABLE III-M-1

FUNCTIONAL COSTS

ITEM	DETERMINED COSTS
Personnel (includes tng & housekeeping by staff)	554,842
Equipment (over $200 - acquisition cost)	86,275
Supplies	
Medical	541
Non-medical	24,136
Maintenance	
Medical	
Hospital	36,407
Housekeeping (janitorial service only)	1,332
Other	
Central Sterile	14
Oper. of utilities	8,301
Contracts	
Food	282,592
Contract Maint.	5,744
Heating personnel	2,923
Travel	586
TOTALS	
Format Training	1,611
OJT	5,858
Housekeeping	2,123

TABLE III-M-2

FUNCTIONAL COSTS

NUMBER	%	PERSONNEL TYPE	PAY GRADE	HOURLY PAY RATE	EXTENDED COST
1	100	Warehouseman	WB-6	3.29 x 1.07/hr.	7,322
1	"	Baker	WB-8	3.43 x 1.07/hr.	7,633
5	"	Cooks	WB-8	3.43 x 1.07/hr.	38,165
6	"	Cooks	WB-5	3.04 x 1.07/hr.	40,596
1	"	Diet worker foreman	WF-2	3.48 x 1.0855/hr.	7,857
2	"	Diet work leaders	WL-4	3.34 x 1.0855/hr.	15,082
6	"	Diet cooks	WB-8	3.43 x 1.07/hr.	45,798
14	"	Diet workers	WB-4	2.82 x 1.07/hr.	87,864
1	"	Mess attendant foreman	WF-1	3.01 x 1.0855/hr.	6,796
3	"	Mess attendant leaders	WL-2	2.77 x 1.0855/hr.	18,765
16	"	Mess attendants	WB-2	2.52 x 1.07/hr.	89,712
2	40	Part time help	WB-1	2.11 x 1.07/hr	3,757
				Sub-total	369,347
				Grand Total	554,842

I. DIETARY -- OPERATIONS SOURCE SHEET

Walson Army Hospital

1. Interviews with Chief of Food Service, October 28, 1969.
2. DA Form 1838, CY69. Per AR40, 2 rations calculated by using beds occupied for inpatients, head count for staff, and head count for dining hall; then multiplying by .23 for breakfast, .34 for lunch, and .43 for dinner, and adding together.
3. Percentage of rations served, by type of eater obtained from DA Form 1833 -2, January 1968. No. of meals by serving place and type of cater then obtained by multiplying appropriate percentage by total rations FY69.
4. Observation in Food Service Dept., week of November 10, 1969.
5. Figures for peak workload times obtained by adding one hour before beginning of serving or distribution period and one-half hour after, to include preparation and cleanup workloads.
6. DA Form 1833 - 1 for January 1968.
7. Interviews with Chief of Diet Therapy, September 26, 1969.

Malcolm Grow Hospital

1. Interview with NCOIC, Dietary.
2. Calculated from ward meal hours, using one hour before and one-half hour after regular meal hours to include preparation and cleanup times.

Beaufort Naval Hospital

1. NAVHOSPBFT P-5400 (Organization Manual).
2. Data Pack, FY68.
3. Extrapolated from one-day sample of "average" days preparation of special trays.
4. From observation notes.

II. DIETARY -- RESOURCE UTILIZATION SOURCE SHEET

Walson Army Hospital

1. Interview with Chief of Food Services, October 28, 1969.
2. Interview with Chief of Diet Therapy, September 26, 1969.
3. Food Service Personnel Schedules, July 1969.
4. Observation in Food Service, week of November 10, 1969.
5. Scaled photographs of layout of all WAH floors furnished by Chief, Registrar Division.

Malcolm Grow Hospital

1. Report by Chief, Food Service, made in October 1969 showing authorize and actual personnel, variance and recommendations of 1969 manpower survey.

Beaufort Naval Hospital

1. From hospital blueprints, scale: 1/4" = 1',0".
2. From Beaufort Property Central Listing, August 14, 1969.

DISPENSARIES

WALSON ARMY HOSPITAL (WAH) -- FORT DIX

Mission

WAH dispensaries are operated by the Department of Clinics as part of its mission. There are nine dispensaries in the Fort Dix system, located in the various troop living and training areas. These dispensaries all perform similar basic services, physical examinations, first line medical treatment, referral of sick call patients, and maintenance of military health records. Sick call is divided into a routine sick call with a physician present, and a non-routine sick call, when unusual or emergency cases are treated and/or referred. Health records detail all treatment and immunizations received for recruits (trainees) and cadre (permanent party troops).

Existing Operations

Most of the problems encountered in the dispensaries system are related to the transmission of information.

The recording of immunization information is not only a complicated and time-consuming process, but records handling in general gets last priority as a dispensary task. Permanent party troops often keep their own records and as a result an estimated 50 percent of them are not contained in the dispensary files.

Since physicians generally prefer duty on other services, quotas for dispensaries are filled via a rotation system. In effect the dispensary always has a temporary doctor making it difficult to maintain continuity in dispensary/personnel/physician communication and standardization in procedures.

Finally, preliminary personnel training does not include practical knowledge or experience in how a dispensary operates.

The single, dominating trend in the dispensary service is the increasing patient load, particularly at the Stockade Dispensary, making patient management more difficult.

MALCOLM GROW USAF MEDICAL CENTER -- ANDREWS AIR FORCE BASE

Mission

The mission of the dispensary* is to provide outpatient oriented medical care, particularly in emergency cases, with additional provisions for delivery of health-maintenance services such as physical examinations and immunizations.

Malcolm Grow USAF Medical Center has five dispensaries designed to carry out this mission. The Pentagon Dispensary handles sick call and routine physical examinations primarily. Its services are extended to: any Pentagon personnel requiring emergency care, all flight-rated and general Air Force officers on duty in the Pentagon and certain VIP civilians designated by the Sectary of the Air Force.

The Presidential Medics Dispensary also has a sick call/routine physical examinations workload. It serves all military personnel assigned to Air Force One, the presidential aircraft.

Bolling Dispensary activities include sick call, routine physical examinations, general practice medicine, emergency medicine, flight medicine, optometry, radiology, immunizations, laboratory work, and pharmacy services. All Bolling AFB active duty military personnel and their resident dependents are eligible recipients.

Military Public Health and Occupational Medicine Dispensary serves Andrews personnel. As public health authority for the base it monitors and controls communicable diseases, industrial/base health hazards, and environmental health conditions. Occupational medicine activities are directed to civilian base personnel, and consist of emergency care, routine physical examinations, and occupational health hazard controls.

Physical Survey (Exam) Clinic provides routine annual and separation physical examinations for Andrews active duty military personnel.

*As stated in AFM 168-4H, Chapter 1, Section B

Existing Operations

Many of the dispensaries associated with the Malcolm Grow BLHC system are housed in poorly designed facilities. In the Physical Survey Clinic, for example, patients are examined and EKG's taken in what was once an auditorium, and laboratory tests and X-rays are performed in another section of the building. The resulting complexity in patient trafficking prolongs examination time.

The problem at Bolling Dispensary is similar. However, a solution is anticipated, since Bolling is scheduled for a new building within the next ten years.

U.S. NAVAL HOSPITAL -- BEAUFORT

Mission

The Beaufort BLHCS has two main dispensary systems -- Parris Island and the Marine Corps Air Station -- which act as small, light care hospitals. They treat emergencies, admit patients for 72 hour observation, and run limited ancillary tests as required. If more than minimal care is needed patients are transferred to the Beaufort Naval Hospital located seven miles from the dispensaries. The dispensaries remove a significant portion of the workload from the main hospital. As service centers, their accessible locations are a decided advantage to patients.

The Parris Island system has five dispensaries: East End for initial recruit screening and immunization; West End, sick call and temporary bed care; Depot, cadre care; Rifle Range, psychiatric services; and the Woman's Dispensary. The Marine Corps Air Station dispensary system provides cadre sick call, and temporary bed care, immunizations, and routine and separation physicals.

Existing Operations

Functional problems are consistent with the WAH pattern. Physicians dislike the lack of professional challenge in dispensary work. The more challenging cases are automatically diverted to the main hospital, with little or no

feedback to the dispensary physician who initiated the treatment sequence. Transmission of information between hospital and dispensary is often slow and inefficient. Health records are carried by the patient with no controls to ensure arrival or return. In addition, some patients referred to the hospital in the morning do not arrive on the ward until night, with transmission gaps occurring during transportation, emergency room screening, admission processing, and ward nursing station procedures. However, such inter-dispensary transportation problems will soon be eliminated at Parris Island when plans to consolidate the dispensaries into one facility are completed.

Scattered lines of authority are probably a major contributor to any of the operational inefficiencies noted at the Beaufort BLHCS dispensaries. The fact that each dispensary is organizationally autonomous precludes centralization of health care administration and hampers coordination of services and procedures with the hospital.

In addition, funding decisions are made, not by the Hospital Commander, but by the Parris Island and Marine Corps Air Station Base Commanders, neither of whom are medical personnel. Consequently, since dispensary medical needs are not fully understood, these needs are not always adequately filled. Moreover, dispensaries must compete with other base units for funds.

DATA PRESENTATION MATRICES

The following matrices and charts detail the data gathered by the Westinghouse teams on the three hospitals' dispensaries. The first matrix delineates dispensary operations; the second, resource utilization; and the third, functional costs.

I. DISPENSARIES -- OPERATIONS

	Walson Army Hospital (WAH) -- Fort Dix	Malcolm Grow Hospital -- Andrews AFB	U.S. Naval Hospital -- Bainbridge
A. Services Rendered	1. Conducting sick call. 2. Arranging transportation of dispensary patients to and from WAH. 3. Completing patient logs in and out of dispensary. 4. Storing and retrieving health records of military personnel. 5. Charging out health records to military patients. 6. Filing information in military health records. 7. Transmitting records to and from Ft. Dix transfer station. 8. Processing sick slips. 9. Processing Chronological Record of Medical Care. 10. Processing lab slips. 11. Processing X-ray slips. 12. Making appointments for dispensary patients in WAH clinics. 13. Maintaining records of immunizations. 14. Screening, including vital signs and throat culture, and routine admission of FHI patients. 15. Dispensing medications on prescription from MD. 16. Giving first line treatment to emergency cases including anaphylactic shock procedures, emergency oxygen administration, use of other emergency treatments. 17. Administering and recording limited "make-up" immunizations. 18. Providing limited care for civilians (Dispensary 5 only).[1,2]	1. General: a. giving physical exams and immunizations, and treatment of emergency cases; b. caring for patients who cannot be handled on an outpatient basis elsewhere than at Malcolm Grow Hospital (MGH) yet do not require hospitalization; c. keeping patients for observation; d. keeping patients awaiting transfer to the hospital.	1. Parris Island dispensaries: a. providing all initial care for Parris Island • East End Dispensary -- initial screening and immunizations • West End Dispensary -- conducting sick call, admitting patients to dispensary ward beds if light care up to 72 hours is required, or referring patients to Beaufort Naval Hospital (BNH) if care beyond 72 hours is required • Depot Dispensary -- caring for permanent personnel, recruits in casual company, and civil service employees on Parris Island • Rifle Range Dispensary -- providing medical treatment for Rifle Range platoons, and supervision and treatment for convalescent platoons • Women's Dispensary -- caring for Women Marine recruits stationed at Parris Island, referring women to BNH for admission or consultation as required • Psychiatry Dispensary -- providing psychiatric services; b. providing limited ancillary services • dispensing pharmaceuticals • taking routine X-rays using the hospital radiologist for consultation and readings; • conducting certain clinical labtests (e.g. WBC, hemoglobin, urinalysis).

II. DoD	I. Dispensaries -- Operations (Cont'd)	
	Andrews	Bradford
A. Services Rendered (Cont'd)	2. Pentagon Dispensary:	2. Marine Corps Air Station (MCAS) Dispensary:
	a. caring for retired officers and non-retired officers at rank of colonel or above, for the Secretary of Defense, for the Secretary of the USAF, and for key USAF and DoD officials on duty in the Pentagon (approx. 12 such officials);	a. providing all initial care and conducting sick call for Marines and permanent personnel providing at Air Base;
	b. conducting retirement physicals for AF colonels on duty in the Pentagon;	b. referring patients to BNH for admission or consultation;
	c. conducting annual physicals for Pentagon personnel on flying status;	c. admitting patients to dispensary beds for light care if not more than 72 hours;
	d. treating emergency cases;	d. providing annual physicals for pilots, officers, and Marine aerospace physicals for Parris Island graduates who are going into Marine Corps Aviation; physicals for Sealaunches Annapolis graduates;
	e. performing the following lab procedures	e. providing limited ancillary services
	• complete blood counts (CBC)	• dispensing pharmaceuticals
	• urinalysis	• taking routine 70 mm and chest X-rays (referred to radiologist at BNH for interpretation)
	• cultures and sensitivity	• processing clinical lab specimens (excluding blood chemistries and other special tests which are sent to BNH).
	• blood draws and spun.	
	3. Presidential Medics Dispensary (PMD)[2]:	
	a. caring for personnel in the squadron assigned to Air Force One, that is, all personnel assigned to the Presidential jetliner, and whose mission is transportation of the President and other VIP's.	
	b. services provided are sick call, routine physicals and appointments, and referrals to WRH.	
	4. Bolling AFB Dispensary -- for Bolling AFB active duty (AD) personnel and AF dependents living at Bolling AFB[3]:	
	a. operating clinics for	
	• general practice medicine	
	• flight medicine (FMC)	
	• routine eye refraction testing	
	• Military Public Health and Occupational Medicine;	
	b. operating ER lab (except chemistry and pharmacy);	
	c. giving immunizations;	
	d. taking X-rays.	

I. Dispensaries -- Operations (Cont'd)

	Ft. Dix	Andrews	Beaufort
A. Services Rendered (Cont'd)		5. Occupational Medicine Dispensary (OMD)[1]: a. providing Flt services during normal duty hours for civilians employed on base; b. providing a center for control and prevention of occupational health hazards on base; c. giving routine physicals as a preventive medical measure to civilians employed on base; 6. Military Public Health (MPH)[1]: a. serving as prevention center for communicable diseases; b. checking industrial health hazards on the base; c. monitoring and controlling community environment (water supply, etc.); 7. Physical Exam (Survey) Clinic (PSC)[5] a. conducting flight physicals for flying status personnel with ranks of Lt. Col. below; b. processing annual physicals and separation physicals for all personnel assigned to Andrews AFB.	
B. Hours of Operation	1. Normal duty hours:[1,2] a. 0630 to 1700 hrs. Monday thru Friday b. 0630 to 1200 hrs. Saturday.	1. Normal duty hours: a. Pentagon[1] -- 0800 to 1700 hrs. (appointments) Monday thru Friday; b. PMD[2] -- 0800 to 1700 hrs. Monday thru Friday; c. Bolling[3] -- 0800 to 1100 hrs. and 1200 to 1700 hrs. (appointments) Monday thru Friday • 0800 to 1000 hrs. for enlisted men • 1000 to 1100 hrs. for commissioned and non-commissioned officers • 1200 to 1700 hrs. for dependents • emergencies as they arrive;	1. Normal duty hours: a. Rifle Range Dispensary -- 0700 to 1600 hrs. • 0700 hrs. Monday, Wednesday, Friday -- medical platoon sick call. • 0700, 0800, 0900, and 1300 hrs. -- regular sick call; b. East End, West End, Depot, and Women's Dispensaries -- 0730 to 1600 hrs. • 0800 and 1300 hrs. -- platoons arrive at East End for processing • 0730 and 1300 hrs. -- West End and Women's Dispensaries sick call;

I. Dispensaries -- Operations (Cont'd)

Ft. Dix	Andrews	Beaufort
	d. OMD and MPH[4] -- 0800 to 1700 hrs. Monday thru Friday;	c. MCAS Dispensary -- 0730 to 1600 hrs.
	e. PSC[5]	• 0730 and 1300 hrs. -- sick call.
	• 0800 to 1700 hrs. Monday thru Friday	
	• 0800 to 1500 hrs. Saturday, operated for and by AF Reservists.	
2. Special duty hours:[1,2]	2. Special duty hours:	2. Special duty hours:
a. 1700 to 0630 hrs. Monday thru Saturday, all day Sunday -- one corpsman on call to retrieve health records for all dispensaries.	a. 24-hour emergency call at Bolling, PMD, and Pentagon;	a. Rifle Range Dispensary -- on call 1600 to 0700 hrs.
	b. 24-hour call at MPH for U. S. Customs, Public Health and Agriculture quarantine inspections of international flights.	• 1800 hrs -- sick call;
		b. East End, West End, and Women's Dispensaries -- 1600 to 0730 hrs.
		• 1600 hrs. -- West End sick call
		• 1900 hrs. -- Women's sick call;
		c. Depot Dispensary -- no special duty hours;
		d. MCAS Dispensary -- 1600 to 0730 hrs.
C. Workload Flow		
1. No. of sick call visits FY69 -- 189,897:[1,4]	1. Pentagon[1]:	1. Parris Island Dispensaries totals:
a. No. of sick call visits FY69 for Dispensary 7 (a typical dispensary) -- 25,472[1,2]	a. daily sick call for 60 to 300 patients;	a. annual no. of patient visits FY68 -- 154,642[1,2] (includes all inpatient visits to West End Dispensary and all outpatient visits; refer to Table I-B-1 for breakdown by type of visit.);
b. for breakdown of sick call visits, refer to	b. approx. 2 emergency cases weekly; Army provides ambulance transportation to MGH when necessary	• annual limited services ---------- approx. 159,672
• Table I-W-1 for breakdown for each dispensary by month for FY69 and the first 3 months of FY70	e. approx. 70 patients per month referred to Andrews clinics;	• annual immunizations ---------- approx. 662,580
• Figure I-W-1 for plot of total visits by month	d. physicals	• annual laboratory tests ---------- approx. 241,008
• Figure I-W-2 for plot of visits to each dispensary by month	• approx. 15 colonels' retirement exams per month	• annual films exposed ---------- approx. 42,036
• Table I-W-2 for average monthly visits by dispensary for January to June, 1969	• approx. 5 to 6 exams per month for others, each requiring from 7 to 12 procedures;	• annual prescriptions ---------- approx. 1,142,076
• Table I-W-3 for a breakdown by general reason for going on sick call for a sampling of patients taken at Dispensary 7 on October 28, 1969.	e. innoculations	b. Rifle Range Dispensary[3]
	• 475 per month (winter)	• regular sick call -- approx. 150 patients daily
	• 278 per month (summer);	• medical platoon sick call -- approx. 35 patients daily.
	f. appointments made by phone.	e. East End Dispensary
		• total no. of physicals for September, 1969 -- 507 (refer to Table I-B-2 for breakdowns)
		• total no. of limited services performed in September, 1969 -- 9,122 (refer to Table I-B-2, breakdown by type of service)

Ft. Dix	Andrews	Beaufort
C. Workload Flow (cont'd)		• total no. of immunizations for September, 1969 -- 49,584 (refer to Table I-B-2 for breakdown by type) • total no. of lab services and X-rays for September, 1969 5,997 (refer to Table I-B-2 for breakdown by type); d. West End Dispensary[4] • sick call visits -- approx. 230 per day (refer to Table I-B-3 for breakdown by time) • consultation referrals to Beaufort for September, 1969 -- 872 • admission referrals to Beaufort -- approx. 129 per month[5], • refer to Figures I-B-1 thru I-B-4 for sick call, physical examination, and immunization procedures. e. Depot Dispensary[5]: • sick call -- approx. 50 people per day; • physical examinations -- 20 per day to permanent personnel (annual, discharge and transfer physicals); f. Psychiatry Dispensary :[6] • depot aptitude boards -- 250 to 270 per month • medical boards -- approx. 80 per month • psychiatric or psychological interviews -- approx. 600 per month • Federal school referrals 4 to 8 per month • evaluation of ward admissions -- approx. 75 per month • permanent personnel interviews -- no estimate of volume. g. Women's Dispensary[6] • sick call -- 10 to 15 per day.
2. Workload observed at Dispensary 7, is as follows: a. health records maintained at any given time [2] • trainee records -- 3,000	2. PMD[2]: a. coverage for approx 350 personnel.	2. MCAS: a. patient visits, FY68 -- 57,830[1]; b. sick call visits -- 70 to 85 per day • 0730 hrs. sick call -- 50 to 60 patients per day • 1300 hrs. sick call -- 20 to 25 patients per day

Ft. Dix

C. Workload Flow (cont'd)

- cadre (those administering basic training) records -- 800;

b. workload stemming directly from sick call visits

- patients sent to WAH -- approx. 7,500 to 9,000 annually[1,2]
- WAH clinic appointments scheduled -- approx. 9,855 annually[2] (refer to Table I-W-1 for average daily no. of clinic appointments made by Dispensary 7 for October 1969, by type of clinic)

3. Patient flow:

a. routine sick call procedure (refer to Figure I-W-3 ,detailed flow chart of procedure)

- patients report for routine sick call between 0630 and 0830 hrs. Monday thru Saturday
- medics screen arrivals (approx. 33% screened out); dispositions made by medics either to duty or to see MD
- MD's arrive and see screened patients 0830 to 1200 hrs.; MD's made dispositions to duty, to bedrest, to appointment in WAH clinic, or to admission to WAH
- drugs and treatment given at dispensary whenever possible
- refer to Table I-W-5 for a sampling of dispostions given sick call patients at Dispensary 7
- patient sent to WAH if necessary

Andrews

3. Bolling Dispensary[3]:

a. approx 2,000 outpatient visits

- approx. 800 walk-ins
- appointments made by phone;

b. approx. 125 emergency patients sent to MGH per month including 50 OB/GYN cases;

e. each of these patients is escorted by a Bolling Dispensary medical or dental technician;

d. during peak periods there are 20 to 25 patients in waiting room; each waits approx. 10 minutes to see corpsman and another 15 minutes to see doctor;

e. X-rays for 2,077 patients annually.

Beaufort

- refer to Table I-B-4 for breakdown of sick call visits on August 25, 1969, by type of service performed and by average patient flow times;

e. ancillary services[1]

- prescriptions issued FY68 -- 22,293
- laboratory tests FY68 ------ 13,315
- X-ray films exposed FY68 -- 10,309

Ft. Dix	Andrews	Beaufort
• refer to Table I-W-6 for a sampling of time taken by medics to screen Dispensary 7 patients; b. non-routine sick call procedure • sick call patient reporting between 1200 and 1700 hrs., examined by corpsman • corpsman makes dispositions to duty, to bedrest, or to WAH specialty clinics.		
4. Peak periods: a. sick call • seasonal -- Dispensary 7 averages approx. 100 sick call patients per day; during URI season (October to March) this increases to 150 to 200 patients • daily -- the great majority of patients arrive between 0645 and 0700 hrs., but there is a significant number of arrivals 0700 to 0715 hrs. and 0815 to 0830 hrs; arrivals then fall [illegible] zero for the rest of the day (Figure I-W-4 shows number of routine sick call arrivals by time of arrival for Dispensary 7 on October 30, 1969; Table I-W-7 shows mean time between arrivals for 172 patients on sick call at Dispensary 7 on October 30, 1969 between 0630 and 1000 hrs.): b. admissions to WAH • Dispensary 7 averages approx. 20 admissions per day: these admissions double during URI season;	4. OMD and MPH[1]: a. OMD does approx. 250 exams per month including 70 mm X-rays (developed in hospital X-ray dept.), specimens (sent to MGH clinical lab), dental screening, and audiograms; b. MPH[1]: • 1,500 passengers on international flights screened monthly for communicable diseases • 35 quarantine inspections monthly for international flights • 70 shops on base must be inspected semi-annually for exposure to toxic chemicals, noise, poor lighting, and other occupational health hazards • inspection of all microwave ovens in aircraft and at places on base such as snack bars • 64 water samples from various strategic places in the base water supply taken every 2 months.	

I. Dispensaries -- Operations (Cont'd)

Ft. Dix	Andrews	Beaufort
c. clerical • dispensary clerical work peaks when a new company arrives or when a company completes training and transfers personnel to new posts • excessive paperwork handled by using training company recruits • each dispensary averages one to 5 recruits in its employ at any given time	5. PSC[5]: a. approx. 415 to 420 physicals per month of which approx. 6 per day are retirement physicals; a peak of approx. 700 in October due to Early Out Program; b. retirement physicals require approx. half again as much time as regular exams, that is, one full day rather than one-half day; c. 5 sigmoidoscopies per day, each taking approx. one hour of physician time.	
D. Information Flow 1. For monthly volume of dispensaries communications, broken down by communication mode according to source or destination, refer to Table I-W-8. 2. For monthly volume of communication inputs and outputs according to the type of communication, refer to Table I-W-9.	1. For monthly volume of dispensaries communications, broken down by communication mode according to source or destination, refer to Table I-M-1. 2. For monthly volume of communication inputs and outputs according to the type of communication, refer to Table I-M-2.	1. The Beaufort BLIICS study concentrated on information flow within the hospital system; information collected during the interviews and 2-week observation period was the only formal tabulation of information flow for the dispensary system.

Walson Army Hospital
Dispensaries - Operations

TABLE I-W-1

BREAKDOWN OF MONTHLY SICK CALL VISITS FOR FY69

Dispensary	July 1968	Aug	Sept	Oct	Nov	Dec	Jan 1969	Feb	Mar	Apr	May	June	July	Aug	Sept	FY69 Total	3 Months of FY70 Total
#1-1st AIT, 2nd BCT	3107	2484	2403	3887	3247	2642	2816	2190	3485	2375	2547	2807	2069	1233	1042	33,990	4344
	19.4%	16.3%	17.9%	22.7%	20.9%	21.3%	19.3%	13.8%	18.2%	13.3%	16.0%	16.7%	12.5%	6.9%	4.9%	17.9%	7.7%
#2-2nd BCT	2974	2886	2190	2910	3192	2074	2713	3410	3179	3733	2770	2567	2637	3602	4698	34,598	10937
	18.8%	18.9%	16.4%	17.0%	20.6%	16.7%	18.6%	21.4%	16.6%	20.8%	17.4%	15.3%	15.9%	19.8%	22.3%	18.2%	19.4%
#3-5th CST	1512	1106	1192	1383	1309	849	1126	1342	1559	1380	1305	1988	1342	1435	1721	16051	4498
	9.3%	7.2%	8.9%	8.1%	8.4%	6.8%	7.7%	8.4%	8.2%	7.7%	8.2%	11.8%	8.1%	7.9%	8.2%	8.5%	8.0%
#4-3rd BCT	2153	2556	2500	3008	2752	2274	2212	2393	3887	2873	2178	2107	2296	2640	3298	30893	8234
	13.8%	16.7%	18.7%	17.6%	17.7%	18.3%	15.2%	15.1%	20.4%	16.1%	13.7%	12.5%	13.8%	14.5%	15.6%	16.3%	14.7%
#5-Stockade	1370	1484	1427	1465	1050	1042	1174	1151	2277	2503	3087	2644	3459	3200	3474	20674	10133
	8.8%	9.7%	10.7%	8.6%	6.8%	8.4%	8.0%	7.2%	11.9%	13.9%	19.4%	15.7%	20.8%	17.6%	16.5%	10.9%	18.0%
#6-5th CST	2020	2503	1778	2076	1757	1587	1494	1735	2152	2238	833	989	986	1165	1628	21212	3779
	12.5%	16.4%	13.3%	12.1%	11.3%	12.8%	10.2%	10.9%	11.3%	12.5%	5.6%	5.9%	5.9%	6.4%	7.9%	11.2%	6.8%
#7-3rd BCT	2590	1929	1478	2060	1853	1733	2678	3368	2229	2380	1365	1811	1475	2138	2441	25472	6054
	16.3%	12.6%	11.0%	12.0%	11.9%	13.9%	18.3%	21.2%	11.7%	13.3%	8.6%	10.8%	8.9%	11.7%	11.6%	13.4%	10.9%
#8-USAPC-Rec-Bivouac	311	338	405	333	295	248	393	310	315	272	371	439	581	562	462	4030	1605
	1.9%	2.2%	3.0%	1.9%	1.9%	2.0%	2.7%	1.9%	1.6%	1.5%	2.3%	2.6%	3.5%	3.1%	2.2%	2.1%	2.9%
#9	0	0	0	0	0	0	0	0	0	125	1383	1467	1733	2236	2344	2975	6313
	0	0	0	0	0	0	0	0	0	0.7%	8.7%	8.7%	10.4%	12.3%	11.1%	1.6%	11.2%
Monthly Total	16037	15286	13373	17122	15455	12449	14606	15899	19083	17879	15889	16819	16578	18211	21108	189,897	55897
	100.8%	100.0%	99.9%	100.0%	99.5%	100.2%	100.0%	99.9%	99.9%	99.8%	99.9%	100.0%	99.8%	100.2%	100.3%	100.1%	99.6%

TABLE I-W-2

AVERAGE MONTHLY SICK CALL VISITS BY DISPENSARY

DISPENSARY		MILITARY ACTIVE DUTY VISITS 8/1/69 - 8/6/69
#1	1st AIT 2nd BCT	2703
#2	2nd BCT	3062
#3	5th CST	1450
#4	3rd BCT	2608
#5	Stockade	2139
#6	5th CST	1582
#7	3rd BCT	2305
#8	USAPC-Rec.	350
#9		992[1]

1. Only 3-months average 4/69-6/69.

TABLE I-W-3

REASONS FOR SICK CALL VISITS ON SAMPLE DAY 10/28/69

REASON FOR VISIT	NUMBER OF PATIENTS	PERCENT
General Medical	20	21
Orthopedic	26	27
Physical Examination	2	2
Boot Problems	2	2
URI	10	10
Sore Throat	25	26
Surgical	3	3
ENT	2	2
Miscellaneous	3	3
Dental	4	4
	97	100.0

Walson Army Hospital
Dispensaries - Operations

TABLE I-W-4

AVERAGE DAILY APPOINTMENTS BY CLINIC*

CLINIC	AVERAGE DAILY NUMBER OF APPOINTMENTS
General Medical	4
Orthopedic	13
Podiatry	1
ENT	5
General Surgical	2
Miscellaneous	2
TOTAL	27

* Sources:
Interview with AO, Dept. of Clinics;
Observation of Dispensary 7;
Patient log in/out book, Dispensary 7, 10/28/69.

TABLE I-W-5

SICK CALL PATIENT DISPOSITIONS*

TOTAL SICK CALL VISITS	DISPOSITION	AVERAGE DAILY NUMBER
93.3	Placed on Quarters Duty	4.5
	Admitted to WAH:	16.0
	URI	15.3
	Other	.7
	Drugs Distributed	26.1

* Source: Observation of Dispensary 7 on October 20, 1969 - October 29, 1969.

TABLE I-W-6

PATIENT SCREENING TIME

NUMBER OF PATIENTS SAMPLED	SCREENING TIME	MINUTES
34	High	7
	Low	0
	Mean	2.4
	Median	2

TABLE I-W-7

SICK CALL INTERVALS*

NUMBER OF PATIENTS OBSERVED	TIME BETWEEN ARRIVALS	MINUTES
112	High	21
	Low	0
	Mean	1.38
	Median	0

* Source: Observation at Dispensary 7 on 10/30/69 between 0630 and 1000 hours.

Walson Army Hospital
Dispensaries - Operations

TABLE I-W-8
NUMBER OF COMMUNICATIONS BY MODE ACCORDING TO SOURCE/DESTINATION

SOURCE/ DESTINATION	RECEIVED BY DISPENSARIES						SENT BY DISPENSARIES					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION				166						68		
AIR EVACUATION												
DENTAL SERVICE				40								
DISPENSARIES												
FLIGHT MEDICINE												
FOOD SERVICE												
HOUSEKEEPING												
LABORATORIES				26712								
MAINTENANCE												
MEDICAL RECORDS												
NURSING SERVICE				4								
OPERATING ROOM												
OUTPATIENT DEPT.				5964		144				1000		83
OUTSIDE WORLD				4408						5004		
PERSONNEL												
PHARMACY				2060						180		
PHYSICAL THERAPY				12		20				12		8
PREVENTIVE MED.				10						2		
PROFESSIONAL SERV				129		200		515		6531		
REGISTRAR				3814						20		
SUPPLY												
VETERINARY MED.												
WARD MANAGEMENT												52
RADIOLOGY				6440						174400		

Watson Army Hospital
Dispensaries - Operations

TABLE I-W-0
NUMBER OF COMMUNICATIONS BY TYPE ACCORDING TO INPUT AND OUTPUT

FUNCTION	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Patient Secondary	Patient Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
Dispensary #1 Input:											
Volume		21157	162	2			8			1	21330
Number		10	2	1			1			1	15
Output:											
Volume	448	3822		840	20	10	20				5160
Number	1	10		1	1	1	2				16
Dispensary #2 Input:											
Volume		22664	204	1176			4	2	2		24057
Number		11	2	12			1	1	1		28
Output:											
Volume	1568	7846		4602	20	10	20	9			14075
Number	2	23		15	1	1	2	3			49
Dispensary #3 Input:											
Volume		12157	162	2			8			1	12330
Number		10	2	1			1			1	15
Output:											
Volume	448	3382		840	20	10	20				4720
Number	1	10		1	1	1	2				16
Dispensary #4 Input:											
Volume		21157	162	2			8			1	21330
Number		10	2	1			1			1	15
Output:											
Volume	448	4222		840	20	10	20				5560
Number	1	11		1	1	1	2				17

Walson Army Hospital
Dispensaries - Operations

TABLE I-W-9 - (Cont'd)

FUNCTION	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Secondary Patient	Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
Dispensary #5											
Input											
Volume		20117	2				8			8	20135
Number		7	1				1			1	10
Output:											
Volume	2	2920			20	10	4				3020
Number	1	8			1	1	1				12
Dispensary #6											
Input:											
Volume		21157	2	2			8			8	21177
Number		10	1	1			1			1	14
Output:											
Volume	448	4132	160	840	20	10	20				5630
Number	1	11	1	1	1	1	2				18
Dispensary #7											
Input:											
Volume		21157	162	2			8			8	21337
Number		10	2	1			1			1	15
Output:											
Volume	448	3822		840	20	10	8				5148
Number	1	10		1	1	1	1				15
Dispensary #8											
Input:											
Volume		20113	2				8			8	20131
Number		7	1				1			1	10
Output:											
Volume	2	3820			20	10	8				3860
Number	1	8			1	1	1				13
Dispensary #9											
Input:											
Volume		17113	2				8			8	17131
Number		0	1				1			1	9
Output:											
Volume	2	3820			20	10	8				3860
Number	1	0			1	1	1				13

Malcolm Grow Hospital

Dispensary - Operations

TABLE I-M-1

NUMBER OF COMMUNICATIONS BY MODE ACCORDING TO SOURCE/DESTINATION

SOURCE/ DESTINATION	RECEIVED BY DISPENSARIES						SENT BY DISPENSARIES					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION								55				
AIR EVACUATION												
DENTAL SERVICE												
DISPENSARIES												
FLIGHT MEDICINE												
FOOD SERVICE												
HOUSEKEEPING												
LABORATORIES												
MAINTENANCE												
MEDICAL RECORDS												
NURSING SERVICE												
OPERATING ROOM												
OUTPATIENT DEPT.		784		27				200		527		40
OUTSIDE WORLD	20	180				320	40	60		60		60
PERSONNEL												
PHARMACY		2										
PHYSICAL THERAPY												
PREVENTIVE MED.												
PROFESSIONAL SERV												
REGISTRAR												
SUPPLY		1						19		403		4
VETERINARY MED.												
WARD MANAGEMENT						20						16
RADIOLOGY												

Malcolm Grow Hospital
Dispensary - Operations

TABLE I-M-2

NUMBER OF COMMUNICATIONS BY TYPE ACCORDING TO INPUT AND OUTPUT

FUNCTION		Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Patient Secondary	Patient Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
Pentagon:												
Input	Volume		226									226
	Number		3									3
Output	Volume		350		20							370
	Number		3		1							4
President's Medics:												
Input	Volume		80									80
	Number		1									1
Output	Volume		112									112
	Number		1									1
Bolling AFB:												
Input	Volume		45	616	2		7		302	28	1090	
	Number		2	2	1		3		3	1	12	
Output	Volume		65	100	21	2	489		146		823	
	Number		3	2	2	2	8		3		20	
Physical Survey (Exam) Clinic:												
Input	Volume		312									312
	Number		2									2
Output	Volume		432									432
	Number		2									2
Other Outlying Dispensaries:												
Input	Volume		280									280
	Number		1									1
Output	Volume	56	560		112							823
	Number	1	1		1							3

Beaufort Naval Hospital
Dispensaries - Operations

TABLE I-B-1

ANNUAL PATIENT VISITS TO PARRIS ISLAND DISPENSARIES*

TYPE OF SERVICE	ANNUAL VISITS
Opthalmology	23,064
Psychiatry	6,849
Podiatry	17,601
Emergency	8,649
General Practice	98,479
Total	154,642

*Source: FY68 Data Pack.

TABLE I-B-2

OUTPATIENT SERVICES PERFORMED AT PARRIS ISLAND DISPENSARIES IN SEPTEMBER 1969

SERVICE				TOTAL
Complete Physical Examinations				290
DAB				50
Replacement records				33
Remedials (MED REP)				134
Others: ECP-7, Air Phys-10, Med Boards-117				507
Recalls: (consults, surveys, weight checks, blood pressure follow-ups, histories, etc.)				718
Total outpatient visits:				1,225
Limited Services	Male Recruit	Permanent Personnel	Female Recruit	
Screening physicals	4,233			4,233
Audiograms	84	546	26	656
PPD's TB	4,233			4,233
Total limited services:				9,122
Immunizations				
Bicillin	4,609			4,609
Erythromycin	287			287
Other	44,480	208		44,688
Total immunizations:				49,584
Adjunct Services				
Laboratory:				
Urine	93	975		1,088
Venipunctures	Blood group/type-44, Hematology-6, Serology-358			4,641
Other lab tests				0
Total laboratory				5,729
X-ray (70 mm)	68	198	2	268
Total adjunct services:				5,997

TABLE I-B-3

WEST END DISPENSARY SICK CALL VISITS*

TIME	AVERAGE PER DAY	RANGE FOR SEPTEMBER 1969
0730	approximately 130	22 to 205
1300	approximately 60	21 to 112
1800	approximately 40	12 to 101

*Source: One month's log book sampling, September 1969.

TABLE I-B-4

MARINE CORPS AIR STATION DISPENSARY SICK CALL VISITS

SERVICE PERFORMED (8/25/69)		QUANTITY	AVERAGE TIME IN MINUTES (am)
Total Sick Call Visits		63	
Examinations:			
By Corpsmen		12	
By Doctor		18	
	Total	30	
Lab Tests		2	
X-Rays		6	
Prescriptions		7	
Emergency Treatment		4	
	From entry to initial screening -		25.4
	Total (in dispensary) -		51.3

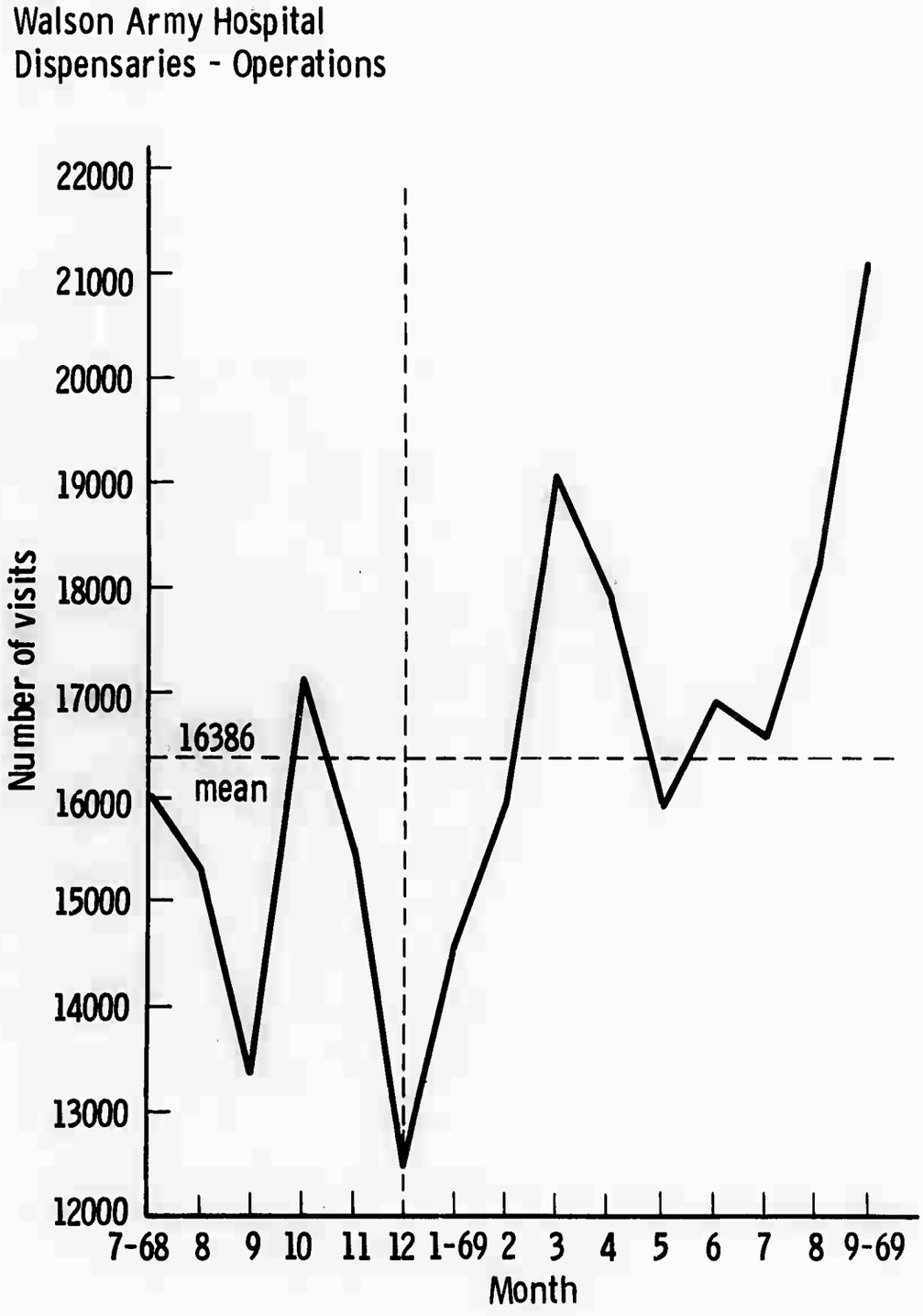


Fig. I-W-1—Number of sick call visits per month

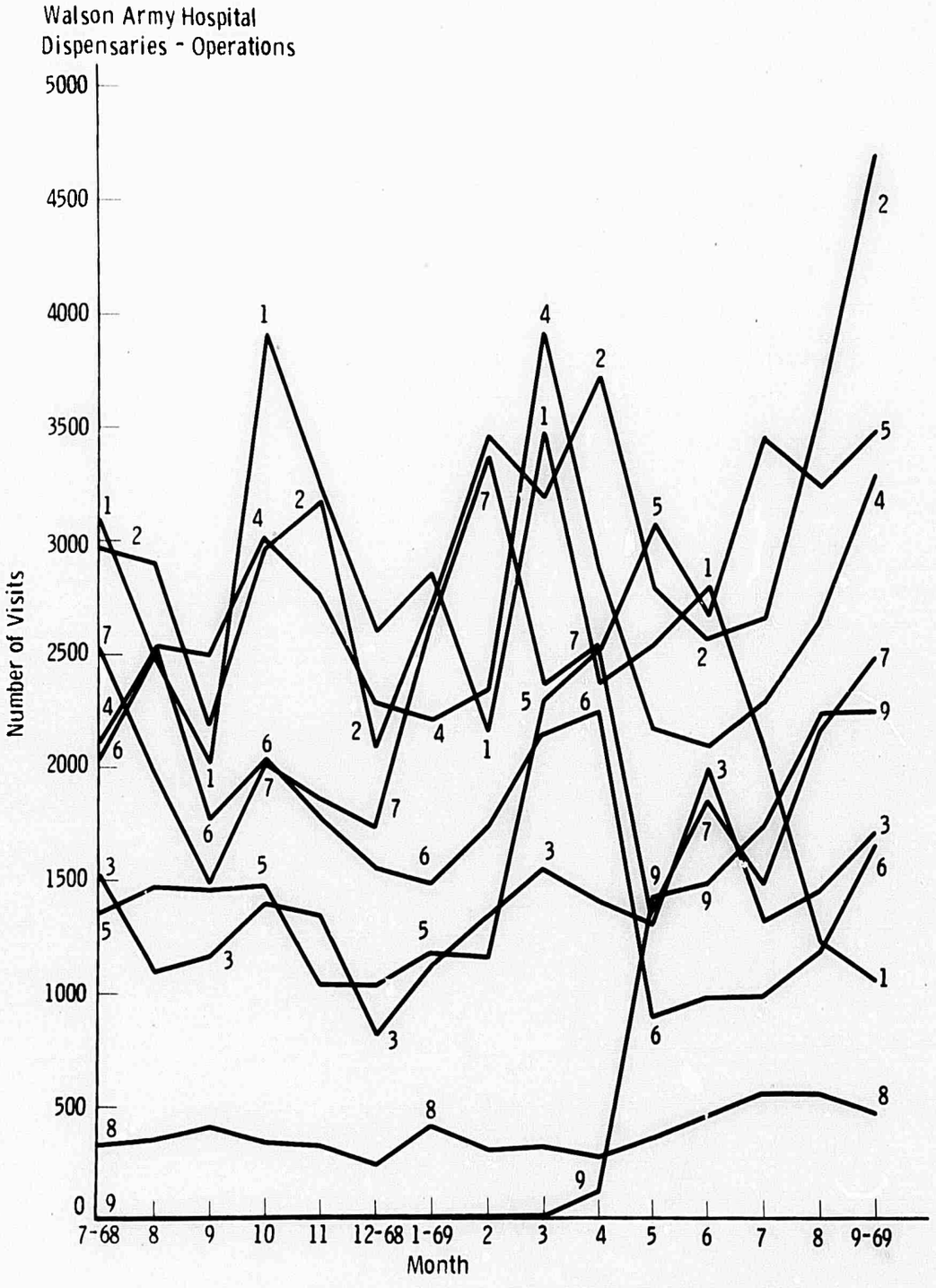


Fig. I-W-2—Number of sick call visits to each dispensary per month

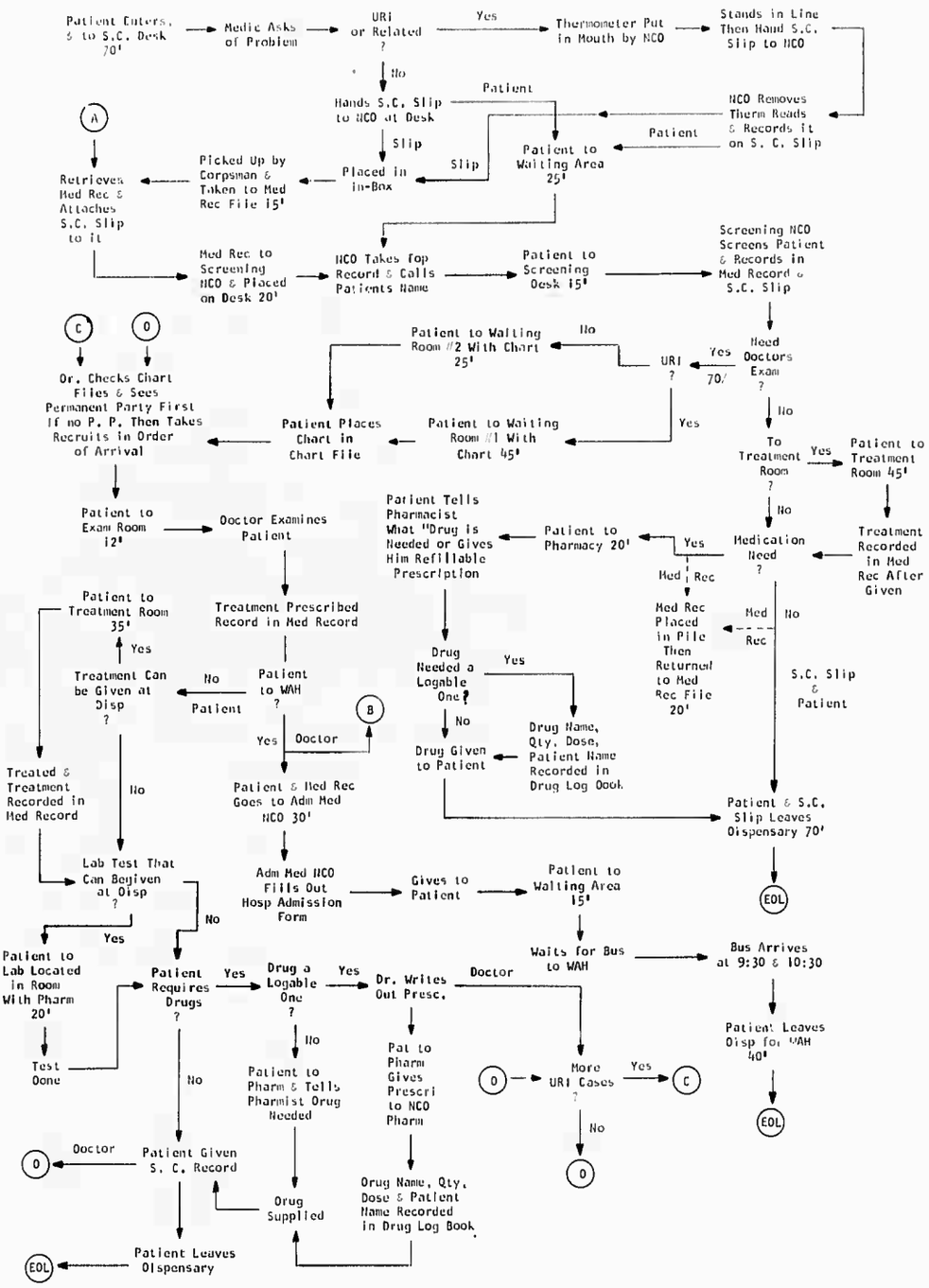


Fig. I-W-3—Routine sick call procedure flow

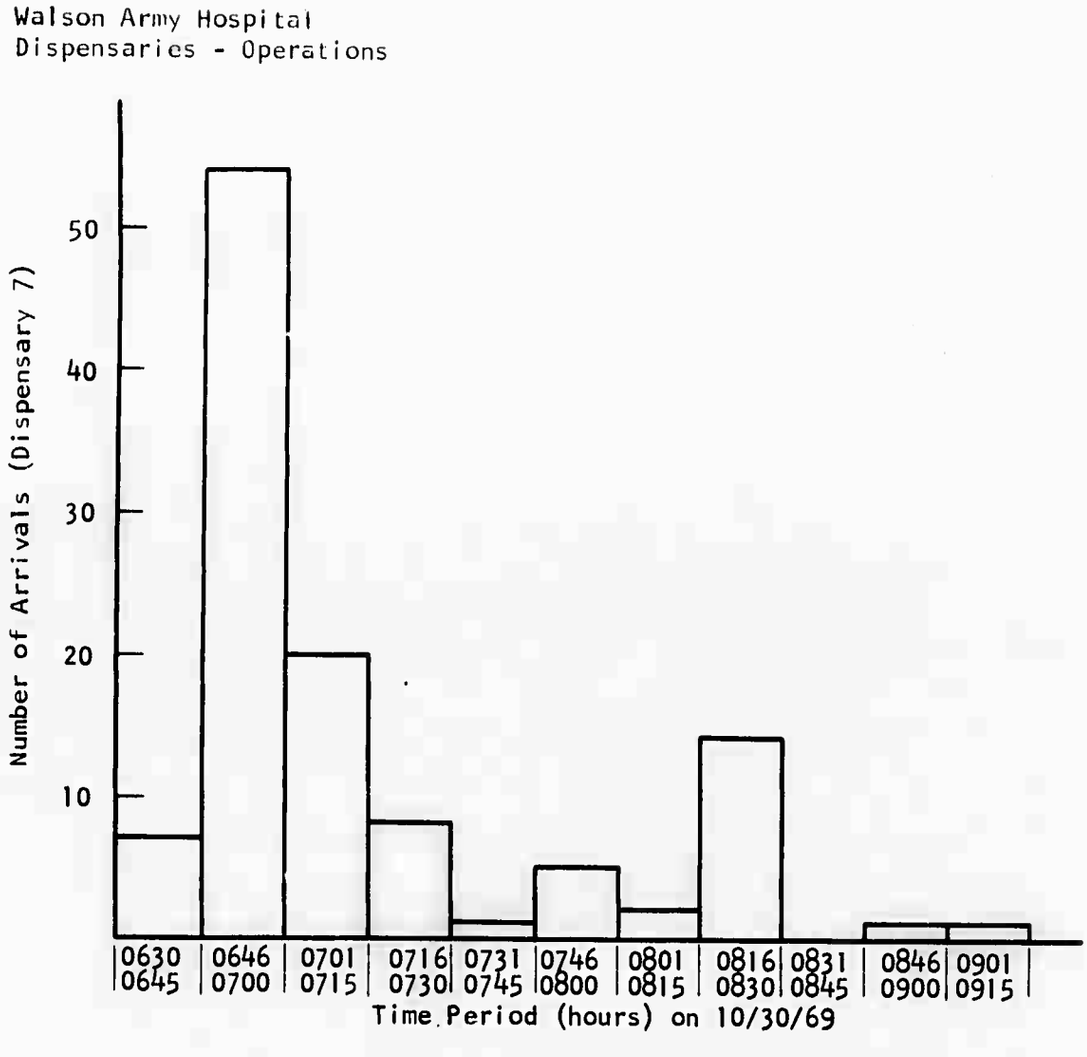


Fig. I-W-4—Arrival times for routine sick call

Beaufort Naval Hospital
Dispensaries - Operations

FIGURE I-B-1

Dwg. 859A593
Pg_ of_

Subject Charted Sick call flow chart for West End Dispensary

Chart Begins Recruits arrive at dispensary Chart Ends _____

Present Method X Proposed Method _____ Date _____

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist / Time	TIME Delay / Storage	NOTES
1. Recruit arrives at dispensary				Sick calls are at 0730,
2. Signs log book				1300, and 1600
3. Waits outside in roofed in area				
4. Corpsman collects individual sick				Separates foot patients
call slips				from others; collects
				slips of those who have
				not been here previously
				first
5. Patient's name called by D.I.				Two men at desk call
				out names
6. Asked for date of birth, service				
number, allergies				
7. Given H-10 treatment record				
8. Foot patients wait in corridor near				
door to podiatry; others wait on				
other side of corridor				
9. Medical - told to enter in groups				Three drs. assisted by
of 5 by D.I.				corpsman and 1 c/m screen
				recruits - serious cases
				are seen by drs.
10. Podiatry - sign log and enter.				
11. Receive treatment				
12. If treated there and discharged,				
Private puts H-10 in bin by batta-				
lion number, signs out of log book				
13. If he needs tests, Dr. writes out				
necessary requistion				
14. Private takes it to proper area				
(e.g., X-ray, pharmacy, lab)				
15. Waits for test				
16. Takes results back to doctor				
17. Dr. determines disposition				

Beaufort Naval Hospital
Dispensaries - Operations

FIGURE I-B-2

Dwg. 859A593

Pg_ of_

Subject Charted: New recruits physical examination flow chart for West End Dispensary (first deck).

Chart Begins: 1:50 pm Chart Ends: 3:30

Present Method: _____ Proposed Method: _____ Date: _____

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist / Time	TIME Delay / Storage	NOTES
1. Assemble platoon in yard			25"	80 men . . .
2. March into building and line up;		200 ft. 3'		Drill instructor used
wait till 340 shot series given			50"	time to indoctrinate new
				recruits who had just
				arrived at 11:00 am
3. Identity checked and men numbered				
4. Asked if allergic to anything			8"	
5. Given two drops oral polio			10"	
6. Recruits march to gun position. One			2'1	
recruit swabs arms with alcohol			3''	
7. Two corpsmen each with one shot-			.5''	
gun give influenza and small pox. One			20"	
gun broke-tried to repair-ended up				
filling syringes for influenza				
8. Gave shots using gun and syringe			3.5''	
9. Men ended up in line for blood			45''	Total time for blood
sample drawing; when completed,				samples and eye exam
recruit moved to line for eye exam				was 45 minutes
10. All lined up and moved upstairs				5 min. total to get to 2

Beaufort Naval Hospital
Dispensaries - Operations

FIGURE I-B-3

Dwg. 859A593
Pg _ of _

Subject Charted: New recruits physical examination flow chart for West End Dispensary (second deck).

Chart Begins: 8:10 Chart Ends: 10:30

Present Method: _____ Proposed Method: _____ Date: _____

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist	TRANSP Time	TIME Delay	TIME Storage	NOTES
1. Assemble in yard						79 men
2. March up back fire escape				2"		
3. Line up in 2 lines						
4. Asked by corpsman if any allergies				1"		
If so come to desk for name check and						
given special pills				5"		
5. Asked by corpsman if sick or had				3"		
recent illness or operation						
6. Those replying screened by corps-				10"		Those deemed sick or
man and recruit sent to see physician						requiring MD exam sent
						to MD
7. Left arm swabbed with cotton				3"		
8. TB shot given				7"		
9. Asked to disrobe						
10. Backside swabbed with alcohol				2"		
11. Bicillin shot given				5"		
12. Remaining recruits wait for the				30"		Observation terminated
recruits sent to MD for exam; MD tied						at 10:30
up in Medical Board - unexpected delay						
13. Screening done but had to give rest						
their shots						

Beaufort Naval Hospital
Dispensaries - Operations

FIGURE 1-B-1

Dwg. 859A593
Pg_ of_

Subject Charted: Third week information series flow chart for West End Dispensary

Chart Begins: 1:00 pm Chart Ends: 1:15 pm

Present Method_____ Proposed Method_____ Date_____

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist	TRANSP Time	TIME Delay	TIME Storage	NOTES
1. 4 platoons arrive in yard	○ ⇨ □ D ▽			20"		
2. March in door (back)	○ ⇨ □ D ▽			25"		From time first recruit
	○ ⇨ □ D ▽					marched in, till last
	○ ⇨ □ D ▽					recruit received shots
	○ ⇨ □ D ▽					was 25 minutes.
3. Both arms swabbed with alcohol by	○ ⇨ □ D ▽					
2 recruits	○ ⇨ □ D ▽					
4. Receive plague shot - syringe	○ ⇨ □ D ▽					Gun shot = 2 seconds
5. Receive yellow fever - gun	○ ⇨ □ D ▽					Syringe Shots = 3 Sec.
6. Recruit hands out cotton balls for	○ ⇨ □ D ▽					Most delay in getting
bleeders	○ ⇨ □ D ▽					recruits to keep moving
7. March out front door	○ ⇨ □ D ▽					

II. DISPENSARIES -- RESOURCE UTILIZATION

	Walson Army Hospital (WAH) -- Fort Dix	Malcolm Grow Hospital -- Andrews AFB	U.S. Naval Hospital -- Beaufort
A. Personnel	1. 35 employees[1] (refer to Table II-W-1 for a list of all full-time dispensary personnel, broken down by individual dispensary, position, pay grade, number of personnel, and hours worked per week) a. physicians and administrators not included in this total because their time is divided among dispensaries, Medical Processing, clinic nursing, ER, and General Outpatient Clinic. 2. Physicians: a. Eight MD's regularly assigned to dispensaries on a part-time rotating basis with up to 12 MD's during URI season[2,4] • one or 2 MD's visit each dispensary for sick call in the morning Monday thru Friday • 3 MD's for sick call in all dispensaries on Saturday; b. MD's rotate on and off dispensary duty in Dispensary 5 (stockade) every week, in all other dispensaries every 2 weeks. 3. Head Nurse: a. Chief Nurse of 4th Field Hospital assigned as Head Nurse, Dispensaries, located in Dispensary 2; b. Spends 25% of his time in patient care in Dispensary 2, 70% managing nursing care in other dispensaries and 5% of his time in 4th Field Hospital duties; c. reports to Chief of Clinic Nursing Service, Administrative Office of Department of Clinics, and 4th Field Hospital Commanding Officer. 4. Clerical personnel: a. spend full time in clerical tasks, e.g. maintaining military health and immunization records for dispensary personnel, scheduling appointments, and handling other administrative paper work.	1. 61 employes total for dispensaries (refer to Table II-M-1 for breakdown for each dispensary by number and occupation of personnel, pay grade, and hours worked per week). 2. Pentagon (Flight Medicine) Dispensary:[1] a. refer to Table II-M-1 for complete list of medical personnel; b. no OJT at this dispensary; technicians and medics fully trained before arrival. 3. PMD:[2] a. One MD and 3 technicians all full-time. 4. Bolling Dispensary:[3] a. refer to Table II-M-1 for complete listing of personnel; b. 3 doctors handle visiting hours; c. 2 medics and a dental technician on call, at least one of whom stays in dispensary until midnight and sleeps in the facility until the morning shift; d. Flight Medicine Clinic has one officer and one technician assigned;	1. 159 employees[1] (refer to Table II-B-1 for breakdown by dispensary and by specific occupation).

		Ft. Dix	Andrews	Beaufort
B.	Facilities (Cont'd)	2. Space:[5] a. total floor space (excluding Dispensaries 5 and 8) -- approx. 9,800 sq. ft. (only dispensaries 2 and 7 were actually measured, as all dispensaries are very similar in layout); b. refer to Table II-W-3 for breakdown of sq. ft. area and percentage of total by individual room for each dispensary.	2. Space: a. total floor space -- 14,804 sq. ft.; b. refer to Table II-M-2 for breakdown of sq. ft. area and percentage of total for each dispensary.	2. Space: a. total floor space -- 74,676 sq. ft.: b. refer to Table II-B-2 for breakdown of space by sq. ft. area for each dispensary.
C.	Equipment	1. Refer to Appendix I, Report 011, for a complete list of all equipment in dispensaries, with quantities and dollar values worth singly or in total over $200.[4]	1. Bolling Dispensary:[3] a. refer to Table II-M-3 for a list of all equipment worth over $200. 2. PSC:[5] a. partial list includes • one lensometer • one visual acuity testing apparatus • one EKG machine • one sigmoidoscope • one refrigerator • one tonometer; b. no other equipment inventory available. 3. Equipment information not available for other dispensaries.	1. No detailed equipment inventory was undertaken for the Beaufort Dispensaries. 2. Refer to Appendix I, Report 011 for a partial list of capital equipment at Parris Island Dispensaries valued over $200. 3. X-ray equipment includes a 70 mm unit for routine chest X-rays at East End Dispensary and a 100 m m100 KV machine primarily for orthopedic spine and skull X-rays at West End Dispensary; the MCAS has a 70 mm unit for films sent to BNH for interpretation, and a larger chest X-ray machine for interpretation by MD's at the dispensary.
D.	Work Sampling Studies	1. No work sampling studies conducted in dispensaries at Fort Dix.	1. No work sampling studies conducted in dispensaries at Andrews.	1. No work sampling studies conducted in dispensaries at Beaufort.

II. Dispensaries -- Resource Utilization (Cont'd)

	Ft. Dix	Andrews	Beaufort
A. Personnel (Cont'd)	5. Medical corpsmen: a. spend 75% of their time in patient care, e.g. patient screening at sick call, all dispositions, and patient treatment upon written orders from MD; and 25% in clerical tasks; b. report to Head Nurse, NCOIC, and the Chief NCO's supervising individual dispensaries.	e. 2 optometrists and one receptionist work in eye clinic; f. no OJT at this location. 5. OMD and MPH: [4] a. refer to Table II-M-1 for list of personnel; b. personnel rotate assignments so that one person is available on call 24 hours a day for quarantine inspections of international flights; c. one week of OJT needed for each of these personnel; d. one man-day per week spent by technician in taking water samples. 6. PSC: [5] a. refer to Table II-M-1 for list of personnel; b. NCOIC is borrowed from Flight Surgeon's Office in the hospital; PSC is authorized one, but none assigned at time of interview.	
B. Facilities	1. Location: a. all dispensaries execpt 5 and 8 -- located in the troop housing and training areas approx. one-half to one and one-half miles from WAH (refer to Table II-W-2 for list of training units serviced by each dispensary); b. Dispensary 5 -- Fort Dix stockade; c. Dispensary 8 -- now abandoned, formerly located in Hospital Annex, Medical Processing area; d. Department of Clinics -- located on first floor of WAH.	1. Location: a. Pentagon Dispensary -- in Pentagon, approx. 15 miles from Andrews AFB; b. Presidential Medics Dispensary -- on flight line at Andrews AFB, approx. one mile from MGH; c. Bolling AFB Dispensary -- at Bolling AFB, approx. 20 miles from Andrews AFB; d. OMD and MPH -- on Andrews AFB, approx. 5 miles from MGH; e. PSC -- in same building as MPH; this clinic is temporarily in an auditorium.	1. Location: a. East End, West End, Depot, and Women's Dispensaries -- on Parris Island approx. 7 miles from BNH, each in a separate building within a one-half mile radius. b. Rifle Range and Psychiatry Dispensaries -- on Parris Island in one building approx. 2 miles from West End. c. MCAS Dispensary -- approx. 7 miles from BNH, in same building as the MCAS Dental Clinic at the Air Base. d. laboratories -- main laboratory in West End Dispensary; small laboratory in Women's Dispensary.

Walson Army Hospital
Dispensary Resource Utilization

TABLE II-W-1

PERSONNEL

DISPENSARY	POSITION	PAY GRADE	QUANTITY	HOURS/WEEK
Number 1	Chief Dispensary NCO	E-6	1	56
(5)	Dispensary Specialist	E-5	2	56
	Dispensary Attendant	E-4	1	56
	Clerk	E-2	1	56
	Clerk	E-4	1	56
Number 2	*Head Nurse, Dispensaries	O-3	1	50
(8)	NCOIC, All Dispensaries	E-7	1	40
	Chief Dispensary NCO	E-6	1	56
	Dispensary Specialist	E-5	2	56
	Clerk	E-3	1	56
	*Dispensary Attendant	E-4	1	44
	*Dispensary Orderly	E-3	1	44
Number 3	*Chief Dispensary NCO	E-6	1	44
(3)	Dispensary Specialist	E-5	1	56
	Dispensary Attendant	E-4	1	56
Number 4	*Chief Dispensary NCO	E-6	1	44
(5)	Dispensary Specialist	E-5	2	56
	Clerk	E-4	1	56
	Dispensary Orderly	E-3	1	56
Number 5	Dispensary Specialist	E-5	1	56
(3)	Dispensary Specialist	E-4	1	56
	Dispensary Orderly	E-3	1	56
Number 6	Chief Dispensary NCO	E-6	1	56
(4)	Dispensary Specialist	E-5	1	56
	Dispensary Attendant	E-4	1	56
	Clerk	E-2	1	56
Number 7	Chief Dispensary NCO	E-6	1	56
(4)	Dispensary Specialist	E-5	2	56
	Clerk	E-4	1	56
Number 8/9	Registered Nurse	GS-9	1	40
(6)	Chief Dispensary NCO	E-6	1	56
	Dispensary Specialist	E-5	1	56
	**Dispensary Specialist	E-5	1	44
	Dispensary Attendant	E-4	2	56

Source: Adjusted Roster (DA-2496-1) from Head Nurse of Dispensaries
* 4th Field Hospital
** 22nd Ambulance Company

Walson Army Hospital
Dispensary Resource Utilization

TABLE II-W-2

TRAINING UNITS SERVICED BY DISPENSARIES

DISPENSARY	UNIT
1	1st AIT Brigade
2	2nd BCT Brigade
3	5th CST Brigade
4	3rd BCT Brigade
5	Stockade
6	5th CST Brigade
7	3rd BCT Brigade
8/9	Medical Processing
	Civilian

TABLE II-W-3

TYPICAL BREAKDOWN OF DISPENSARY FLOOR SPACE

DESCRIPTION	SQ. FEET	PERCENT
Waiting room	360	25.71
Reception and record area	100	7.14
Pharmacy and lab area	160	11.42
Office	80	5.71
Treatment room	120	8.57
Latrine	40	2.85
NCOIC office	80	5.71
Utility	80	5.71
Supply room	80	5.71
Doctors' office and treatment room	100	7.14
Waiting room	120	8.57
Record room	80	5.71
	1400	99.95

TOTALS

Dispensary	Sq. Feet
1	1400
2	1400
3	1400
4	1400
6	1400
7	1400
9	1400
TOTAL	9800

TABLE II-M-1

STAFF BREAKDOWN

DISPENSARY	PERSONNEL CODE	PAY GRADE	QUANTITY	HOURS	DESCRIPTION
Pentagon	B	06	1	41	Flight Surgeon, OIC
	C	06	1	41	Physician
	C	03	1	41	Flight Medical Officer
	B	E8	1	41	NCOIC Clinic
	D	E6	1	41	Medical Technician
	D	E4	2	41	Assistant Medical Technicians
	D	E5	1	41	Assistant NCOIC, Medical Tech
	D	E3	1	41	Medical Technician
	D	E5	1	41	X-ray Technician
	D	E5	1	41	Pharmacy Technician
	D	E4	1	41	Lab Technician
	E	GS6	1	40	Secretary to OIC
	E	GS5	1	40	Receptionist
	E	GS5	1	40	Clerk Typist
Bolling AFB	A	0-4	1	40	OIC Dispensary
	C	0-3	2	78	General Practice Doctors
	A	E7	1	36	NCOIC Clinic
	B	E7	1	39	NCOIC Professional Service
	D	E6	1	40	X-ray Technician
	D	E7	1	40	Pharmacy Technician
	D	E6	1	40	Laboratory Technician
	D	E5	10	40	Technicians
	E	GS4	2	40	Receptionist
	C	GS7	1	40	Nurse
	E	GS4	1	40	Clerk Typist
	C	04	1	40	Optometrist
	C	03	1	40	Optometrist
	G	WB-2	1	40	Janitor
	D	E7	1	40	Public Health Service Technician
Occupational Medicine and Military Public Health	C	GS11	1	40	Physician-Occupational Medicine
	C	GS7	1	40	Nurse OCE, Medicine
	D	E6	1	40	Technician-OCE Medicine
	E	GS-4	1	40	Secretary
	D	E4	1	40	Technician
	C	04	1	5	Dentist
	A	03	1	40	BIE Environmental Engineer
	D	E7	2	40	Preventive Medicine Technician
	B	E9	1	40	NCOIC
	D	E5	1	40	Preventive Medicine Technician
	D	E4	1	40	Preventive Medicine Technician
	E	GS4	1	40	Clerk
Physical Examination	C	O-3	1	48	General Practice Physician
	B	E-6	1	50	NCOIC Physical Survey Clinic
	D	E-5	1	50	Medical Technician
	D	E-4	1	50	Medical Technician
	D	E-3	1	50	Medical Technician
	E	GS-4	1	40	Receptionist-Typist
President's Medics		O-3	1	40	Physician
		E-5	3	40	Technician

Malcolm Grow Hospital

Dispensary - Resource Utilization

TABLE II-M-2

FACILITIES BREAKDOWN

DISPENSARY	FACILITY	AREA IN SQUARE FEET	PERCENTAGE OF AREA	PERCENTAGE OF TOTAL FUNCTION
Bolling AFB	Autoclave lounge Room	170	3.19	
	Cast Room	100	1.87	
	EKG Room	80	1.50	
	Treatment Emerg. Room	375	7.04	
	X-ray Room	100	1.87	
	X-ray Film Developing	80	1.50	
	Dressing Room	100	1.87	
	Men's Toilet	120	2.25	
	X-ray NCOIC	80	1.50	
	X-ray File Room	100	1.87	
	Doctor's Office and Exam Room	260	4.88	
	Lounge	225	4.22	
	Exam Rooms	240	4.51	
	Optom. (2)		3.28	
	Visual Screening	175	3.19	
	Admin. Records Retarded, etc.	170		
	Audio Meter Room	50	.93	
	PX Technician Work Room	135	2.53	
	PX Optical Concession	145	2.72	
	Waiting Area	325	6.10	
	Medical Supplies	180	3.38	
	Doctor's Sleeping Quarters	235	4.41	
	X-ray Film and Film Storage	150	2.81	
	Miscellaneous Storage	25	.46	
	Locker Rooms	250	4.69	
	Eye Clinic Control	160	3.00	
	Forms Storage	100	1.87	
	Custodial Supply Room	75	1.40	
	Bed Storage	120	2.25	
	Linen Uniform Storage	135	2.53	

Malcolm Grow Hospital

Dispensary - Resource Utilization

TABLE II-M-2 (cont'd)

FACILTIIES BREAKDOWN

DISPENSARY	FACILITY	AREA IN SQUARE FEET	PERCENTAGE OF AREA	PERCENTAGE OF TOTAL FUNCTION
	Miscellaneous Storage	84	1.57	
	Cleaning Equipment Storage	130	2.44	
	Utility Area	80	1.50	
	NCOIC Office	125	2.34	
	Unused Office	225	4.22	
	Health Service Lounge	216	4.06	
	Total Area	5320		35.93
Pentagon	Eye Lane	100	3.73	
	X-ray Room	600	22.43	
	Doctor's Office	320	11.96	
	Audio Booth	75	2.80	
	Pharmacy	250	9.34	
	Administrative Files	100	3.73	
	Storage (2)	125	4.67	
	EKG Room	160	5.98	
	Doctor's Office	200	7.47	
	Chief's Office	200	7.47	
	Receptionist	100	3.73	
	Annex Room	380	14.21	
	Rest Room	64	2.39	
	Total Area	2674		18.06
President's Medics	Total Area	578		3.90
Physical Examination	Total Area	3784		25.56
Occupational Medicine and Military Public Health	Total Area	2448		16.53
	Combined Total	14,804		

Malcolm Grow Hospital

Dispensary - Resource Utilization

TABLE II-M-3

EQUIPMENT LIST

EQUIPMENT CODE	FIXED PORTABLE	QUANTITY	OPERATING HOURS	LOADING	PURCHASE PRICE	DESCRIPTION
K	F	1	8	N	$14320	X-ray Unit
J	P	1	24	N	418	Defibrillator
L	P	1	8	N	504	Centrifuge
K	F	2	24	N	1260	Operating Tables
L	P	1	8	N	421	Microscope
F	F	1	8	N	346	Intercom
K	P	1	8	N	464	Opthalmoscope
N	P	2	24	N	7846	Ambulance
J	P	1	24	N	625	EKG Machine

TABLE II-B-1

STAFF BREAKDOWN

PARRIS ISLAND DISPENSARIES

DISPENSARY	PERSONNEL	NUMBER
Rifle Range Dispensary	Medical Doctors	2
	Corpsman - Supervisor	1
	Corpsman - Pharmaceuticals and Screening	1
	Corpsman - Night Duty	1
	Corpsman - Pistol Range Attendant	1
	Corpsman - Records and Medical Platoon Sick Call Attendant	1
	Total	7
East End Dispensary	Medical Doctor	1
	Nurse - Temporary Assignment	1
	Corpsmen - Health Records Section	5
	Corpsman - RAMS Section (Data Processing)	1
	Corpsmen - Night Duty	3
	Corpsmen - Physical Examination	9
	Corpsman - Radiology	1
	Corpsman - Administrative Chief	1
	Total	22
West End Dispensary	Medical Doctors	4
	Podiatrists	2
	Corpsmen - Podiatrist's Assistants	2
	Corpsmen - Surgical Section (Sutures only)	2
	Corpsmen - Laboratory	3
	Corpsmen - X-ray	3
	Corpsmen - Information Desk	2
	Corpsmen - Pharmacy	1
	Corpsmen - Screening	6
	Corpsman - Wards	4
	Total	29
Depot Dispensary	Medical Doctor	1
	Corpsmen	2
	Total	3
Woman's Dispensary	Medical Doctor	1
	Corpswave - Chief, Supervisory	1
	Corpswave - Receptionist and Records Keeper	1
	Corpswaves - Screening	2

TABLE II-B-1 (cont'd)

	Corpswaves - Pharmacy	1
	Total	6
Psychiatry	Psychiatrists	3
	Psychologist (one Civil Services)	2
	Secretaries (Civil Service)	3
	Women Marine Recruits	2
	Total	10
Marine Corp Air Station Dispensary	Officers	8
	MSC	3
	Corpsmen	61
	Total	72

TABLE II-B-2

FACILITIES BREAKDOWN

DISPENSARY	AREA IN SQUARE FEET
Parris Island Dispensaries:	
East End Dispensary	18,688
Rifle Range Dispensary	16,064
West End Dispensary	16,064
Depot Dispensary	6,820
Woman's Dispensary (estimated)	4,032
	61,668
Marine Corp Air Station Dispensary	13,008
Total	74,676

III. DISPENSARIES -- FUNCTIONAL COST

	Walson Army Hospital (WAH) -- Fort Dix	Malcolm Grow Hospital -- Andrews AFB	U.S. Naval Hospital -- Beaufort
A. Total			
1. Cost:	$110,909 annually.	$[illegible] annually.	$1,251,416 annually.
2. Source:	a. refer to Tables III-W-1 through III-W-9 for elemental figures used in deriving costs and to Appendix VII for functional breakdown.	a. refer to Appendix VII for functional cost breakdown summary sheet.	a. refer to Appendix VII for functional cost breakdown summary sheet.
B. Personnel			
1. Cost:	$342,392 annually: military -- $[illegible]; civilian -- $10,261; allocated from Department of Clinics -- $13,[illegible]; function cost -- $330,[illegible]; non-function cost -- $11,797.	$751,211 annually: function cost -- $744,[illegible]; non-function cost -- $6,[illegible].	$993,100 annually: function cost -- $985,[illegible]; non-function cost -- $7,[illegible].
2. Source:	a. see Tables III-W-2 thru -9 for staffing figures for each dispensary used in calculating personnel cost. Figures for assigned enlisted men were obtained from Dispensary Personnel Breakdown (DA Form 2496-1) dated October 29, 1969, and verified by observation in Dispensaries 2 and 7. Enlisted men assigned from 4th Field Hospital were allocated .8 to dispensary function. Salaries of Head Nurse and NCOIC of Dispensaries were allocated among the individual dispensaries based on interview estimates from Head Nurse. Allocation of MD's time was made from the Dept. of Clinics schedule dated November 10, 1969 thru November 22, 1970 which assigns all Dept. of Clinics MD's to various duties.	a. function cost -- the number of personnel assigned to dispensaries was determined from interviews with NCOIC of Dispensaries; pay rates for military personnel were taken from AFM 177-101 (C)1. Civilian rates were extracted from USAF salary rates July, 1969 (Appendix IX); benefits for civilians were determined from information given in interview with [illegible] military consultant.	a. [illegible] observations and interviews, supplemented by personnel rosters wherever available.
	b. [illegible] obtained pay rates for each labor grade from [illegible] and added 7.0% fringe benefits for civilian labor.	• non-function cost -- time spent by employee outside the function ● housekeeping -- from 71 hours spent by 9 personnel in housekeeping chores, estimated by interviewee ● formal training -- TDY time for training purposes from Professional Activities Report FY69 ● OJT -- from hours per trainee and instructor, estimated by interviewee. Cost/person rate by function from business office. Cost [illegible] Appendix VI. (No OJT in Pentagon or Dallas.)	
	c. WAH determined cost from Dispensary Personnel Breakdown (DA-2496-1) for enlisted men, MEDDAC TDA for civilians, and special staffing report prepared by Chief, Personnel Div. for Officers.		
	d. Dept. of Clinics cost prorated as 45% of total personnel and travel costs for that dept., as estimated by AO, Dept. of Clinics.		

	Ft. Dix	Andrews	Beaufort
C. Supplies			
1. Cost:	$37,937 annually (all prorated from Dept. of Clinics costs): medical -- $21,638; non-medical -- $1,033.	$79,017 annually.	$23[illegible],21[illegible] annually.
2. Source:	a. cumulative cost run for FY69 received by Management Services Div. from Post Data Processing, showing resource cost by item of expense for each function (see Appendix I, Report 011). Supply costs were derived for the Dept. of Clinics, and prorated for dispensaries (.45), OPC, ER, and Medical Processing, using estimate by AO, Dept. of Clinics. See Table III-W-10 showing cost sheet for Dept. of Clinics.	a. from Report of Medical and Non-medical Supply Expense FY69;	a. Parris Island Dispensaries -- extrapolated from first quarter FY70 supply expenditures as reported by Accounting Officer.
		b. Central Sterile Supply (CSS) (added into medical) -- calculated from total annual CSS cost (Report of Medical and Non-medical Supply Expense FY69) using Dispensaries share of total CSS cost taken from 2 months' orders and direct issues data.	b. MCAS Dispensary -- from FY69 supply expenditures as reported by the Dispensary Administrative Officer (AO).
D. Maintenance			
1. Cost:	$9,900 annually: WAH medical maintenance -- $3,693; Ft. Dix Post Engineering -- $6,107.	$3,115 annually: medical -- $2,919; non-medical -- $226.	$21,146 annually: medical -- $1,368; non-medical -- $19,77[illegible].
2. Source:	a. medical -- request slips from November 1968 to November 1969 were reviewed to determine charges to functions for parts and labor; these charges were used for medical maintenance costs.	a. medical -- labor and parts from medical maintenance chits for entire FY69.	a. Parris Island Dispensaries -- estimated by Maintenance Officer from FY69 expenditures.
	b. Post Engineering -- total annual costs of labor and material obtained in an interview with Post Engineering; estimate then obtained on percentage of their total work performed for WAH; 3-month sample of Post Engineering requests taken to distribute the percentage of cost allocated among WAH functions. See Appendix IV for all calculations.	b. non-medical -- calculated from total annual maintenance costs (Medical Expense Report CY69) using dispensaries' percentage share of total hospital maintenance cost taken from one month's chits.	b. MCAS Dispensary -- estimated by dispensary AO from FY69 expenditures as reported by AO.

	Ft. Jackson	Andrews	Beaufort
E. Housekeeping			
1. Cost:	$5,634 annually: all housekeeping done by dispensaries staff.	$10,461 annually: janitorial -- $5,591; staff housekeeping -- $1,870.	$16,356 annually: all housekeeping done by dispensaries staff.
2. Source:	a. estimate made of amount of time spent in housekeeping by staff in Dispensary 7 following observation there. This estimate was used to calculate housekeeping cost for a "typical" dispensary. This cost for 8 dispensaries was entered as housekeeping cost.	a. janitorial -- cost of janitor service provided for function from percentage of total hospital floor space.	a. Parris Island Dispensaries -- from observations and estimates based on fact that work is done by recruits with minimal corpsman supervision.
	b. housekeeping labor expended by members of training companies (recruits) was not included.	b. staff -- time spent by staff of dispensaries in housekeeping, estimated by NCO of dispensaries.	b. MCAS Dispensary -- estimated by Dispensary AO, supported by observations.
F. Training			
1. Cost:	$6,153; all OJT.	$2,796 annually: formal -- $987; OJT -- $756; training dept. -- $1,053.	$40,222 annually: formal -- $12,794; OJT -- $18,492; training dept. -- $8,944.
2. Source:	a. a portion of the total function personnel cost was allocated to training on the basis of estimates made by observers of the amount of time needed for a student to reach 90% efficiency in each job class; these estimates were factored into a learning curve equation to arrive at OJT costs (see Appendix VI -- OJT Costs).	a. formal -- see Personnel, formal training.	a. formal -- interview estimates.
		b. OJT -- see Personnel, OJT training.	b. OJT -- observations.
		c. training dept. -- the cost of training dept. administrative personnel allocated to each function was determined first by finding the percentage of the total training staff allocated to a given function and then calculating this percentage of administrative personnel salaries.	c. training dept. -- prorating the salary of the corpsman in charge of training among the functions according to the number of corpsmen receiving training in each function.

III. Dispensaries -- Functional Costs (Cont'd)

		Ft. Dix	Andrews	Beaufort
C.	Capital Equipment			
	1. Cost:	$8,050 standard -- $6,611; non-standard -- $1,479; all prorated from Dept. of Clinics.	$151,669.	$145,589.
	2. Source:	a. Dept. of Clinics costs prorated for dispensaries (.45), OPD, ER, and Medical Processing based on estimate by AO, Dept. of Clinics. See Tables III-W-1 and III-W-10 for numbers.	a. refer to computer run PCN 43165A. September 30, 1969 inventory of total hospital equipment worth singly or in total over $200].	a. Parris Island Dispensary -- FY69 expenditures estimated by Parris Island Supply Officer; only partial equipment list available. b. MCAS Dispensary -- FY69 expenditures estimated by Dispensary AO; no equipment listing available.

Walson Army Hospital
Dispensaries - Functional Costs

TABLE III-W-1

FUNCTIONAL COSTS

ITEM	(W) DETERMINED COSTS
Direct Charges	
Mil. Labor	288,611
Civil. Labor	10,261
Maintenance	
Post	6,107
Medical	250
Misc. Charges	1,314
Prorated Charges	
Dept. of Clinics (.45 of total)	101,529
Personnel	38,976
Supplies	57,897
Medical	56,083
Non-medical	1,814
Equipment	7,978
Standard	6,611
Non-standard	1,366
Other	4,656
Travel, etc.	4.544
Misc. Eq.	113
Total Charges	$410,089

TABLE III-W-2

PERSONNEL

ASSIGNED NO. & GRADE		ACTUAL NO. & GRADE	
Dispensary #8			
2	E6	2	E6*
1	E5	1.8	E5*
1	E4	2	E4*
		.1	E7
		5	E1*
		1	GS9
Mil.:$25,419.00		Mil.:$49,519.70	
Civ.:$		Civ.:$9,590.00 =	
10261 - 1 - MH			
* 56 hrs/wk			

TABLE III-W-3

PERSONNEL

ASSIGNED NO. & GRADE		ACTUAL NO. & GRADE	
Dispensary #7			
1	O4		
1	E6	1	E6*
1	E4	1	E4*
		.1	E7
		.2	O3**
		2	E5*
Mil.:$26,449.00		Mil.:$26,733.70	
Civ.:$		Civ.:$	
* 50 hrs/wk			
** 56 hrs/wk			

Walson Army Hospital
Dispensaries - Functional Costs

TABLE III-W-4

PERSONNEL ASSIGNED NO. & GRADE		ACTUAL NO. & GRADE	
Dispensary #6			
1	O3	.2	O3**
2	E6	1	E6*
1	E5	1	E5*
1	E4	1	E4*
1	E2	1	E2*
		.1	E7
Mil.: $40,403.00		Mil.: $24,142.70	
Civ.: $		Civ.: $	

** 50 hrs/week
* 56 hrs/week

TABLE III-W-5

PERSONNEL ASSIGNED NO. & GRADE		ACTUAL NO. & GRADE	
Dispensary #5		.2	O3**
1	E5	1	E5*
1	E4	1	E4*
1	E6		
1	E3	1	E3*
		.1	E7
Mil.: $21,354.00		Mil.: $17,034.70	
Civ.: $		Civ.: $	

** 50 hrs/week
* 56 hrs/week

TABLE III-W-6

PERSONNEL ASSIGNED NO. & GRADE		ACTUAL NO. & GRADE	
Dispensary #4			
1	O3	.2	O3
1	E5	2	E5*
1	E4	1	E4*
1	E7	.1	E7
		.8	E6*
		1	E3*
Mil.: $31,037.00		Mil.: $28,743.90	
Civ.:		Civ.:	

* 56 hrs/wk

TABLE III-W-7

PERSONNEL ASSIGNED NO. & GRADE		ACTUAL NO. & GRADE	
Dispensary #3			
1	O3	.2	O3**
1	E6	.8	E6*
2	E4	1	E4*
		.1	E7
		1	E5*
Mil.: $28,729.00		Mil.: $19,580.90	
Civ.: $		Civ.: $	

** 50 hrs/week
* 56 hrs/week

TABLE III-W-8

PERSONNEL ASSIGNED NO. & GRADE		ACTUAL NO. & GRADE	
Dispensary #2			
1	O3	.65	O3**
3	E5	2	E5**
1	E4	.8	E4*
		.3	E7
		1	E6*
		1.8	E3*
		.5	E1*
Mil.: $33,440.00		Mil.: $40,723.95	
Civ.: $		Civ.: $	

** 50 hr/week
* 56 hr/week

TABLE III-W-9

PERSONNEL ASSIGNED NO. & GRADE		ACTUAL NO. & GRADE	
Dispensary #1			
1	O3	.2	O3**
1	E6	1	E6*
1	E5	2	E5*
1	E4	2	E4*
		.1	E7
		1	E2*
Mil.: $29,766.00		Mil.: $34,373.70	
Civ.: $		Civ.: $	

** 50 hr/week
* 56 hr/week

Walson Army Hospital
Dispensaries Functional Costs

TABLE III-W-10

FUNCTIONAL COSTS - DEPARTMENT OF CLINICS

PERSONNEL										
ASSIGNED		ACTUAL		SUPPLIES		MISCELLANEOUS		PRORATE		
No. & Grade		No. & Grade		Medical	Non-medical	Item	Cost	Function	Rate	Amount
1	O5	.5	O6	124,631	4,033	Travel	8439	Med.		
1	O4	.5	O4			Contract		Processing	.5	11,281
1	O3	1	O3			Services	1658	OPC	.3	67,688
1	O5					Equipment	250	ER	.2	45,125
1	E7	.7	E7			Std. Eqt.	14,692	Dispensaries	.45	101,529
1	E5					Non-std.	3,037			
1	E4									
2	E3	2	E3			Total	10,347	Total		225,623
2	E7									
1	E4									
		1	GS6							
1	GS5	1	GS5							
3	GS3									
1	GS4	2	GS4							
4	GS3	3	GS3							
		1	E3							
Mil.:	$110,058.00	$44,813.00								
Civ.:	$46,505.00	$39,067.00								

I. DISPENSARIES -- OPERATIONS SOURCE SHEET

Walson Army Hospital

1. Interview with Head Nurse of Dispensaries, and observation of Dispensaries 2 and 7.
2. Observation of Dispensary 7, and extrapolated from average daily figures from Dispensary 7.
3. Extrapolated from average daily figures obtained from interview with AO, Dept. of Clinics, and observation of Dispensary 7.
4. Daily Statistics Forms kept in Dept. of Clinics (called in every day from each dispensary).

Malcolm Grow Hospital

1. Interview with NCOIC, Pentagon Dispensary, November 18, 1969.
2. Interview with NCOIC, Presidential Medics Dispensary, November 18, 1969.
3. Interview with NCOIC, Bolling Dispensary, October 29, 1969.
4. Interview with NCOIC, MPH and OHD, November 12, 1969.
5. Interview with NCOIC, Physical Exam (Survey) Clinic, November 13, 1969.

Beaufort Naval Hospital

1. FY68 data pack.
2. Breakdown from 7-month sample of NAVMED 1454, January to July, 1969.
3. Interview estimates.
4. Information from log book samples, 1 month, September 1969.
5. Seven month tabulation of NAVMED 1454, February 1969 to August 1969.
6. Interview estimates.

II. DISPENSARIES -- RESOURCE UTILIZATION SOURCE SHEET

Walson Army Hospital

1. Adjusted Roster (DA-2496-1) from Head Nurse of Dispensaries.
2. Interview with AO, Dept. of Clinics.
3. Dept. of Clinics schedule for November 10 thru 22, 1969, from AO, Dept. of Clinics.
4. WAH Property Book. See Functional Costs, Capital Equipment.
5. Measuring Dispensaries 7 and 8; all dispensaries except 5 and 8 are approx. same size as Dispensary 7. Dispensary 5 was not measured.

Malcolm Grow Hospital

1. Interview with NCOIC, Pentagon Dispensary, November 18, 1969.
2. Interview with NCOIC, Presidential Medics Dispensary, November 18, 1969.
3. Interview with NCOIC, Bolling Dispensary, October 29, 1969.
4. Interview with NCOIC, MPH and OHD, November 12, 1969.
5. Interview with NCOIC, Physical Exam (Survey) Clinic, November 13, 1969.

Beaufort Naval Hospital

1. Collected during interviews and verified when possible by direct observation.

MEDICAL RECORDS

WALSON ARMY HOSPITAL (WAH) -- FORT DIX

Mission

The function of Medical Records is to "act as custodian of all Medical Clinical records of inpatients and outpatients, which includes receiving, reviewing, maintaining, storing, and disposing of these records."* These duties are carried out by the Registrar Division's Medical Records and Reports Branch, which also performs all Registrar duties, excluding Admissions, Dispositions, and Hospital Treasurer.

The Westinghouse study identifies "Medical Records" as those functions which deal with clinical (inpatient) and dependent health (outpatient) records. The WAH Medical Records Department is composed of two sections: Clinical Records, for receiving, reviewing, and processing inpatient records; and Medical Records Library, for filing, retrieving, and disposing of outpatient records for dependents, retired personnel, and military personnel working in the hospital. (Other military outpatient records are kept by the individual dispensary concerned).

Existing Operations

WAH Medical Records has a six to eight month backlog of unprocessed discharge records, despite the regulation that all records for a given month must be processed within that month. Facilities, personnel, and equipment inadequacies have all contributed to this central problem; there are, for example, five different record storage areas.

WAH has no fully-qualified medical records librarian. Only 3 percent of the personnel have prior clerical training and 80 percent have no Registrar experience at all. The result is an excessive OJT burden.

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* As stated in AR40-4, paragraph 2-24.

The Clinical (Inpatient) Records section has experienced considerable trouble using the master index card storage and retrieval system with the result that this equipment is used to only 50 percent capacity. The entry equipment is slow and the file not only takes up a great amount of space, but can be used by only one person at a time.

The trend at WAH is to expand the patient data base and to automate storage and retrieval of medical records. Data is already being put in coded form and WAH predicts that Medical Records will become heavily dependent upon computers for storage, retrieval, and analysis within the next five to ten years.

MALCOLM GROW HOSPITAL -- ANDREWS AIR FORCE BASE

Mission

Medical Records, which reports to the office of the Registrar,* is composed of two distinct sections: the Clinical Records Library, which reviews, processes, retrieves, updates, and files inpatient medical records; and the Central Files, which reviews, processes, retrieves, updates, and files outpatient medical records. Exceptions to these procedures include: medical records of all flight-rated personnel, which are processed by the Flight Surgeon's Office; records of outpatient and sick-call visits to dispensaries, which are kept at the dispensaries; records of dental health examinations and treatments, which are kept by the dental clinics; and records of all prenatal visits, which are kept by the OB-GYN Clinic during the day, and by the Labor and Delivery Room at night.

Existing Operations

Records are sometimes lost or misfiled and the incorporation of data into the medical records is often delayed. In some cases, this problem cannot be controlled by Medical Records. Chits and records on the way to or from any

* As stated in AFM168-4G, Section F, paragraph 1-14, page 1-10.

of the four main generating points (Medical Records, clinics, laboratories, or Radiology) are perhaps the greatest problem. During this often lengthy in-transit period, such documents are unavailable either to physicians or Medical Records. Most inefficiencies, however, are due to untrained Medical Records personnel.

U. S. NAVAL HOSPITAL -- BEAUFORT

Mission

Medical Records at Beaufort Naval Hospital functions under two lines of authority: Outpatient Records under the Administrative Branch of the Outpatient Service and Inpatient Records under the Patient Affairs Branch of the Personnel and Patient Affairs Division.* In practice, both departments report to the Chief of Patient Affairs.

Of the two, Outpatient Records is more clearly a discrete function. This facility, located on the second floor, is run by civilian personnel whose sole function is to retrieve and file records. The Supervisor has the additional responsibility of interviewing mothers of new-borns and typing birth records.

Inpatient Records is located in the Patient Affairs Office and has no full-time staff. Patient Affairs personnel file and retrieve records from Archives (which takes approximately two man-hours per month) and routinely perform such tasks as transcribing dictation and typing discharge summaries, which relate to Inpatient Records.

Existing Operations

At Beaufort Naval Hospital outpatient charts require a minimum of three days to complete. Consequently, physicians must query the laboratory for test results that are not in the records and patient return visits are interrupted while test results from a previous vists are obtained. Outpatient Records personnel file incomplete charts and then have to retrieve the and insert additional data.

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* As stated in the Beaufort Organizational Manual, NAVHOSPBPT INST, P-5400; p. C-22; pp. D-23 and D-24.

Delays in receiving outpatient records may create queues of 12 to 15 patients at a time. Such delays could be avoided if the Outpatient Records staff were augmented at peak periods by Patient Affairs personnel. The relative locations of the two facilities, however, make this difficult.

Inpatient Archives is not only inefficiently located in the basement but lacks a cross-indexing system, making it difficult to respond quickly to physicians' retrieval requests.

DATA PRESENTATION MATRICES

The following matrices and charts detail the data gathered by the Westinghouse teams on the three hospitals' medical records services. The first matrix delineates medical records operations; the second, resource utilization; and the third, functional costs.

I. MEDICAL RECORDS — OPERATIONS

	Wilson Army Hospital (WAH) — Ft. Dix	Malcolm Grow Hospital — Andrews AFB	U.S. Naval Hospital — Bethesda
A. Services Rendered	1. Outpatient Record Room (OPRR):[1] a. storing and retrieving information in dependents' health records for Fort Dix and McGuire AFB military health records, stored in an individual troop dispensary will be discussed in the Dispensaries section; b. storing and retrieving information on records of retired military personnel and military personnel working in the hospital; c. converting all records to the color-coded terminal digit filing system; d. filing, pulling, and backfiling records for prescheduled clinic appointments, and on special request for other appointments, walk-ins, and dependent sick calls; e. making appropriate medical warning tags for patients; f. transferring records to other treatment facilities when requested. 2. Clinical Records (CR):[6] a. preparing for filing hospital records of all inpatients discharged from WAH; b. preparing paper work on medical board cases; c. preparing paper work for line-of-duty investigations and third party liability claims; d. completing and typing clinical record cover sheets for each discharge; includes coding of diagnoses according to ICD and ICO; e. scanning charts of inpatients to search possible line-of-duty cases of sc, notifying ft. Dix Post Judiant Counsel; f. filing lab slips, operation reports, and X-ray slips which arrive separately from the charts; g. collecting, storing (OPR) of dept. personnel.	1. Central Files (CF):[5] a. storing outpatient medical records for all personnel eligible for health care at Malcolm Grow Hospital; b. transferring medical records of active duty personnel transferred to other bases; c. maintaining outpatient records, including ● insertion of lab slips ● insertion of radiology reports ● insertion of narrative summaries ● insertion of consultation reports; d. withdrawing and delivering records to outpatient departments for scheduled patient visits; e. withdrawing records for walk-in or emergency patients; f. refiling returned records; g. transferring records to other facilities on request. 2. Clinical Records Library (CRL):[6] a. filing all inpatient records; b. reviewing records to ensure completeness; c. withdrawing records upon request of a physician, administrative officer, or other facilities; d. accumulating statistics required by the registrar's office and Air Force directives; e. retiring records according to AF regulations.	1. Outpatient Records (OPR): a. storing and retrieving information contained in the health records of dependents and retired personnel and their dependents; b. advance retrieving of records for scheduled visits; c. retrieving of records upon request for walk-in and emergency patients; d. forwarding of records of patients who are transferring; e. updating the records with lab slips and other reports after they are signed by the relevant doctors; f. refiling records which have returned from clinics. Records of active duty personnel other than those stationed at the hospital are kept in the dispensaries (at other Parris Island or MCAS) and are discussed in that section. Records of hospital personnel are kept on file in the ER, and are retrieved at that location when needed. 2. Inpatient Records (IPR): a. handled by the Medical Records section of the Patient Affairs Branch, which prepares narrative summaries, operation reports, medical surveys, and other records of inpatient treatment; b. operating the clinical dictating system; c. filing and refiling inpatient charts in the archives when necessary.[8]

क्रम	संकेत	विवरण
१०	[illegible]	[illegible]
२०	[illegible]	[illegible]
३०	[illegible]	[illegible]
४०	[illegible]	[illegible]
५०	[illegible]	[illegible]
६०	[illegible]	[illegible]
७०	[illegible]	[illegible]
८०	[illegible]	[illegible]
९०	[illegible]	[illegible]
१००	[illegible]	[illegible]

C. Medical Records -- Operations (Cont'd)

	Hi. Rise	Andrews	Meadows
1. Workload Flow and Data	b. patient flow • refer to Figure I-W-1 procedure chart showing the standard flow of work generated by a patient requesting an outpatient health record[1] • time between patient arrivals: median time = one minute; mean = 0.95 minute[2] (See Table I-W-1 for breakdown of time between arrivals) • time required to pull outpatient record on request: median time = one minute; mean = 1.9 minutes[3] (Table I-W-2 shows breakdown of observed patient records pull-out times) • for conversion of records to terminal digit filing system: median time = 2 minutes; mean = 2.2 minutes[4] (Table I-W-3 shows breakdown of observed conversion times) c. peak periods and queues • peak arrival times of patients = 0830 to 1100 hrs. and 1300 to 1430 hrs.[5] • time spent in queue by patient waiting for records on request: median = 5.2 minutes; mean = 5.1 minutes[6] (Table I-W-4 shows breakdown of waiting times for 2 groups of patients observed.	b. withdrawal of records for verbal requests • approx. 80,000 record retrievals annually[1] • procedure = patient or clerk from an outpatient clinic requests record at dispensing window after signing an medical records clerk references card index for patient number, then retrieves and delivers record from the records file. This procedure takes from one to 5 minutes with an average time of 3 minutes • peak periods = correspond closely to peak hours in emergency room, i.e. 1900 to 2300 hrs. weekdays and 0900 to 2300 hrs. weekends c. maintenance of records • approx. 355,000 pulls for maintenance annually[1] • procedure = lab slips, narrative summaries, etc., are removed during working hours from various clinics from 1700 to 0700 hrs. personnel not engaged in pulling records file these papers, locate the proper record, file the slip in the outpatient record, and refile the completed record.	b. patient flow = patient goes to appointment desk, waits in line, presents I.D., chart pulled, given to patient guide, given to runner (male patient) if no record, a new one typed; patient goes to appropriate clinic for treatment (Figure I-B-1 shows full work flow in outpatient records generated by patient requesting an outpatient health record[3]) • queue time on record requests: median time = 0 to one minute; average = 2.68 minutes; for a total of 197 patients observed in one day (refer to Table I-B-1 and Figure I-B-2) • time between patient arrivals on record request: median time = 1 to 1.59 minutes; average = 1.41 minutes, for a total of 197 patients observed in one day (refer to Table I-B-2) • queue time for appointments: median time = 0 to one minute; average = 2.27 minutes for a total of 58 patients (refer to Table I-B-3 and Figure I-B-3) • time between patient arrivals for appointment requests: median time = 4 to 4.59 minutes; average = 4.96 minutes, for a total of 58 patients (refer to Table I-B-4).
2. CR:	a. annual workload volume[1] • charts processed = 58,356 • documents typed = 8,436 • folders stored = 33,156 • documents coded = 31,140 (see Table I-W-5 for breakdown of categories) b. Figure I-W-2 is a procedure chart showing the standard flow of medical record information for patient discharges.	2. CR: a. filing of new records • 9,000 admissions or new records annually[1] • procedure = record received from ward; index card made up and placed in card file; record placed in order by terminal digit in file b. pulling of record • 180,000 record retrievals annually[1] • procedure = verbal request received on phone or in person; storage position located from index card file; record pulled and its storage location marked by "out" card indicating the dept. which requested the record; record placed in output file to be picked up by requesting authority.	2. DR: a. inpatient records are kept at Beaufort for 2 years, the current year on the first floor at patient affairs (approx. 4,000 records),[2] and the others stored in archives until they are shipped to St. Louis. b. new record is created each time a person is admitted to the hospital; former record(s) pulled only at the doctor's request.

II. Use	Subtype	Duration
	c. Filing of old records ● Old records on file.[1] ● Record retirement procedure -- records inactive for 5 years are pulled and sent to a Records Staging Area elsewhere on the base and kept there approximately one year, then shifted forward to the Armed Forces Medical Records Storage Center (St. Louis or destroyed according to AR regulations.	
	3. MRI.[2] a. records stored -- 175,306 b. cards in patient index file -- 250,000 c. records stored by year; after 5 years, all of the oldest year's records are purged and sent to Department of Army for storage.	
B. Information Flow	1. For monthly volume of medical records communications broken down by communication mode according to source or destination refer to Table I-W-6.	1. For monthly volume of medical records communications, broken down by communication mode according to source or destination, refer to Table I-W-5.
	2. For monthly volume of communication inputs and outputs according to type of communication, refer to Table I-W-7.	2. For monthly volume of communication inputs and outputs according to the type of communication, refer to Table I-W-2.

TABLE I-W-1

OUTPATIENT ARRIVAL TIMES BREAKDOWN

8:30 A.M. - 10:15 A.M.		12:30 P.M. - 2:15 P.M.	
TIME BETWEEN ARRIVAL IN MINUTES	PATIENTS	TIME BETWEEN ARRIVAL IN MINUTES	PATIENTS
0	56	0	11
1	61	1	11
2	19	2	12
3	6	3	8
4	3	4	8
5	2	5	6
6	0	6	8
7	2	7	0

TABLE I-W-2

RECORD RETRIEVAL TIMES BREAKDOWN

RETRIEVAL TIMES IN MINUTES	OUTPATIENT RECORDS
0	0
.5	20
1.0	28
1.5	9
2.0	8
2.5	3
3.0	8
3.5	0
4.0	0
4.5	0
5.0	2
5.5	0
6.0	0
6.5	0
7.0	0

TABLE I-W-3

RECORD CONVERSION TIMES BREAKDOWN

CONVERSION TIME IN MINUTES	OUTPATIENT ARRIVALS
1	6
2	13
3	6
4	3
5	0

TABLE I-W-4

WAITING TIME BREAKDOWN

	PATIENTS REQUESTING RECORDS	
WAITING TIME IN MINUTES	GROUP I	GROUP II
0	-	1
1	20	3
2	32	4
3	31	10
4	21	11
5	20	10
6	11	9
7	5	7
8	5	6
9	1	8
10	2	5
11	1	9
12	1	4
13	0	4
14	2	2
15	1	1
16	-	3
17	-	1
18	1	1
19	-	0
20	-	1
21	-	1
22	-	0
23	-	1
24	-	0
25	1	-
35	-	1

TABLE I-W-5

WORKLOAD BREAKDOWN

CATEGORY	MONTHLY VOLUME	ANNUAL VOL. (approx.)
CRI charts processed	1180	14,160
Regular charts processed	3268	39,216
Charts typed	1063	12,756
New folders stored	2788	33,456
Dispositions coded	2595	31,140
Line of Duty Forms typed	490	5,880

Walson Army Hospital
Medical Records Operations

TABLE I-W-6 NUMBER OF COMMUNICATIONS BY MODE ACCORDING TO SOURCE/DESTINATION

SOURCE/ DESTINATION	RECEIVED BY MEDICAL RECORDS						SENT BY MEDICAL RECORDS					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION		1		40						402		5
AIR EVACUATION												
DENTAL SERVICE				90	40					640		
DISPENSARIES												
FLIGHT MEDICINE												
FOOD SERVICE												
HOUSEKEEPING												
LABORATORIES				11895						2100		
MAINTENANCE												
MEDICAL RECORDS												
NURSING SERVICE				70						840		
OPERATING ROOM				20								
OUTPATIENT DEPT.				16890	12850					11400		
OUTSIDE WORLD	159					12	78	5		14000	12	5
PERSONNEL												
PHARMACY												
PHYSICAL THERAPY				141						440		
PREVENTIVE MED.				890	200					1200		
PROFESSIONAL SERV		2		5495		140		1500		12200	156	
REGISTRAR				11426						1561		
SUPPLY												
VETERINARY MED.												
WARD MANAGEMENT				1800	1800					516		
RADIOLOGY				110						1400		

Walson Army Hospital
Medical Records Operations

TABLE I-W-7
NUMBER OF COMMUNICATIONS BY TYPE ACCORDING TO INPUT AND OUTPUT
INPATIENT

INPUT / OUTPUT	Patient Care Report	Patient Care Requested	Patient Care Supplemental	Patient Secondary	Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
INPUT											
VOLUME OF COMMUNICATION		2425	2	8439	3300				1	1	14168
NUMBER OF COMMUNICATION		2	1	39	2				1	1	46
OUTPUT											
VOLUME OF COMMUNICATION	20340				1755	5			2	1	22103
NUMBER OF COMMUNICATION	12				10	1			2	1	26
OUTPATIENT INPUT											
VOLUME OF COMMUNICATION		63791	6000	13130							82921
NUMBER OF COMMUNICATION		49	3	35							87
OUTPUT											
VOLUME OF COMMUNICATION		26316							1		26317
NUMBER OF COMMUNICATION		37							1		38

Malcolm Grow Hospital
Medical Records Operations

TABLE I-M-1
NUMBER OF COMMUNICATIONS BY MODE ACCORDING TO SOURCE/DESTINATION

SOURCE / DESTINATION	RECEIVED IN MEDICAL RECORDS: U.S. MAIL	RECEIVED IN MEDICAL RECORDS: INTERNAL MAIL	RECEIVED IN MEDICAL RECORDS: TELETYPE	RECEIVED IN MEDICAL RECORDS: BASIC CARDS	RECEIVED IN MEDICAL RECORDS: WORD-SMITH	RECEIVED IN MEDICAL RECORDS: TELETRACE	SENT BY MEDICAL RECORDS: U.S. MAIL	SENT BY MEDICAL RECORDS: INTERNAL MAIL	SENT BY MEDICAL RECORDS: TELETYPE	SENT BY MEDICAL RECORDS: BASIC CARDS	SENT BY MEDICAL RECORDS: WORD-SMITH	SENT BY MEDICAL RECORDS: TELETRACE
ADMINISTRATION												
ADMISSIONS												
DENTAL SERVICE												
DISPENSARIES												
FLIGHT MEDICINE												
FOOD SERVICE												
HOUSEKEEPING												
LABORATORIES												
MAINTENANCE												
MEDICAL RECORDS												
NURSING SERVICE												
OPERATING ROOM												
OUTPATIENT DEPT.	200		10924			40				12726		
OUTSIDE AGENCIES												
PERSONNEL												
PHARMACY												
PHYSICAL THERAPY												
PREVENTIVE MED.												
PROFESSIONAL SERV												
REGISTRAR	1200		2248							800		
SUPPLY												
VETERINARY MED.												
WARD MANAGEMENT												
RADIOLOGY												

TABLE I-M-2
TYPE OF COMMUNICATIONS BY INPUT & OUTPUT

Medical Records	Patient Care Internal	Patient Care Interfacility	Patient Care Sub-Department	Patient Accounts	Patient Correspondence	Personnel	Supplies	Facilities	Procurement	Other	Total
INPUT: Outpatient (3001)		3000	1600	1184	2310				500		13704
Inpatient (3703)			160	1228	2210						3628
TOTAL		3000	1760	3412	4520				500		17332
OUTPUT: Outpatient (3001)		4000		11214	1000						16214
Inpatient (3703)				1120	12						1132
TOTAL		4000		12331	1012						17346

TABLE I-B-1

QUEUE TIME FOR RECORD REQUESTS *

MINUTES	NUMBER OF REQUESTS
0	57
0-1	19
1-2	19
2-3	11
3-4	8
4-5	11
5-6	6
6-7	3
7-8	6
8-9	2
9-10	2
10-11	2
11-12	0
12-13	3
13-14	3
14-15	4
15-16	0
16-17	1
17-18	0
18-19	0
19-20	1

TABLE I-B-2

PATIENT ARRIVALS RECORD REQUESTS *

MIN' SEC"	NUMBER OF ARRIVALS
0" - 59"	68
1' - 1' 59"	58
2' - 2' 59"	35
3' - 3' 59"	16
4' - 4' 59"	7
5' - 5' 59"	3
6' - 6' 59"	1
7' - 7' 59"	0
8' - 8' 59"	3
9' - 9' 59"	0
10' - 10' 59"	2
11' - 11' 59"	1

median time: 1 - 1' 59"
average time between arrivals: 1.41 min.
total people: 197

* One day observation on 20 October 1969.

TABLE I-B-3

APPOINTMENT QUEUE TIME *

MINUTES	NUMBER OF APPOINTMENTS
0	25
0-1	5
1-2	2
2-3	1
3-4	4
4-5	2
5-6	2
6-7	1
7-8	0
8-9	2
9-10	0
10-11	1
11-12	

median: 0
average time: 2.27
total people: 51

TABLE I-B-4

APPOINTMENT REQUESTS PATIENT ARRIVALS *

MIN.' SEC."	NUMBER OF ARRIVALS
0 - 59"	3
1 - 1' 59"	9
2 - 2' 59"	3
3 - 3' 59"	4
4 - 4' 59"	5
5 - 5' 59"	2
6 - 6' 59"	1
7 - 7' 59"	1
8 - 8' 59"	1
9 - 9' 59"	2
10 - 10' 59"	1
11 - 11' 59"	0
12 - 12' 59"	1
13 - 13' 59"	1
14 - 14' 59"	1
15 - 15' 59"	0
16 - 16' 59"	1
17 - 17' 59"	2

median time: 1 - 4' 59"
average time between arrivals: 4.86 min
total people: 51

* One day observation on 20 October 1969.

Beaufort Naval Hospital
Medical Records Operations

TABLE I-B-5

NUMBER OF COMMUNICATIONS BY MODE ACCORDING TO SOURCE/DESTINATION

SOURCE/ DESTINATION	RECEIVED BY MEDICAL RECORDS						SENT BY MEDICAL RECORDS					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION				6						33		
AIR EVACUATION												
DENTAL SERVICE				25								
DISPENSARIES												
FLIGHT MEDICINE												
FOOD SERVICE				1						2		
HOUSEKEEPING												
LABORATORIES				3								
MAINTENANCE												
MEDICAL RECORDS												
NURSING SERVICE				915						1457		20
OPERATING ROOM												
OUTPATIENT DEPT.				12522					300	4689		
OUTSIDE WORLD												
PERSONNEL												
PHARMACY												
PHYSICAL THERAPY												
PREVENTIVE MED.												
PROFESSIONAL SERV												
REGISTRAR				21						1		
SUPPLY										10		
VETERINARY MED.												
WARD MANAGEMENT												
RADIOLOGY				925						925		
EMERGENCY				339		60				840		

BEAUFORT NAVAL HOSPITAL
MEDICAL RECORDS OPERATIONS

TABLE I-B-6

TYPE OF COMMUNICATIONS BY INPUT AND OUTPUT

ARCHIVES	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Patient Secondary	Patient Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
INPUT											
Admissions (0701)		28			308						336
O. P. D. (0702) Medical Records		12521		4	420					340	13285
Patient Affairs (0703)		2196	40	1	141				21	149	2548
Total		14745	40	5	869				21	489	16169
OUTPUT											
Admissions (0701)		2316									2316
O. P. D. (0702) Medical Records		5369	501				6				5876
Patient Affairs (0703)		937	1	1	421		4		22		1386
Total		8622	502	1	421		10		22		9578

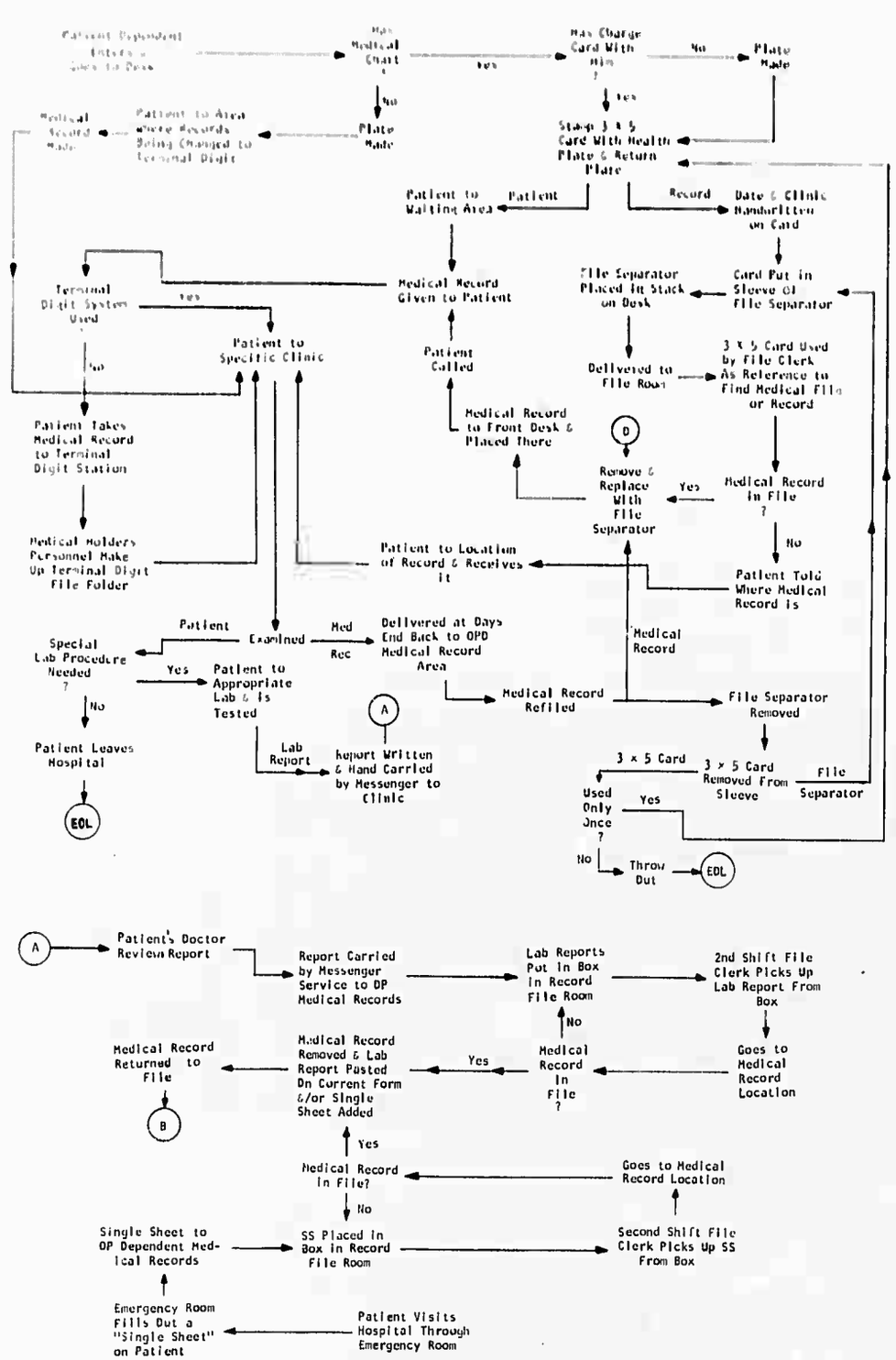
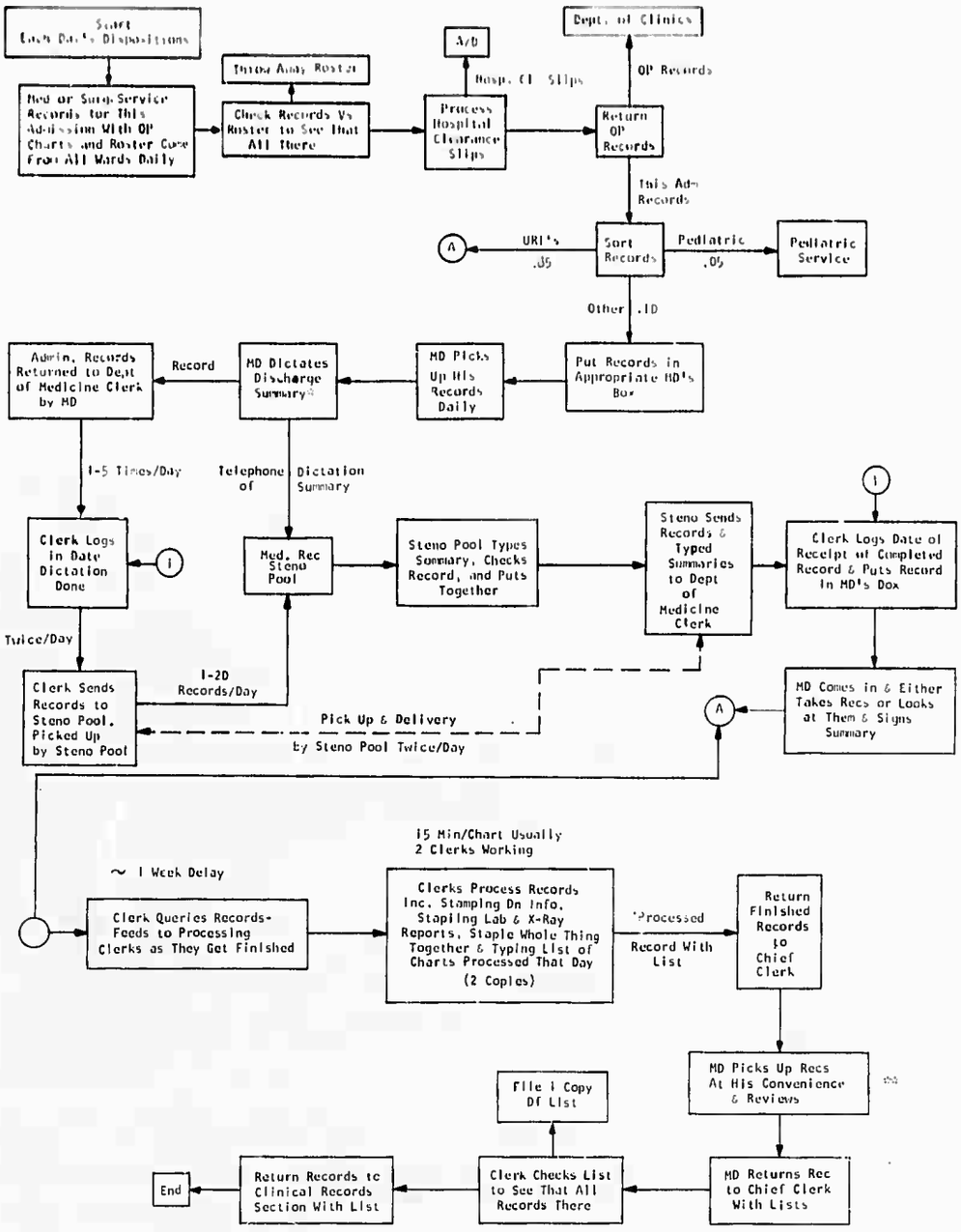


Fig. I-W-1—Outpatient record work flow

Walson Army Hospital
Operations • Med Records



* M.D.'s Take From 1 Day to 1 Month to Dictate Summary. Actual Dictation Takes 15 Min - 1 Hr.

** Review is for Medical Correctness. Chief, Gen. Med. Reviews All Except URI's. URI's Reviewed by Rotating Roster of Internists. All Charts for 1 Week Must Be Reviewed That Week. Review Takes 1 Min. (Routine URI) to ½ Hour.

Fig. 1-W-2—Record disposition flow

BEAUFORT NAVAL HOSPITAL
MEDICAL RECORDS OPERATIONS FIGURE I-B-1
HOSPITAL FLOW PROCESS CHART

Dwg. 859A593
Pg_ of_

Subject Charted Outpatient Records - Chart Pick-Up

Chart Begins Pt. Enters Appt. Line Chart Ends Pt. Chart Filed (with chits)

Present Method _____ Proposed Method _____ Date _____

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist / Time	TIME Delay / Storage	NOTES
1. Pt. arrives at appointment desk				From walk-in clinic or
				to pick up chart which
				wasn't at clinic
2. Waits in line				
3. Presents I.D. at desk				
4. Chart looked up				Pink card from chart left
				in filing case when chart
				pulled
5.1 If male, chart is stapled together				
and given to him to take to clinic				
5.2 If female; chart is put on pile for				If no runner or if urgent,
runner				chart is stapled and given
				to woman to carry to clinic.
5.3 If no chart - new one typed				
6. Chart returns after clinic is closed				
delivered by corpsman				
7. Chits returned at end of day from				Chits go from lab to clinic
each clinic - - 2 days later than				where doctor must sign
charts				& then return them to
				records room
8. Charts filed				Filed by corpsman if
				assigned to duty watch;
				otherwise by records
				personnel the next day
9. Chart pulled again when chits arrive				
10. Chits inserted; charts refiled				

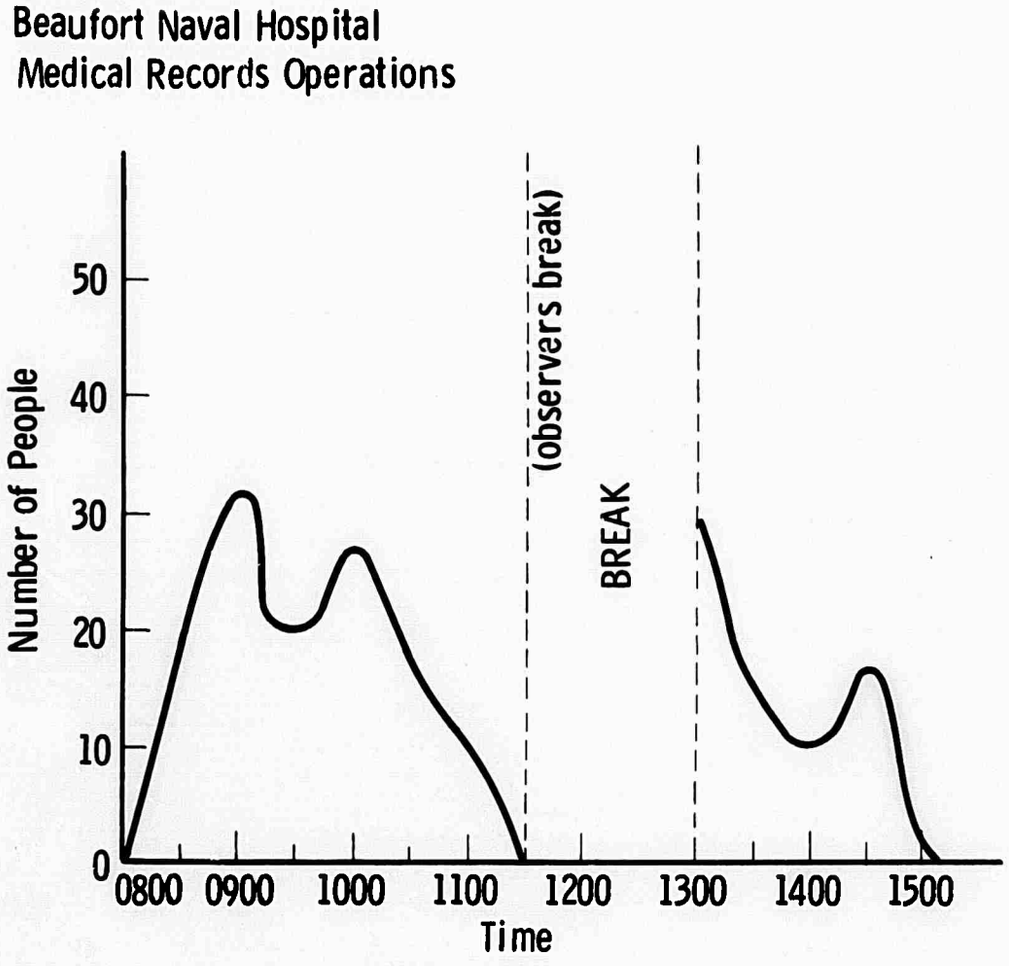


Fig. I-B-2 -Record request—peak loading time

Beaufort Naval Hospital
Medical Records Operations

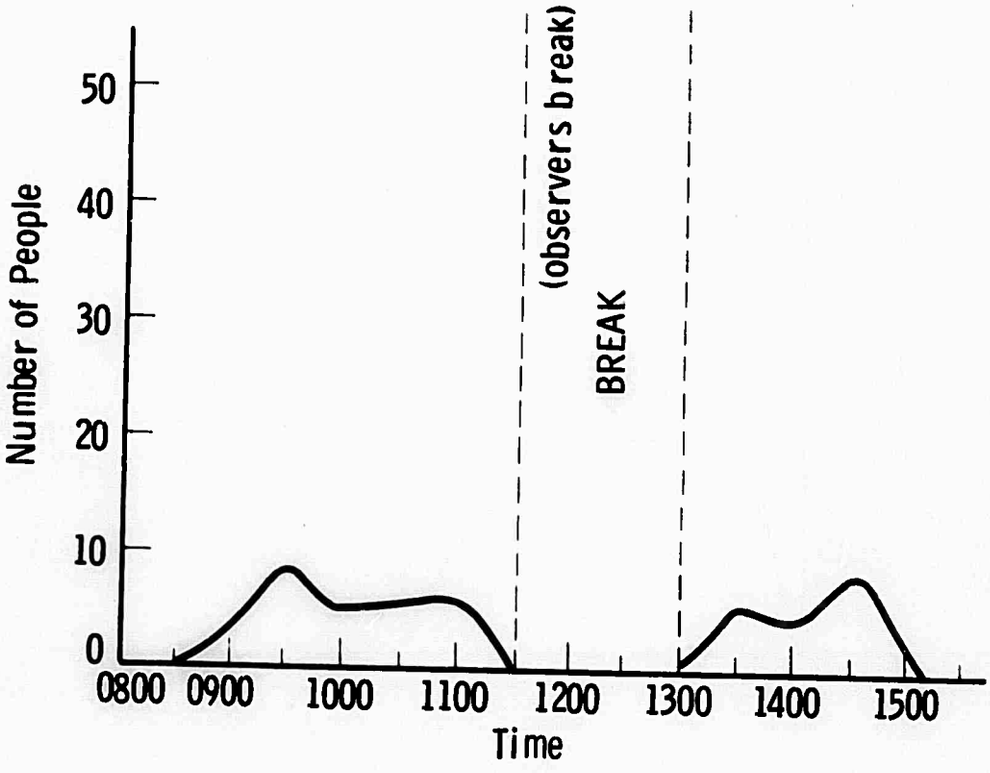


Fig. I-B-3 –Appointment request–peak loading time

II. MEDICAL RECORDS -- RESOURCE UTILIZATION

	Walson Army Hospital (WAH) -- Ft. Dix	Malcolm Grow Hospital -- Andrews AFB	U.S. Naval Hospital -- Beaufort
A. Personnel	1. Thirty-three employees. Refer to Table II-W-1 for listing of staff and patients; it shows breakdown of personnel allocated to CR (sick and wounded section), MRL, and the OPRR.[2]	1. Eleven employees (refer to Table II-M- for breakdown of employees by position, pay grade, and hours worked per week): a. CF -- 9; b. CRL -- 2.	1. OPR -- four civilian employees.
	2. MRL:[3] a. the medical records librarian is an accredited record technician, working toward becoming a registered record librarian (presently WAH has none). The librarian reviews text and coding of medical boards case summaries, indexes medical diagnoses, participates on Medical Records Audit Committee, represents the hospital in court, and trains personnel in use of the terminal digit filing system; b. the medical hold maintains the diagnostic index; c. other personnel in the MRL section spend full time maintaining the completed CR (inpatient) files.	2. CF:[4] a. NCOIC spends 20% of his time supervising section's administrative work and 80% retrieving records; b. other clerks spend full time retrieving and filing papers and records.	2. IPR -- no full-time military employees. Personnel in Patient Affairs are responsible for maintaining, filing, and retrieving inpatient records. In interview estimates, it was found that about 2 hours per week of the Chief of Patient Affairs, and 2 hours per week of the Assistant Supervisor, are spent dealing with inpatient records. In addition, 3 of the 5 clerk-typists at Patient Affairs are involved with inpatient records (i.e. typing, dictation, reports, etc.).
	3. CR (sick and wounded section) -- all personnel spend full time processing and finalizing for storage in the MRL Library the clinical (inpatient) records of all discharged patients. All personnel are cross-trained (OJT) and all jobs are interchangeable, with the exception of the supervisory position. See Table II-W-2 for specific duties of CR personnel.[4]	3. CRL:[4] a. NCOIC spends 50% of his time on statistical tasks, 10% on communications, 20% on administrative work, and 20% on filing and retrieving records; b. clerk spends full time on files.	
	4. OPRR -- all personnel spend full time filing/retrieving dependent outpatient records and converting records to the color-coded terminal digit filing system. With the exception of the NCOIC who handles administrative matters and special problems, jobs of all personnel are interchangeable.[5]		

II. Medical Records -- Resource Utilization (Cont'd)

	Ft. Dix	Andrews	Bragg
C. Equipment (cont'd)	3. The most significant pieces of equipment in medical records are: [2, 3] a. a Remington Rand Lektriever in the library for storage/retrieval of record index cards. Unfortunately, this machine has approximately 50% down time (i.e., time when machine broken or otherwise not working). This machine occupies the same amount of space as would manual filing cabinets. Moreover, it works slowly and can be only used by one person at a time. b. a Lektriever for index cards at the outpatient record room desk, which, though smaller than the above, works much better. 4. There are no equipment maintenance problems. [2, 3, 4]		
D. Work Sampling Studies	1. No work sampling performed.	1. No work sampling performed.	1. No work sampling performed (a observer spent one day in the outpt section observing patient queuing).

II. Medical Records -- Resource Utilization (Cont'd)

	Ft. Dix	Andrews	Beaufort
B. Facilities	1. Location:[1] a. OPRR -- WAH first floor clinic area; the outpatient record desk is adjacent to the OPD waiting area; b. MRL -- WAH first floor; library, consisting of storage space and the librarian's office, interfaces clinical records section; has additional storage space on first floor (registrar, 70 mm X-ray areas) and sixth floor (ward area); c. CR -- WAH first floor; (previously a corridor, but now sealed off into office space).	1. Location: a. CF -- first floor in OPD area; b. CRL -- first floor in administrative wing of hospital.	1. Location: a. OPR -- on the second floor, main corridor, adjacent to the clinical laboratory; b. IPR -- on the first floor, main corridor, front of building, adjacent to Pharmacy (Patient Affairs); c. archive* -- in the basement.
	2. Floor space:[1] a. total floor space -- approx. 1,922 sq.ft.; b. refer to Table II-"-3 for breakdown by room of sq. ft. and percent of total.	2. Floor space -- 2,169 sq. ft.:[1] a. CF -- 1,208 sq. ft; b. CRL -- 961 sq. ft.	2. Floor space: a. OPR -- 760 sq. ft. including waiting area, counter and office space, and storage area; b. IPR -- refer to Registrar matrix, Patient Affairs Section; c. archives -- 576 sq. ft. of storage.
C. Equipment	1. Refer to Appendix I- Report 011 for complete list of all equipment in the MRL and CR section and for a complete list of all equipment in the OPRR, including quantity and dollar values of all equipment worth over $200.[6]	1. Major equipment: a. CF[1] • Nine Remington Rand Lektriever rotary record storage machines • one Remington Rand Kard-veyor index card file; b. CRL -- one Remington Rand Kard-veyor index card file.	1. Beaufort medical records equipment is limited to several typewriters and some dictating machines; there is no automated record retrieval system.
	2. Lack of duplicating equipment is a critical problem in MRL and in CR section;[3,1]	2. Refer to Appendix I, Report 011 included in Registrar for detailed list of equipment worth over $200.	

Walson Army Hospital
Medical Records Resource Utilization

TABLE II-W-1

STAFF BREAKDOWN

SECTION	POSITION	PAY GRADE	QUANTITY	HOURS/WEEK
Clinical Records	Supervisor	GS-5	1	40
	Line of Duty Clerk	GS-4	1	40
	Clerk Typist	GS-3	2	40
	Medical Hold Pers.	E-3	1	28
	Military Clerks	E-4	2	44
Medical Records Lib.	Med. Rec. Librarian	GS-5	1	40
	File Clerk	GS-4	1	40
	File Clerk	GS-3	1	40
	Medical Hold Pers.	E-4	1	28
	Military Clerk	E-4	1	44
Out Patient Rec's.	NCOIC	E-6	1	44
	Military Clerks	E-6	1	44
	Military Clerks	E-5	1	44
	Military Clerks	E-4	2	44
	Military Clerks	E-3	2	44
	Military Clerks	E-2	2	44
	Civilian Clerks	GS-2	2	40
	Medical Hold Pers.	E-2	7	28

Walson Army Hospital
Medical Records Resource Utilization

TABLE II-W-2

STAFF DUTIES BREAKDOWN

POSITION	QUANTITY	DUTIES
Supervisor	1	General administration of section and handling of all non-routine cases when they arise.
Line-of-duty clerk	1	Preparation of paperwork on line-of-duty investigations and third-party cases.
Clerk-typists	2	Processing and typing of records of discharged patients.
Military clerks	2	Half of time spent typing records of discharged patients and half filing paperwork which belongs in records but has arrived separately.
Medical hold personnel	4	Stamping standard diagnosis codes and other data on URI charts, thus avoiding typing of these records.

TABLE II-W-3

FACILITIES BREAKDOWN

SECTION	DESCRIPTION	AREA IN SQUARE FEET	PERCENTAGE OF TOTAL AREA
Clinical Records (Sick and wounded)	Long Office Processing Section	462	9.38
	Medical Records Library - Librarian's Office	129	2.62
	Clinical Records Library	452	9.18
	Clinical Records Storage - 1st, 6th floors	250	5.07
Outpatient Records	Outpatient Records Storage	344	6.98
	Records Desk	185	3.75
	Waiting area (shared with OPC)	2700	54.85
	Female latrine	180	3.65
	Male latrine	220	4.46
	Total	4922	99.99
	Subtotals: Inpatient	1793	26.25
	Outpatient	3629	73.69

Malcolm Grow Hospital
Medical Records Resource Utilization

TABLE II-M-1

ASSIGNED MEDICAL RECORDS PERSONNEL

AUTHORIZED		ASSIGNED
AFSC	RANK	SECTION
90670	TSGT	Medical Board
90650	SGT	Medical Board
90670	TSGT	Outpatient Records
90650	SSGT	Outpatient Records
90650	SSGT	Outpatient Records
90650	SGT	Outpatient Records
90650	SGT	Outpatient Records
90650	SGT	Outpatient Records
90650	SGT	Outpatient Records
90650	SGT	Outpatient Records
90650	SGT	Outpatient Records
90650	SGT	Outpatient Records
90650	SGT	Outpatient Records
90650	SGT	Outpatient Records
90650	SSGT	Clinical Res. Library
90650	SGT	Clinical Res. Library
90650	SGT	Clinical Res. Library

III. MEDICAL RECORDS -- FUNCTIONAL COST

	Walson Army Hospital (WAH) -- Ft. Dix	Malcolm Grow Hospital -- Andrews AFB	U.S. Naval Hospital -- Beaufort
A. Total Cost			
1. Cost:	$140,821 annually.	$54,938 annually.	$36,441 annually.
2. Source:	a. refer to Appendix VII for functional cost breakdown summary sheet b. refer to Tables III-W-1 and III-W-2 for elemental figures from which total costs were derived.	a. refer to Appendix VII for functional cost breakdown summary sheet.	a. refer to Appendix VII for functional cost breakdown summary sheet.
B. Personnel			
1. Cost:	$137,838 annually: military -- $88,803; civilian -- $49,035; function cost -- $128,803; non-function cost -- $9,035.	$46,260 annually: function cost -- $45,109; non-function cost -- $1,155 (refer to Appendix IX for breakdown).	$34,934 annually: function cost -- $34,859; non-function cost -- $75.
2. Source:	a. (W) figures determined from interviews with medical records personnel and observation of dept. (W) obtained pay rates for each labor grade from "Standard Rates for Military Personnel Services," AFM 177-10 (C91) for Military Personnel and schedule established by DoD (5 June 1968) directive 5120.39 for civilian personnel, and added 7% fringe benefits for civilian personnel. b. (W) figures include all Registrar Division employees involved full time in CR (sick and wounded section), MRL, and OPRR. c. WAH determined costs from MEDDAC TDA for civilian personnel, from DA Form 2472 for enlisted personnel and from special staffing report prepared by Chief of Personnel Division for officers.	a. function cost -- the number of people assigned to medical records was determined from interviews with the NCOIC of Medical Records; pay rates for military personnel were taken from AFM 177-101 (C91); civilian rates were extracted from USAF salary rates July 1968 (Appendix IX); benefits for civilians were determined from information given in interview with (W) military consultant. b. non-function cost -- time spent by employees outside medical records. • housekeeping -- from hours spent by medical records personnel in housekeeping chores, estimated by interviewee • formal training -- TDY time for training purposes from Professional Activities Report FY 69 • OJT -- from hours per trainee and instructor, estimated by interviewee. Changeover rate function from business office. Cost from Appendix VI.	a. Beaufort name list for October 1969 (computer run for payroll accounting), checked against interviews and observations.
C. Supplies			
1. Cost:	$1,624 annually: medical -- $764; non-medical -- $860.	$6,247 annually.	Supply costs not obtained; not broken down in Account 310, and assumed of minor importance when compared to total supply costs.
2. Source:	a. cumulative cost run for FY69 received by Management Division Services from Post Data Processing showing resource cost by item of expense for each function. Supply costs were derived for the entire Registrar Division, then factored and allocated, heuristically: 2/3 to Registrar and 1/3 to Medical Records.	a. from Report of Medical and Non-medical Supply Expense FY69.	

III. Medical Records -- Functional Costs (Cont'd)

	Ft. Dix	Andrews	Beaufort
D. Maintenance			
1. Cost:	$310 annually: no Ft. Dix Post Engineering or WAH medical maintenance; all maintenance as charged by equipment suppliers.	$232 annually: medical -- $0; non-medical -- $232.	$850 annually.
2. Source:	a. figure was obtained in interview with Chief of Registrar Division.	a. prorated from annual maintenance cost for Andrews given in Medical Expense Report CY69; one month's chits used as basis for calculations.	a. non-medical maintenance -- calculated by multiplying percentage share of total hospital sq. footage by total maintenance costs for the hospital building only (e.g. excludes grounds, housing, medical maintenance, etc.) listed in Account 310, SFC Code 7150.
E. Housekeeping			
1. Cost:	$1,049 annually: all on housekeeping contract	$2,373 annually: janitorial services -- $1,898; housekeeping by staff -- $475.	$580 annually: by staff -- $0; by janitorial service -- $580.
2. Source:	a. civilian housekeeping agency's co with WAH for FY69 yielded the total annual cost of housekeeping. This total annual cost ($431,000) was allocated to individual functions on a basis of sq. ft. cleaned. Medical Records -- .24%. See Appendix V for all calculations.	a. janitorial -- cost of janitor service prorated for department from percentage of total hospital floor space; b. staff -- time spent by staff of function in housekeeping, estimated by NCO of Medical Records.	a. time spent by janitors in medical records was obtained from the Janitorial Work Distribution Chart.
F. Training			
1. Cost:	$9,035 annually: all OJT.	$977 annually: formal -- $676; OJT -- $301; training dept. -- $0.	$152 annually: outpatient records -- $75 (all OJT); inpatient records -- $77 (training department).
2. Source:	a. a portion of total function personnel cost was allocated to OJT based on observers' estimates of the amount of time a student needed to reach 90% efficiency in each job class. Estimates were factored into learning curve equation to arrive at OJT costs (see Appendix VI -- OJT Costs).	a. formal -- see Personnel, Formal Training; b. OJT -- see Personnel, OJT Training.	a. OJT -- from interviews and observations; b. training dept. -- prorating the salary of the corpsman in charge of training among the functions according to the number of corpsmen receiving training in each function.
G. Capital Equipment			
1. Cost:	$10,323: standard -- $5,751; non-standard -- $4,572.	$29,879.	None listed as being over $200.
2. Information Source:	a. A survey of WAH property book taken December 8, 9, and 10, 1969, in which two types of equipment were tallied: • equipment with unit price greater than $200 • equipment with unit price less than $200 but for which the number units in the function brought the total dollar figure above $200; b. there were two types of WAH equipment price records • standard equipment, in which the price on file represents current market value; • non-standard equipment, in which the price on file is original purchase price.	a. refer to computer run PCN 43165A 30 SEP 69, inventory of total hospital equipment worth over $200.	

Walson Army Hospital
Medical Records Functional Costs

TABLE III-W-1

FUNCTIONAL COSTS

ITEM		Ⓦ DETERMINED COSTS
Direct Charges		
Mil. Labor		88,803
Civil. Labor		49,035
Supplies - Medical		764
Supplies - Non-Medical		860
Maintenance		310
Misc. Charges		54
Prorated Charges: Housekeeping		1,049
Equipment	TOTAL	10,323
Cost of standard		5,751
Cost of non-standard		4,572
Total Charges		140,821

TABLE III-W-2

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NO.	& GRADE	NO.	& GRADE	ITEM	COST, $
5	E6	2	E6	Contractural Service	
2	E3	6	E3	Equipment	10,323
4	E4	5	E4	Standard	5,751
4	E5	1	E5	Non-standard	4,572
1	GS9			Maintenance	310
1	GS5	1.7	GS5	Total	140,821
2	GS4	2	GS4		
3	GS3	3	GS3		
2	GS2	2	GS2		
		6.5	E2		
		.4	E8		
Mil.: $85,952.00		Mil.: $88,803.30			
Civ.: $50,869.00		Civ.: $45,827.60			

I. MEDICAL RECORDS -- OPERATIONS SOURCE SHEET

Walson Army Hospital

1. Interview with Chief, Registrar Division.
2. Mean and median times between arrivals calculated from observations of time between patient arrivals from 0830 and 1115 hrs. and between 1250 and 1445 hrs.; mean and median for each observation period averaged for overall figures.
3. Calculated from observation of pulling of 68 outpatient records on request.
4. Calculated from observation of conversion of 28 patient records to terminal digit filing system.
5. Mean and median queue times calculated from means and medians for queue times for 2 groups of patients observed. The figures were weighted for the number of patients in each group and then averaged.
6. Interview with Supervisor, Clinical Records.
7. Interview with Medical Records Librarian.
8. Observation of Outpatient Record Room.
9. Workload Reports (DA-2496) from Registrar.

Malcolm Grow Hospital

1. Interview with NCOIC of Medical Records.

Beaufort Naval Hospital

1. NAVHOSPBFT P-5400 (Organization Manual).
2. Interview estimate.
3. From one-day observation, October 20, 1969.

II. MEDICAL RECORDS -- RESOURCE UTILIZATION SOURCE SHEET

Walson Army Hospital

1. Scaled photograph of WAH floor plans provided by Chief of Registrar Div.
2. Interview with Chief, Registrar followed by observation of Depts.
3. Interview with MRL.
4. Interview with Supervisor, Clin. Records.
5. Observation of OPRR.
6. WAH Property Book.

Malcolm Grow Hospital

1. Interview, NCOIC of Medical Records.

OUTPATIENT DEPARTMENT (OPD)

WALSON ARMY HOSPITAL (WAH) -- FORT DIX

Mission

An Army Outpatient Department function is operated by the Department of Clinics and supported by the Clinic Nursing Service. The Department of Clinics is responsible for medical and administrative personnel in the general Outpatient Clinic (OPC), the Emergency Room (ER), and the Medical Processing (Physical Examination) Section. All specialty clinics are set up and staffed by their equivalent professional department -- either Medicine, Surgery, Psychiatry Neurology etc.

The mission of the Department of Clinics in administering OPD services includes: dependent sick call, emergency treatment services, examination and/or treatment of all patients properly referred to clinics, and Army-regulation physical examinations of referred personnel.* The OPD Clinic Nursing Service mission includes providing nursing care for outpatients in the clinics and ER and for those inpatients under treatment in the various specialty clinics.** The OPD missions of the Departments of Medicine, Surgery, and Psychiatry and Neurology include providing diagnostic service, care, and treatment, as required, to all patients assigned or referred to the department.* This implies the operation of clinics in the various specialties related to each department.

At WAH, the Clinic Nursing Service provides nurses for the OPC, ER, and as many specialty clinics as staff size allows. The Department of Clinics provides overall OPD administration plus medical and clerical staffing in the OPC, ER, and Medical Processing Service. The Department of Psychiatry and Neurology operates both a Neurology Clinic and a Mental Hygiene Consultation Service providing psychiatric, psychological, and social work services. The Department of Medicine has eight specialty clinics -- General Medicine, Radioisotopes, Dermatology, Allergy, Cardiology, Gastroenterology, Communicable Diseases, and Pediatrics; the Department of Surgery operates six -- General

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* As stated in AR 40-4.
** As stated in AR 40-6.

Surgery, Urology, Eye, Ear, Nose and Throat, Orthopedics, Physical Therapy, and OB/GYN; the Optometry Service has its own Clinic; and Preventive Medicine operates several including the Well Baby, and Immunization clinics.

Existing Operations

The Outpatient Department is a large and diverse operation and any problems which occur are in direct proportion to the size of its workload.

For example, the various clinics could cope more effectively with workloads that were evenly distributed. But lack of coordination between the clinics and the Central Appointment Desk frequently confuses patient scheduling, with the result that some waiting rooms are crowded.

The Emergency Room which offers round-the-clock service, suffers particularly from a chronically unbalanced workload. On weekends and holidays when the regular clinics are closed, non-emergency patients converge on the ER in such numbers that they may wait up to three or four hours for care. The fact that the ER has no access to these patients' outpatient or dispensary records after regular hours further slows the treatment process.

Ironically, ER facilities are barely able to sustain normal operations. The location of waiting, treatment, and examining rooms prevents optimum patient flow patterns. In addition, with the exception of one examining room, ER is totally without emergency power.

The general shortage of medical, paramedical, and nursing personnel affects all Outpatient Department functions. Nurses are overburdened with clerical work. Identification data must be laboriously hand-copied since military personnel are not issued identity plates that can be stamped. Nurses must also perform clerical and secretarial tasks in addition to their own when civilian personnel are absent.

The Army apportions its physicians among BLHCS with little regard for the type of medical specialist needed in a given system. WAH, for example, has eight pediatricians and one cardiologist. As a result, since Pediatrics' workload does not warrant eight physicians, some have been assigned to services outside their specialty. Conversely, the cardiology workload is heavy, taxing the single specialist who must find time between patient visits to read EKG's for the entire hospital

MALCOLM GROW HOSPITAL -- ANDREWS AIR FORCE BASE

Mission

Air Force literature refers to the Outpatient Department as "The Air Force Clinic," and defines its mission as: "the sum of facilities and arrangements employed to provide total outpatient care. Geographically it is a location; functionally, it is the composite of separately organized general and special elements which provide outpatient health services. The general catagories of clinics to be provided are: general therapy, including emergency, medical specialties, and surgical specialties."*

The following are eligible for care in Air Force clinics: all military personnel requiring routine medical attention; dependents, if facilities and medical staff are available and scheduling can be arranged so it does not interfere with military medical care; emergency patients; hospital inpatients requiring such clinic services as consultation, examination, and treatment; and specifically authorized personnel.

In accordance with the provisions of the Air Force Manual, Malcolm Grow Hospital operates a multiple-service Outpatient Department comprised of 22 individual clinics. General Therapy Services includes the General Practice Clinic and Emergency Room. Medical Services are provided in nine specialty clinics: Allergy and Immunization, Cardiopulmonary, Dermatology, Hematology, Inhalation Therapy, Internal (General) Medicine, Neurology, Pediatrics, and Psychiatry. Surgical Services are similarly specialized by Clinics: General Surgery, Plastic Surgery, Thoracic Surgery, Opthalmology, Optometry, Otolaryngology, Orthopedics, and Urology. Two additional services, OB/GYN and Flight Medicine, complete the OPD.

Existing Operations

The Air Force Clinic at Andrews AFB has many of the operational problems found at Fort Dix.

The central appointment system is not only overloaded but inefficient since personnel are unable to screen calls or provide the simple "first-line care" advice that would direct patients to the proper clinics.

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* As stated in ARM 168-4H, Chapter 3, Section A, paragraphs 3-2 and 3-3.

Individual problems with facilities become important when viewed in a total clinical context. The doors of the Cast Room, the Radioisotope area, and the Physical Therapy Clinic are too narrow to admit patient beds. Clinic and ward storage sites have been usurped for needed office and examination space, with stores, in many cases, relegated to converted toilet areas. Additional facilities problems arise from the fact that some services, Flight Medicine and Dermatology for example, have been placed in facilities not originally designed for them.

An additional problem, unique at Andrews, is that VIP scheduling and treatment tends to disrupt operations in general. The reason is that all VIP outpatients require personal hospital escorts and must receive first priority in the clinics, in Ward 1E, the laboratories, and Radiology.

U.S. NAVAL HOSPITAL -- BEAUFORT

Mission

The Outpatient Department at Beaufort has as its mission the delivery of examination, diagnostic care, and treatment services on an outpatient visitation basis, to active duty, retired, and dependent eligibles.* The outpatient service is separated into administrative areas -- outpatient records, appointments, and correspondence -- and clinical areas, of which there are eight basic divisions: Medical, Surgical, Obstetrics and Gynecology, Pediatrics, EENT, Dermatology, Orthopedics, and Emergency. Each clinic is individually located in the hospital and, except for the emergency room, has its own staff of doctors from the appropriate service, who treat both outpatients and inpatients.

The Emergency Room has no attendant medical staff during clinic hours, at which time it acts in a referral capacity. However a physician is always "on call" to administer emergency treatment. The ER is staffed on a rotation basis from 1600 to 0730 hrs. by the Officer of the Day. The day shift corpsmen and night shift corpsmen are permanently assigned. The evening shift corpsmen are selected on a rotational basis from the staff corpsmen.

The main coordination point between clinics is the Central Appointments Section where doctors make known when they can see patients and where all scheduling takes place.

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* As stated in the Beaufort Organization Manual, NAVHOSPBFT INST. P-5400.

Existing Operations

Lack of coordination is a major problem at Beaufort Clinics. Since clinic locations are scattered rather than grouped, centralized supervision is difficult.

Physicians fail to fully utilize the coordinating potential of the Central Appointments Section. For example, although the Surgical Clinic is to be conducted on an appointment-only basis, 25 percent of its patients are walk-ins who have been informally scheduled by a physician, sometimes for a day when the clinic is not open. Clinic schedules frequently run over into duty watch hours, a fact which complicates cleaning equipment and preparing the clinic for the next day's activities.

Another impediment to full efficiency is the use of the ER for expedient rather prescribed purposes. Patients use the ER to obtain routine medical care particularly when the physician on duty is a specialist in the area of their medical needs (e.g. the largest influx of pediatric cases occurs on the evening when the physician on ER duty is a pediatrician).

Each clinic occupies its own territory and boundaries are rigidly observed, a practice which discourages optimal workload/space ratios. Interfunctional space sharing and scheduling would permit far more effective utilization of total facilities. In many cases, the problem takes the form of inappropriate adjacencies. As a result, Optometry eye lanes cannot by shared by Opthalmology; Urology Clinic staff must carry X-rays to Radiology two floors above to be developed; Male Walk-In Clinic patients must travel to another level to obtain their medical records.

In some cases more resources and space are needed. The insufficient number of waiting rooms makes it necessary for patients to wait in corridors. Since the Female Walk-In Clinic consists of a single office-examination-treatment room, patients waiting in the corridor have little privacy. There are no qualified paramedical personnel to read EKG's, so the physician must read them between patient examinations. The lack of a training course for cast room technicians means each must be given four months of OJT. Finally, the collective professional expertise of the medical staff does not cover all specialty areas required; consequently, the Outpatient Department must staff the Orthopedic Clinic with an unqualified reservist and one general practitioner who refers

cases for diagnoses to the senior medical officer.

To expedite patient throughput, Beaufort physicians are beginning to categorize and examine patients by the type of condition -- whether infectious or non-infectious.

DATA PRESENTATION MATRICES

The following matrices and charts detail the data gathered by the Westinghouse teams on the three hospitals' outpatient services. The first matrix delineates outpatient operations; the second, resource utilization; and the third, functional costs.

I. OUTPATIENT DEPARTMENT -- OPERATIONS

	Walson Army Hospital (WAH) -- Fort Dix	Malcolm Grow Hospital -- Andrews AFB	U.S. Naval Hospital -- Beaufort
A. Services Rendered	1. Operating the following clinics for military and civilian dependents unless otherwise noted:	1. Operating the following clinics for inpatients at Malcolm Grow Hospital and for outpatients in Malcolm Grow Medical Center:	1. Operating the following clinics for inpatients and outpatients, active duty (AD) military and their dependents, providing examination, diagnosis, care, and treatment; also providing consultations at all clinics (except OB/GYN and Pediatrics) for patients from Parris Island:
	a. General Outpatient clinic (OPC) • serves dependents only • civilian "dispensary" -- daily dependent sick call • referral source for other WAH clinics;	a. General Medicine and Internal Medicine clinic -- outpatient services on a referral basis for general medicine, internal medicine, and in gastroenterology, cardiology, and rheumatology;	a. Medical clinic -- divided into • male medical • female medical appointment • female medical walk-in;
	b. General Medical clinic -- special medical problems;	b. General Surgical clinic • referral clinic for general surgery and thoracic surgery; • minor outpatient surgery performed;	b. General Surgical clinic -- preoperative, postoperative and minor surgical care;
	c. General Surgical clinic -- special surgical problems;	c. Pediatric clinic • medical services for children up to and including 12 years • operation of a Well-Baby clinic;	c. Pediatrics clinic • 6-week Well-Baby clinic • 6-month Well-Baby clinic • walk-in • vital signs;
	d. Pediatric clinic • specialized pediatric care • serves dependents of active duty and of retired military;	d. Dermatology clinic • referral clinic for skin disorders • ultraviolet and medical treatments of skin diseases • minor surgical removal of moles and small growths;	d. Dermatology clinic;
	e. Well-Baby clinic • routine periodical checkups for newborns • serves dependents of AD and retired military • operated by Army Health Nursing Service;	e. Allergy and Immunization (A&I) clinic • referral clinic for allergic patients • allergy diagnoses and treatments • immunizations on request for AD military and dependents • priority to AD military being reassigned overseas;	e. Orthopedic clinic;
	f. Dermatology clinic -- treatment of skin problems;	f. Neurology clinic • consultation and referral service • electroencephalograms (EEG) administered;	f. Urology clinic;
	g. Allergy clinic -- care of allergy patients;	g. Orthopedic clinic -- ambulatory care and specialty support in orthopedics for inpatients and outpatients;	g. Eye, Ear, Nose, and Throat (EENT) clinic • ophthalmology • otolaryngology • optometry;

I. Outpatient Department -- Operations (Cont'd)

	Ft. Dix	Andrews	Beaufort
A. Services Rendered (Cont'd)	p. Immunization clinic • injections for AD military and dependents • operated by Army Health Nursing Service; q. Cardiac clinic • limited treatment of special cardiac problems • electrocardiograms (EKG) administered; r. Dental clinics and Dispensaries -- these appear in Dentistry and Dispensaries matrices, respectively.	p. Inhalation Therapy (IT) clinic • therapy for outpatients • respirator service for wards.	
	2. Operating other services: a. Emergency Room (ER) • emergency medical service • ambulance service;	2. Operating other services: a. Emergency Room (ER) • emergency medical care for severe lacerations, bleeding, severe burns, fractures, respiratory and cardiac attacks, and ingestions • emergency surgery, to include closures of minor lacerations, castings, insertions of chest tubes, lumbar punctures, venous cutdowns, abcess drainage, and location and removal of foreign bodies;	2. Operating other services: a. Emergency Room (ER) • immediate attention for patients entering requiring emergency treatment and care • referral service for patients coming into ER whose needs can be more appropriately served in other clinics.
	b. Mental Hygiene Consultation Service (MHCS) • acts as psychiatric clinic run and staffed by WAH Dept. of Psychiatry and Neurology (P&N) • offers psychiatric and psychological help, psychological testing, and social work services;	b. Flight Medicine clinic (FMC) • physical examinations of AF Officer Training program applicants for AF Academy applicants • annual physical examinations for AF personnel on flying status • administration of aerospace fitness, air crew effectiveness, and other preventive medical programs • performance of lab procedures to include hemoglobin, hematocrit, urinalysis, and serology.	
	c. Medical Processing Service (MPS) -- run and staffed by WAH Dept. of Clinics • handles all physical examinations (routine, flight, limited) for Ft. Dix • serves as Army entrance and exit physical examining station • conducts physicals for McGuire AFB and West Point cadets • conducts routine dental, eye, hearing, and X-ray examinations.		

I. Outpatient Department -- Operations (Cont'd)

	Ft. Dix	Andrews	Beaufort
A. Services Rendered (Cont'd)	h. Neurology clinic • treatment of brain and central nervous problems • performs its own electroencephalography (EEG);	h. Physical Therapy (PT) clinic -- physical therapeutic care for inpatients and some outpatients on a referral basis;	h. Obstetrics and Gynecology (OB/GYN) clinic;
	i. Orthopedic clinic -- standard orthopedic services plus podiatry, brace shop, and cast room;	i. Urology clinic • consultations and treatments for urological disorders • cystocopies performed;	i. Physical Therapy (PT) -- administration of medically prescribed therapeutic treatments for both inpatients and outpatients.
	j. Physical Therapy (PT) -- treatment of inpatients and outpatients, using exercise, heat, light, sound, etc;	j. Eye, Ear, Nose, and Throat (EENT) clinic • specialty medicine and surgery in ophthalmology and otolaryngology • refractions and audiograms performed • services in optometry;	
	k. Occupational Therapy (OT) -- inpatient treatment only;	k. Obstetrics and Gynecology (OB/GYN) clinic -- medical care for OB and GYN patients including prenatal care (appointment or walk-in);	
	l. Urology (GU) clinic • specialized treatment of genito-urinary problems • does its own X-ray work;	l. Cardiopulmonary clinic • consultations for cardiac problems and non-infectious diseases of the lung • lab administration of electrocardiograms (EKG), basal metabolism rate (BMR) tests, pulmonary function tests, and ventilometries • cardiac monitoring support of ward management (see Ward Management matrix);	
	m. Eye, Ear, Nose, and Throat (EENT) clinics • ophthalmology • optometry • audiology • otolarygology;	m. Psychiatry clinic • treatment, including counseling, group therapy, and drug clinic for AD military only • consultation for dependents;	
	n. Obstetrics and Gynecology (OB/GYN) clinic • prenatal and birth control clinics • serves WAC and female dependents of AD and retired military;	n. Hematology clinic • consultations for blood disorders • diagnosis and therapy for leukemia and oncological disorders • support for Cardiopulmonary clinic	
	o. Communicable Disease clinic -- for treatment of venereal diseases;	o. General Practice (GP) clinic • treatment for AD military sick call patients • practice of general medicine for routine illnesses of AF dependents • screening of military and dependents for referral to specialty clinics;	

I. Outpatient Department -- Operations (Cont'd)

B. Hours of Operation

Ft. Dix

1. Normal duty hours:
   a. 0800 to 1200 hrs. and 1300 to 1530 hrs. Monday thru Friday
      - Pediatric clinic
      - Medical clinic
      - Surgical clinic
      - GU clinic
      - Dermatology clinic
      - OB/GYN clinic
      - MHCS
      - OPC
      - MPS
      - OT;

   b. 0800 to 1100 hrs. and 1300 to 1530 hrs. Monday thru Friday
      - ENT clinic
      - Eye clinic
      - Neurology clinic;

   c. Orthopedic clinic -- 0800 to 1600 hrs. Monday thru Saturday;

   d. PT -- 0800 to 1200 hrs. and 1300 to 1600 hrs. Monday thru Friday;

   e. Cardiology clinic -- 1300 to 1530 hrs. Monday thru Saturday;

   f. Well-Baby clinic -- 0800 to 1200 hrs. Saturday;

   g. Gastroenterology -- irregular;

   h. ER -- 24 hours a day, 7 days a week.

2. Special duty hours:
   a. in addition to the ER staff, one MD and one corpsman from each specialty clinic are on call at all times.

Andrews

1. Normal duty hours:
   a. for all clinics except as noted below -- 0800 to 1700 hrs. Monday thru Friday;

   b. Pediatric clinic
      - 0800 to 2200 hrs. Monday thru Friday, appointments and walk-ins
      - 1300 to 1515 hrs. Tuesday and Wednesday, Well-Baby clinic;

   c. ER -- 24 hours a day, 7 days a week -- full coverage; walk-in clinic caring off-hours for other clinics

   d. Neurology clinic and lab -- 0830 to 1630 hrs., 4 days per week, closed Wednesday
      - one day per week reserved for outpatients
      - 3 days per week reserved for inpatients;

   e. Psychiatry clinic
      - consultations -- 0800 to 1700 hrs., Monday thru Friday
      - Matac (drug clinic) -- Monday afternoon;

   f. GP sick call -- 0800 to 0945.

2. Special duty hours:
   a. Flight medicine personnel on call during off-duty hours for emergencies on the flight line;

   b. OB/GYN emergencies and walk-ins during off-duty hours are by ward 3B and/or Labor and Delivery;

   c. ER handles emergencies and walk-ins during off-duty hours for all other clinics.

Beaufort

1. Medical Clinic:
   a. Male Medical clinic
      - patients seen by MD's 1000 to 1230 hrs. Monday thru Friday
      - corpsman on duty 0730 to 1600 hrs. to take EKG's upon MD's request;

   b. Female Medical appointment clinic
      - 0800 to 1130 hrs. and 1300 to 1500 hrs. Monday, Wednesday, Friday
      - 1300 to 1500 hrs. Tuesday
      - 0800 to 1130 hrs. Thursday;

   c. Female Medical walk-in clinic -- 0800 to 1130 hrs. and 1300 to 1600 hrs. Monday thru Friday.

2. Surgery Clinic
   a. clinic hours
      - 1300 to 1600 hrs. Monday, Wednesday, Friday
      - 0900 to 1130 hrs. Wednesday (minor surgery);

   b. 0800 to 1600 hrs. Monday thru Friday (corpswave on duty).

3. OB/GYN:
   a. clinic hours
      - Monday 0900 to 1130 hrs. (GYN appointments) and 1230 to 1530 hrs. (prenatal revisits)
      - Tuesday 1300 to 1400 hrs. (post partum clinic) and 1345 to 1530 hrs. (Family Planning)

I. Outpatient Department -- Operations (Cont'd)

	Ft. Dix	Andrews	Beaufort
B. Hours of Operation (Cont'd)			• Wednesday 0800 to 1130 hrs. (new Prenatal clinic) and 1300 to 1530 hrs. (GYN) • Thursday 0830 to 1130 hrs. (prenatal visit) • Friday 0900 to 1130 hrs. and 1400 to 1530 hrs.; (GYN appointments); b. also given at the OB/GYN clinic are immunizations, Tuesday 0900 to 1150 hrs., and Thursday 1245 to 1500 hrs. 4. Pediatric clinic: a. 0830 to 1130 hrs. Monday, Tuesday, Friday (walk-in): b. 1300 to 1600 hrs. Monday, Tuesday, Friday (appointment follow-up); c. 0830 to 1130 hrs. Wednesday (walk-in); d. 1300 to 1600 hrs. Wednesday (6-months Well-Baby clinic). e. 0830 to 1100 hrs. Thursday (6-weeks Well-Baby clinic). 5. EENT clinic: a. ophthalmology • Monday 0800 to 1130 hrs. (AD military appointment) and 1300 to 1500 hrs. (dependent appointment) • Tuesday 0800 to 1500 hrs. (dependent appointment) • Wednesday 1300 to 1500 hrs. (dependent appointment • Thursday 0800 to 1130 hrs. (Glaucoma clinic) • Friday 1300 to 1500 hrs. (dependent appointment); b. optometry • Monday, Tuesday 0800 to 1130 hrs. (AD military appointment) and 1300 to 1500 hrs. (dependent appointment) • Wednesday, Thursday 0800 to 1130 hrs. (dependent appointment) • Friday 0800 to 1130 hrs. and 1300 to 1500 hrs. (dependent appointment);

I. Outpatient Department -- Operations (Cont'd)

	Ft. Dix	Andrews	Beaufort
B. Hours of Operation (Cont'd)			c. otolaryngology • Monday 0800 to 1130 hrs. (AD military appointment), 1300 to 1500 hrs. (AD military walk-in) • Tuesday, Wednesday, Friday 1300 to 1600 hrs. (dependent appointment); d. corpsman on duty for EENT, 0800 to 1600 hrs. weekdays. 6. Dermatology: a. clinic hours • 0800 to 1130 hrs. and 1300 to 1530 hrs. Monday thru Friday (walk-in) • 1300 to 1530 hrs. Monday, Tuesday, Friday (appointment); b. corpsman on duty 0800 to 1600 hrs. weekdays. 7. Orthopedics: a. Monday 1300 to 1600 hrs. (military walk-in); b. Wednesday 0800 to 1100 hrs. (dependent); c. Friday 0830 to 1500 hrs. (military walk-in); d. Saturday 0830 to 1130 hrs. (Club Foot clinic); e. corpsmen on duty around the clock; one corpsman on watch 1600 to 0730 hrs. for emergency work). 8. Urology clinic: a. clinic hours • Monday 0830 to 1130 hrs. (female appointment) and 1300 to 1600 hrs. (military appointments) • Tuesday 1300 to 1530 hrs. (cystoscopy) • Wednesday 1300 to 1500 hrs. (Pediatric) • Friday 0800 to 1130 hrs. (military appointment) and 1300 to 1500 hrs. (military retired); b. 0800 to 1600 hrs. Monday thru Friday (corpsmen). 9. PT: a. 0730 to 1600 hrs. Monday thru Friday. 10. ER: a. 7 days a week, 24 hours a day; • 0700 to 1600 hrs. (corpsmen) • 1600 to 0700 hrs. (Officer of the Day).

I. Outpatient Department -- Operations (Cont'd)

	Ft. Dix	Andrews	Beaufort
C. Workload Flow	1. General: a. total patient visits FY69 -- 332,076[1] • visits include OPC; ER; Medical, Pediatric, Dermatology, Allergy, Neurology, EEG, Surgical, Orthopedic, GU, ENT, Eye, and OB/GYN clinics; OT, PT, and MHCS • refer to Table I-W-1 for monthly average of visits to WAH clinics and units broken down by patient categories [2]; b. physicals and screening FY69 -- 109,489[1] • includes flight physicals, other complete physicals, limited physicals, and screenings.	1. No. of patients annually[1]: a. entire OPD -- 391,038 • inpatients -- 35,609 • outpatients -- 355,429; b. refer to Table I-M-1 for breakdown by clinic or unit.	1. Total OPD clinic visits: a. 23,513 FY69; b. for breakdown of clinics by inpatient outpatient and by clinic division see Table I-B-1.[1]
	2. Medical: a. approx. 36,474 patients annually;[3] b. WAH patient flow was not observed.	2. Internal Medicine: a. 10,957 patients annually;[1] b. patient flow[2] • patients wait from one day to 2 weeks for consultation appointment • emergeney patients (approx. 6 to 18 per week) have priority;	2. Medical: a. visits annually -- 23,513[2] • Male Medical -- 4,493[3] • Female Medical appointment and Female Medical walk-in -- 11,786 (walk-ins generally comprise 2/3 of the female patient load);[3,4] b. patient flow • Male Medical -- visits by appointment and walk-in (for breakdown of times between patient arrivals, refer to Table I-B-2. Corpsmen present to make appointments, to run EKG's, and to screen walk-ins referring them to appropriate specialty clinics • Female Medical appointments and Female Medical walk-in -- at times when MD staffing is low, these clinics are run as one; when run separately, female appointments patients are received by a corpsman; and walk-in patients are logged in and given preliminary care by a corpswave;

I. Outpatient Department -- Operations (Cont'd)

	Ft. Dix	Andrews	Beaufort
C. Workload Flow (Cont'd)		c. peak periods • workload heavy all day long • walk-in GI emergency cases upset scheduled appointments on an irregular basis (6 to 10 per week) • isolated duty physicals also upset scheduled appointments on an irregular basis (4 to 5 per month).	c. peak periods • Male Medical -- recruits from Parris Island are seen by referral only; peaks occur during epidemics at Parris Island (e.g., pneumonia during observation period) and at the beginning of school season, since school physicals are given here • Female appointment — clinic can handle more appointments on Wednesday and Friday mornings, since it is then staffed by 2 MD's; when one MD handles the clinic, usually 6 appointments are at 15-minute intervals • Female walk-in -- generally Monday is the day with heaviest load of patient arrivals; peak hours daily 0930 to 1030 hrs. and 1330 to 1400 hrs.
	3. Surgical: a. approx. 12,207 patients annually;[3] b. patient flow was not observed.	3. General Surgical: a. 12,418 patients annually;[1] b. there is a large no. of emergency cases, which have priority over scheduled appointments;[3] c. scheduled patients must wait when physician late returning from surgery, or when called for emergency surgery.[3]	3. Surgical: a. approx. 4,005 visits annually (for breakdown see Table I-B-1);[5] b. patient flow • services by appointment and walk-in • procedure -- refer to Figure I-B-1. Corpsmen present 5 days a week to handle phone calls, do housekeeping tasks, and prepare for the next clinic hours • refer to Table I-B-3 for patient stay figures;[6] c. peak periods -- for a one-day observation in clinic • average time in clinic -- 23 minutes (range 10 to 38 minutes) • average time between arrivals — 2.7 minutes • Monday is normally the day with heaviest workload, due to a large number of consultation patients from Parris Island.[6]

	Ft. Dix	Andrews	Beaufort
C. Workload Flow (Cont'd)	4. Pediatrics: a. approx. 61,032 patients annually[3] (including visits to Well-Baby clinic); refer to Table I-W-2 for a monthly breakdown of patient categories;[2] b. WAH patient flow was not observed; c. peak periods • greatest number of regular clinic patients arrive on Monday • Well-Baby clinic -- no information available on peak hours • refer to Figure I-W-1 for volume of visits to pediatric clinic by day of week for January 1969.[4]	4. Pediatrics: a. 54,183 patients annually;[1] b. patient flow[4] • patients scheduled for 15-minute periods 0900 to 1130 hrs. and 1300 to 1600 hrs. • pediatric emergencies after 2130 hrs. referred to ER • diphtheria-tetanus (DPT) and polio shots given during Well-Baby clinic. c. peak periods[4] • seasonal -- during winter months • daily -- 0900 to 1100 hrs.	4. Pediatrics: a. approx. 16,995 visits annually[7] for breakdown refer to Table I-B-1; b. patient flow • services by appointment and walk-in • 6-week and 6-month Well-Baby clinic visits and all revisits are scheduled through appointment desk; sick call patients may walk in during appointments clinic, although they normally report on Monday, Wednesday, or Friday 0900 to 1100 hrs. • patients logged in, have vital signs checked by corpsman who can also run limited hematology, urine, and throat culture tests for same day checking by the doctor • MD's see patients in order of arrival, except for true emergencies • for a 6-week sample of the appointment book (Outpatient Records Dept.) showing the average appointments made see Table I-B-4 • Well-Baby clinic (August 24 and 28, 1969); 6-week Well-Baby Clinic (scheduled patients) average wait time 31.8 minutes, average exam time 18.1 minutes • walk-ins during 6-week Well-Baby clinic exam time 11.5 minutes for 15 patients • 6-month Well-Baby clinic (scheduled) average wait time 32.5 minutes, average exam time 13.3 minutes • refer to Table I-B-5 for breakdowns of exam and wait time and for number of patients served.

	Ft. Dix	Andrews	Beaufort
C. Workload Flow (Cont'd)	5. Dermatology: a. approx. 9,013 patient visits annually;[3] b. patient flow • appointments and consultations; no walk-ins • patient flow was not observed.	5. Dermatology: a. 15,653 patients annually;[1] b. patient flow[5] • patients scheduled by central appointments as follows: new patients, 15-minute appointments; return patients, 10-minute appointments • each morning, time set aside for immediate action (emergency treatments, routine minor surgeries, etc.) for about 5 appointments • 2-week backlog for new patients; one week for new patients; c. no peak periods.	5. Dermatology: a. 3,194 patient visits annually[5] b. patient flow -- clinic is run on appointment basis only, except for same-day referrals from Medical walk-in clinic (approx. 3 per day) (for results of observation of patient flow in entire receiving corridor, including Female walk-in and appointment and Dermatology clinics, refer to Table 1-B-6).[9]
	6. Allergy: a. approx. 14,784 patient visits annually;[3] b. patient flow • appointments and consultations only • patient flow was not observed.	6. A&I: a. 22,443 patients annually;[1] b. patient flow[6] • scheduling -- allergy patients referred from other units. Scheduling priority given to pediatric patients; AD flight personnel must keep immunizations up to date to maintain world-wide duty status; they are scheduled from computer listing, sent from Central Base Personnel Office, for the necessary injections to be brought up to date every 6 months. Waiting period approximately 6 weeks for other patients with appointments • physician diagnoses allergy problems by medical history, physical exam and testing and treats them with hyposensitive injections or medications applied externally. Serious reactions to medication occur on the average about once a month; c. peak periods[6] • seasonal -- spring and summer months • peaks for each major overseas movement of AF personnel.	
	7. Immunization: a. appointment or walk-in; b. patient flow not observed.		
	8. Neurology: a. approx. 6,735 patients annually;[3] b. approx. 1,296 EEG's annually;[3] c. patient flow was not observed.	7. Neurology:[7] a. 9,151 patients annually;[1] b. clinic • physicians see patient 30 minutes for first visit and 20 minutes for succeeding visits; c. lab • each patient takes one hour for routine EEG • EEG sleep studies take one and one-half hour to 2 hours.	

I. Outpatient Department -- Operations (Cont'd)

	Ft. Ikx	Andrews	Beaufort
C. Workload Flow (Cont'd)	9. Orthopedic: a. approx. 10,836 patient visits annually[2] • brace shop -- approx. 6,312 visits annually • podiatry -- approx. 10,152 visits annually • cast room -- approx. 15,180 visits annually; b. patient flow • Orthopedic -- appointments generally (scheduled every half hour), consultations, and walk-ins -- for a profile of patient times spent in waiting, examination, etc., refer to Figure I-W-2; for a sampling of times between patient arrivals and of times spent being examined, refer to Table I-W-3 • Podiatry -- refer to Figure I-W-3 for a process chart of typical procedures followed; to Figure I-W-4 for a profile chart of time spent in waiting, examination, etc. for a sample patient group; to Table I-W-3 for a sampling of time between patient arrivals and examination times;[6] c. peak periods • orthopedic generally -- greatest patient arrival load from approx. 1000 to 1130 hrs. and 1415 hrs. to 1545 hrs. (Refer to Figure I-W-5 for chart of numbers of patients in waiting area from 1230 to 1700 hrs. and to Figure I-W-6 for a chart of patient arrivals for entire day, by half hours.)[6] • podiatry -- greatest arrival load approx. 0830 to 1000 hrs. Refer to Figure I-W-6 for chart of arrivals for entire day. [6]	8. Orthopedic: a. 15,757 patients annually;[1] b. patient flow [5] • priority given to VIP patients (approx. 10 per day) • daily workload of total of 60 to 70 patients per day • 25 to 30% of workload is referred from clinic and ER; c. peak hours 0900 to 1100 and 1300 to 1500 hrs. daily.[8]	6. Orthopedic: a. approx. 6,773 visits annually;[10] b. patient flow • the heavy load in orthopedics has necessitated restricting treatment to AD military and dependents under 16 years; other patients are seen on an emergency basis only (refer to process flow chart Figure I-B-2 for patient handling procedures) • for a one-day observation of the clinic, Friday, October 17, 1969 -- 58 patients; 7 casts applied; 22 consults from Parris Island; one consult from Male Medical walk-in clinic; 9 X-rays needed (sent to Radiology); c. peak periods and queues • days when Parris Island patients are seen are the heaviest; all the recruits arrive at one time approx. one half hour after opening of clinic and remain at the hospital until everyone has been examined • noticeable increase in workload during the football season at Parris Island and the orthopedics workload fluctuates with the level of Parris Island recruit population.
	10. GU: a. annual patient visits -- approx. 6,912;[3] b. annual X-rays taken -- approx. 1,668;[3] c. patient flow • patients by appointment only • patient flow not observed.	9. Urology: a. 6,780 patients annually;[1] b. patient flow [9] • scheduled by Central Appointments • clinic visits scheduled every half hour • cystoscopies scheduled for one hour • backlog from 2 to 6 weeks for appointments; c. peak hours 0900 to 1100 hrs. daily.[9]	7. Urology: a. patient visits FY69 -- 2,091[11] • outpatients -- 1,924 • inpatients -- 167; b. procedures performed FY69 -- 1050[3] (refer to Table I-B-7 for breakdown by outpatient or inpatients, and type of procedure); c. patients flow -- all visits on appointment basis only; current workload has created a 3 to 4 week wait for a clinic visit and a 4 to 5 week wait for elective surgery.

	Ft. Dix	Andrews	Beaufort
C. Workload Flow (Cont'd)	11. Eye clinics: a. annual patient visits • Optometry -- approx. 194,532.[7] Refer to Table I-W-4 for a breakdown by reason for visit and types of patient • WAH Eye clinic -- approx. 7,932;[8] b. Optical lab makes approx. 48,000 pairs of glasses annually; c. patient flow • Optometry -- appointments, consultations, and walk-ins. Refer to Figure I-W-7 for a chart of typical procedures followed for recruit eye examinations; to Figure I-W-8 for a sampling of waiting, fitting, screening, and eye exam times; to Table I-W-5 for a summarization of these times and between arrivals (sampling); and to Figure I-W-9 for a study of patient flow into, out of, and waiting in optometry clinic room[9] • Optical lab -- work fed in by Optometry clinic. Refer to Figure I-W-7 for a chart of typical procedures. Lab makes 2 pairs of glasses for each patient needing them[9] • WAH Eye clinic -- appointments, consultations, and walk-ins. Refer to Figure I-W-10 for process chart of typical eye examination (conducted by optometry personnel at WAH EENT clinic); to Figure I-W-11 for sampling of patient waiting and examination times; to Table I-W-5. for a summarization of times between arrivals and of examination times; and to Figure I-W-12 for a study of patient flow into, out of, and waiting in Eye clinic by room;[10] d. peak periods • Optometry clinic and Optical lab -- peak arrival loads 0915 to 1015 hrs. (refer to Figure I-W-13 for chart of number of arrivals by time for a typical morning)[9] • Eye clinic -- none.	10. EENT: a. 18,324 patients annually (refer to Table I-M-2 for breakdown by patient services performed);[1] b. patient flow[10] • order of patient priority is (1) stat; (2) hospital personnel and VIP's; (3) regular appointments; and (4) walk-ins • patients appointments usually 2 weeks from request date • workload generally twice that of appointments load due to walk-ins; c. peak periods[10] • peak hours 1000 to 1100 and 1300 to 1500 hrs. daily • each physician scheduled for surgery one-half day per week; workload for remaining clinic personnel is higher during these times.	8. EENT: a. total outpatient visits FY69 -- 4,206[12] • ophthalmology -- 3,617 • otolaryngology -- 589; b. inpatient admissions FY69 -- 506 • ophthalmology -- 352 • otolaryngology -- 154; c. surgical procedures performed FY69 -- 397[3] • ophthalmology -- 81 • otolaryngology -- 316; d. no. of refractions FY69 -- 4472; e. patient flow -- the clinic is run primarily on an appointment basis, with provision made for ENT walk-in on Monday afternoon for Parris Island consultation patients, and for emergency walk-ins at any time; surgical procedures are normally scheduled on Tuesday, Wednesday, and Friday, and the time consumed in surgery by MD's has created a one to one and one-half-month backlog in clinic appointments; f. peak periods • ENT and ophthalmology clinic workload is heaviest on Monday, for military patients • optometry clinic handles heavier load of appointments in morning than in afternoon.

	Ft. Dix	Andrews	Beaufort
C. Workload Flow (Cont'd)	12. ENT: a. patient visits -- approx. 9,408 annually;[8] b. patient flow -- appointments (every half hour), consultations, and walk-ins. (Refer to Figure I-W-14 for a chart of typical procedures; to Figure I-W-15 for a sampling of sequence and amount of time patient spends in various activities; to Figure I-W-16 for a study of patient flow into and out of ENT examining rooms; to Table I-W-6 for a summarization of times between arrivals, for examination, and hearing test times;[11] e. peak periods -- none.		
	13. OB/GYN: a. patient visits -- approx. 29,412 annually;[3] refer to Table I-W-7 for figures for years from 1958 to 1969;[12]	11. OB/GYN: a. 33,640 patients annually • 16,330 OB patients • 17,310 GYN patients;[1]	9. OB/GYN -- OB Revisit Clinic: a. approx. 13,928 visits annually[13] • new OB patients seen Wednesday only (refer to flow process chart Figure I-B-3 for further information) • gynecology clinic -- see Figure I-B-4 for information • post partum and family planning -- usually 15 patients for post partum examination and 30 patients to receive contraceptive prescriptions, Tuesday afternoon only; b. patient flow • services by appointment and walk-in; • for procedures for handling patient, see Figure I-B-5 • one-day observation of the clinic (October 16, 1969) -- scheduled visits 79; no-show 4; walk-in 4. • first patient called at approx. 0900 hrs.; clinic over at approx. 1041 hrs. • 3 MD's c. queues -- 29 persons waiting to be seen at 0918 hrs, one-day observation on October 16, 1969.
	b. patient flow was not observed.	b. patient flow[11] • OB patients -- normally see MD during second month of pregnancy and thereafter at intervals of 5 weeks and decreasing to one-week intervals by last month • GYN patients -- only AF dependent patients seen.	

I. Outpatient Department -- Operations (Cont'd)

	Ft. Dix	Andrews	Beaufort
C. Workload Flow (Cont'd)	14. Cardiac: a. annual patient visits[3] • regular cardiac -- approx. 3,276 • EKG -- approx. 7,956; b. patient flow was not observed.	12. Cardiopulmonary: a. 6,473 patients annually[1] • 5,099 cardiology patients • 1,374 pulmonary patients; • clinic visits -- 7,866 annually • routine EKG's -- 17,355 annually • routine pulmonary function tests -- 474 annually • special lung studies -- 735 annually • patient days monitored -- 1,095 annually • blood gas test -- 481 annually • blood pressure checks -- 330 annually • in-therapy treatments -- 4,416 annually;[12] b. peak periods[13] • seasonal -- winter months • daily -- EKG processing workload at 1600 hrs. when EKG's come in from FMC and dispensaries for processing and reading.	
	15. MHCS: a. annual patient visits -- approx. 1,834[3]. (Refer to Table I-W-8 for monthly breakdown by patient category[2] and to Table I-W-9 for sources of referrals to MHCS;[13] b. approx. 360 psychological tests administered annually;[14] c. patient flow -- refer to Table I-W-10 for dispositions given referred patients, and to Table I-W-11 for breakdown of dispositions given patients;[13] d. peak periods -- none.	13. Psychiatry: a. 25,927 patients annually;[1] b. patient flow[14] • AD military patients only; dependents and retired must use CHAMPUS program (i.e. seek care in civilian hospitals) • approx. 2 walk-ins per day; the rest are appointments • group therapy sessions for 8 to 10 persons meet once per week for one to 2 hours • Matac (drug therapy clinic) held Monday afternoons for chronically ill patients who are on continued medication and typically hospitalized once or twice yearly; c. seasonal peak[14] during winter and at end of school year in early summer.	

Ft. Dix	Andrews	Beaufort
C. Workload Flow (cont'd)	14. Hematology: a. 3,382 patients annually;[1] b. patient flow[15] • patients scheduled by central appointments 45 minutes for new patients; 20 minutes for return patients • each visit is preceded by a blood test the day before in the clinical labs.	
16. PT: a. annual patient visits -- approx. 36,468[3]. Refer to Table I-W-12 for sources of annual patient flow to PT from other hospital units;[15] b. patient flow -- all patients scheduled. Refer to Table I-W-13 for a sampling of arrival times, length of treatment periods, waiting times and other pertinent comments.[16]	15. PT: a. 22,249 patients annually;[1] b. patient flow[16] • new patient arrivals -- approx. 8 on Monday and 3 or 4 for any other weekday • all wheelchair patients escorted by orthopedics ward personnel • 30 minutes of treatment allowed per patient; technician can handle 3 or 4 of some treatments at once • patients come to PT for periods from one day to one and one-half years, averaging approx. 3 weeks • of 85 to 100 patients per day, only 3 or 4 are scheduled and the rest are unscheduled referrals from orthopedic ward (20 patients per day, each making 2 trips per day) or orthopedic clinic; e. weekly peak workload on Wednesdays after grand rounds on Orthopedic ward.[16]	10. PT: a. patient visits FY69 -- 7,390;[14] b. patient flow -- patients sent to PT by MD's in clinics or wards, and put on appropriate program of exercise, scheduled for revisits as necessary; c. peak periods • PT receives a large portion of its workload from the orthopedics clinic; workload during the week is light due to scheduling of revisits when Orthopedics demand will be light.
17. OT: a. annual patient visits -- approx. 6,912;[3] b. patient flow not observed.		

I. Outpatient Department -- Operations (Cont'd)

	Ft. Dix	Andrews	Beaufort
C. Workload Flow (Cont'd)	18. Outpatient clinic: a. general OPC workload flow • annual visits -- approx. 34,116[3] • patient flow -- see appropriate sections for dependent sick call and scheduled visits below (refer to Figure I-W-17 for process chart;[17] procedures described below for scheduled and dependent sick call) • peak periods -- 0900 to 1100 hrs. and 1300 to 1500 hrs. Refer to Figure I-W-18 for chart of patient arrivals by time of day;[17] b. patient flow -- dependent sick call • procedure -- patient walks in to desk, signs in, gets his record from Medical Records office, goes to waiting area, goes to exam room, undergoes exam and any necessary tests or treatment, leaves hospital. Refer to Figure I-W-17 for detailed process chart. Refer to Table I-W-14 for sampling of times between patient arrivals elapsed times for blood pressure and temperature checks, and exam times. Refer to Figure I-W-19 for a profile of times spent in waiting, blood pressure checks, and exams for a sample patient group; refer to Figure I-W-20 for patient flow by room[17] • peak periods -- largest number of dependent sick call patients arrive from 0815 to 0830 hrs. and from 0945 to 1030 hrs., slacking off to 1130 hrs. Refer to Figure I-W-21 for a chart showing numbers of patient arrivals by time of day;[17] c. patient flow -- scheduled appointments • procedure -- patient signs in at desk, goes to waiting room, goes to exam room, undergoes exam and any necessary tests or treatment, leaves hospital. Refer to Figure I-W-17 for detailed process chart. Refer to Table I-W-14 for sampling of time between arrivals, elapsed time	16. General Practice: a. 31,506 patients annually[1] • 30 sick call patients per day; b. patient flow[17] • only chronic illnesses handled here; sick call patients with acute illness use ER walk-in clinic • officers' sick call by appointment • 3 physicians man sick call, which runs one and 3/4 hours from 0800 to 0945 hrs. and see a total of about 30 AD military per day • each physician schedules 3 officer sick calls by appointment per day at 0945, 1000 and 1015 hrs. • dependents seen rest of day; scheduled for 15-minute appointments by central appointments, with about a 12- to 15-day backlog • cancelled appointments are filled by walk-in patients; about 6 to 10 per day filled by central appointments (same-day basis); about one to 3 per day filled by ER walk-in patients • GP is a screening-referring clinic; 60% of appointment patients are referred elsewhere; 35% of sick call patients are referred elsewhere; c. peak periods[17] • daily peak workload 0800 to 0945 hrs., during sick call; workload constant for remainder of day • weekly peaks on Monday and Friday.	

	Ft. Dix	Andrews	Beaufort
C. Workload Flow (Cont'd)	for blood pressure and temperature checks, and examination times spent in waiting, blood pressure checks; and examination times by a sample patient group, and to Figure I-W-20 for patient flow by room[17] • peak periods -- none. 19. MPS: a. physicals conducted -- approx. 109,488 annually;[8] b. patient flow • refer to Figure I-W-22 for detailed process chart of "typical" complete physical exam • refer to Figure I-W-23 for sample profile of times patients spend in various activities during examination; and to Table I-W-15 for summarization of time elapsed during various stages of exams;[18] c. peak periods -- there are generally from 2 to 4 peaks daily, occurring at random times, when groups of patients arrive for physicals.	17. FMC: a. 26,100 patients annually[1]; b. patient flow[18] • 90% of exams scheduled, 10% walk-in • 15% of scheduled exams for rated officers; 7% for retiring officers • Surgeon General's Office schedules flight physicals; daily schedules made by receptionist • officers' retirement physicals require one man-day's work • general officers' exams require 8 hours for technician escort, 3 hours for physician, and 1.5 hours for an administrative technician • FMC also handles sick call for flight rated personnel; c. peak periods[18] • workload least from April to August • daily peak 0800 to 1000 hrs. • regular workload falls behind with each general officer's physical exam. 18. Inhalation Therapy: a. 4,416 patients annually;[1] • 3,280 inpatient treatments annually, performed on ward • 1,136 outpatient treatments annually (about 3 per day are from cardiopulmonary clinic), performed in clinic area; b. peak months October to December.[19]	

20. Communicable Diseases:

a. appointment or walk-in

b. patient flow was not observed.

	Ft. Dix	Andrews	Beaufort
C. Workload Flow (Cont'd)	21. ER: a. patient visits -- approx. 54,780 annually[3] • refer to Table I-W-16 for "actual emergency" cases as percentage of total arrivals in ER[19] • refer to Table I-W-17 for reasons for patient arrivals[19] • refer to Table I-W-18 for age distribution of patients;[19] b. patient flow • refer to Figure I-W-24 for process chart of typical ER procedures[20] • mean patient time spent in ER -- 31.4 minutes[6] refer to Table I-W-18 for breakdown by high, low, and median times;[19,20] e. peak periods • from 0900 to 1100 hrs. and from 1500 to 1900 hrs. for dependents and retired military (refer to Table I-W-10 for chart showing number of arrivals by time of day and to Tables I-W-20 : I-W-21 for no. of arrivals by time of day for weekday and weekend)[19] • from 0700 to 2200 hrs. for active duty military (refer to Table I-W-19 for chart showing number of arrivals by time of day and to Tables I-W-20 and I-W-21 for no. of arrivals by time of day for weekday and weekend).[19]	19. ER: a. 71,175 patients annually[1] • approx. 150 per week classified important or urgent • auto accident cases are majority of true emergencies • approx. 100 to 150 cases per year from Bolling Dispensary; b. patient flow[20] • 1,600 to 2,000 patients seen per week; scheduled by time of arrival; serious cases take precedence (urgency determined by corpsmen who signs patient in) • approx. 30 to 40 patients are classified as important or urgent and are usually admitted to hospital per week • average wait is between one to one and one-half hours; with consults, labs or X-rays; can run as high as 2 to 5 hours; e. peak periods[20] • large queues develop 0900 to 1000 hrs., 1500 to 1600 hrs., and 1900 to 2100 hrs., and at these times patients may wait one to one and one-half hours • weekly peaks on Saturdays and Sundays 1000 to 2100 hours.	11. ER: a. approx. 10,369 visits annually;[15] b. patient flow • refer to Figures I-B-6 thru I-B-8 (process flow) for procedures • for a 3-week sample of the ER log book (January 1 to 7, 1969; March 7 to 13, 1969; July 22 thru 28, 1969) see Table I-B-8.
	22. Clinic referrals from outside BLHCS: a. from Picatinny Arsenal -- 318 annually;[21] b. from Patterson Army Hospital -- 2,580 annually;[22] c. from Tobyhanna Army Depot -- 358 annually;[23] d. from McGuire AFB -- 1,958 annually;[24] (refer to Table I-W-22 for breakdown of referrals by source and clinic referred to).[21, 22, 23, 24]		

I. Outpatient Department -- Operations (Cont'd)

	Ft. Dix	Andrews	Beaufort
D. Information Flow	1. For monthly volume of OPD communications, broken down by communication mode according to source or destination, refer to Table I-W-23.	1. For monthly volume of OPD communications, broken down by communication mode according to source or destination, refer to Table I-M-3.	1. For monthly volume of OPD communications, broken down by communication mode according to source or destination, refer to Table I-B-9.
	2. For monthly volume of communication inputs and outputs according to the type of communication, refer to Table I-W-24.	2. For monthly volume of communication inputs and outputs according to the type of communication, refer to Table I-M-4.	2. For monthly volume of communication inputs and outputs according to the type of communication, refer to Table I-B-10.

Walson Army Hospital
Operations - OPD

TABLE I-W-1

AVERAGE MONTHLY OUTPATIENT CLINIC VISITS

CLINIC	ACTIVE DUTY	DEP. A.D.	DEP. A.D. <14	DEP. A.D. >14	RE-TIRED	DEP. RET.	OTHERS	IN-PUTS	OUT-PUTS	TOTAL
. Physical Therapy	2,685	144			90	106	14			3,039
. Occupational Therapy	588		89	105	5	19	0			806
. Urology Service	273		52	134	82	34	1	X-ray 30	X-ray 109	576
. Brace Shop	384		89	38	9		6			526
. Podiatry	691	160			13	7				871
. Orthopedic	1,519		65	315	64	19	5			1,987
. Surgical (OP only)	440		56[1]	259[1]	55		13			823
. Optometry	12,806			721[1]	0		160			13,687
. OB-Gyn	38			2,378[1]	35					2,451
. EENT	918		386	351[1]	94		4			1,753
. Cast Room	930		15	272	32	12	4			1,265
. Emergency Room	2,879	1,420			86	158	22			4,565
. General OP				2,370	473					2,843
. Dermatology	258	332			45			29		664
. Allergy	370	499			133	151		79		1,232
. Medical	285	293			173					751
. Cardiac	54		8	59	81		5	66		273
. Pediatric			5,086							5,086
. Inhalation	329	16			35					430
. Pulmonary	107	88			20		1			216
. Radioisotopes	38	88			20					146
. EKG								342	321	663

*Source: DD-444-Outpatient Reports, Feeders, Last 6 mo. of FY69 (1-69 thru 6-69).

[1]Includes Dependent Retired.

TABLE I-W-2

PEDIATRIC CLINIC VISITS

MONTH	DEPENDENT ARMY	DEPENDENT AIR FORCE	DEPENDENT NAVY	TOTAL	AMBULATORY INPATIENTS	HIGH PER DAY M-F	LOW PER DAY M-F	WELL BABY CLINIC
1-69	2819	2913	328	6060	248	343	116	142
2-69	2221	2468	308	4997	255	375	161	108
3-69	2408	3251	280	5939	233	389	54	181
4-69	1877	2379	220	4476	263	270	41	129
5-69	1915	2637	295	4847	215	300	66	132
6-69	1505	2438	251	4194	200	249	58	153

TABLE I-W-3

TIME ANALYSIS OF ORTHOPEDIC/PODIATRY CLINIC PATIENT VISITS

ACTION TIMED	NUMBER SAMPLED	HIGH (minutes)	LOW (minutes)	MEDIAN (minutes)	MEAN (minutes)
Orthopedic Clinic:					
Patient Arrival Intervals	110	33	0	2	4.7
Examinations (doctor present)	83	43	2	11	14.1
Podiatry Clinic:					
Patient Arrival Intervals	41	51	0	5	10.1
Examinations (doctor present)	104	33	1	8	9.6

TABLE I-W-4

OPTOMETRY CLINIC VISITS*

FUNCTION	TYPE OF PATIENT	12 MONTH TOTAL
Evaluation and Examination	Army	12556
	Dependent	9119
	Retired	1046
	Other Military	359
Total		23080
Special (contacts, etc.)	Army	37
	Dependent	264
	Retired	
	Other Military	
Total		301
Limited (Medical Processing)	Army	64981
	Dependent	
	Retired	
	Other Military	378
Total		65359
Dispensing Glasses	Army	40349
	Dependent	
	Retired	1379
	Other Military	349
Total		42077
Fitting Glasses	Army	25393
	Dependent	6
	Retired	1015
	Other Military	210
Total		26624
Repairing Glasses	Army	2790
	Dependent	
	Retired	406
	Other Military	19
Total		3215
Adjusting Glasses	Army	539
	Dependent	
	Retired	222
	Other Military	49
Total		810
Job Order Manufacturing	Army	31548
	Dependent	
	Retired	1259
	Other Military	259
Total		33066

*Summary from DA-2965 (12/68 thru 9/69), prorating for year by multiplying by a factor of 1.2.

TABLE I-W-5

TIME ANALYSIS OF OPTOMETRY/EYE CLINIC PATIENT VISITS

ACTION TIMED	NUMBER SAMPLED	HIGH (minutes)	LOW (minutes)	MEDIAN (minutes)	MEAN (minutes)
Optometry Clinic:					
Eye Examinations	17	18	5	12	12.1
Fitting Glasses	20	9	1	3	3.6
Eye Screening	18	4	0	2	2
Patient Arrival Intervals	42	15	0	2	3.11
Eye Clinic:					
Examinations (Appointment Patients)	46	45	1	8	11.9
Patient Arrival Intervals	41	27	0	2	4.5

TABLE I-W-6

TIME ANALYSIS OF ENT CLINIC PATIENT VISITS

ACTION TIMED	NUMBER SAMPLED	HIGH (minutes)	LOW (minutes)	MEDIAN (minutes)	MEAN (minutes)
Patient Arrival Intervals	48	28	0	3	4.5
Examinations (doctor present)	33	13	2	7	6.4
Hearing Tests	15	16	3	7	8.3
Patient Stay in Examination Room	41	44	2	11	13.3

Walson Army Hospital
Operations-OPD

Table 1-W-7 -- OB/GYN Clinic Outpatient Visits (1959-1969)

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
January	1529	1472	1867	2181	2149	1930	2237	1778	2038	2668	2664			
February	1646	1433	1816	1905	1919	1776	2197	1711	1923	2503	2150			
March	2057	1494	2213	2137	2162	1924	2482	2342	2568	2619	2141			
April	2054	1553	2006	2040	2050	1925	2438	2139	2376	2598	2325			
May	1950	1655	2016	2182	2193	1812	2099	2076	2696	3095	2708			
June	1920	1728	2261	1931	2008	1967	2399	2051	2801	2459	2301			
July	1808	1684	2007	2379	2207	2150	2181	1983	2219	2325	2327			
August	1574	1937	2308	2349	2143	1991	2142	2141	2455	2335	2216			
September	1607	1885	2056	2003	2093	2166	1965	2565	2522	2044	2324			
October	1572	1905	2218	2182	2241	2202	1723	2045	2457	2423				
November	1420	1930	1959	2332	1926	2099	2038	1931	2431	2310				
December	1353	1624	1851	1642	1788	2247	1816	1809	1996	2146				
	20,490	20,300	24,578	25,263	24,879	24,189	25,717	24,571	28,839	29,405				

TABLE I-W-8

MENTAL HYGIENE CONSULTATION SERVICE OUTPATIENT VISITS

TYPE OF PATIENT	JAN. 1969	FEB. 1969	MAR. 1969	APRIL 1969	MAY 1969	JUNE 1969	JULY 1969	AUG. 1969	SEPT. 1969	9 MONTH TOTAL
Active Duty Army	804	1200	2002	1978	1775	1210	1506	1979	1834	14,288
Active Duty Navy				1	1					2
Active Duty AF	40	35	34	32	23	28	20		34	246
Reserves/Short Tour	4			12		5	15		5	41
West Point Screening*	45	142								187
Total Military	893	1377	2036	2023	1799	1243	1541	1979	1873	14,764
Army Depend. >14 yrs.	79	61	103	68	85	73	73	69	53	664
Army Depend. <14 yrs.	24	22	45	50	37	33	35	70	14	330
Navy Depend. >14	13		3	18	11	20	28	15	15	123
Navy Depend. <14	10	11	27	10	6	5	15	9	9	102
AF Depend. >14	35	26	35	41	40	52	52	44	30	355
AF Depend. <14	13	23	3	5	3	7	8	11	27	100
Total Dependents	174	143	216	192	182	190	211	218	148	1,674
Civilian Employees	1			1	2	2			1	7
Retired			2	4	7	16	9	11	10	59
Total Visits	1068	1520	2254	2220	1990	1451	1761	2208	2032	16,504

*West Point Cadets are screened by MHCS as part of their Medical Processing. This occupies 1-2 psychiatrists for about 3 days full time.

TABLE I-W-9

PATIENT REFERRALS TO MENTAL HYGIENE CONSULTATION SERVICE*

REFERRAL SOURCE	PATIENTS REFERRED TRAINEES	OTHER MILITARY	NON-MILITARY	TOTAL REFERRALS FOR NINE MONTHS (1/69 - 9/69)
Other Army Posts	1	22	4	27
Other Armed Services	1	38	9	48
Self Referrals	355	237	195	787
Receiving Station	7	20	7	34
Training Center	0	1	0	1
Service School	0	0	0	0
Physical Examiner	11	20	188	219
Dispensary	119	106	26	251
Hospital	92	71	207	370
Chaplain	39	7	1	47
Military Legal Authority	11	17	0	28
Provost Marshall	1987	2701	0	4688
Commanding Officer	1223	700	4	1927
Other	53	78	96	227
Total	3899	4018	737	8654

*From DA-8-262, sent monthly to the Surgeon General under the Adjutant's signature.

TABLE I-W-10

MENTAL HYGIENE CONSULTATION SERVICES TO REFERRAL PATIENTS

SERVICE	PATIENTS REFERRED (1/69 - 9/69) TRAINEES	OTHER MILITARY	NON-MILITARY	TOTAL SERVICES
Screening Exams	1950	2410	155	
Diagnosis and Findings	1253	1233	209	
Diagnosis and Treatment	777	452	365	
Psychological Test	34	105	313	
TOTAL	4014	4200	1042	9256

TABLE 1-W-11

MENTAL HYGIENE CONSULTATION SERVICE PATIENT DISPOSITION

DISPOSITION	PATIENTS (1/69-9/69) TRAINEES	OTHER MILITARY	NON-MILITARY	TOTAL DISPOSITIONS
Continue Same Duty Status	1729	1648	500	
Reclassification - Reassignment	830	718		
Admission to Hospital	32	40	13	
Normal Separation	18	16		
Other	1290	1595	179	
TOTAL	3899	4017	692	8608

TABLE 1-W-12

AVERAGE MONTHLY PHYSICAL THERAPY VISITS

TYPE OF PATIENT	AVERAGE NUMBER OF VISITS PER MONTH
Inpatients	
Orthopedic Service	24,964
General Surgery	3,005
Medical Service	1,666
Neurology	89
Clinics	
Orthopedic	5,716
Outpatient	208
Emergency Room	186
Neurology	186
Surgical	122
Medical	100
Dispensaries	229
Dermatology	28
Pediatric	50
Dental Service	28

Walson Army Hospital
Operations - OPD

TABLE I-W-13

SAMPLE PHYSICAL THERAPY TREATMENT BREAKDOWN

APPOINTMENT TIME	ARRIVAL TIME	TREATMENT ROOM ENTRY TIME	DEPARTURE TIME	TREATMENT RECEIVED	ROOM
0900	0908	Immediate	1000	Leg	BR
Walk in	0900	924	929	Made appointment	BR
0920	0911	Immediate	950		BR
0920	0913	"	927	RGE of Motion: Fingers	Gym
0920	0913	"	931		Gym
0900	0914	"	940		BR
0920	0915	"	938	Shoulder	
0900	0920	"	940	Fingers	Gym
0920	0920	"	940	Knee	BR
0920	0920	"	931	Leg:Flexion	BR
0920	0925	"	935	Hand: Exercise	Gym
0940	0928	"	939	Leg: Exercise	BR
0920	0934	"	1001	Arm	Gym
1000	0934	"	1004	Hand	Gym
0940	0939	"	957	Hand: Exercise	Gym
1000	0939	"	1022	Ultrasound	-
0840	0940	"	1002	Fingers	Gym
0940	0942	"	1012	Whirlpool	-
0940	0945	"	1034	Legs	BR
1000	0945	"	958	Leg	BR
0940	0949	"	1007	Leg	BR
1000	0950	"	1014	Knee	BR
1000	0952	"	1010	2 Knees	BR
0950	0952	"	1015	Knee	BR
0940	0957	"	1012		BR
1000	0959	"	1014	Hand	Gym
1000	1001	"	1026	Leg: Whirlpool	-
1000	1002	"	1013	Knee	BR
1020	1005	"	1021	Ankle Movement Meas.	BR
1020	1006	"	1045	Whirlpool & Exercise	-

TABLE I-W-11

MENTAL HYGIENE CONSULTATION SERVICE PATIENT DISPOSITION

DISPOSITION	PATIENTS (1/69-9/69) TRAINEES	OTHER MILITARY	NON-MILITARY	TOTAL DISPOSITIONS
Continue Same Duty Status	1729	1648	500	
Reclassification - Reassignment	830	718		
Admission to Hospital	32	40	13	
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TABLE I-W-12

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Inpatients	
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Orthopedic	5,716
Outpatient	203
Emergency Room	186
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Surgical	122
Medical	100
Dispensaries	229
Dermatology	28
Pediatric	50
Dental Service	28

Walson Army Hospital
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TABLE I-W-13

SAMPLE PHYSICAL THERAPY TREATMENT BREAKDOWN

APPOINTMENT TIME	ARRIVAL TIME	TREATMENT ROOM ENTRY TIME	DEPARTURE TIME	TREATMENT RECEIVED	ROOM
0900	0908	Immediate	1000	Leg	BR
Walk in	0900	924	929	Made appointment	BR
0920	0911	Immediate	950		BR
0920	0913	"	927	RGE of Motion: Fingers	Gym
0920	0913	"	931		Gym
0900	0914	"	940		BR
0920	0915	"	938	Shoulder	
0900	0920	"	940	Fingers	Gym
0920	0920	"	940	Knee	BR
0920	0920	"	931	Leg:Flexion	BR
0920	0925	"	935	Hand: Exercise	Gym
0940	0928	"	939	Leg: Exercise	BR
0920	0934	"	1001	Arm	Gym
1000	0934	"	1004	Hand	Gym
0940	0939	"	957	Hand: Exercise	Gym
1000	0939	"	1022	Ultrasound	-
0840	0940	"	1002	Fingers	Gym
0940	0942	"	1012	Whirlpool	-
0940	0945	"	1034	Legs	BR
1000	0945	"	958	Leg	BR
0940	0949	"	1007	Leg	BR
1000	0950	"	1014	Knee	BR
1000	0952	"	1010	2 Knees	BR
0950	0952	"	1015	Knee	BR
0940	0957	"	1012		BR
1000	0959	"	1014	Hand	Gym
1000	1001	"	1026	Leg: Whirlpool	-
1000	1002	"	1013	Knee	BR
1020	1005	"	1021	Ankle Movement Meas.	BR
1020	1006	"	1045	Whirlpool & Exercise	-

TABLE 1-W-13 (cont'd.)

SAMPLE PHYSICAL THERAPY TREATMENT BREAKDOWN

APPOINTMENT TIME	ARRIVAL TIME	TREATMENT ROOM ENTRY TIME	DEPARTURE TIME	TREATMENT RECEIVED	ROOM
1020	1006	Immediate	1030	Leg	BR
1000	1010	"	1109	Leg & Exercise-APR	BR
Walk In	1012	"	1022	To see Colonel	
Walk In	1015	"	1033	Ankle	BR
Walk In	1017	1023	1024	To see Colonel	-
1030	1019	"	1047	Ankle-Knee	BR
1020	1020	"	1037	Hand	Gym
1020	1020	"			
	1022	"	1049	Heat packs Ultraviolet	-
1040	1025	"	1047	Hand	Gym
1040	1027	"	1047	Knee	BR
1040	1027	"	1037	Whirlpool	-
1040	1027	"	1046	Both Ankles	BR
1040	1035	1037	1100	Lift Weights on Chest	Gym
1040	1036	"	1131	Hip	BR
900	1037	"	1102	Left Wrist	Gym
1040	1037	"	1103	Ex-Ambulation	BR
900	1037	"	1135	Col's. Spec. Room	
1020	1056		1108	Leg	BR
1245	1245	"	1303	Cerebral Palsy Case	Gym
1300	1245	1300	1327	Leg	BR
"	1245	"			
"	1250	1256	1305	Ultrasonic	BR
"	1256	1258	1317	Meas.	BR
"	1257	1259	1327	Hand	Gym
"	1258	Immediate	1320	Hip	BR
1300	1258	"	1318	Leg; Exercise - APR	BR
1300	1258	"			
1300	1259	"	1321	Knee	BR
1300	1300	Immediate		Hand	JOBST Unit Gym
1320	1300	"	1336	Shoulder	Gym
1300	1301	"	1345	Ultrasonic Fingers	-
1320	1310	1320			
Walk In	1313	1315	1322	To see Col.	
1300	1300	Immediate	1314	Leg	BR
1320	1318	"	1343	Leg	BR
1320	1318	"	1339	Leg & Arm	Gym
1320	1319	"	1340	Knee	BR
1310	1320	"		Whirlpool	-
1320	1322	"		Leg	BR
1320	1325	"			
1310	1326	"		Both Ankles	BR
1340	1330	"		Leg	BR
1340	1332	"		Arm	Gym
1340	1335	"		Whirlpool	-
Walk In	1336	"		Leg	BR
1310	1337	"			
1320	1320	"	1339	Hand	Gym
1400	1343	"		Hand	Gym
1340	1343	"		Hand	Gym
1400	1343	"		Legs	BR
1340	1345	"			
	1354				

TABLE I-W-14

TIME ANALYSIS OF OUTPATIENT CLINIC PATIENT VISITS

ACTION TIMED	NUMBER SAMPLED	HIGH (minutes)	LOW (minutes)	MEDIAN (minutes)	MEAN (minutes)
Scheduled Clinic:					
Patient Arrival Intervals	52	14	0	2	2.5
Blood Pressure and Temperature Procedures	17	9	1	2	3.2
Patient stay in examination room (p.m.)	43	47	1	7	10.1
Dependent Sick Call:					
Patient Arrival Intervals	93	9	0	1	1.9
Blood Pressure and Temperature Procedures	16	6	1	2	2.8
Patient stay in examination room (a.m.)	60	35	2	8	8.8

TABLE I-W-15

TIME ANALYSIS OF PATIENT VISITS TO MEDICAL PROCESSING

PHYSICAL EXAMINATION PROCEDURE TIMED	NUMBER SAMPLED	HIGH	LOW	MEDIAN	MEAN
History taking	25	28	15	20	21.7
X-ray	15	3	1	1	1.2
Blood pressure and pulse	10	3	2	2	2.3
Eye Test	11	1	1	1	1
Blood sample	10	2	1	1	1.2
Dental check	11	2	1	1	1.1

Walson Army Hospital
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TABLE I-W-16

OCCURRENCES OF ACTUAL EMERGENCIES IN EMERGENCY ROOM INVOLVING MILITARY AND DEPENDENT/RETIRED PATIENTS*

	DATE	NUMBER OF ACTUAL EMERGENCIES	TOTAL ARRIVALS	PERCENTAGE EMERGENCY
Military Personnel:	Sat. 10/11	9	107	8.25%
	Sun. 10/12	9	134	6.70
	Mon. 10/13	8	107	7.48
	Tue. 10/14	5	113	4.42
	Wed. 10/15	11	146	7.51
	Thu. 10/16	12	123	9.80
	Fri. 10/17	6	88	6.81
Total		60	818	7.35%
Weekday Total	Monday-Friday	42	577	7.28%
Weekend Total	Saturday-Sunday	18	241	7.45%
Dependents and Retired Personnel:	Wed. 10/22	4	50	8.0%
	Thu. 10/23	8	39	20.5
	Fri. 10/24	5	45	11.1
	Sat. 10/25	14	96	14.7
	Sun. 10/26	14	90	15.5
	Mon. 10/27	7	43	16.3
	Tue. 10/28	10	48	20.8
	Wed. 10/29	12	37	32.5
Total		74	448	16.5%
Weekday Total	Monday-Friday	46	262	17.5%
Weekend Total	Saturday-Sunday	28	186	15.0%

*Liberal interpretation - All cuts, vomiting, car accidents, bites, broken bones, head knocks, overdoses, and suicide attempts.

TABLE I-W-17

REASONS FOR EMERGENCY ROOM VISITS BY MILITARY AND DEPENDENT/RETIRED PERSONNEL

Military Personnel Reasons	Sat. 10/4	Sun. 10/5	Mon. 10/6	Tue. 10/7	Wed. 10/8	Thur. 10/9	Fri. 10/10	Sat. 10/11	Sun. 10/12	Mon. 10/13	Tue. 10/14	Wed. 10/15	Thur. 10/16	Fri. 10/17	Total All	Total M-F	Total S-S
General Medical[A]	45	56	70	51	40	60	61	54	48	46	48	53	47	31	710	508	202
General Surgical[B]	5	8	3	8	3	3	4	3	6	4	5	5	6	4	67	45	22
URI & Related	9	46	34	16	27	34	18	19	48	21	16	39	30	19	376	254	122
Orthopedic	24	21	37	24	24	25	23	18	13	20	22	33	24	10	318	242	76
X-Ray			3	1	13	7	1	9	1	1	4	4	1	2	47	37	10
Overdose	2					2					1			2	7	5	2
Stomach[C]	6	4	7	10	8	10	7	1	10	6	8	3	5	9	94	73	21
Unknown	8	6	8	8	13	8	6	3	5	8	9	9	7	7	105	83	22
Shot Reaction														2	2	2	0
Dental	2	1	3	1					3	1				1	12	6	6
Car Accident			1			1							2		4	4	0
Attempted Suicide					1	1							1	1	4	4	0
Total	101	140	166	119	129	151	120	107	134	107	113	146	123	88			

Dependents and Retired Personnel Reasons	Wed. 10/22	Thur. 10/23	Fri. 10/24	Sat. 10/25	Sun. 10/26	Mon. 10/27	Tue. 10/28	Wed. 10/29	Total All	Total M-F	Total S-S
General Medicine[A]	28	18	22	49	48	24	20	16	227	130	97
General Surgical[B]	1	5	2	6	3		7	3	27	18	9
URI & Related	9	8	10	22	18	4	7	6	74	34	40
Orthopedic	3	4	1	7	4	7	4	5	35	24	11
X-Ray		1				1			2	2	0
Overdose		1				1	1		3	3	0
Stomach[C]	1		1	6	10		7	4	29	13	16
Unknown	7	2	7	6	2	6	2	3	35	27	8
Shot Reaction									0	0	0
Dental	1		1	2	3				7	2	5
Car Accident			1						1	1	0
Attempted Suicide									0	0	0
Total	40	39	45	98	88	43	48	37			

A Includes such things as ear, eye, back strain, burn, mental strain, dizziness, etc.
B Includes cuts, bleeding, lance boils, etc.
C Includes stomach and vomiting.

TABLE I-W-18

TIME AND AGE ANALYSIS OF EMERGENCY ROOM PATIENT VISITS

	NUMBER SAMPLED	HIGH	LOW	MEDIAN	MEAN
Length of stay	118	120 min.	5 min.	25 min.	31.4 min.
Age distribution of dependents and retired personnel (1969 sample)	327	66 years	-1 yr.	13 yrs.	20.32 yrs.

TABLE I-W-19

EMERGENCY ROOM HOURLY ARRIVAL TIMES

HOUR STARTING	DEPENDENTS AND RETIRED	MILITARY ACTIVE DUTY
0000	3	7
0100	2	10
0200	3	5
0300	0	4
0400	4	0
0500	2	0
0600	5	3
0700	10	41
0800	8	47
0900	24	56
1000	25	64
1100	23	67
1200	16	54
1300	16	65
1400	12	66
1500	23	61
1600	31	44
1700	27	56
1800	30	42
1900	30	58
2000	13	86
2100	22	46
2200	10	41
2300	7	10

TABLE I-W-20

EMERGENCY ROOM WEEKDAY ARRIVAL TIMES

HOUR STARTING	DEPENDENTS AND RETIRED	MILITARY ACTIVE DUTY
0000	0	4
0100	1	6
0200	2	3
0300	0	4
0400	4	0
0500	0	0
0600	2	2
0700	2	20
0800	2	36
0900	7	34
1000	4	37
1100	3	51
1200	2	41
1300	9	46
1400	3	51
1500	11	47
1600	23	37
1700	18	43
1800	16	31
1900	24	46
2000	10	60
2100	19	38
2200	6	27
2300	3	6

TABLE I-W-21

EMERGENCY ROOM WEEKEND ARRIVAL TIMES

HOURS STARTING	DEPENDENT AND RETIRED	MILITARY ACTIVE DUTY
0000	3	3
0100	1	4
0200	1	2
0300	0	6
0400	0	0
0500	2	0
0600	3	2
0700	8	21
0800	6	11
0900	17	22
1000	21	7
1100	20	16
1200	19	13
1300	7	19
1400	9	15
1500	12	19
1600	8	12
1700	9	13
1800	19	11
1900	6	11
2000	3	26
2100	8	8
2200	4	9
2300	4	4

TABLE 1-W-22

ANNUAL OUTPATIENT CLINIC REFERRALS FROM OUTSIDE BASE LEVEL HEALTH CARE SYSTEMS

REFERRAL SOURCE	WAH CLINIC REFERRED TO	TOTAL REFERRALS FOR THE YEAR
Picatinny Arsenal	Dental	48
	ENT	18
	Eye	90
	GU	12
	Medical	24
	Medical Processing	54
	OB-GYN	12
	Orthopedic	18
	Pediatric	6
	Radioisotope	12
	Surgical	18
Total		318
Patterson Army Hospital	Allergy	348
	Dermatology	900
	ENT	12
	Neurology	648
	Podiatry	660
	Radioisotope	12
Total		2580
Tobyhanna Army Depot	Allergy	20
	Cardiac	12
	Dermatology	20
	ENT	20
	Eye	112
	GU	20
	Medical	32
	Medical Processing	4
	Neurology	20
	OB-GYN	8
	Orthopedic	36
	Pediatric	16
	Radioisotope	18
	Surgical	20
Total		358
McGuire Air Force Base	Allergy	48
	Cardiac	20
	Dermatology	148
	ENT	60
	Eye	52
	Gastroenterology	91
	Medical	108
	Mental Hygiene	92
	Neurology	47
	OB-GYN	7
	Orthopedic	163
	Pediatric	1
	Private MD	1049
	Surgical	72
Total		1958

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TABLE I-W-23
NUMBER OF COMMUNICATIONS BY MODE ACCORDING TO SOURCE/DESTINATION

SOURCE/ DESTINATION	RECEIVED BY						SENT BY					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION	6			1761	19	232		226		327		4
AIR EVACUATION												
DENTAL SERVICE				86						400		
DISPENSARIES				1200		83				5120		140
FLIGHT MEDICINE												
FOOD SERVICE												
HOUSEKEEPING												
LABORATORIES				11943		3600				2000		200
MAINTENANCE												
MEDICAL RECORDS				21400	16887	33				79900		
NURSING SERVICE										2		
OPERATING ROOM				6		2				20		73
OUTPATIENT DEPT.												
OUTSIDE WORLD				3720						40000		
PERSONNEL												
PHARMACY				16120		74				280		
PHYSICAL THERAPY				26						99	64	
PREVENTIVE MED.				186								
PROFESSIONAL SERV				981		1790		20		1640		210
REGISTRAR				1451				1540		45		
SUPPLY				4	3971	245				12		58
VETERINARY MED.				50								
WARD MANAGEMENT				356						724		
RADIOLOGY				11060		4000				240460		1000

TABLE I-W-24

NUMBER OF COMMUNICATIONS BY TYPE ACCORDING TO INPUT AND OUTPUT

OPD:	FUNCTION	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Patient Secondary	Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
6040	Input:											
	Volume of Comm.			20,916	23			4				20,943
	Number of Comm.		24	2				1				27
	Output:											
	Volume of Comm.		2,889		1,225		10	12	5	1	4	4,146
	Number of Comm.		8		5		1	3	2	1	1	21
6100	Input:											
	Volume of Comm.		1,364		4,241		31	16		42	111	48,065
	Number of Comm.		8		9		1	1		8	9	36
	Output:											
	Volume of Comm.	8,508	9,984	13,203	227		10	1,928	5	74	429	34,368
	Number of Comm.	24	11	12	9		1	5	2	5	5	74
6300	Input:											
	Volume of Comm.		34,272		3	5		8				34,288
	Number of Comm.		9		1	2		1				13
	Output:											
	Volume of Comm.		8,488		1	1	10	366	5		8	8,879
	Number of Comm.		11		1	1	1	4	2		1	21
6302	Input:											
	Volume of Comm.		22,616		5			4				22,625
	Number of Comm.		9		2			1				12
	Output:											
	Volume of Comm.		2,979		1,215	1	10	669	5	3	24	4,906
	Number of Comm.		10		4	1	1	5	2	2	2	27
6303	Input:											
	Volume of Comm.		22,600		3		9	4				22,616
	Number of Comm.		7		1		1	1				10
	Output:											
	Volume of Comm.		2,845		1,215	1	10	896	5	1	4	4,977
	Number of Comm.		8		4	1	1	5	2	1	1	23
6304	Input:											
	Volume of Comm.		840		3		4	4				851
	Number of Comm.		4		1		1	1				7
	Output:											
	Volume of Comm.		529		495		10	4	5			1,043
	Number of Comm.		3		4		1	1	2			11
6305	Input:											
	Volume of Comm.		21,700		3			4				21,707
	Number of Comm.		7		1			1				9
	Output:											
	Volume of Comm.		3,113		1,935	1	12	73	5	1	4	5,144
	Number of Comm.		7		4	1	2	5	2	1	1	23
6306	Input:											
	Volume of Comm.	25	20,320		7			4				20,356
	Number of Comm.	1	26		2			1				30
	Output:											
	Volume of Comm.		2,591		500		10	4	5	1	1,604	4,715
	Number of Comm.		11		5		1	1	2	1	2	23
6307	Input:											
	Volume of Comm.		20,813		123	20		2				20,958
	Number of Comm.		12		3	1		1				17
	Output:											
	Volume of Comm.		4,572		1,511	1	10	372	5	3	24	6,498
	Number of Comm.		9		5	1	1	5	2	2	2	27
6308	Input:											
	Volume of Comm.		21,414		7		13	4			8	21,446
	Number of Comm.		8		2		2	1			1	14
	Output:											
	Volume of Comm.		4,901		1,441		11	298	5	3	28	6,687
	Number of Comm.		9		2		2	3	2	2	2	22

TABLE I-W-24 (Cont'd)

OPD:	FUNCTION	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Secondary Patient	Administrative Equipment	Supplies	Facilities	Personnel	Other	Total
6309	Input: Volume of Comm.		20,160		4			4			20,168
	Number of Comm.		6		2			1			9
	Output: Volume of Comm.		286		241			24	5	1	557
	Number of Comm.		5		2			5	2	1	15
6310	Input: Volume of Comm.		20,796		4		4	4			20,808
	Number of Comm.		13		2		1	1			17
	Output: Volume of Comm.		4,274		735		11	12	5	3	28	5,068
	Number of Comm.		6		4		2	3	2	2	2	21
6311	Input: Volume of Comm.		30,204		3			4				30,216
	Number of Comm.		8		1			1				10
	Output: Volume of Comm.		1,552		255		10	12	5	1	12	1,847
	Number of Comm.		8		4		1	3	2	1	1	20
6330	Input: Volume of Comm.		20,476		42	20	9	4				20,513
	Number of Comm.		8		2	1	1	1				13
	Output: Volume of Comm.		4,261		961		10	38	5		12	5,287
	Number of Comm.		9		2		1	4	2		1	19
6363	Input: Volume of Comm.		252		23	1,500		2				1,777
	Number of Comm.		5		2	1		1				9
	Output: Volume of Comm.		5,892		265			4	5	3	22	6,191
	Number of Comm.		5		5			1	2	2	2	17
6800	Input: Volume of Comm.		40		3			5		52	89	189
	Number of Comm.		1		1			2		9	5	18
	Output: Volume of Comm.		41		15		10	17		74	429	586
	Number of Comm.		2		3		1	5		5	5	21
6801	Input: Volume of Comm.							4				4
	Number of Comm.							1				1
	Output: Volume of Comm.							4				4
	Number of Comm.							1				1
6810	Input: Volume of Comm.	425		20	60			5		19	190	719
	Number of Comm.	2		1	1			2		4	7	17
	Output: Volume of Comm.		20		57	1	10	17		8	426	539
	Number of Comm.		1		6	1	1	5		3	5	22
6850	Input: Volume of Comm.		20					8		1	78	107
	Number of Comm.		1					1		1	6	9
	Output: Volume of Comm.		20				10	8				38
	Number of Comm.		1				1	1				3

TABLE I-M-1

INPATIENT AND OUTPATIENT VISITS TO OUTPATIENT DEPARTMENT FOR FY69*

FUNCTION	INPATIENT	OUTPATIENT	TOTAL
Emergency Room		71,175	71,175
Clinics			
Neurology	4,408	4,743	9,151
OB-GYN	21	33,619	33,640
Orthopedic	1,774	13,983	15,757
Cardio Pulmonary	168	6,305	6,473
General Practice	1	31,505	31,506
Internal Medical	427	10,579	11,006
General Surgery	217	12,201	12,418
Psychiatry	13,755	12,172	25,927
EENT	237	18,087	18,324
Allergy	48	22,395	22,443
Urology	952	5,828	6,780
Hematology	68	3,314	3,382
Dermatology	1,164	14,489	15,653
Flight Medicine	346	25,754	26,100
Pediatric	0	54,183	54,183
Physicial Therapy	11,876	10,373	22,249
Inhalation Therapy		4,416	4,416
TOTAL	45,462	365,121	390,583

*Source: AF 235A FY69
Number of Treatments Urgent 132
Number of Treatments Important 4284

TABLE I-M-2

PATIENT SERVICES PERFORMED BY EENT CLINIC

SERVICE	NUMBER PERFORMED
Diffractions	2383
Audiometers	1158
Opthamology Patient Visits	1821
Optometry Patient Visits	2822
ENT Patient Visits	2714

Malcolm Grow Hospital
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TABLE I-M-3
NUMBER OF COMMUNICATIONS BY MODE ACCORDING TO SOURCE/DESTINATION

SOURCE/ DESTINATION	RECEIVED BY: U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	SENT BY: U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION												
AIR EVACUATION												
DENTAL SERVICE												
DISPENSARIES				127						28		
FLIGHT MEDICINE				4		20						
FOOD SERVICE												
HOUSEKEEPING												
LABORATORIES		4		8673		2068				35716		1060
MAINTENANCE										2		
MEDICAL RECORDS				2720						3060		
NURSING SERVICE												
OPERATING ROOM												
OUTPATIENT DEPT.												
OUTSIDE WORLD	77	4		185		3176	1043	240		1400		3046
PERSONNEL						4000						
PHARMACY		2		160		1100				23127		366
PHYSICAL THERAPY												
PREVENTIVE MED.												
PROFESSIONAL SERV												
REGISTRAR				9392						7221		180
SUPPLY		13		1238				40		3682	20	160
VETERINARY MED.												
WARD MANAGEMENT		988		3053		692				3262		1180
RADIOLOGY				4950		747				4118		360

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TABLE I-M-4

TYPE OF COMMUNICATIONS BY INPUT AND OUTPUT

FUNCTION	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Patient Secondary	Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
Inhalation Therapy 3454 Input	80	127	136	30			60				433
Output							20				20
Physical 3351 Input											
Output											
General Therapy 3303 Input	40	6418	1109	781	370		20			28	8856
Output		11269	2500	724	1321		500	30	20		16364
Emergency Room 3100 Input	508	5799	717	2081	424		252	4	8	30	9823
Output	846	21431	1032	9220	5004	16	703	25	56		38333
Allergy Clinic 3314 Input		20									20
Output											
Dermatology 3318 Input											
Output											
Cardiopulmonary 3302 Input	240	828	875	160	380					28	2531
Output		3080	657	160	2260	4	480	30	2		6637
Neurology 3210 Input		12									12
Output		4			4						8
General Medicine 3304 Input	40	1297	668	3590	360		20			30	6005
Output		4885	470	244	2181		488	50	2		8320
General Surgery 3305 Input											
Output											

Malcolm Grow Hospital
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TABLE I-M-4 (cont'd)

FUNCTION	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Patient Secondary	Patient Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
Neurology 3215											
Input											
Output											
Orthopedic Clinic 3301											
Input	200	1884	952	176	2971		40			20	6243
Output		3160	4290	231	2050		418	23	2		10174
Pediatrics 3309											
Input											
Output					4						4
OB/GYN 3240											
Input	40	1530	1316	216	360		20			28	3510
Output		3160	6268	288	2350		484	24	5		12579
Psychiatry 3302											
Input	60	440	350	315	385		20			20	1590
Output		3160	662	140	2220		486	25	2		6695
EENT Clinic 3313											
Input			4								4
Output											

TABLE I-B-1

CLINIC VISITS FY69

CLINIC	OUTPATIENT		INPATIENT
ENT			
Opthalmology	3,617		352
Otorhinolaryngology	589		151
Optometry (# of refractions)		1,172	
Dermatology	3,120		71
OB/GYN			
GYN	5,189		1
OB	8,738		--
Pediatries	16,995		--
Surgery			
General Surgery	3,712		97
Proctology	192		1
Orthopedic	6,436		337
EDR (Emergency)	10,369		--
Urology	1,924		167
PT	2,452		5,398
Total		23,513	

TABLE I-B-2

TIME BREAKDOWN OF PATIENT VISITS TO MALE MEDICAL CLINIC*

PATIENTS	TIME BETWEEN ARRIVALS (MINUTES)	STAY (MINUTES)
1	0-1	
1	1-2	
2	2-3	
4	3-4	
4	4-5	
1	5-6	
2	7-8	
1	8-9	
1	10-11	
1	16-17	
1	23-24	
3	more than 25	
Median Average	4-5	54.6
Range	9.12	From 10 Minimum to 235 maximum (3 hours 55 min.)

* Information is based on a one-day observation conducted August 28, 1969.

TABLE I-B-3

TIME BREAKDOWN OF PATIENT VISITS TO SURGICAL CLINIC*

PATIENTS	TIME BETWEEN ARRIVALS (MINUTES)	STAY (MINUTES)
8	0	
5	0-1	
4	1-2	
1	2-3	
2	3-4	
3	4-5	
1	5-6	
1	6-7	
2	7-8	
1	8-9	
Median	1-2	
Average	2.78	23.13
Range		From 10 minimum to 38 maximum

* Information is based on a one-day observation conducted October 27, 1969.

TABLE I-B-4

SIX WEEKS SAMPLE OF PEDIATRIC APPOINTMENTS

DAY	TIME	CLINIC	NUMBER OF APPOINTMENTS
Monday	0830 - 1130 hours	Walk-in	6
	1300 - 1600	Follow-up Appointment	90
Tuesday	0830 - 1130	Walk-in	6
	1300 - 1600	Follow-up Appointment	70
Wednesday	0830 - 1130	Walk-in	12
	1300 - 1600	Well Baby Clinic (6 months)	77
Thursday	0830 - 1130	Well Baby Clinic (6 months)	16
	(afternoon carry over)	Well Baby Clinic (6 months)	45
Friday	0830 - 1130	Walk-in	6
	1300 - 1600	Follow-up Appointment	80

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TABLE I-B-5

WELL BABY CLINIC EXAMINATION AND WAITING TIMES *

TIME (In Minutes)	WAITING		EXAMINATION				
	6 Weeks Clinic Patients	6 Months Clinic Patients	6 Weeks Clinic Patients	6 Months Clinic Patients	Walk-in Clinic Patients	Vital Signs Clinic Minutes	Vital Signs Clinic Patients
0 - 10	1	2	1	5	7	4	8
11 - 20	1	1	9	5	5	5	6
21 - 30	5	0	2	1	3	6	6
31 - 40	1	3	1	0	0	7	2
41 - 50	3	3	0	0	0	↓	
51 - 60	1	1	0	0	0	13	1
Average Time	31.8 minutes	32.5 minutes	18.1 minutes	13.3 minutes	11.5 minutes	5.45 minutes	
Minimum Time	7 "	6 "	9 "	7 "	1 "	4 "	
Maximum Time	53 "	51 "	35 "	28 "	27 "	13 "	
Range	46 "	46 "	26 "	21 "	26 "	9 "	

* One Day Observation:

6 Weeks Clinic on 24 August 1969.
6 Months Clinic on 28 August 1969.

TABLE I-B-6

SERVICE TIMES AND MEDIAN TIME BETWEEN ARRIVALS, DERMATOLOGY, FEMALE WALK-IN, AND FEMALE APPOINTMENT CLINIC (OBSERVED ON WEDNESDAY, SEPT. 3, 1969).

Total number of patients: 44	Arrival Profile:
Median time between arrivals:	0800-0830:9 arrivals
2-3 minutes.	0831-0900:5 arrivals
Range:0-21 minutes	0901-0930:14 arrivals
Median service time:8-11 minutes	0931-1000:9 arrivals
Range:1 to 33 minutes	1001-1030:4 arrivals
No shows:4	1031-1100:3 arrivals

TABLE I-B-7

PROCEDURES PERFORMED UROLOGY CLINIC: FY69

PROCEDURE	OUTPATIENT	INPATIENT
Urine	658	33
Cystoscopy	95	10
IVP's	16	4
Panendscopy	1	0
Retrograde pyelograms	5	2
Urethral dilations and calibrations	21	7
Semen analysis	26	0
Meatotomy	0	0
Circumcisions	43	0
Prostate needle biopsy	0	0
Voiding cystouretерogram	115	14
Total	980	70

TABLE I-B-8

THREE WEEK SAMPLE OF EMERGENCY ROOM LOG *

TIME OF ENTRY	TOTAL ENTERED AVERAGE	HIGH	LOW	PERCENT DEPENDENT	PERCENT RETIRED
0301 - 0730	2.9	8	1	81	0
0731 - 1200	4.4	18	0	78.4	5.8
1201 - 1600	7.1	17	1	80	0.9
1601 - 2000	13.6	23	7	84.7	1.1
2001 - 2400	6.6	11	3	84	3.2

* Three week sample: Weeks of 1 January, 7 March and 22 July, 1969.

Beaufort Army Hospital
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TABLE I-B-9

NUMBER OF COMMUNICATIONS BY MODE ACCORDING TO SOURCE/DESTINATION

SOURCE/ DESTINATION	RECEIVED BY						SENT BY					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION				8								
AIR EVACUATION												
DENTAL SERVICE												
DISPENSARIES												
FLIGHT MEDICINE												
FOOD SERVICE												
HOUSEKEEPING				200						200		
LABORATORIES				6494						8064		
MAINTENANCE				9						4		
MEDICAL RECORDS				12522						4689		300
NURSING SERVICE				202		480				580		
OPERATING ROOM				12						80		
OUTPATIENT DEPT.												
OUTSIDE WORLD												
PERSONNEL												
PHARMACY				6704						5		
PHYSICAL THERAPY										4		120
PREVENTIVE MED.												
PROFESSIONAL SERV												
REGISTRAR												
SUPPLY				158						102		
VETERINARY MED.												
WARD MANAGEMENT												
RADIOLOGY				624		216				216		
EMERGENCY				72						5		

Beaufort Naval Hospital
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TABLE I-B-10

NUMBER OF COMMUNICATIONS BY TYPE ACCORDING TO INPUT AND OUTPUT

FUNCTION		Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Patient Secondary	Patient Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
Surgery Clinic	Input		942	40	40	20		20				1062
	Output		1420					44				1464
Orthopedic Clinic	Input		1550	60	40	8		40				1498
	Output		1434		4			438				1576
Urology Clinic	Input		328	60		20		32				440
	Output		600					44	4			648
OB-Gyn Clinic	Input		2071	60	40	20		40				2231
	Output		5242					46	1			5289
EENT Clinic	Input		896	60	40	12		22				1030
	Output		1359		4	46						1409
Dermatology Clinic	Input		366	60	40			32				498
	Output		642					42				684
Female Medical Appointment	Input		964	60	40			32				1096
	Output		2578					40			140	2758
Male Medical	Input		2352		40			32				2424
	Output		5706					32				5738
Female Medical Walk-in	Input		1616					20				1636
	Output		1520					20				1540
Pediatrics Clinic	Input		2359	60				32	4	5		2460
	Output		4113					2280	4			6397
Total Input			13244	460	280	80		302	4	5		14375
Total Output			24614		8			3032	9		140	27803

Walson Army Hospital
Operations - OPD

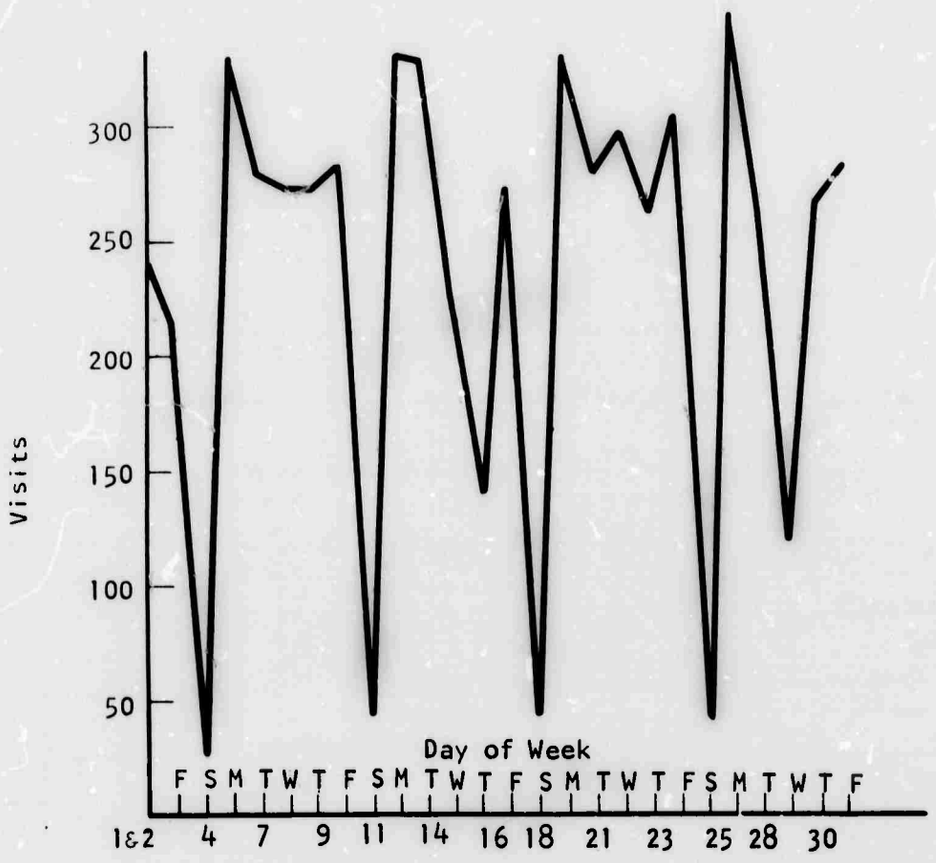

Fig. I-W-1—Pediatric clinic visits for sample month (1/69)

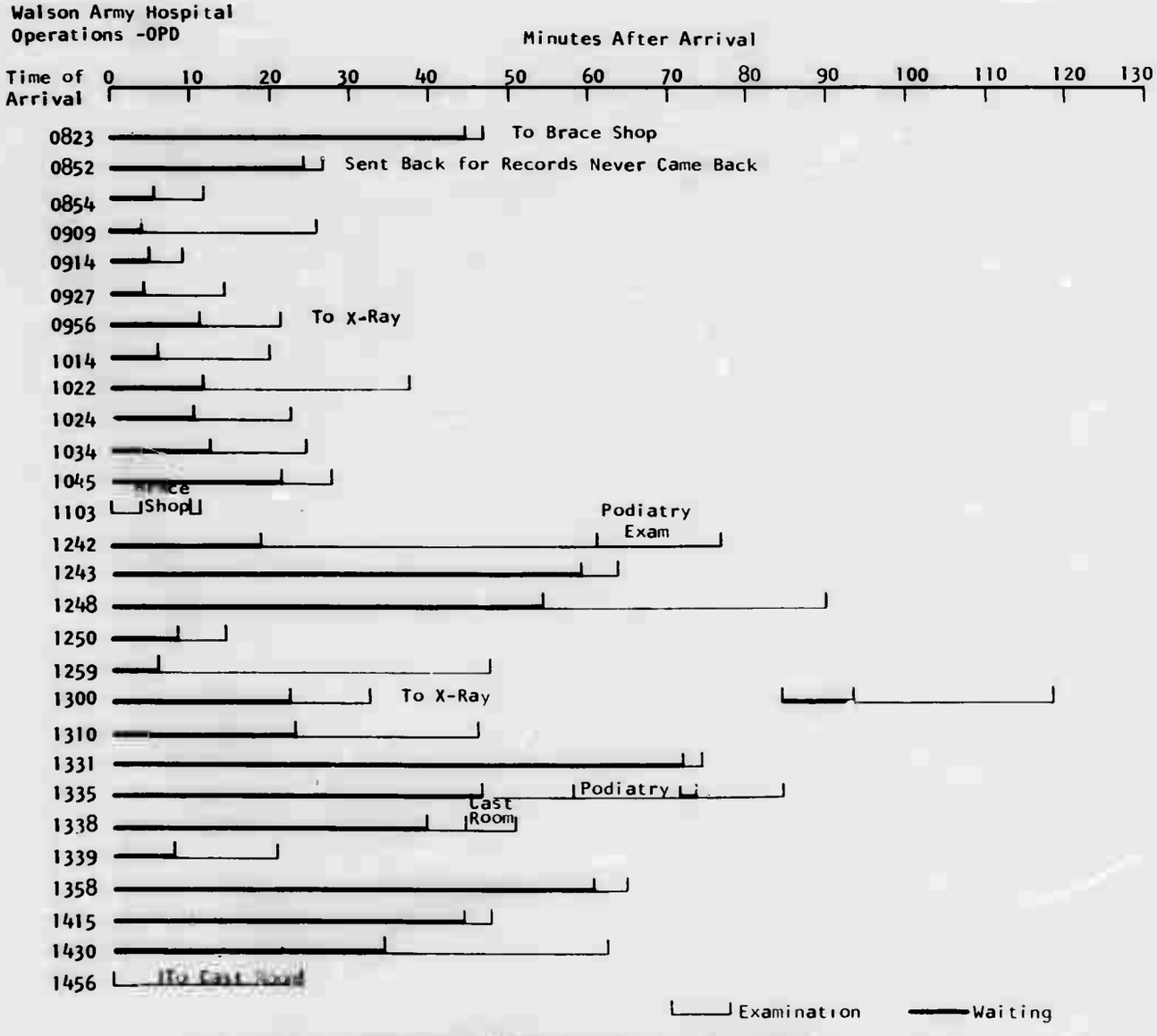

Fig. I-W-2 –Orthopedic/Podiatry Clinic patient cycles

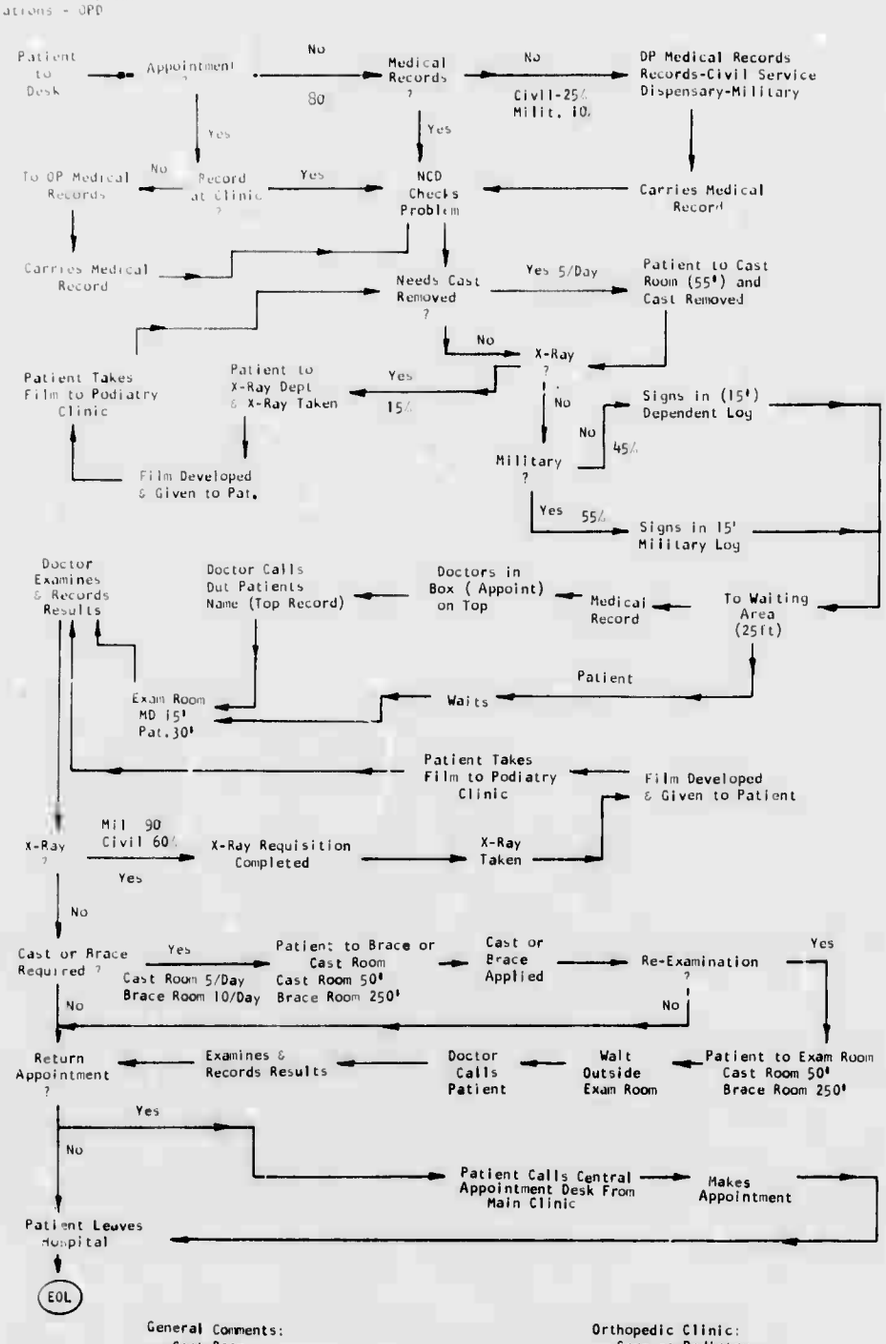

Fig. I-W-3 —Podiatry clinic procedure flow

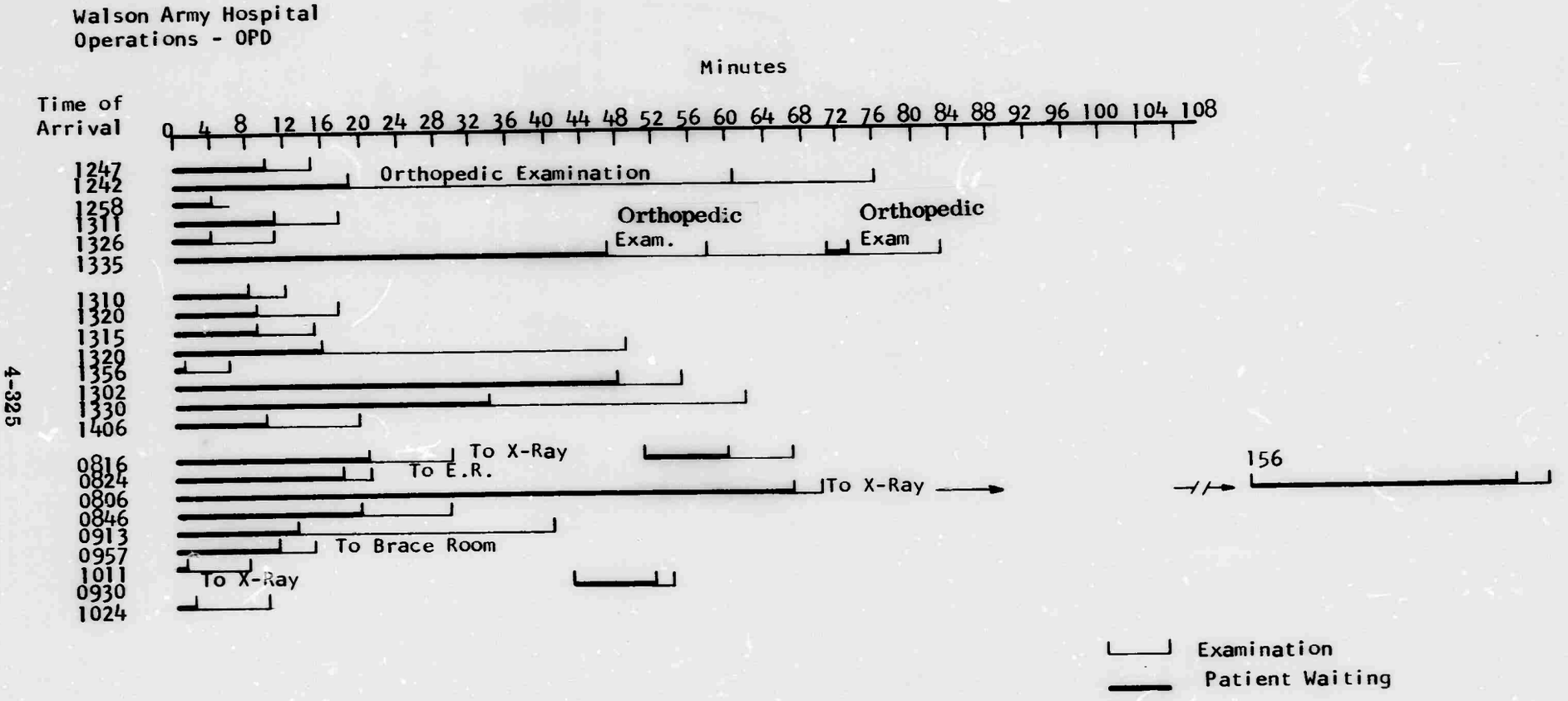

Fig. I-W-4 —Podiatry clinic individual patient cycles

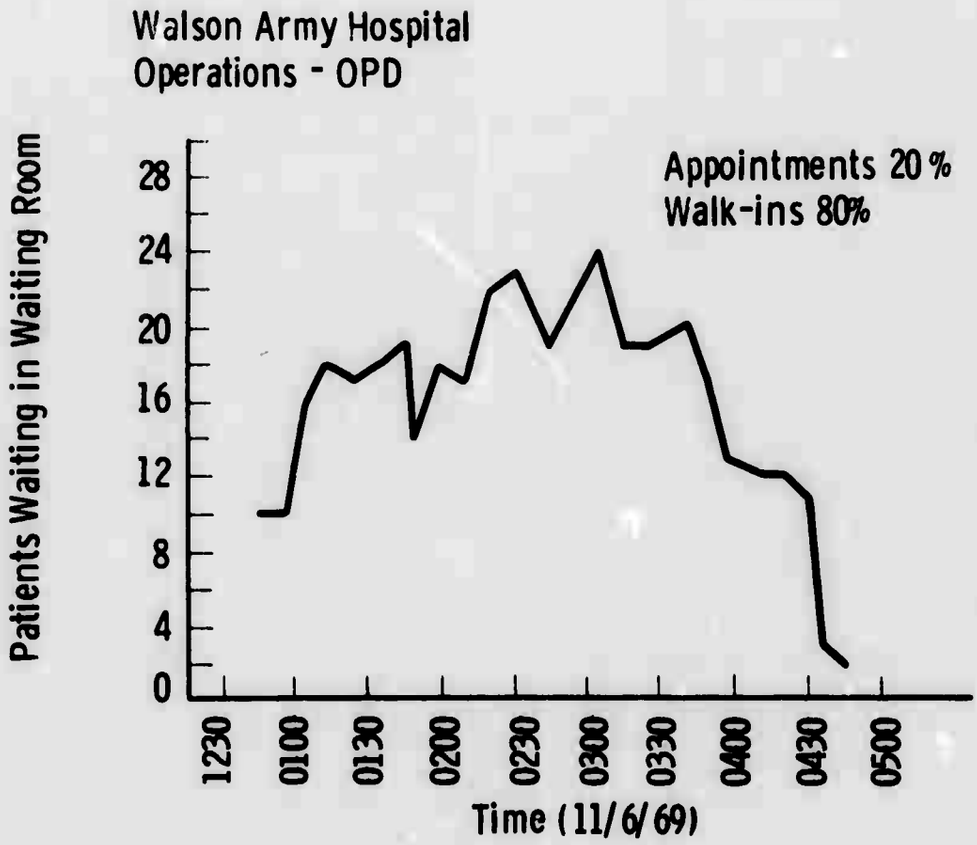

Fig. I-W-5 —Orthopedic/podiatry clinic patient waiting time

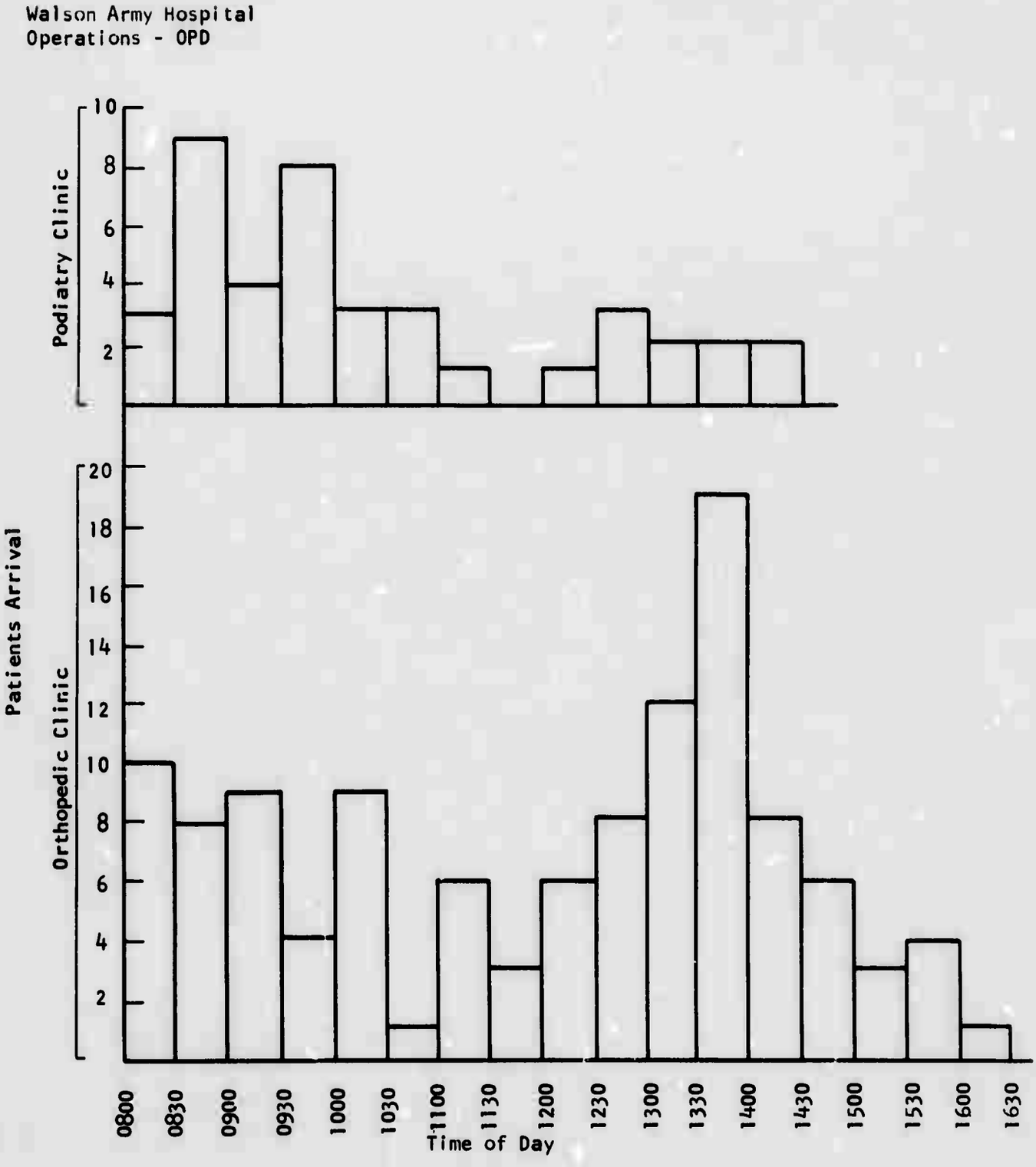

Fig. I-W- 6 —Orthopedic/podiatry clinic patient arrival times

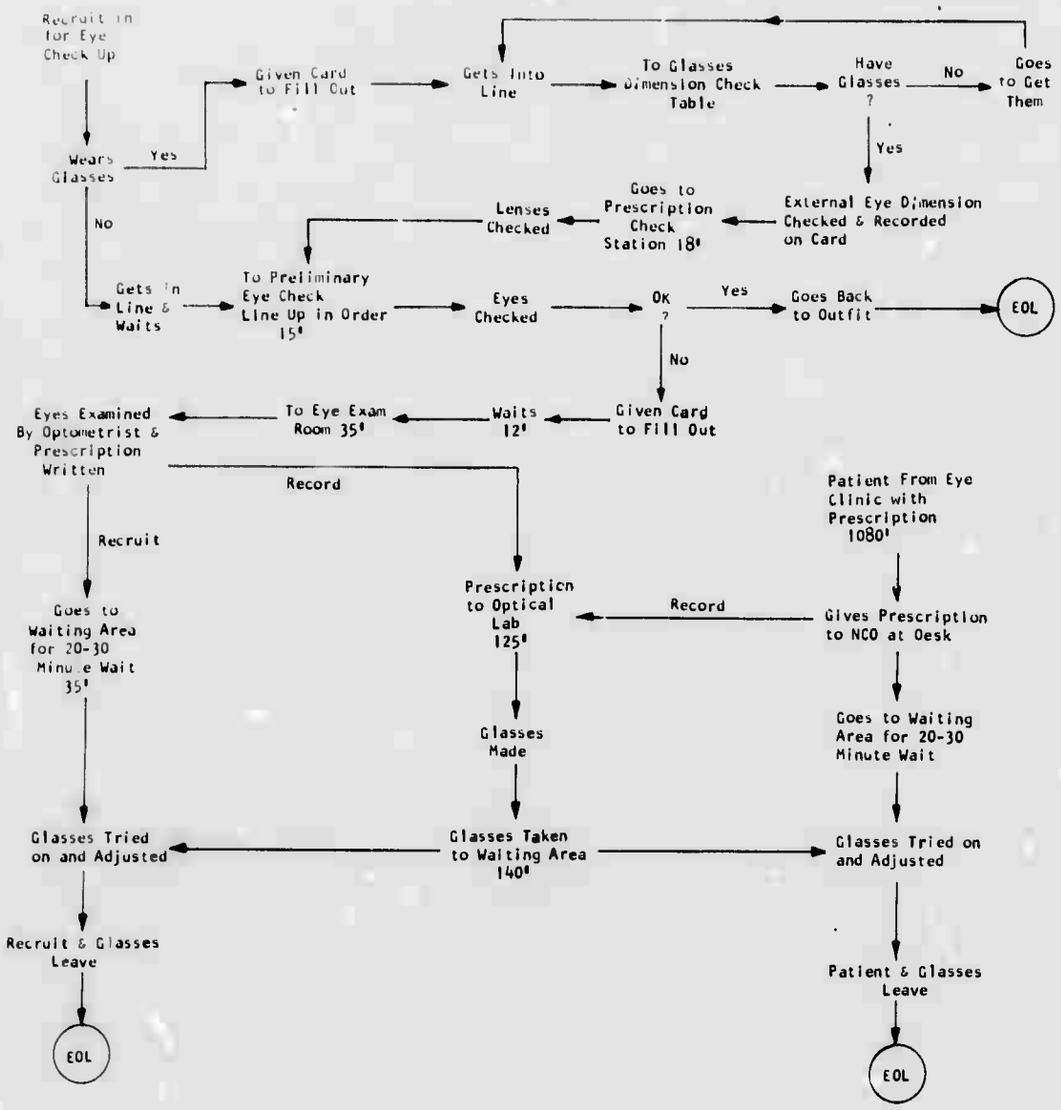

Fig. I-W-7 —Recruit eye examination procedure flow

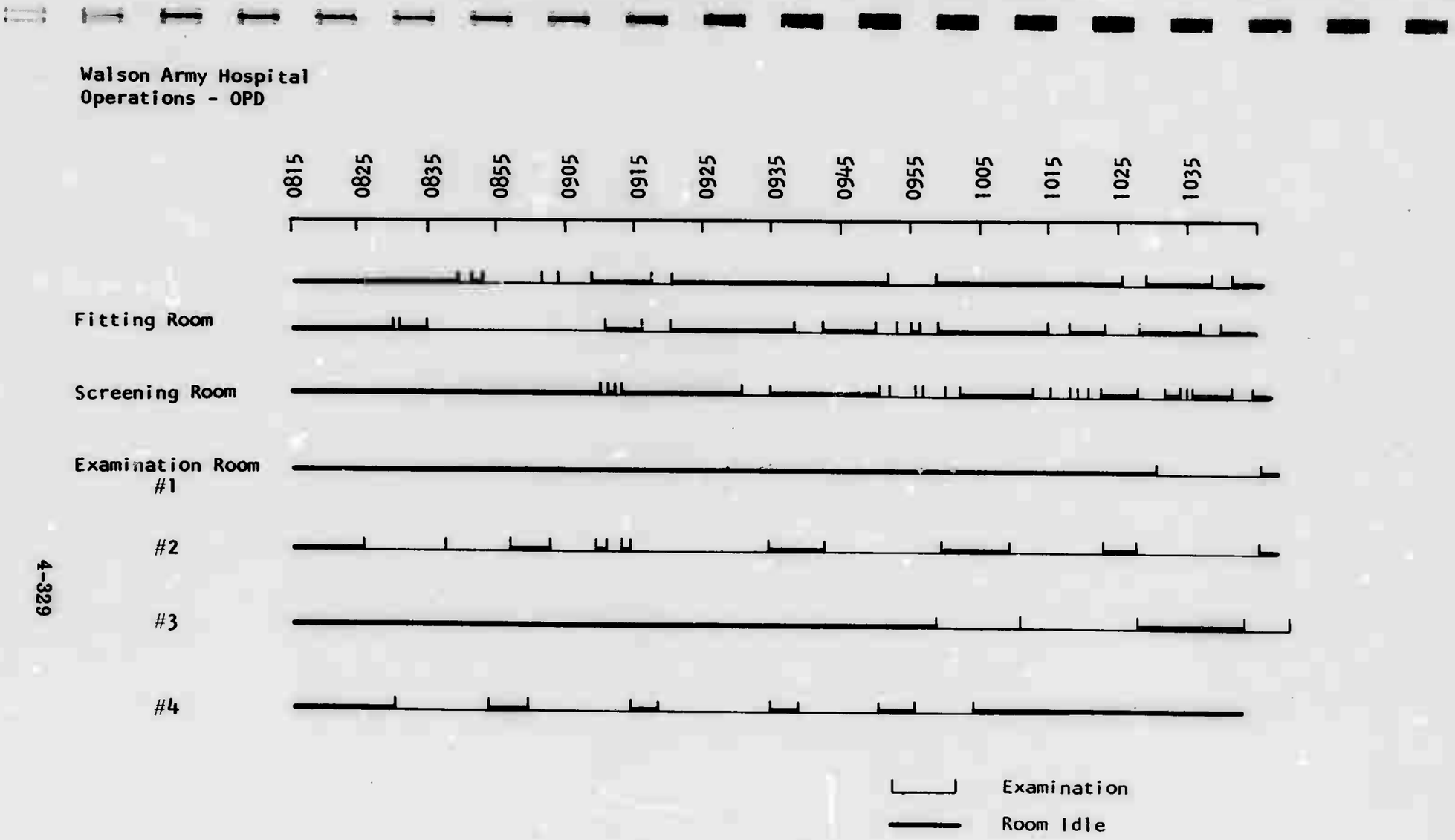

Fig. I-W-8—Optometry/Eye Clinic patient flow

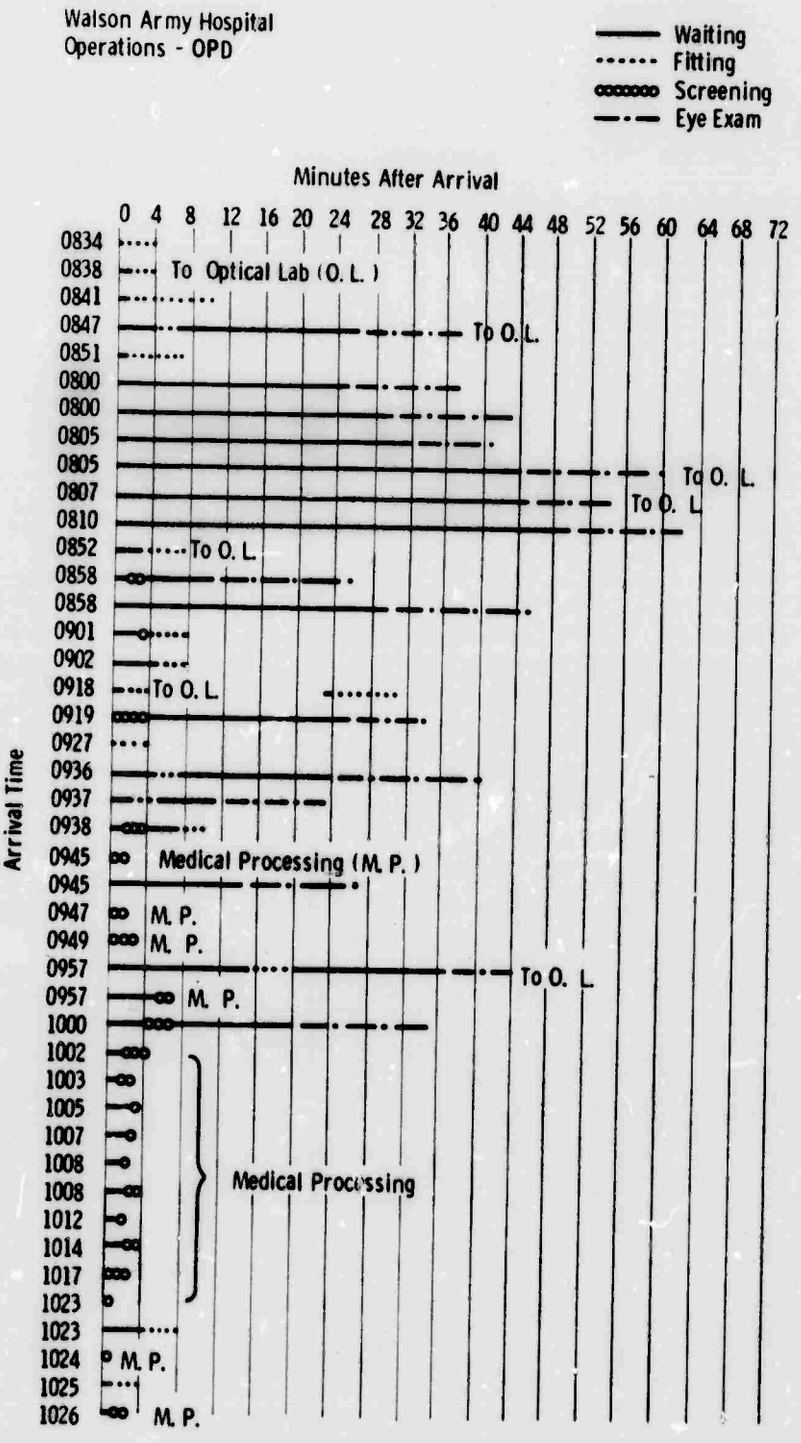

Fig. I-W-9—Optometry/Eye Clinic patient cycles

Walson Army Hospital
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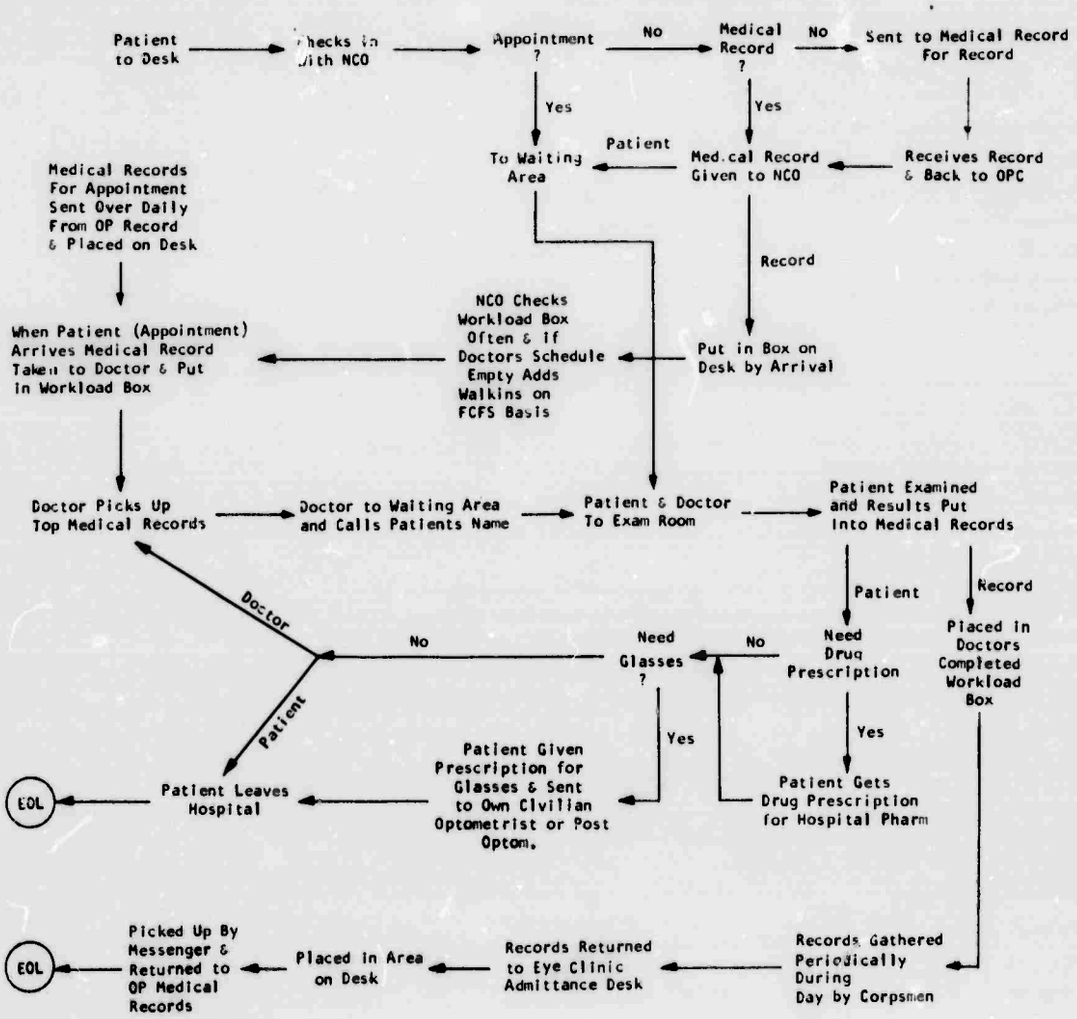

Fig. I-W-10-Eye clinic procedure flow

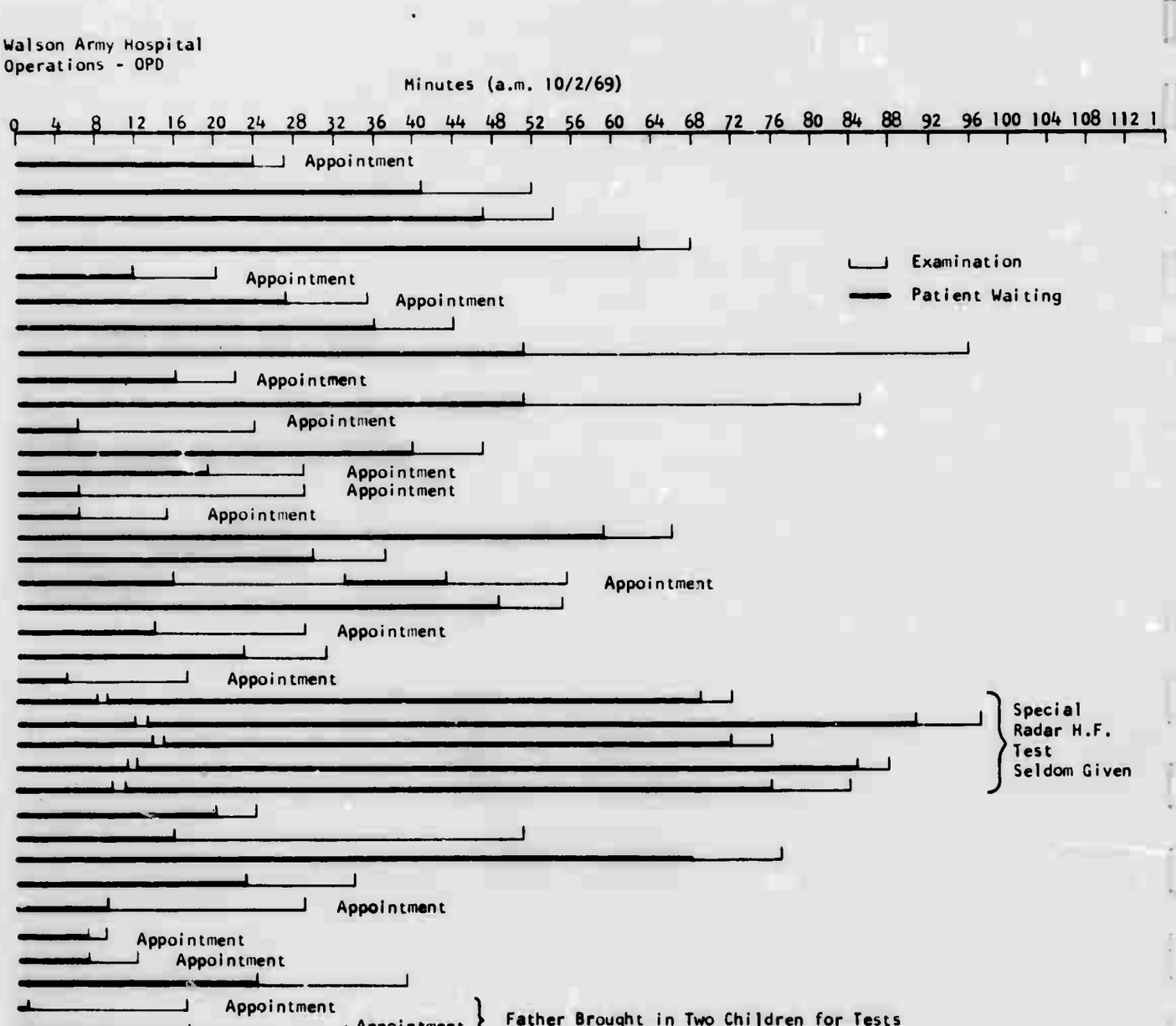

Fig. I-W-11—Eye clinic patient cycles

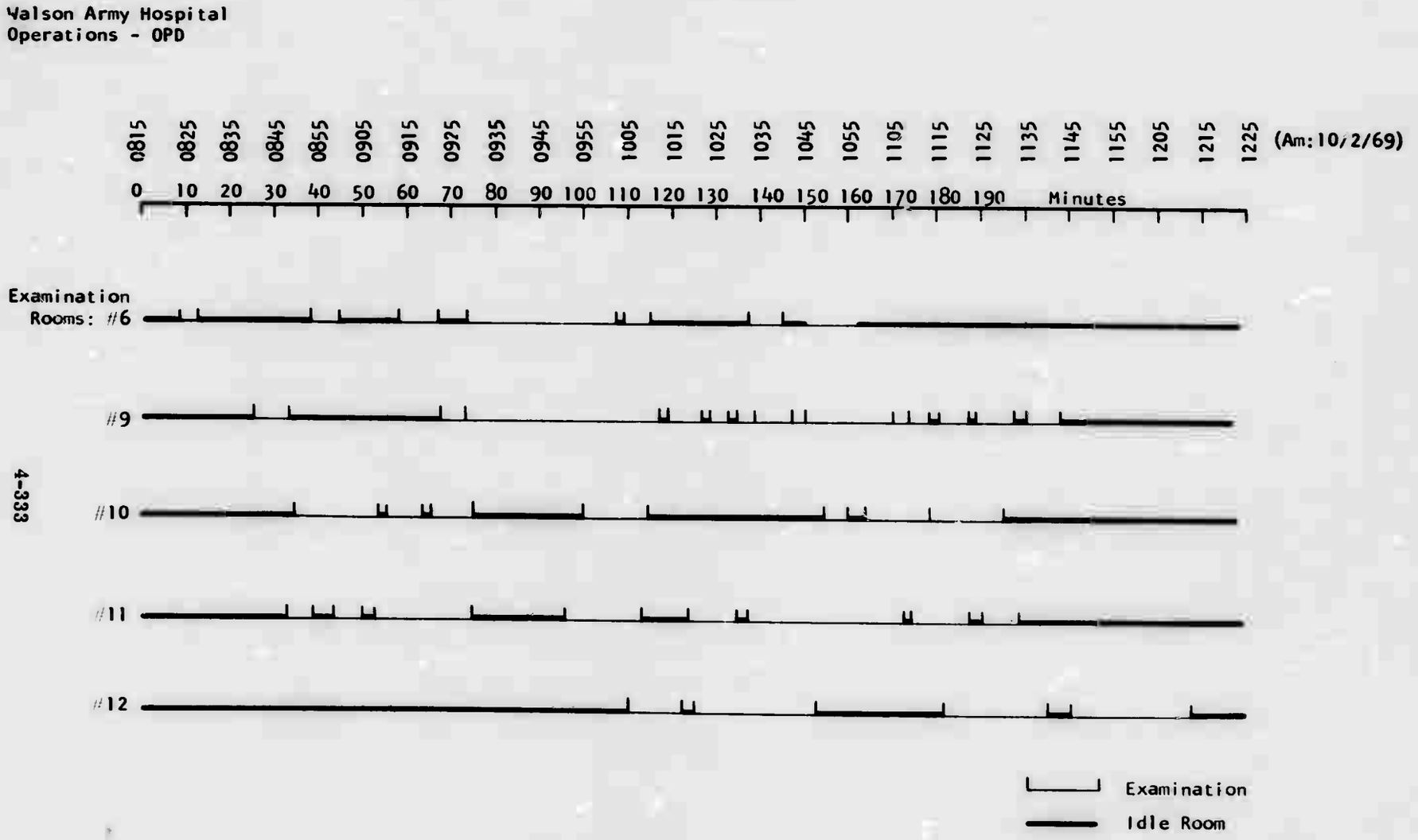

Fig. I-W-12—Eye clinic patient flow

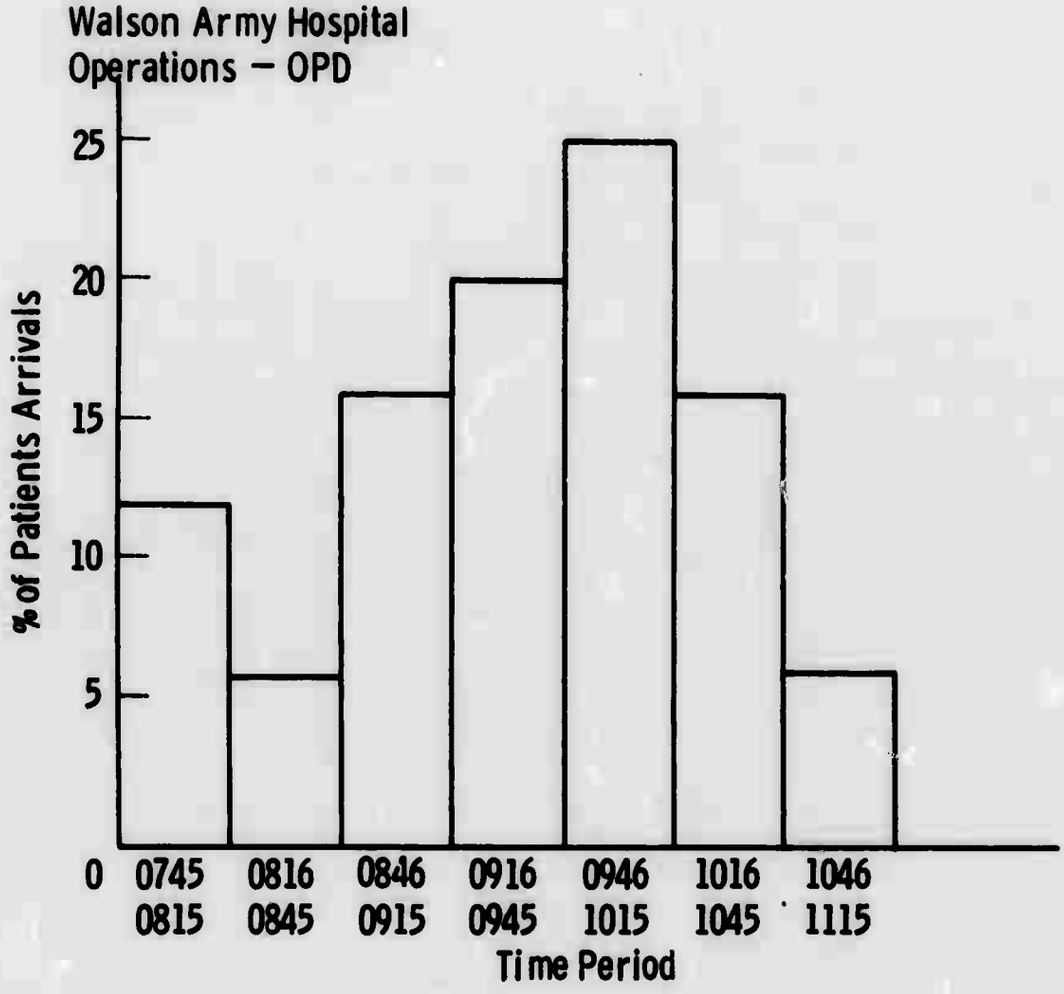

Fig. I-W-13–Optometry clinic patient arrival times

Walson Army Hospital
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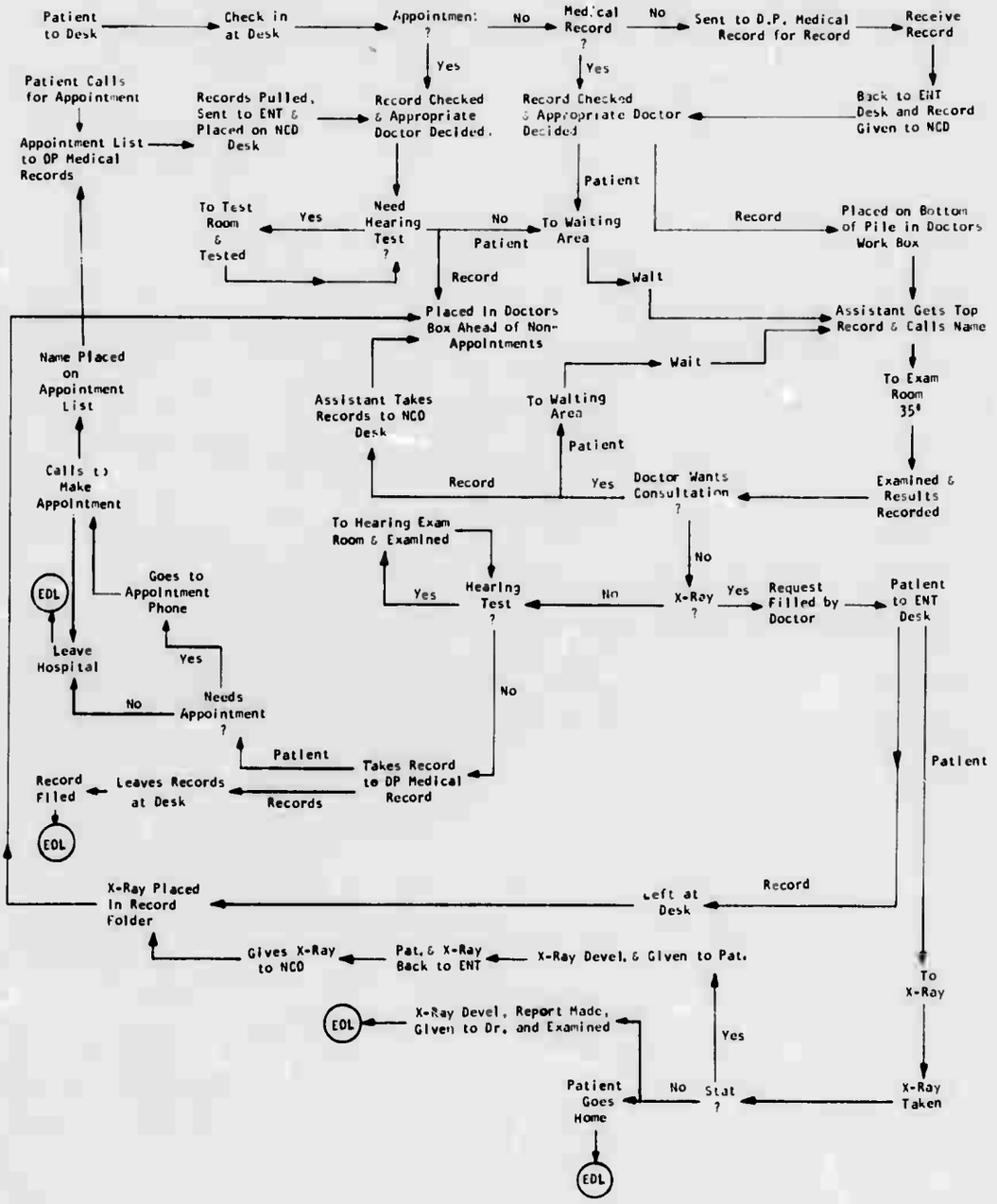

Fig. I-W-14 -ENT clinic procedure flow

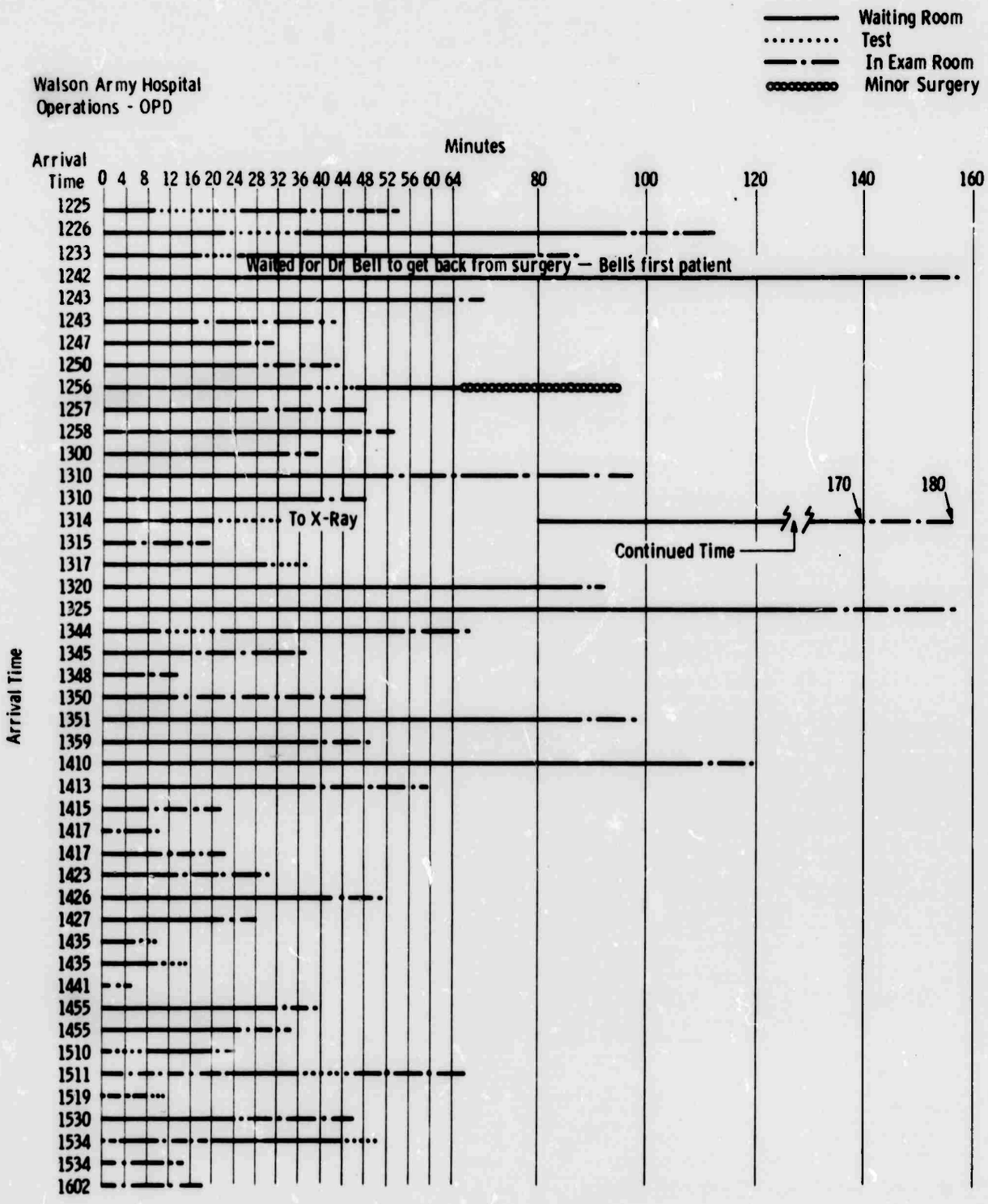

Fig. I-W-15-ENT Clinic patient cycles

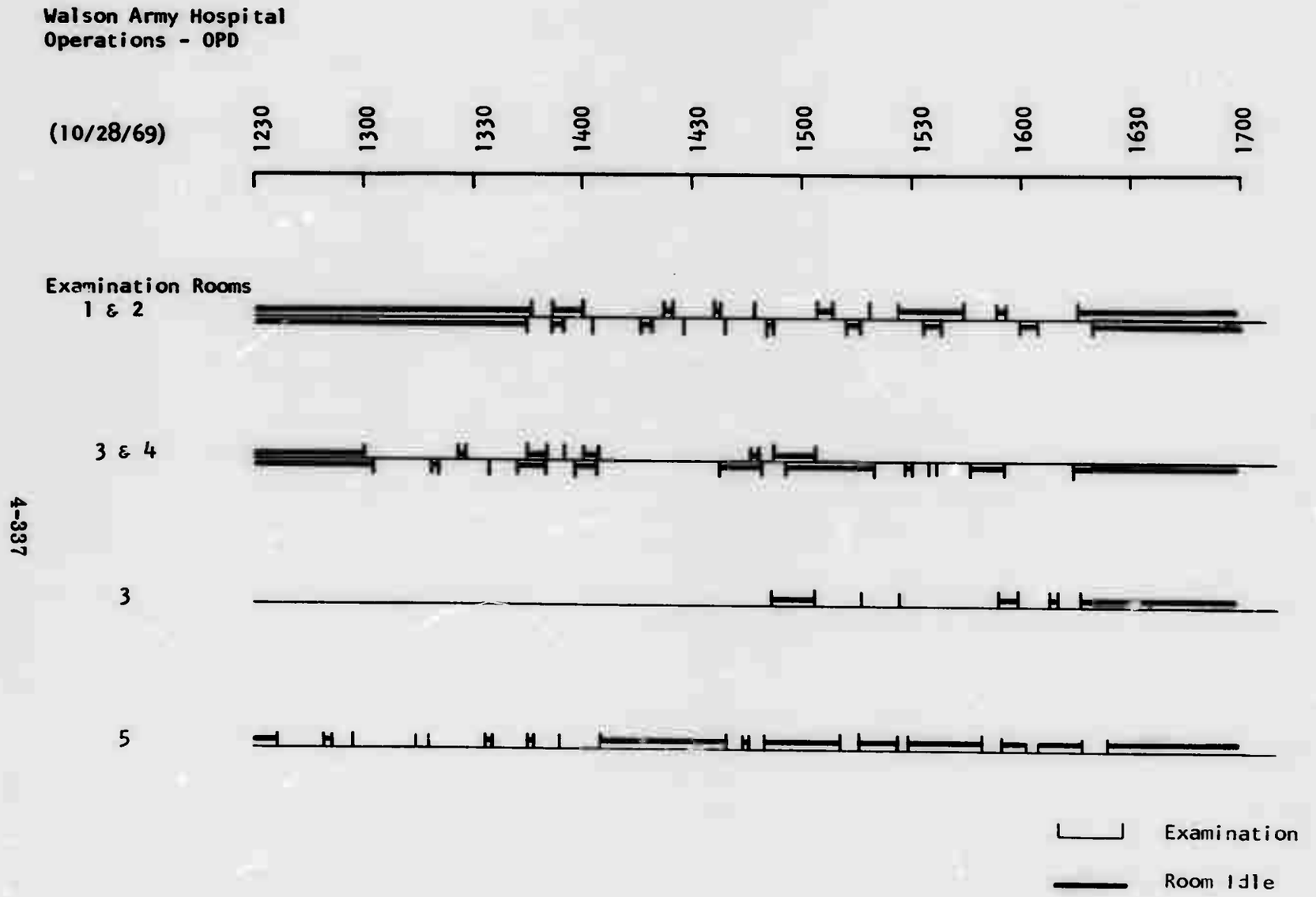

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Fig. I-W-16-ENT Clinic patient flow

Watson Army Hospital
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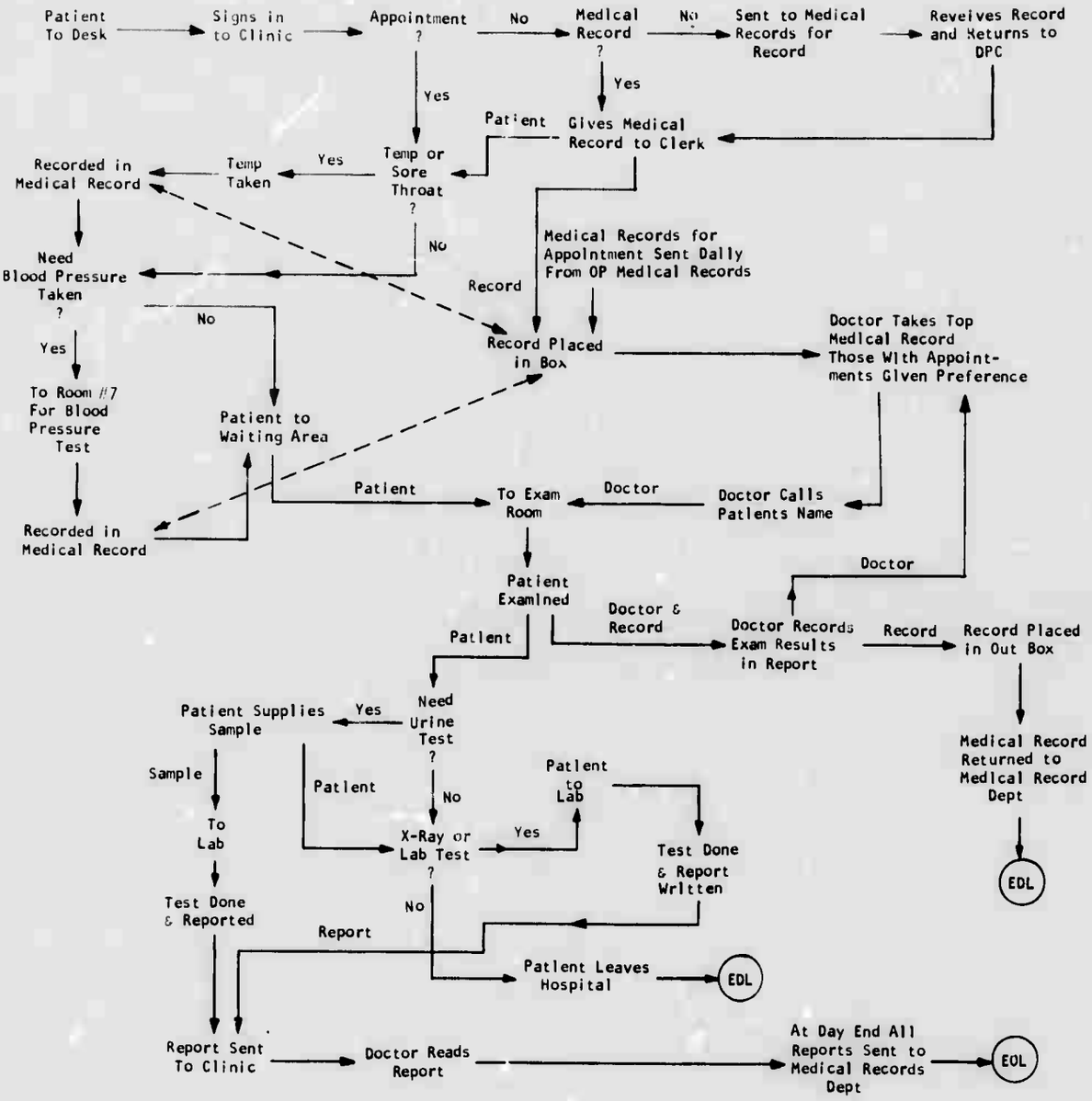


Fig. I-W-17—Outpatient clinic procedure flow

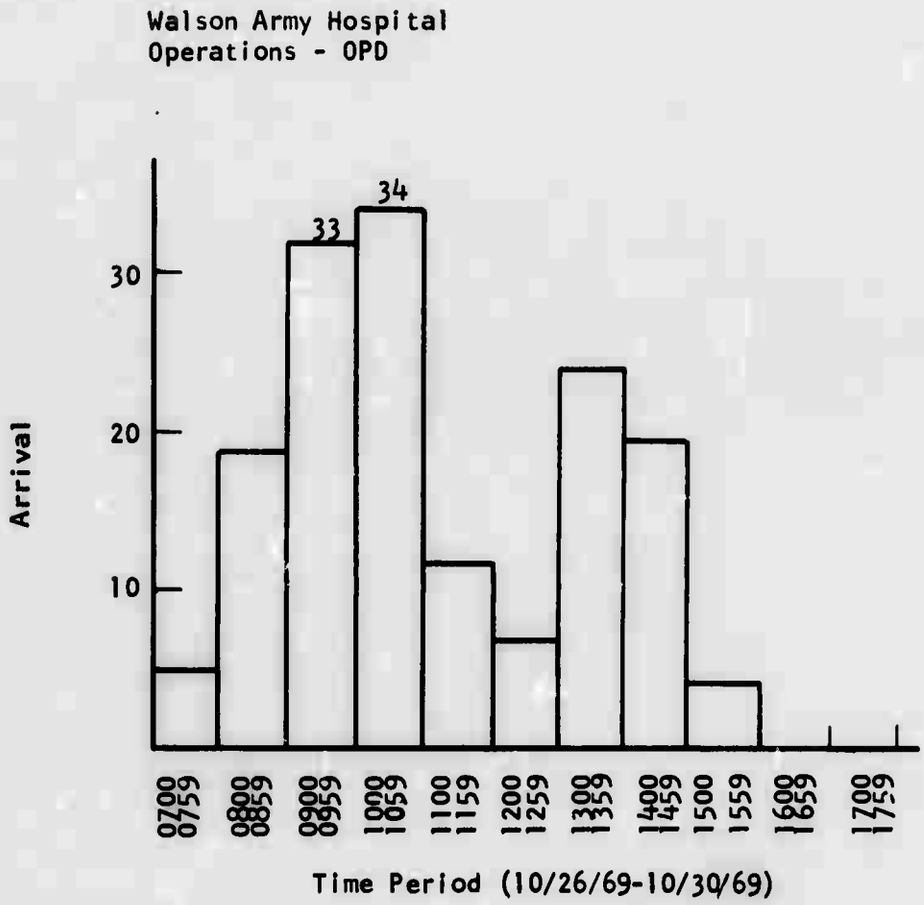


Fig. I-W-18—Outpatient clinic patient arrival times

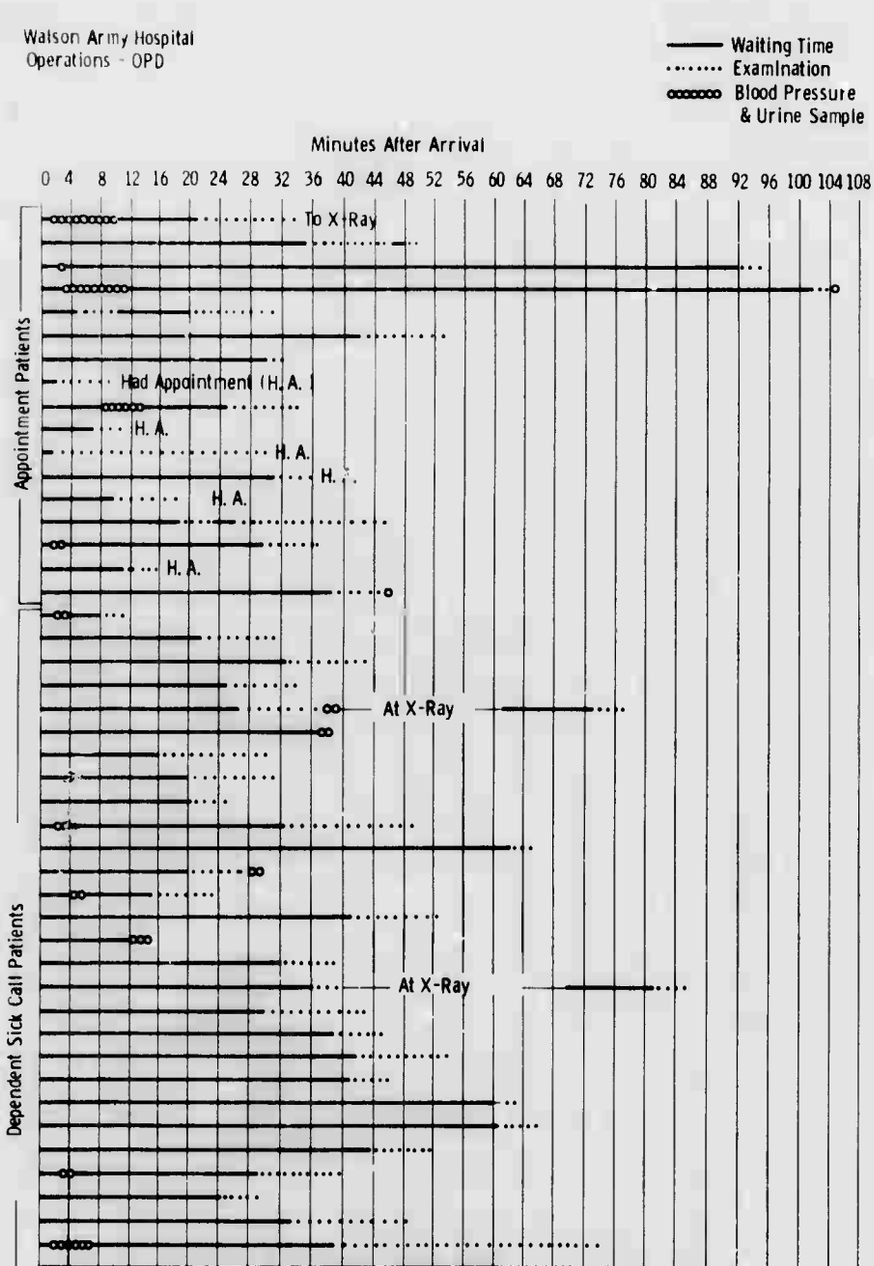


Fig. I-W-19—Outpatient Clinic patient cycles

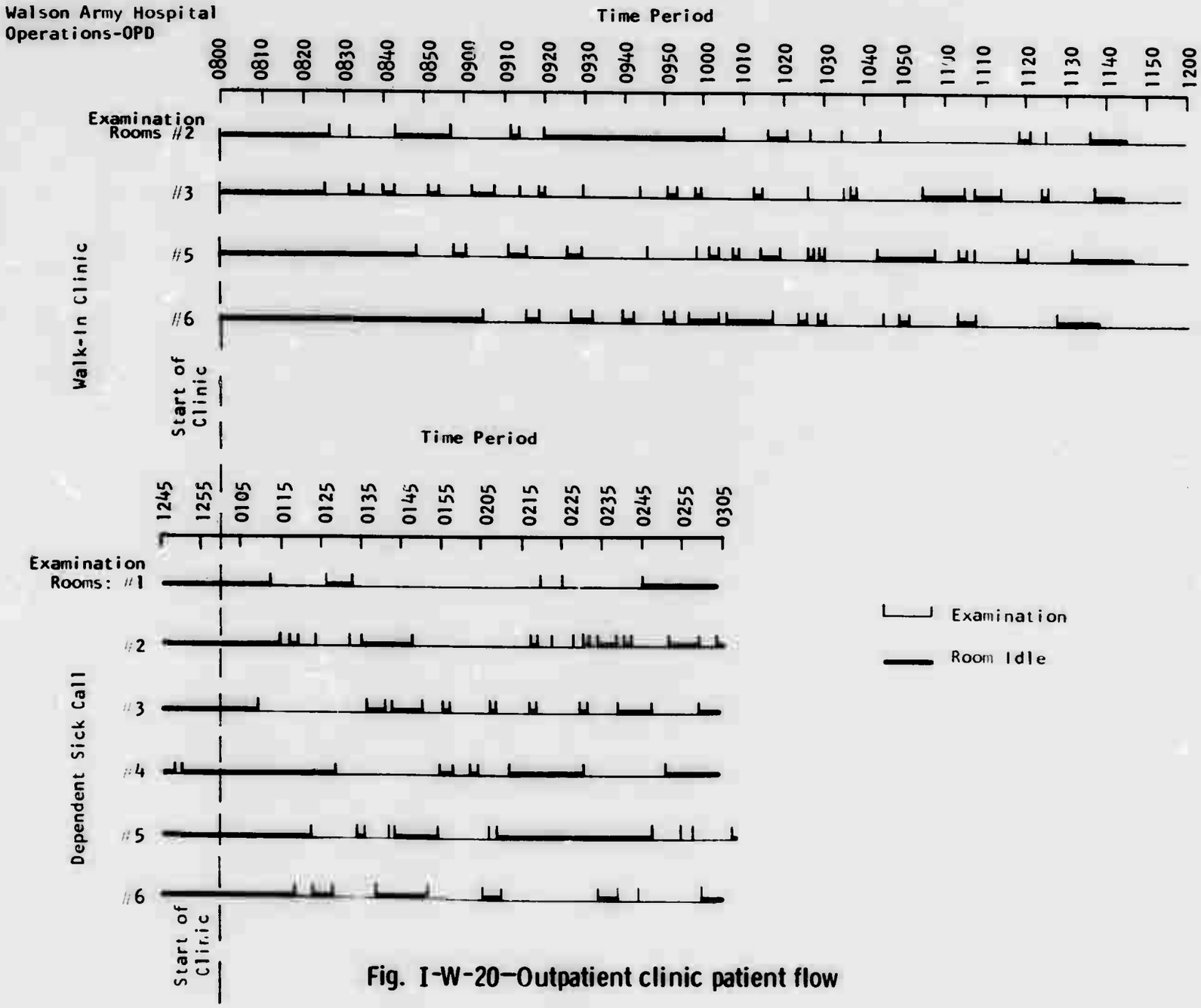


Fig. I-W-20—Outpatient clinic patient flow

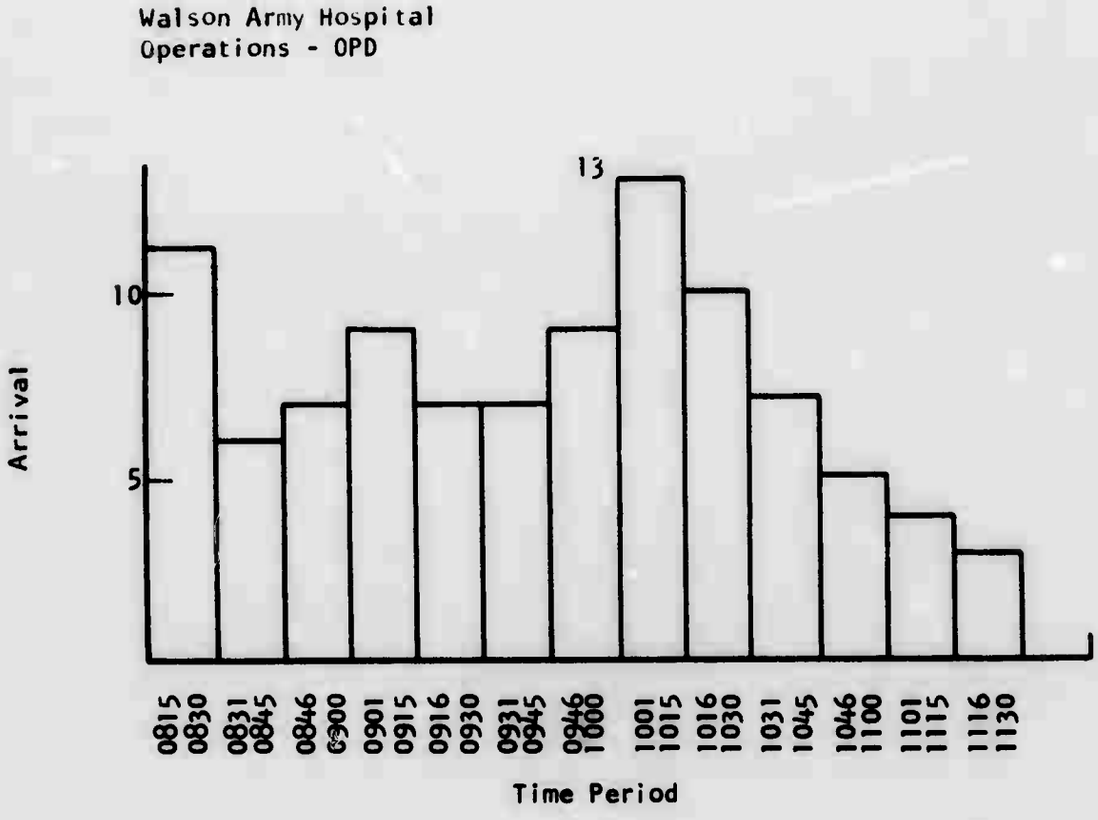


Fig. I-W-21—Outpatient clinic patient arrival times for dependent sick call

Walson Army Hospital
Operations - OPD

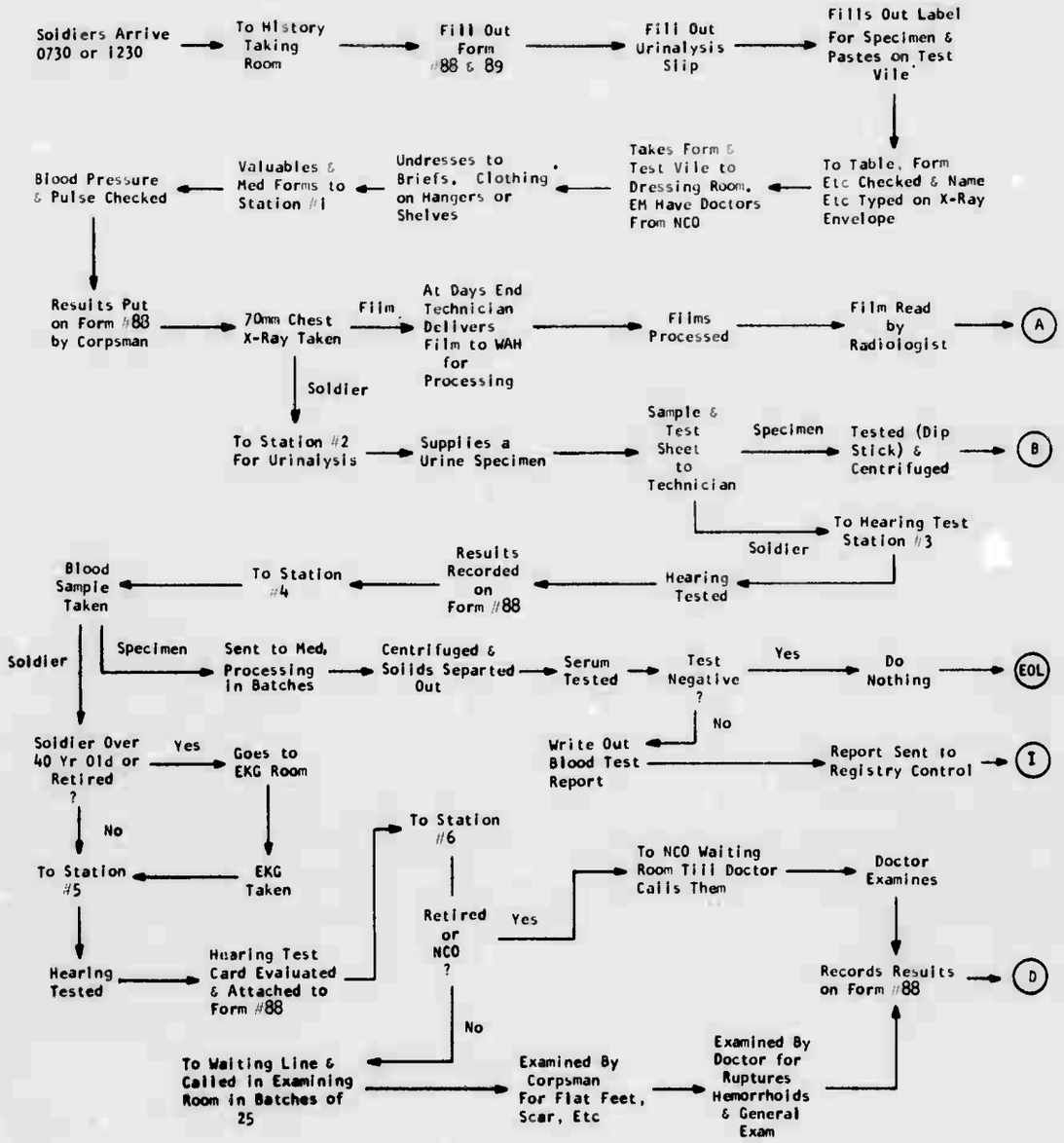


Fig. I-W-22—Medical processing procedure flow

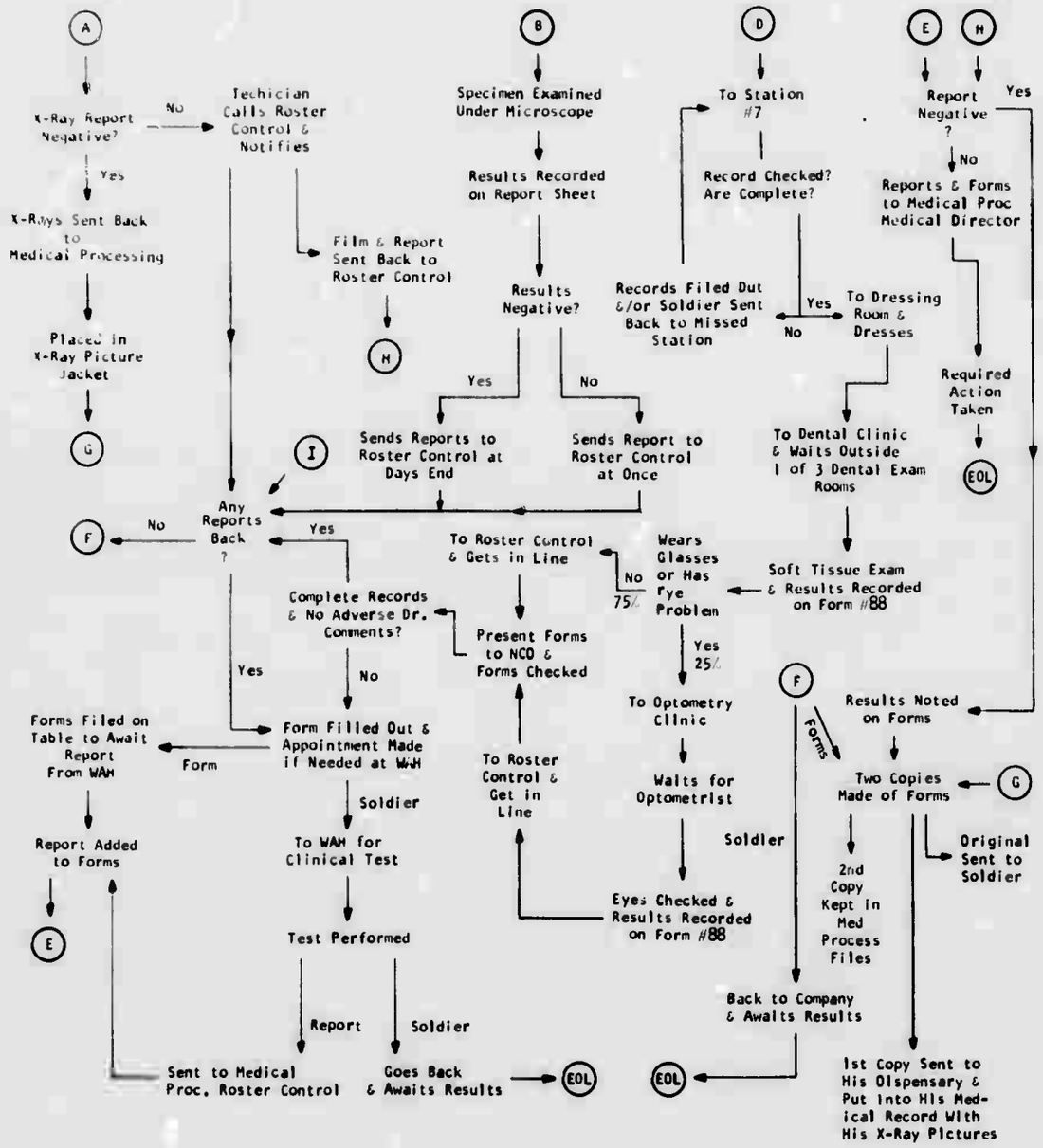


Fig. I-W-22—Continued

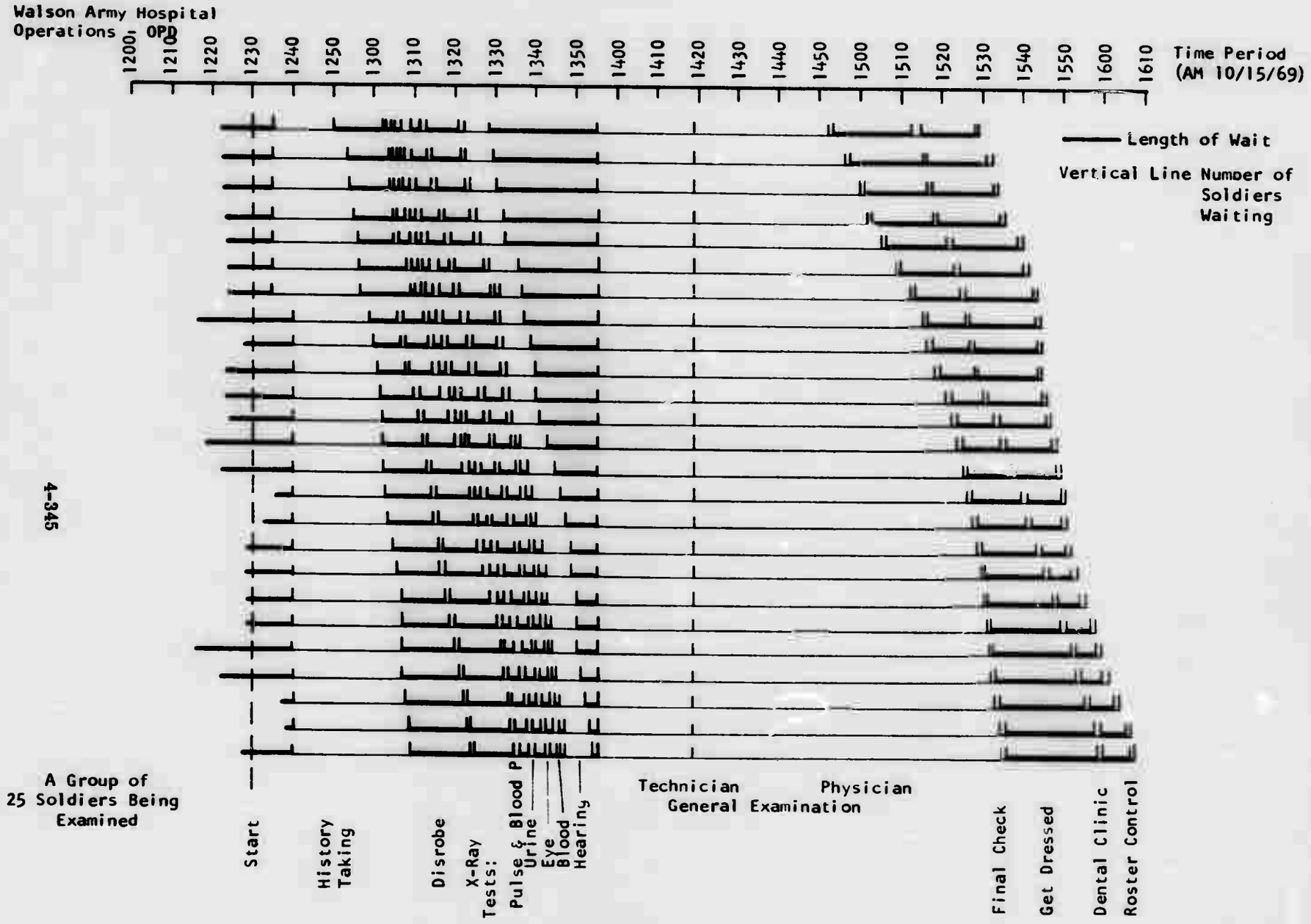


Fig. I-W-23 – Medical Processing patient cycles

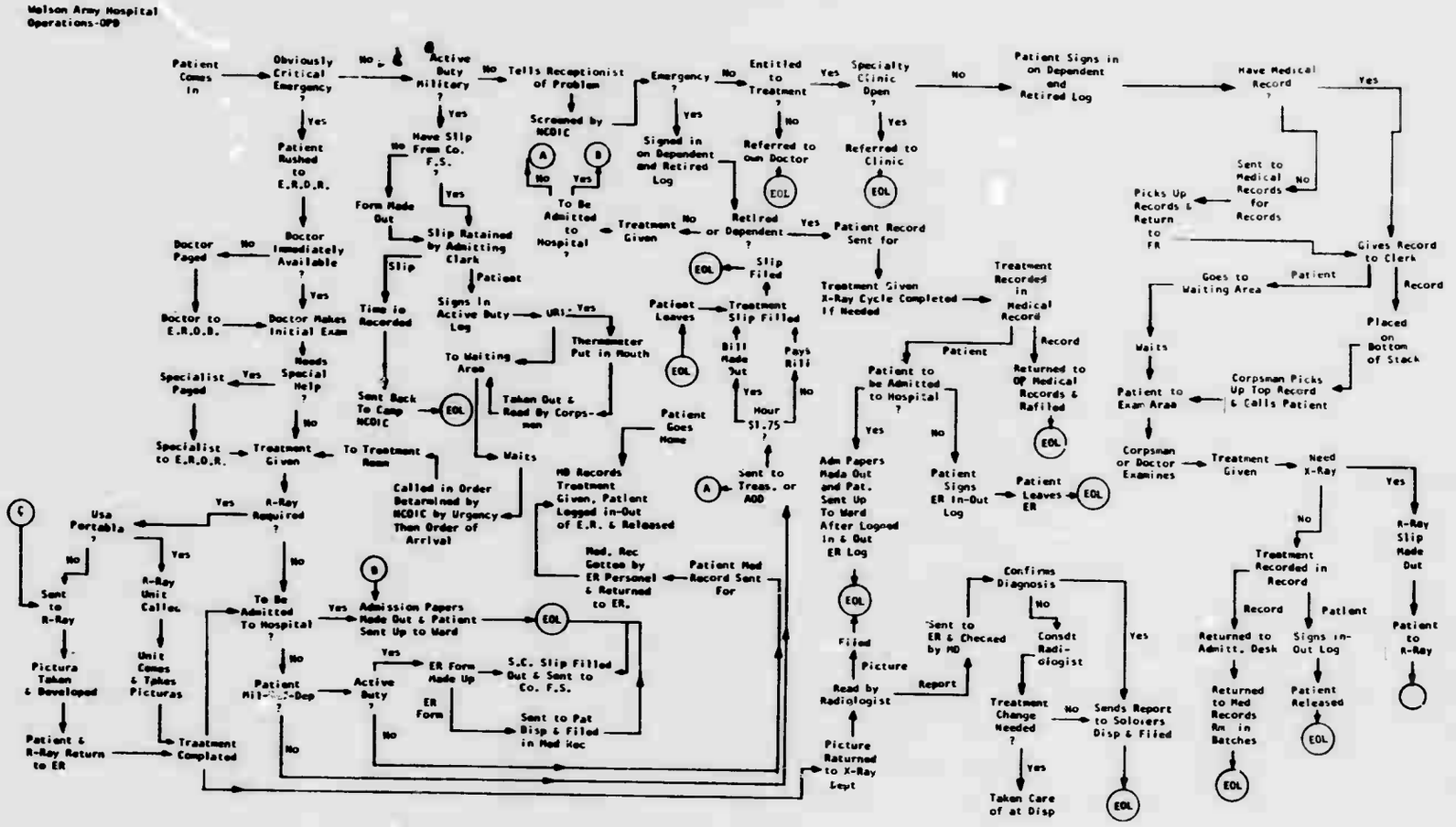


Fig. I-W-24—Emergency room procedure flow

Malcolm Grow Hospital
Operations – OPD

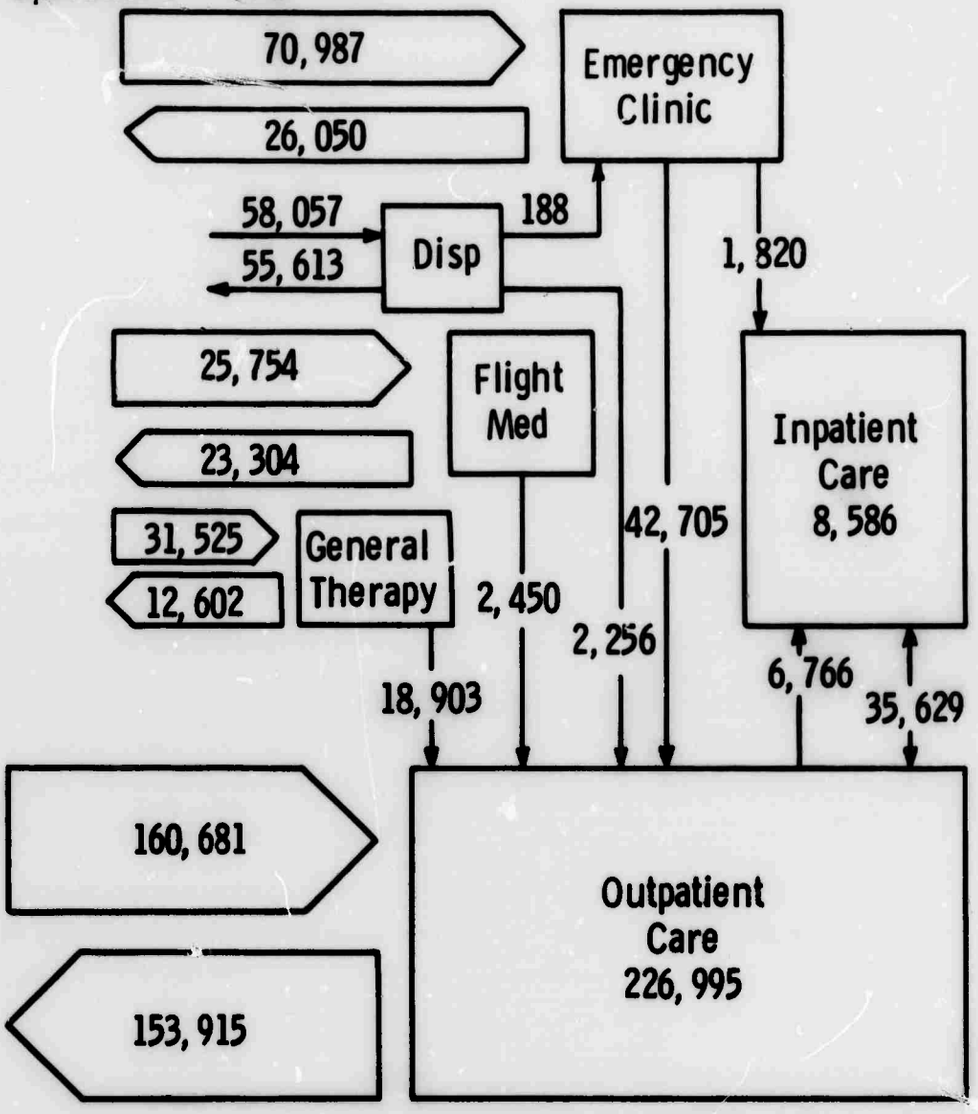


Fig. I-M-1—Outpatient department patient flow

Beaufort Naval Hospital
OPD - Operations

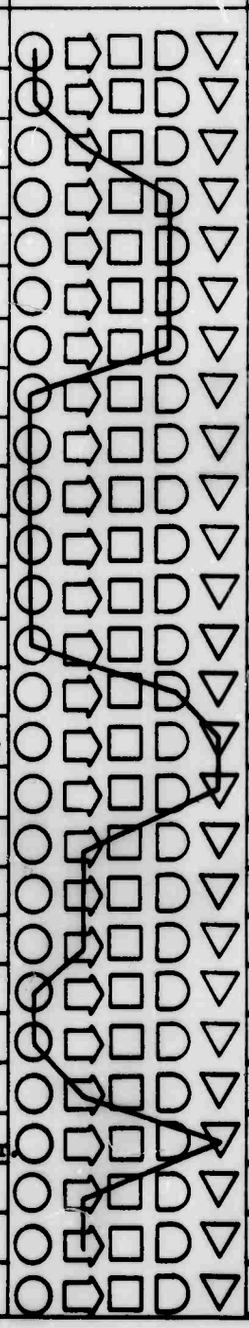
Dwg. 859A593
Pg_ of_

FIGURE I-B-1

Subject Charted Surgical Clinic Procedure Flow Chart

Chart Begins _____ Chart Ends _____

Present Method _____ Proposed Method _____ Date _____

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist / Time	TIME Delay / Storage	NOTES
1. Patient makes appointment through outpatient records.				
2. Charts picked up day before.				
3. Patient stops at desk.				
4. Waits to see Corpswave				
5. If appointment made - chart is there; they wait.				
6. If consult - they have consult sheet with them.				Consults especially heavy on Monday - with no advance warning. Wed. & Fri. consults may be called in by Physical Therapy.
7. Wait in corridor.				
8. Chart placed on counter by order of arrival.				
9. Doctor comes to counter, picks up chart in groups of 3 or 4.				Selects those cases he has seen before, or that he wants.
10. Calls patient's name.				
11. Examines patient.				
12. Patient leaves.				
13. Doctor puts chart in box on counter.				
14. At end of clinic - charts taken to OP Records.				

Beaufort Naval Hospital
OPD - Operations

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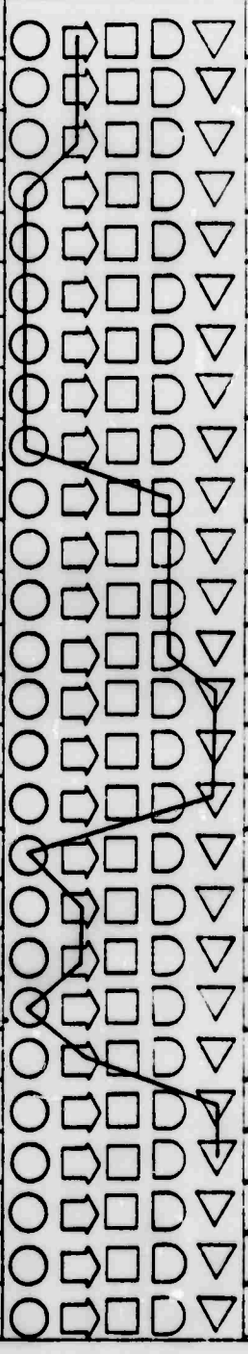
FIGURE I-B-2

Pg. — of —

Subject Charted Orthopedic Clinic Procedure Flow Chart for Military Walk-in Patients

Chart Begins _____ Chart Ends _____

Present Method _____ Proposed Method _____ Date _____

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist / Time	TIME Delay / Storage	NOTES
1. Patient arrives at desk.				Has consultation sheet and/or chart (maybe x-rays).
2. Consultation sheet stamped with date.				
3. Patient logged in.				
4. Doctor assigned.				Only Chief of Clinic handles medical Board cases. If previous patient gets old consult sheet from file - he gets same doctor. Recruits are seen last, after permanent personnel.
5. Sits.				
6. Waits for doctor.				
7. Patient keeps all records except consultation sheet - sheets carried to Doctor's office.				
8. Name called by Doctor.				
9. Sent for X-ray if necessary.				~50% of all x-rays not accepted.
10. Diagnosis written on consult sheet.				
11. One copy taken by patient.				
12. One copy kept by ortho. - filed for one year alphabetically.				

Beaufort Naval Hospital
OPD Operations

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FIGURE I-B-3

Subject Charted New OB Clinic - Wednesdays

Chart Begins Patient makes appointment Chart Ends Makes appointment for another visit

Present Method _____ Proposed Method _____ Date _____

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist / Time	TIME Delay / Storage	NOTES
1. Patient calls appointment desk				Usually about 24 appoint-
2. Is given two appointments: one				ments made per clinic.
for lab work, a week prior to visit;				Three to five month wait
one for clinic visit				time to get appointment
3. Patient goes to lab for blood work				unless emergency
4. Blood test results sent to clinic				
5. Checked for abnormalities				
6. Filed				
7. Charts are pulled the day before				
appointment				
8. OB nurse transcribes lab results				
onto chart				
9. Patient reports to clinic				On Wednesday only
10. Shown movie; given lecture and				
pamphlet				
11. History taken by R.N.				
12. Change into gown				
13. Chart carried to corpsman				
14. Patient's name called				
15. Dr. examines				
16. Patient dresses				
17. Goes to appointments desk				Usually for one month
18. Is given a second appointment				later

Beaufort Naval Hospital
OPD Operations

FIGURE I-B-4

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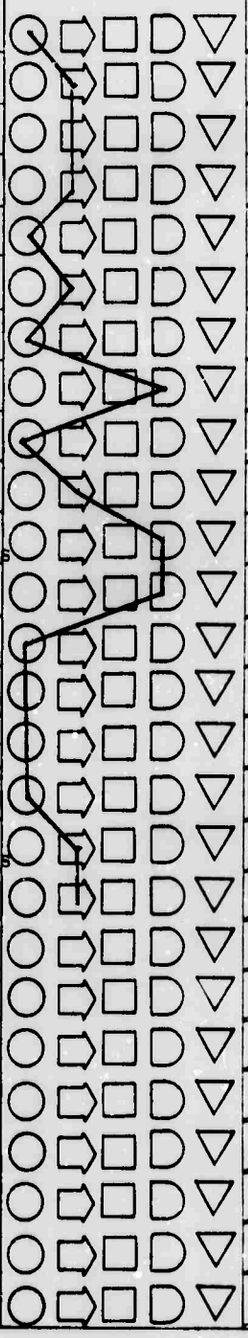
Subject Charted Gynecology Clinic

Chart Begins Patient makes appointment Chart Ends Patient's chart returned

Present Method _____ Proposed Method _____ Date _____

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist / Time	TIME Delay / Storage	NOTES
1. Patient calls in for appointment				About 20 patients per clinic are scheduled.
2. Charts sent to clinic the day prior to appointment				
3. Patient arrives at desk				
4. Name crossed off appointment list				
5. Chart taken to counter				
6. Patient changes to gown				
7. Waits in corridor				
8. Name called				
9. Enters office				
10. Waits in office while doctor finishes exam in the other office				Doctors rotate between 2 exam rooms - each exam takes 15-20 minutes. A female stand-by must be present.
11. Is examined				
12. Patient dresses				
13. Makes another appointment at OB desk if necessary				
14. Charts returned to Medical Records at end of day				

Beaufort Naval Hospital
OPD - Operations

FIGURE 1-B-5

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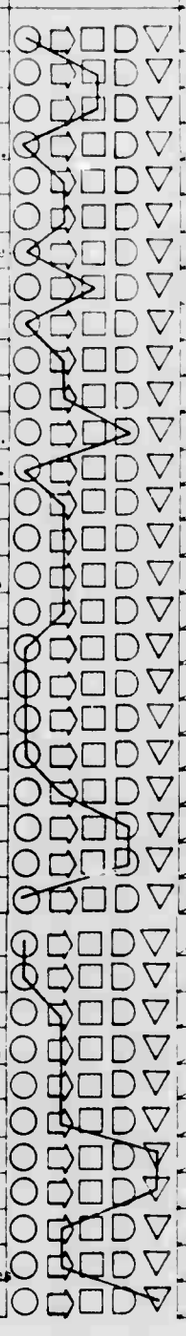
Subject Charted OB-Gyn. Revisit Clinic Procedure Flow Chart

Chart Begins _____ Chart Ends _____

Present Method _____ Proposed Method _____ Date _____

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist / Time	TIME Delay / Storage	NOTES
1. Receive chart prior day.				Picked up at OPD Records.
2. Review each chart for lab tests				
needed.				
3. If needed - clipped to front of chart.				
4. Patient checks in at lab first for				
urinalysis. (dipstick)				
5. Give urinalysis tag to clinical nurse				
at desk.				
6. Writes urinalysis result on chart.				
7. Go to weight and blood pressure				
desk.				
8. Chart waits on blood pressure desk.				
9. If no chart - write on slip of paper-				Not returned from other
send patient to OP Records to find				clinics, etc. 2-3 charts
chart.				per clinic.
10. Chart goes from blood pressure to				
counter by doctor's offices.				
11. Red Cross volunteer calls out				Each doctor has 2 rooms -
patient names.				examines one patient
				while the other is called
				in to second room to wait.
12. Patient enters room.				
13. Waits for doctor to finish other				
exam.				
14. Is examined				
15. Is told when to make another				
appointment.				
16. Goes to front desk at OB Clinic				
for revisit appointment, (or to OPD				
records for new appointment).				
17. Leaves hospital.				
18. Chart put in one of 2 piles accord-				
ing to date of expected delivery.				
19. Taken to OP Records.				
20. Filed -- separate file for deliveries				
expected before Christmas.				

Beaufort Naval Hospital
OPD - Operations

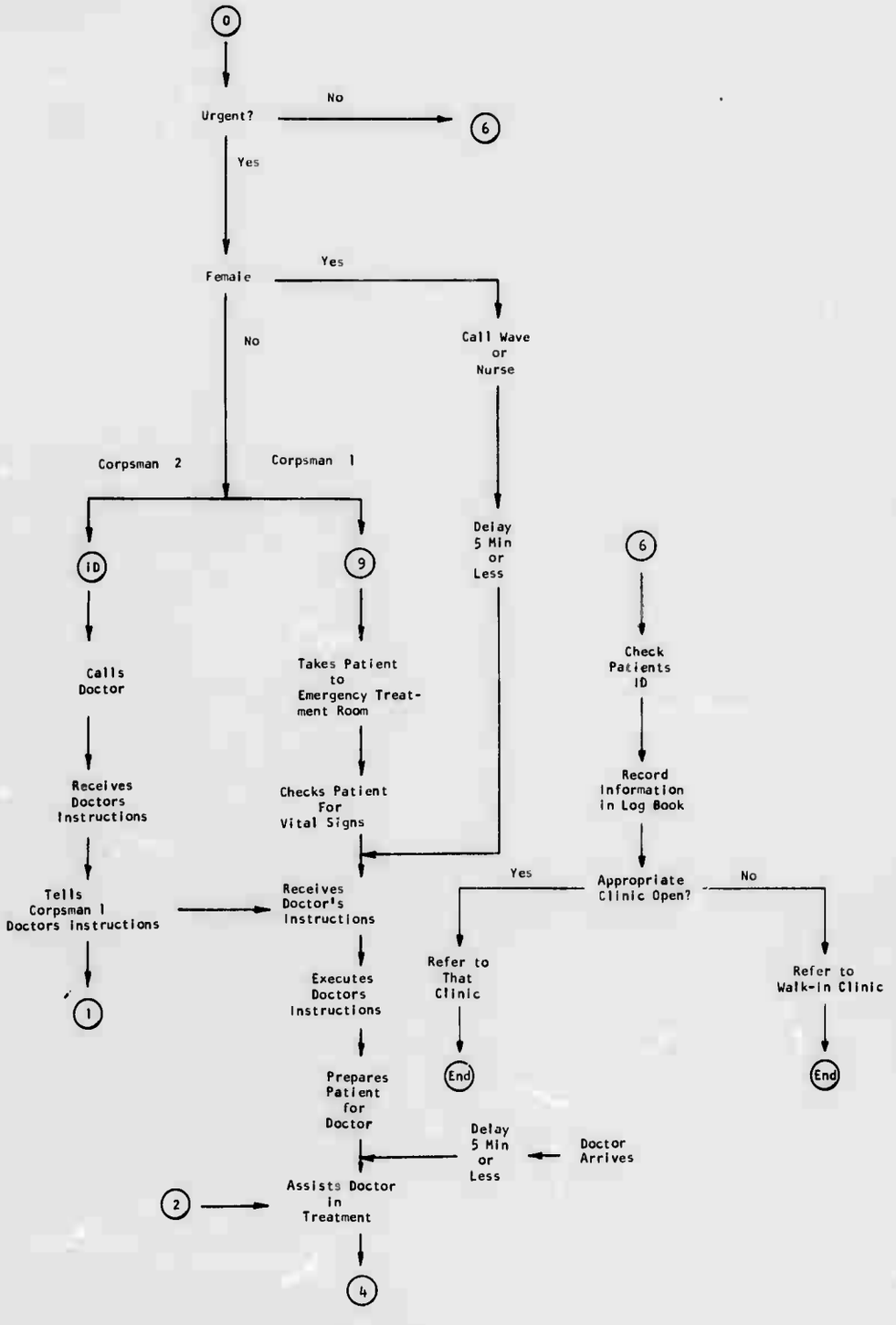


Fig. I-B-6—Emergency Room process flow for walk-in patients (a. m.)

Beaufort Naval Hospital
OPD-Operations

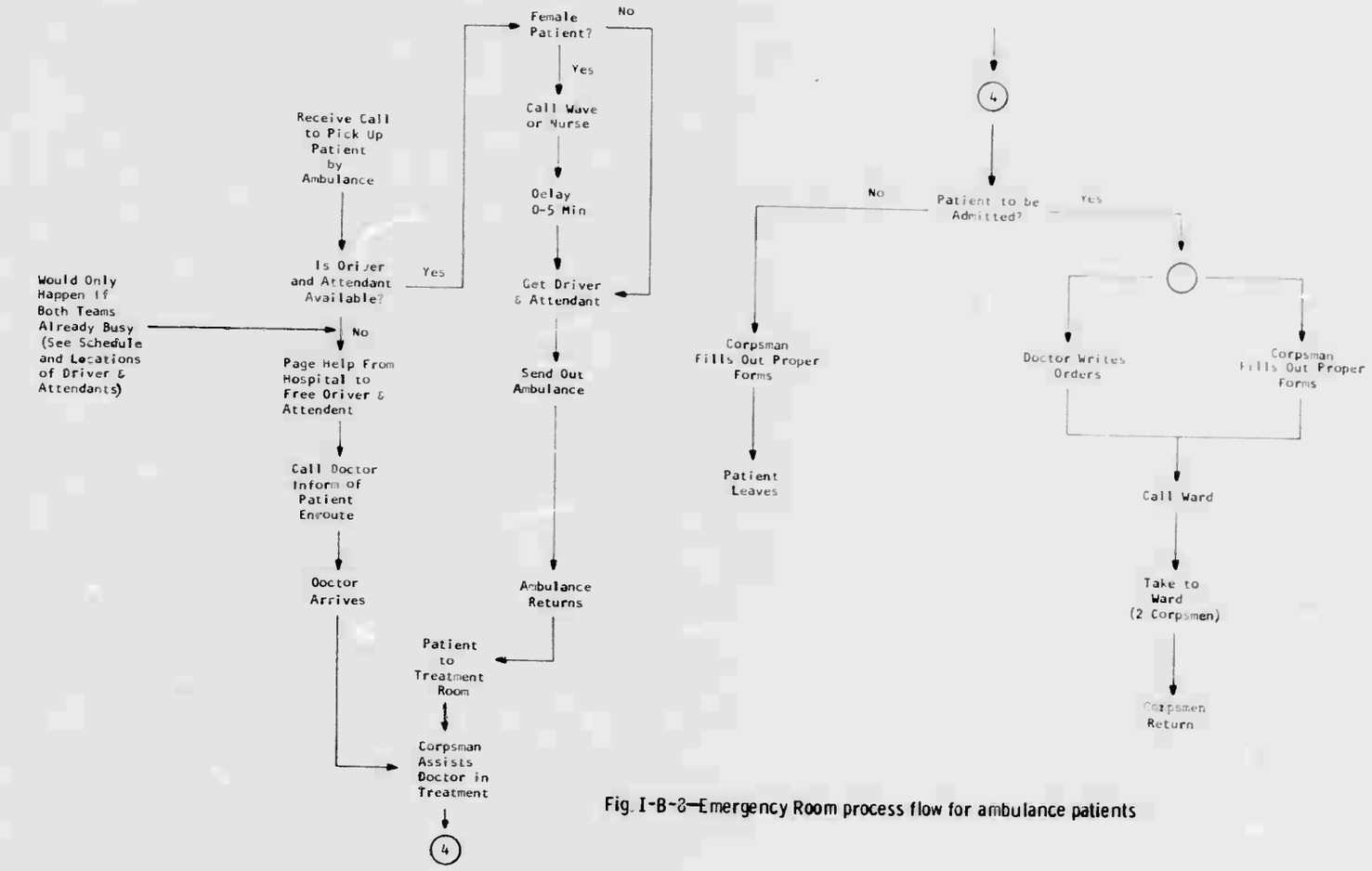


Fig. I-B-8—Emergency Room process flow for ambulance patients

Beaufort Naval Hospital
OPD- Operations

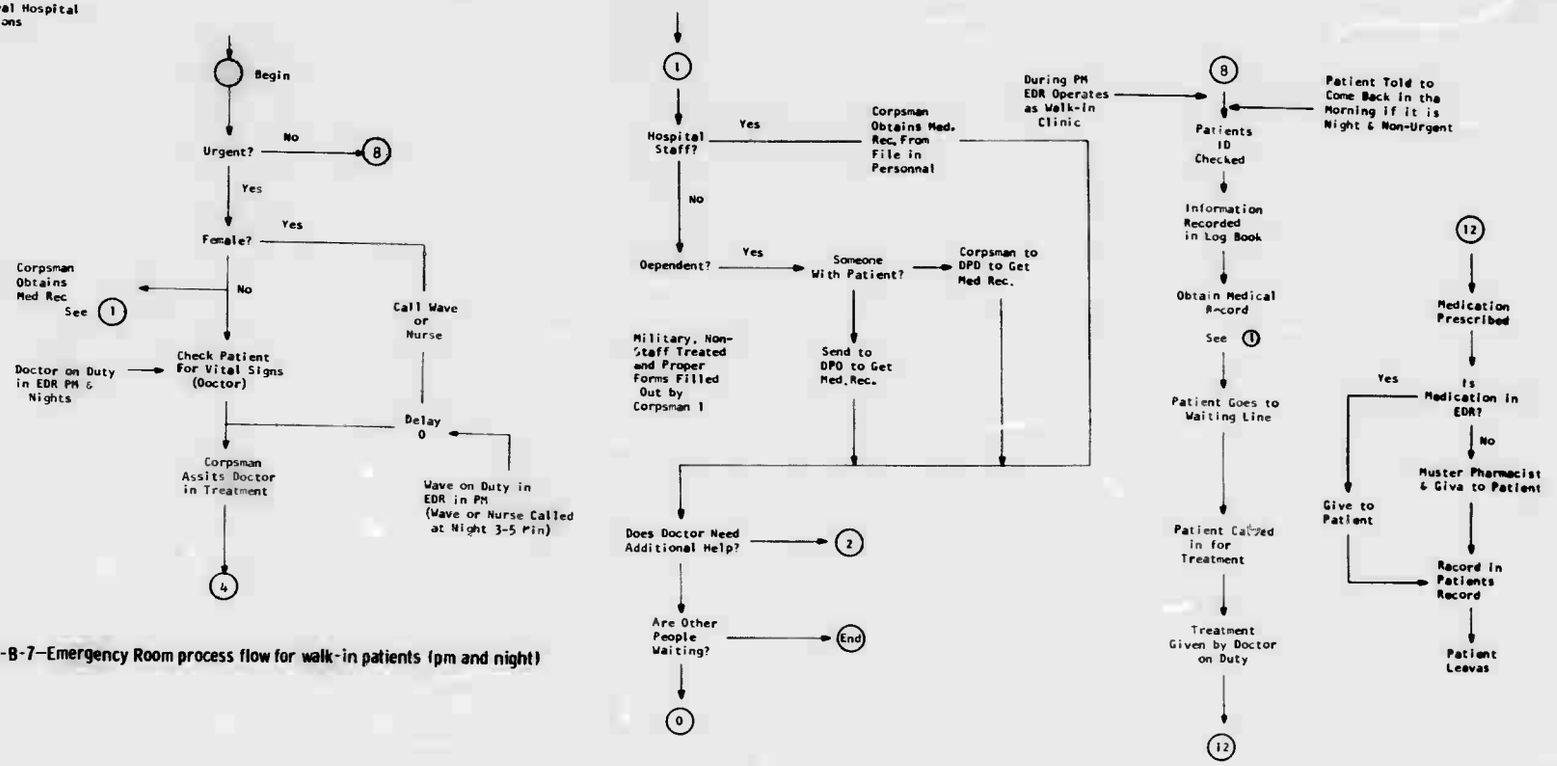


Fig. I-B-7—Emergency Room process flow for walk-in patients (pm and night)

II. OUTPATIENT DEPARTMENT -- RESOURCE UTILIZATION

	Walson Army Hospital (WAH) -- Fort Dix	Malcolm Grow Hospital -- Andrews AFB	U.S. Naval Hospital -- Beaufort
A. Personnel	1. 225[1] employees (full-time OPD employees only). Refer to Table II-W-1 for listing of staff and positions broken down by function and pay grade, and including hours worked per week. a. WAH Dept. of Psychiatry and Neurology (P&N) runs and staffs the MHCS; b. WAH Dept. of Clinics runs and staffs the MPS; c. Army Health Nursing Service runs and staffs Well-Baby and Immunization clinics; d. All other clinics are run and staffed by the professional dept. (Medicine, Surgery, Clinics, P&N) responsible for their existence.	1. 251 employees. Refer to Appendix I, Report 011 for complete list of personnel for each unit within OPD, by position, number, pay grade, and hours worked per week. 2. Internal Medicine:[1] a. Dept. Chairman handles all VIP's; b. MD's determine priority for appointments; c. technicians need 2 weeks OJT and must be familiar with special procedures before assignment; d. in addition to regular duties, a technician spends 15 hours per week in housekeeping chores. 3. General Surgical:[2] a. surgeons are in OR in morning and see clinic patients in afternoon. 4. Pediatrics:[3] a. Chief of Pediatrics is a flight surgeon and works 4 hours per week in that office; b. 2 MD's assigned each day to handle walk-in patients; c. one civilian MD works each night for 3 hours. 5. Dermatology:[4] a. 2 physicians each spend one day per week in FMC; b. one physician spends one day per week in surgery; c. technician needs approx. 6 months OJT. 6. A&I:[5] a. technician needs approx. 3 months OJT; by second week he can give injections; b. one allergist for adult patients and one for pediatric patients. 7. Neurology:[6] a. technicians need one month OJT before they can work independently.	1. 38.7 employees; includes MD time in clinics as broken down in function cost (for breakdown of personnel for each clinic, pay grade, hours worked per week, and job descriptions refer to Appendix I, Report 011). 2. Medical Clinic: a. Male Medical -- 2 corpsmen are full-time and 3 physicians are part-time; b. Female Medical appointment -- 3 part-time officers and one full-time corpsmen; c. Female walk-in -- the corpswave who registers patients, keeps her own log book of laboratory test results since formal clinical laboratory results often do not come back in time for patients' return visits. 3. Surgical: a. the 4 surgeons have divided the workload so each sees a certain group of patients, i.e., dependents, infected, non-infected. 4. OB/GYN: a. the RN and the corpswave spend a large percentage of their time in clerical work; b. a female standby must be present during all medical examinations. 5. Pediatrics: a. a pediatrician must be present at all Caesarean sections and he assumes responsibility for the baby at birth. b. pediatrician is also responsible for the examination of all babies at birth and discharge; c. physician responsibility for the nursery rotates each month. 6. Orthopedics: a. cast technicians need approx. 4 months' OJT. 7. Urology: a. all training for corpsmen is OJT. b. urologist performs surgery 2 days per week.

II. Outpatient Department -- Resource Utilization - (Cont'd)

	Ft. Dix	Andrews	Beaufort
A. Personnel (Cont'd)		8. Orthopedic:[7] a. the chief MD spends 25 hours per week in ER; b. staff MD spends 25 hours per week in ER and surgical ward; c. civilian MD spends 10 hours per week in surgery and ward; d. technicians need 2 years OJT before they can work independently; e. technician observes for 3 months, works for 6 months to qualify as assistant; f. staff does most of the housekeeping. 9. Urology:[8] a. shares NCOIC with Hematology clinic. 10. EENT:[9] a. general • medical receptionist runs one common waiting and control area • NCOIC of EENT supervises all three clinics (Ophthalmology, Optometry, and Otolaryngology) • staff spends 16 man-hours in general cleanup once weekly • technicians need 3 to 6 months OJT for complete effectiveness; b. Ophthalmology • Chief spends one day per week in surgery • one E-6 technician spends one day per week and one E-5 technician spends one-half day per week with Chief in Surgery; c. Otolaryngology • Chief spends one-half day in surgery and one-half day in wards each week • Otolaryngologist spends one-half day in Flight Surgeon's Office, one-half day in surgery, and one-half day in wards each week. • technicians spend one-half day in surgery each week.	8. PT: a. all technicians receive OJT for this job. b. the physical therapist makes 3 trips to the orthopedic ward every day and spends approx. 4 hrs. per week at the clinic conferring with the Chief of Orthopedics. 9. ER: a. housekeeping cleans during peak workload period of the ER; as a result they only work 10 minutes of the allotted hour ; b. each technician spends 4 hours per day doing housekeeping chores.

II. Outpatient Department -- Resource Utilization - (Cont'd)

Ft. Dix	Andrews	Beaufort
A. Personnel (Cont'd)	11. OB/GYN:[10] a. Chairman of OB/GYN establishes standard operating procedure for appointments and sees VIP patients; b. OB/GYN receptionists make MD's appointments; c. NCOIC determines inventory levels; d. civilian nurse makes appointments for VIP's. 12. Cardiopulmonary:[11] a. technicians used in C-P clinic, C-P lab, and in Cardiac Monitoring (ward management function); b. civilian personnel, (one female cardiopulmonary technician needed as chaperone for all female patients, about one-half patient load) used mostly as chaperones, are shared by C-P lab and C-P clinic; c. 4 to 5 man-hours per week technician time required for housekeeping; d. cardiac catheterizations performed in radiology area require one-half day each of 5 to 6 technicians and 2 MD's time. 13. Psychiatry:[12] a. technicians screen new patients in brief interview; b. technicians spend approx. 2 hours per week on housekeeping chores. 14. Hematology:[13] a. NCOIC responsible for Medical, Surgical, Urology, and Hematology clinics; b. Hematology personnel monitor anticoagulant blood levels of cardiology patients for Cardiology clinic. 15. GP:[14] a. clinic personnel do light housekeeping within unit; b. no OJT in this clinic. 16. PT:[15] a. work in teams of one registered physical therapist and one therapy technician; b. registered physical therapists attend Wednesday grand tours on Orthopedic ward.	

II. Outpatient Department -- Resource Utilization (Cont'd)

Ft. Dix	Andrews	Beaufort
A. Personnel (Cont'd)	17. IT:[16] a. provides one E6 technician per month and one each of E3 and E4 technicians every 4 months for NCOD; b. one technician spends 2 hours each morning locating equipment on wards. 18. ER:[17] a. a hospital CO staffs ER with physician; Chief Nurse with nurses; and NCOIC's of hospital and the Medical clinics, with medical technicians; b. NCOIC calls in an additional physician each time ER backlog reaches one and one-half to 2 hours; c. nurses spend a major portion of time on administrative tasks; d. medical technicians drive ambulances on 12-hour shifts; e. training of medical technicians takes from 9 to 11 months. 19. FMC: a. janitorial housekeeping service only 50% efficient; staff handles additional burden; b. medical technician needs 30-day OJT; proficiency tested in both oral and written examinations; c. 6 flight surgeons authorized; only 2 assigned; the remaining manpower is supplied by part-time help from flight medical officers from other outpatient clinics.	
B. Facilities 1. Location: a. OPC • on WAH first floor, main OPD area facing Dermatology clinic and adjacent to OPD entrance to WAH • shares waiting area with outpatient record room;	1. Location: a. Internal Medicine • hospital first floor, clinic area • uses one GP clinic room for minor surgery;	1. Location -- the OPD's have no central location at the Beaufort Naval Hospital. They are located in the hospital as follows: a. Male Medical (EKG) -- stub wing, A-1; on the first floor down the hall from the ER;

	Ft. Dix	Andrews	Beaufort
B. Facilities (Cont'd)	b. Medical • shares space with surgical clinic on WAH first floor, main OPD area, interfacing Dermatology clinic, outpatient records area and ENT clinic • Gastroenterology -- uses Medical clinic facility or Chief's office on eighth floor of hospital; c. Surgical -- same as Medical clinic; d. Pediatric -- in WAH first floor addition across hallway from pharmacy; e. Dermatology -- on WAH first floor, main OPD area adjacent to Medical/Surgical clinic and outpatient record room and across hallway from general OPC; f. Allergy -- in WAH basement addition, adjacent to Preventive Medicine and OR classroom; g. Neurology -- in WAH first floor addition, next to pharmacy and across hallway from Pediatric clinic; h. Orthopedic -- one side of WAH first floor, main OPD area, across hallway from labs and GU clinic; i. PT -- on WAH first floor, near elevators and adjacent to inpatient medical records area; j. OT -- in WAH basement adjacent to dining hall; k. GU -- on WAH first floor, main OPD area, adjacent to outpatient record room, EENT clinic, clinic waiting area, and Cardiology clinic; l. Eye • WAH Eye clinic shares space with ENT clinic • Optometry clinic in separate building in WAH annex area approx. one mile from WAH; m. ENT -- on first floor of WAH, main OPD area, interfacing Medical/Surgical clinic, labs, GU clinic, and outpatient records area; n. OB/GYN -- in WAH first floor addition at end of hallway across from WAH Dental clinic and connecting with Pediatric clinic;	b. General Surgical • first floor clinic area • both thoracic MD's in one office; c. Pediatric -- first floor clinic area; d. Dermatology -- basement clinic area; e. A&I -- basement clinic area; f. Neurology (clinic and lab) • fourth floor near Neurology ward • no exam rooms; g. Orthopedic -- first floor clinic area; h. Urology -- first floor clinic area; i. EENT • first floor clinic area • one room in base exchange concession for optician's shop; j. OB/GYN -- basement clinic area; k. Cardiopulmonary -- first floor away from main clinic area; l. Psychiatry -- basement clinic area; m. Hematology -- first floor away from main clinic area; n. GP -- first floor clinic area; o. PT -- first floor clinic area; p. IT -- first floor away from main clinic area; q. ER • first floor clinic area • no direct access to surgery or cardiopulmonary units; r. FMC -- basement clinic area.	b. EENT, Female appointment, Dermatology, Female walk-in, Optometry, OB/GYN, Pediatrics -- on the second floor, main corridor, listed in the order encountered from the elevator towards the front of the building; c. Surgical clinic -- stub wing B-2, on the second floor opposite the Infected Surgical ward; d. Urology -- stub wing B-1, on the first floor, opposite ward B-1; e. ER -- first floor, along the corridor leading to wing A; f. Orthopedics -- stub wing A-3, on the third floor, opposite the Orthopedics ward; g. PT -- second floor along corridor leading to ward B-2.

	Ft. Dix	Andrews	Beaufort
B. Facilities (Cont'd)	o. Communicable Diseases -- in WAH basement addition, adjacent to Preventive Medicine and Allergy clinic; p. Immunization -- in WAH basement addition as part of Preventive Medicine (Army Health Nursing) area; q. Cardiology -- on WAH first floor, main OPD area, interfacing labs and GU clinic, facing ENT clinic from hallway; r. MHCS -- in separate building, approx. one-half mile from WAH; s. MPS -- in separate building in WAH Annex area approx. one mile from WAH, connecting with Optometry clinic and Dental Clinic No. 4; t. ER -- on WAH first floor near main entrance • has 2 entrances • shares waiting area with Admissions Desk.		
	2. Space: [2] a. total floor space -- approx. 25,985 sq. ft. in WAH; b. breakdown of sq. ft. by room within clinic or unit shown in Table II-W-2.	2. Space: a. total floor space -- approx. 38,300 sq. ft.; b. refer to Table II-M-1 for breakdown for units and for rooms in each unit by sq. ft. and percentage of total.	2. Space: a. total floor space 19,333 sq. ft. b. see Table II-B-1 for facilities breakdown.
C. Equipment	1. Refer to Appendix 1, Report 011, for lists of all equipment found in OPD.	1. For a list of all equipment worth over $200, refer to Appendix 1, Report 011. 2. For complete listing of all equipment worth over $200 for these and all the remaining clinics, refer to computer run PCN 43165A September 30, 1969.	1. See Table II-B-2 and Appendix 1, Report 011 for list of OPD equipment worth over $200. 2. For ER equipment see Table II-B-2.
D. Work Sampling Study	1. No work sampling conducted for WAH OPD.	1. Observation period: a. 3 days (September 14, 1969, September 30, 1969, and November 15, 1969) in ER to observe and record general procedures (layout, work flow); b. 2 days (September 15 and November 16, 1969) devoted specifically to work sampling study in which 14 employees in 4 job categories related to each job were observed.	1. Observation period: a. one-half day (October 17, 1969), spent in orthopedics clinic observing 6 employees in 6 job categories, with related facilities utilization; b. one-half day (October 16, 1969), spent in OB/GYN clinic observing 5 employees in 3 job categories with related facilities utilization.

II. Occupant Department -- Resource Utilization (Cont'd)

	Ft. Dix	Andrews	Beaufort
D.	Work Sampling Study (cont'd)	2. Steps in recording and analyzing data: a. task performed by each employee and area of facility in which task is performed recorded at random times on special data sheets (see Appendix II); b. tasks and areas then grouped and coded for meaningful analysis; c. data keypunched and processed by computer for analysis (refer to Appendix X for graphic display of data showing % of time spent by employee type according to task or room and to Appendix II for processing results which yielded these percentages).	2. Steps in recording and analyzing data: a. task performed by each employee and area of facility in which task is performed recorded at random times on special data sheets; b. due to the small sample, there was no need to tabulate the results using the computer.

TABLE II - W - 1

STAFF BREAKDOWN

FUNCTION	POSITION	PAY GRADE	QUANTITY	HOURS PER WEEK
Clinic Nursing Service	Clinic Nursing Supervisor	O-5	1	40
	NCOIC	E-7	1	44
	RN	GS-7	1	24
OB/GYN Clinic	MD's	O-3	3	40
	Head Nurse	GS-7	1	40
	Corpsmen	E-4	2	35*
	Corpsmen	E-2	1	35*
	Corps Aides	GS-3	3	40
	Clerk Typist	GS-3	1	40
Emergency	MD's	O-3	8	40
	RN	O-3	1	40
	RN	O-2	3	40
	NCOIC	E-7	1	44
	Corpsmen	E-6	5	44
	Corpsmen	E-5	2	44
	Corpsmen	E-4	3	44
	Corpsmen	E-4	3	35*
	Corpsmen	E-3	1	44
	Corpsmen	E-3	2	35*
	Corpsmen	E-2	1	35*
	Clerks	GS-4	1	40
	Clerks	E-7	1	28**
	Clerks	E-4	5	28**
	Clerks	E-3	1	28**
Optometry/Eye	Optometrist	O-3	4	40
	MD	O-5	1	40
	MD	O-4	1	40
	EENT, Spec.	E-5	2	44
	EENT, Spec.	E-4	3	44
	EENT, Spec.	E-3	1	44
	Clerk	GS-5	1	40
	Optometry Aid	GS-5	1	40
	Clerk Typist	GS-3	2	40
	Clerk	E-4	1	28*
	Receptionist	E-4	1	44
ENT Clinic				
	MD	O-3	3	40
	Corpsman	E-4	1	35*
	Assistants	E-5	2	44
	Clerk	E-3	1	44
	Secretary	GS-5	1	40
	Clerk	GS-4	1	40
	Clerk	E-4	1	28**
Neurology Clinic	MD	O-4	1	40
	MD	O-3	1	40
	EEG Tech	E-6	3	44
	EEG Tech	E-5	2	44
	Receptionist	GS-3	1	40
Physical Therapy	Chief	O-5	1	40
	Assistant Chief	O-3	1	40
	Therapist	O-2	1	40
	Therapist	O-1	1	40
	NCOIC	E-6	1	40
	Technicians	E-4	6	44
	Technician	GS-5	1	40
Orthopedic Clinic	MD	O-4	2	40
	MD	O-3	3	40
	Podiatrist	GS-9	1	40
	Podiatrist	O-3	1	40
	Corpsmen	E-2	1	35*
	Clerks	E-5	2	28**
	Clerks	E-4	3	28**
	Clerk	E-3	1	28**
	Orthotist	GS-9	1	40
	Clerk-steno	GS-4	1	40
	Corpsmen	E-6	1	28**
	Cast Man	GS-7	1	40
	Cast Man	E-6	1	44
	Cast Man	E-5	1	44
	Cast Man	E-4	3	44
Cardiology Clinic	MD	O-4	1	40
	EKG Techs	E-6	3	44
	EKG Techs	E-5	2	44
	Clerk-steno	GS-4	1	40

TABLE H - W - 1 (cont'd)

STAFF BREAKDOWN

FUNCTION	POSITION	PAY GRADE	QUANTITY	HOURS PER WEEK
Pediatric Clinic	MD	O-4	2	40
	MD	O-3	2	40
	Head Nurse	O-2	1	40
	Corpsmen	E-6	1	35*
	Corpsmen	E-5	1	35*
	Corpsmen	E-3	1	35*
	Corpsmen	E-2	2	35*
	Clerk-steno	GS-3	1	40
	Nurses Aid	GS-3	1	40
	Clerk	E-2	1	28**
Medical Clinic	MD	O-3	3	40
	Corpsmen	E-3	1	35*
	Clerk-steno	GS-4	1	40
Dermatology	MD	O-4	1	40
	Nurse Aid	GS-5	1	40
	Clerk	GS-4	1	40
	Corpsmen	E-4	1	44
	Clerk	E-2	1	44
Gastro enterology	MD	O-4	1	40
	Corpsmen	E-4	1	44
GU	MD	O-5	1	40
	MD	O-3	1	40
	Specialist	E-6	1	44
	Corpsmen	E-5	1	35*
	Clerk	E-2	1	28**
Surgical Clinic (4)	MD	O-4	2	40
	Corpsmen	E-5	1	44
	Nurses Aid	GS-4	1	40
OPC (10)	MD	O-4	2	40
	MD	O-3	3	40
	Corpsmen	E-2	1	35*
	Nurses Aid	GS-3	1	40
	Clerk	E-7	1	28**
	Clerk	E-4	1	28**
	Clerk	E-3	1	28**
Medical Processing (22)	MD	O-3	2	40
	Admin. Officer	O-2	1	40
	Chief Clerk	GS-5	1	40
	Clerks	GS-3	3	40
	NCOIC	E-6	1	44
	Corpsmen	E-5	3	44
	Corpsmen	E-4	4	44
	Corpsmen	E-3	3	44
	Corpsmen	E-2	4	44
Mental Hygiene (29)	Psychiatrists	O-4	4	40
	Psychologists	O-3	1	40
	Social Workers	O-4	1	40
	Social Workers	O-3	3	40
	Admin. Assistant	GS-7	1	40
	Secretary	GS-5	1	40
	Stenos	GS-3	2	40
	Clinical Psych. Spec.	E-7	1	44
	Clinical Psych. Spec.	E-5	4	44
	Clinical Psych. Spec.	E-4	1	44
	Clinical Psych. Spec.	E-2	1	44
	Social Work Spec.	E-5	5	44
	Social Work Spec.	E-4	2	44
	Social Work Spec.	E-3	2	44

*WAC's
**Medical Holding Co.

WALSON ARMY HOSPITAL
RESOURCE UTILIZATION - OPD

TABLE II-W-2

FACILITIES BREAKDOWN

UNIT	DESCRIPTION	AREA IN SQUARE FEET	PERCENT OF UNIT	PERCENT OF TOTAL AREA
6040	Reception Room	49	6.57	2.87%
	EKG Room	50	6.71	
	Doctor's Office	100	13.42	
	EEG Room	62	8.32	
	EEG Room	62	8.32	
	Latrine	40	5.36	
	EKG Room	110	14.76	
	Doctor's Office	80	10.73	
	Cardiology Office	125	16.77	
	Cardiology Examination Area	67	8.99	
	Total	745		
6100	Treatment Room	588	30.59	7.42%
	Trauma Room	170	8.84	
	Ambulance Drivers Room	150	7.80	
	Medicine Storage	64	3.32	
	NCOIC Office	72	3.74	
	Storage and Record Room	64	3.32	
	Reception Area	90	4.68	
	Waiting Area	224	11.65	
	Treatment Room	110	5.72	
	Doctor's Office	120	6.24	
	Examination Room	120	6.24	
	POD	100	5.20	
	Latrine	50	2.60	
		1922		
6302	Examination Room	100	8.23	4.69%
	Doctor's Office	100	8.23	
	Examination Room	100	8.23	
	Doctor's Office	130	10.69	
	Break Room	56	4.60	
	Storage Closets	35	2.80	
	Proctoscopy Room	144	11.85	
	Minor Surgery Room	210	17.28	
	Doctor's Office and Examination Room	180	14.81	
	Wrapping Room	160	13.16	
		1215		

TABLE II-W-2 (Cont'd)

FACILITIES BREAKDOWN

UNIT	DESCRIPTION	AREA IN SQUARE FEET	PERCENT OF UNIT	PERCENT OF TOTAL AREA
6303	Waiting Area G.U. Clinic	378	29.67	4.91%
	Chief G.U. Service Surgery Clinic	168	13.18	
	Examination Room	80	6.27	
	Storage Closets	20	1.56	
	Doctor's Office	80	6.27	
	Supplies Storage	110	8.63	
	Supply Closet	40	3.13	
	X-Ray Room	160	12.55	
	Examination Room	98	7.69	
	Doctor's Office	140	10.98	
		1274		
6304	Treatment Room	280	17.99	6.00%
	Optometry Eye Lane	98	6.29	
	Optometry Eye Lane	98	6.29	
	Optometry Eye Lane	98	6.29	
	Optometry Examination Room	168	10.79	
	Optometry Examination Room	224	14.39	
	Visual Field	200	12.85	
	Examination Room	70	4.49	
	Optometry Office and Examination Room	130	8.35	
	Doctor's Office	110	7.06	
	Broom Closet	30	1.92	
	Secretary	50	3.21	
		1556		
6305	Examination Room	90	10.90	
	Doctor's Office	80	9.69	
	Audio Test Room	80	9.69	
	Utility Room	120	14.54	
	Doctor's Office	110	13.33	
	Latrine	40	4.84	
	Reception Area	60	7.27	
	Waiting Area	245	29.69	
		825		

TABLE II-W-2 (Cont'd)

FACILITIES BREAKDOWN

UNIT	DESCRIPTION	AREA IN SQUARE FEET	PERCENT OF UNIT	PERCENT OF TOTAL AREA
6306	Waiting Area	120	19.16	2.41%
	Reception Area	64	10.22	
	Diagnostic Equipment Room	60	9.58	
	Secretary's Office	55	8.78	
	Forms Room	15	2.39	
	Doctor's Office and Examination Room	82	13.09	
	Doctor's Office and Examination Room	82	13.09	
	Linen Closet	20	3.19	
	Doctor's Office and Examination Room	64	10.22	
	Doctor's Office and Examination Room	64	10.22	
		626		
6307	Chief Orthopedic Service Office	168	4.73	
	Form Storage Closet	50	1.40	
	Secretaries' Office	65	1.83	
	Clerk's Office	245	6.89	
	Examination Room Orthopedics	100	2.81	
	Examination Room Orthopedics	120	3.37	
	Reception Area	120	3.37	
	Utility Room	90	2.53	
	Latrine	40	1.12	
	Equipment Storage	150	4.22	
	Waiting Area	294	8.27	
	Storage Closets	25	.70	
	Storage Closets	36	1.01	
	Waiting Area	98	2.75	
	Treatment Room	238	6.70	
	Caste Room	400	11.26	
	Waiting Area Brace Shop	100	2.81	
	Sewing Room Brace Shop	192	5.40	
	Work Area Brace Shop	416	11.71	
	Shoe Shop Brace Shop	380	10.70	
	Office and Fitting Room Brace Shop	144	4.05	
	Supply Brace Shop	80	2.25	
		3551		

TABLE II-W-2 (Cont'd)

FACILITIES BREAKDOWN

UNIT	DESCRIPTION	AREA IN SQUARE FEET	PERCENT OF UNIT	PERCENT OF TOTAL AREA
6308	Clinic Waiting Area	2700	65.21	15.98%
	Male Latrine	220	5.31	
	Female Latrine	180	4.34	
	Waiting Area	440	10.62	
	Reception Desk	60	1.44	
	Storage Closet	30	.72	
	Examination Room	110	2.65	
	Doctor's Office and Examination Room	168	4.05	
	Latrine	30	.72	
	Closets	20	.48	
	Storage Closets	32	.77	
	Treatment Room	150	3.62	
		4140		
6309	Examination Room	40	7.33	2.10%
	Examination Room	50	9.17	
	Reception Room	55	10.09	
	Doctor's Office	40	7.33	
	Doctor's Office	45	8.25	
	Lab. Area	85	15.59	
	Treatment Room	80	14.67	
	Latrine	30	5.50	
	Supplies	70	12.84	
	Waiting Area	50	9.17	
		545		
6310	Doctor's Office and Examination Room	175	13.50	5.00%
	Doctor's Office and Examination Room	175	13.50	
	Doctor's Office and Examination Room	84	6.48	
	Examination Room	90	6.94	
	Examination Room	90	6.94	
	Examination Room	80	6.17	
	Secretary	70	5.40	
	Break Room	50	3.85	
	Waiting Area	432	33.33	
	Reception Area	50	3.85	
		1296		

TABLE II-W-2 (Cont'd)

FACILITIES BREAKTHROUGH

UNIT	DESCRIPTION	AREA IN SQUARE FEET	PERCENT OF UNIT	PERCENT OF TOTAL AREA
6311	Waiting Area	280	29.38	3.68%
	Reception Desk	180	18.88	
	Treatment Room Allergy Clinic	225	23.60	
	Male Latrine	50	5.24	
	Doctor's Office and Examination Room	108	11.33	
	Doctor's Office and Examination Room	110	11.54	
		953		
6330	Examination Rooms (17)	56	3.14	6.86%
	Super and NCO Office	49	2.75	
	Doctor's Office	49	2.75	
	Doctor's Office	49	2.75	
	Doctor's Office	72	4.04	
	Doctor's Office	72	4.04	
	Doctor's Office	72	4.04	
	Doctor's Office	49	2.75	
	Doctor's Office	49	2.75	
	Treatment Room	64	3.59	
	Office	49	2.75	
	Infant Child Waiting	72	4.04	
	Reception Room	56	3.14	
	Waiting Area	528	29.26	
	Height and Weight Room	50	2.81	
	Utility Room	50	2.81	
	Doctor's Latrine	29	1.63	
	Supplies	35	1.96	
	Clean Linen	35	1.96	
	Soiled Linen	40	2.24	
	Break Room	64	3.59	
	Male Latrine	60	3.37	
	Female Latrine	64	3.59	
	Equipment Room	65	3.65	
		1778		

TABLE II-W-2 (Cont'd)

FACILITIES BREAKTHROUGH

UNIT	DESCRIPTION	SQUARE FEET	PERCENT OF UNIT	PERCENT OF TOTAL AREA
6363	Waiting Area	141	32.11	1.69%
	Office	123	28.01	
	Lab.	63	14.35	
	Latrine	42	9.56	
	Hallway	70	15.94	
		439		
6800	Treatment Room	260	5.16	19.42%
	Optometry Eye Lave	112	2.22	
	Optometry Examination Room	224	4.45	
	Optometry Examination Room	160	3.18	
	Visual Field	150	2.98	
	Waiting Area	590	11.72	
	Reception Area	50	.99	
	Secretary's Office	80	1.59	
	Optometry Eye Lave - Annex	112	2.22	
	Chief Optometry Service-Annex	80	1.59	
	Glasses Adjusting Room - Annex	100	1.98	
	Optometry Examination Room - Annex	100	1.98	
	Waiting Area - Annex	200	3.97	
	NCO and Secretaries - Annex	220	4.37	
	Storage Room Lab.	72	1.43	
	Lavatory	40	.79	
	Utility Room - Annex	112	2.22	
	Eye Check Area	540	10.73	
	Waiting Room	70	1.39	
	Eye Examination Room	430	8.54	
	Eye Examination Room	210	4.17	
	Lavatory	60	1.19	
	Supply Room	168	3.33	
	Glass Making Room	650	12.92	
	Storage Room	120	2.38	
	Storage Room	120	2.38	
		5030		

TABLE II-M-1

FACILITIES BREAKDOWN

		SQUARE FEET	%
3248	Orthopedic Clinic		
	Patient Examination Rooms	997	40.59
	Office - NCOIC and Secretary	92	3.74
	Office - Physicians	597	24.30
	Toilets	50	2.03
	Janitors Closet	20	.81
	Storage Closet	20	.81
	Control Desk	50	2.03
	Patient Waiting Area	189	7.69
	Utility Room	61	2.48
	Fracture - Cast Room	380	15.47
		2456	
3302	Cardiopulmonary Clinic		
	Examination Rooms	350	23.89
	Waiting Room	85	5.80
	Toilets	60	4.09
	NCOIC Office	130	8.87
	Physicians Offices	635	43.34
	Storage Room	50	3.41
	Janitors Closets	20	1.36
	Stairs and Ducts	110	7.50
	Control Desk	25	1.70
		1465	
3303	General Therapy Clinic		
	Waiting Area	418	14.97
	Control Area	81	2.90
	NCOIC Office	86	3.08
	Doctors Office	831	29.76
	Examination Rooms	380	13.61
	Treatment Room	313	11.21
	Storage Closets	104	3.72
	Janitors Closets	59	2.11
	Utility Room	41	1.46
	Corridor Waiting Area	480	17.19
		2793	

TABLE II-M-1 (cont'd)

FACILITIES BREAKDOWN

		SQUARE FEET	%
3304	Internal Medicine (General Med.)		
	Office, Chairman, Department of Medicine	100	8.66
	Toilets	80	6.93
	Offices	200	17.33
	Chief Internal Medical Service	100	8.66
	Chief Rheumatology	18	1.55
	Storage Room	36	3.11
	Janitors Closet	22	1.90
	NCOIC Clinic	72	6.23
	Receptionist Area	168	14.55
	Patient's Waiting Area	256	22.18
	Secretary's Office	102	8.83
		1154	
3305	General Surgical Clinic		
	Treatment Room	220	19.64
	Doctor's Offices	154	13.75
	Chief of Surgery	121	10.80
	Secretary	80	7.14
	Proctoscopy Room	140	12.50
	Examination Rooms (2)	280	25.00
	Bed Room	50	4.46
	Toilets	75	6.69
		1120	
3331	Pediatric Clinic	4422	
3351	Physical Therapy	2823	
3312	Psychiatric Clinic		
	Reception	120	6.17
	Patients Waiting Area	340	17.49
	Technicians Interview Room	140	7.20
	Lounge	72	3.70
	NCOIC Room	120	6.17
	Group Therapy	220	11.32
	Psychiatrist Office	330	16.98
	Psychiatrist Office	340	17.49
	Psychology Testing	180	9.26
	Storage Area	24	1.23
	Baths	40	2.05
	Janitors Closets	17	.87
		1943	

TABLE II-M-1 (cont'd)

FACILITIES BREAKDOWN

		SQUARE FEET	%
3313	EENT Clinic		
	Fitting Room	83	3.32
	Eye Lanes (4)	536	21.50
	Waiting Area	320	12.83
	Control (recept)	72	2.88
	Utility	72	2.88
	Toilets	54	2.16
	Optometrists Office (2)	290	11.63
	Elec.	88	3.52
	Examination Rooms (2)	200	8.02
	Examination Rooms (2)	190	7.62
	Audio Test Rooms (2)	168	6.73
	Otolaryngology Examination Rooms	108	4.33
	Personnel	40	1.60
	Storage	100	4.01
	Resident Office	96	3.85
	Intern	76	3.04
		2493	
3314	Allergy and Immunization		
	Allergy Waiting Room	140	7.10
	Immunization Room	100	5.07
	Utility Room	20	1.01
	Laboratory	150	7.61
	Immunization Room	280	14.20
	Nurses Room	100	5.07
	Toilets (2)	75	3.80
	Examination Rooms (6)	540	27.39
	Doctors Offices (2)	200	10.14
	NCOIC	80	4.05
	Holding	176	8.92
	Storage Room	110	5.58
		1971	

TABLE II-M-1 (cont'd)

FACILITIES BREAKDOWN

		SQUARE FEET	%
3315	Urology Clinic		
	Cystoscopy Room	290	19.06
	Residents Room	100	6.57
	Doctors Rooms (2)	296	19.46
	Urology Room	108	7.10
	Examination Room (2)	360	23.66
	Urology Room	108	7.10
	Supply	30	1.97
	Doctor's Office	144	9.46
	Toilet	25	1.64
	Dark Rooms	60	3.94
		1521	
3317	Hematology Clinic		
	Thyroid Scan Room	200	19.49
	Dual Probe Scanner Room	168	16.37
	Low Level Lab	150	14.61
	NCOIC Office	67	6.53
	Toilets	35	3.41
	Hot Room	58	5.65
	Auto Clave	58	5.65
	Doctor Examination Room	140	13.64
	Magna Scan Room	150	14.61
		1026	
3318	Dermatology Clinic		
	Doctor's Office	100	6.53
	Examination Rooms (4)	360	23.52
	Doctor's Office	114	7.45
	Surgery	115	7.51
	Doctor's Office	100	6.53
	Mycology Lab.	100	6.53
	Grenz-ray	120	7.84
	Utility	40	.19
	Storage	75	4.90
	Nurse's Room	90	5.88
	Toilets	50	3.26
	Control	50	3.26
	Waiting Room	216	14.11
		1530	

TABLE II-M-1 (cont'd)

FACILITIES BREAKDOWN

		SQUARE FEET	%
3151	Inhalation Therapy		
	Therapy Stalls	150	30.61
	Toilets	30	6.12
	Technicians Office	40	8.16
	Storage Room	80	16.32
	Lab and Work Area	100	20.40
	Control Area	90	18.36
		490	
3320	Flight Medical Clinic		
	Waiting Area	950	24.58
	Control - Reception	130	3.36
	Storage Rooms	124	3.20
	Labs	144	3.72
	Doctors Office	600	15.52
	Locker Rooms	170	4.39
	Administration Offices	866	22.41
	Special Procedure Rooms	750	19.40
	Toilets	130	3.36
		3864	
3240	OB-GYN Clinic		
	Physicians Offices	715	24.75
	Charge Nurse and NCOIC	80	2.77
	Weight and Measurements Room	190	6.57
	Toilets	90	3.11
	Janitors Closets	20	.69
	Storage Closets	30	1.03
	Utility Area	128	4.43
	Examination Rooms	1070	37.04
	Waiting Room	515	17.83
	Control Desk	50	1.73
		2888	

TABLE II-M-1 (cont'd)

FACILITIES BREAKDOWN

		SQUARE FEET	%
3100	Emergency Room		
	Patient Waiting Area	564	23.60
	Observation Suite	476	20.02
	Surgical Suite	404	16.99
	Examination Rooms	180	7.57
	Doctor's Office	100	4.20
	Chairmans Office	106	4.45
	NCOIC and Charge Nurse Office	106	4.45
	Storage Area	134	5.63
	Control Area	50	2.10
	Reception Desk	59	2.48
	Vestibule Area	198	8.32
		2377	

Subtotals

	Square Ft.	% of Total
3210	468	1.22
3240	2888	7.54
3005	360	.93
3100	2377	6.20
3151	490	1.27
3248	2456	6.41
3302	1465	3.82
3303	2793	7.29
3304	1154	3.01
3305	1120	2.92
3312	1943	5.07
3313	2493	6.50
3314	1971	5.14
3315	1521	3.97
3317	1026	2.67
3318	1530	3.99
3320	3864	10.08
3331	4422	11.54
3351	2823	7.37
3781	1136	2.96
Total	38300	

TABLE II-B-1

FACILITIES BREAKDOWN

FUNCTION	DESCRIPTION	AREA IN SQUARE FEET	PERCENT OF AREA	PERCENT OF TOTAL AREA
Emergency Room	Doctors Quarters	408	19.78	
	Linen Storage	36	1.74	
	Utility and Cleaning Room	144	6.98	
	Suction Pump Storage Room	12	.58	
	Womens Treatment Room	276	13.38	
	Emergency Treatment Room	256	12.41	
	Patient Receiving Area	484	23.47	
	Connecting Hallway and Stretcher Storage	264	12.80	
	Patient Waiting Area	120	5.81	
	Miscellaneous Storage	25	1.21	
	Staff Medical Records Storage Room	25	1.21	
	Doctor's Bag Storage Room	12	.58	
	Total	2062		12.46
Surgery Clinic	Treatment Rooms	715	34.67	
	Office Space	682	33.07	
	Storage Space	181	8.77	
	Corridor - Waiting Room	560	27.15	
	Total	2138		12.92
Orthopedic Clinic	Storage and Supplies	195	14.71	
	Night Duty Rooms	90	6.79	
	Doctor's Office and Examination Rooms	154	11.62	
	Doctor's Office	345	26.03	
	Doctor's Bath	147	11.09	
	Examination Rooms	330	24.90	
	Reception Area	64	4.83	
	Total	1325		8.01

TABLE II-B-1 (cont'd)

Urology Clinic	Examining Room	154	11.39	
	Cystoscopy Room	252	18.63	
	Waiting Room	168	12.42	
	Sterile Storage	168	12.42	
	Doctors Office	210	15.53	
	Linen Room	112	8.28	
	Supplies	84	6.21	
	Reception Area	64	4.73	
	Laboratory and Shower Area	140	10.35	
	Total	1352		8.17
OB GYN Clinic	Doctors Office	480	17.91	
	Examination Rooms	504	18.80	
	Baths and Closets	448	16.71	
	Nursing Office	160	5.97	
	Vital Signs Room	384	14.32	
	Private Corridors	160	5.97	
	Main Corridor and Waiting Area	544	20.29	
	Total	2680		16.20
EENT Clinic	Treatment Rooms	252	11.60	
	Waiting Areas	312	14.37	
	Sterilizing Rooms	108	4.97	
	Chart Testing Area	252	11.60	
	Reception Area	117	5.38	
	Audio and Photo Rooms	126	5.80	
	Transillumination and refraction	168	7.73	
	Closets	56	2.57	
	Doctor's Office	216	9.94	
	Optometrists Office	192	8.84	
	Corridor	372	17.13	
	Total	2171		13.12
Dermatology Clinic	Examining Room	324	81.81	
	Reception Room	72	18.18	
	Total	396		2.39
Female Medical Appointment Clinic	Examining Room	360	83.33	
	Reception Room	72	16.66	
	Total	432		2.61
Male Medical Clinic	Pulmonary Function Laboratory	168	14.31	
	Examining Rooms	686	58.43	
	Storeroom	112	9.54	
	Closets and Bathrooms	208	17.71	
	Total	1174		7.09
Female Medical Walk-In Clinic	Examining Room	342	72.00	
	Reception	133	28.00	
	Total	475		2.87
Pediatric Clinic	Bathrooms	288	12.32	
	Closets	96	4.10	
	Doctor's Office and Examination Room	864	36.98	
	Vital Signs Room	176	7.53	
	Waiting Room	304	13.01	
	Cubicles Room for Examination	608	26.02	
	Total	2336		14.12

TABLE II-H-2

EQUIPMENT LIST

Equipment Code	Fixed Portable	Quantity	Operating Hours	Loading	Purchase Price	Description
		Surgery 0301				
P	F	4	8	N	$1,796	Surgical Lamps
P	P	1	8	N	301	Portable Surgical Lamps
K	P	3	8	N	195	Portable Exam Table
K	F	1	8	N	1,838	Operating Table
K	F	1	8	N	946	Procto Table
O	F	1		N	290	Glass Medicine Locker
O	P	4		N	195	Treatment Carts
K	P	1		N	1,775	Bantam Bovie
					$13,705	Total
		Orthopedics 0302				
J	P	1		N	$1,539	Ortho Open Trnle
J	F	1		N	410	Utensil Sterilizer
J	P	1	0.0	U		Adult Fracture Table
J	P	1		N		Child Fracture Box
J	F	5		N	546	Treatment Tables
N	P	2		N	195	Treatment Carts
J	P	1		U	287	Traction Cart
J	P	23		N	400	Bulkon Frames & Accessories
J	P	2		N	365	Foster Frames
N	P	1		N	364	Gurney
J	F	1		N	1,796	Operating Light
J	P	1		N	655	Bohler-Brnun Traction
					$9,301	Total
		Urology 0303				
	P	1	8	N	$ 528	Microscope
J	P	1	8	N	350	Centrifuge
J	F	1	8	N	265	Ceiling Lamp
N	P	1	8	N	605	Gurney
K	F	1		U	2,955	X-Ray Unit
K	F	1	8	N	3,329	Urology Table
K	F	2	8	N	329	Examining Table
J	P	1	8	N	450	Cautery Unit
J	P	1	8	N	615	Fiber Optic Light
O	F	2	8	N	217	Instrument Cabinet
J	P	8		U	256	Cystoscopes
J	P	5	8	N	346	Resectoscopes
K	F	1	8	N	1,257	Ritter Procto Table
J	P	1	8	N	262	Foroblique Telescope
O	F	1	8	N	404	Urological Cabinet
O	F	1	8	N	560	Urological Cabinet
K	F	1	8	N	946	Procto Table
N	P	1	8	N	364	Wheeled Stretcher
N	P	1	8	N	418	Wheeled Stretcher
J	P	1	8	N	1,806	Anesthesia Machine
					$15,840	Total
		OB - Gyn 0304				
	F	1	21	N	$ 887	Refrigerator
J	P	6	8	N	195	Stainless Steel Treatment Cart
N	P	1	8	N	430	Gurney
O	F	1	24	N	290	Stainless Steel Cabinet
K	F	6	8	N	476	OB Exam Table
K	P	2	8	N	410	Microscope
J	F	4	8	N	301	Surgical Lamp
O	F	1	8	N	393	Cabinet Type Table
O	F	1	8	N	207	Instrument Cabinet
O	F	1	8	N	275	Medicine Cabinet
					$8,727	Total

TABLE H-B-2 (cont'd)

Equipment Cost	Fixed Portable	Quantity	Operating Hours	Loading	Purchase Price	Description
		EENT 0305				
K	P	2	8	N	$ 246	Lensometer
K	P	1	8	N	547	AO CO Phorator
K	P	1	8	N	819	Refracting Unit
K	P	2	8	N	300	AO CO Lens Set
K	P	2	8	N	1,324	Slit Lamp
K	P	1	8	U	760	AO CO Troposcope
K	P	1	8	N	498	Farnsworth Lantern
K	P	1	8	N	3,158	OP V MUE Microscope
K	P	1	8	N	280	Indirect Opthalmoscope
K	F	1	8	N	613	EENT Surgical Chair
K	P	1	8	U	1,288	Tonograph Tonometer
K	P	1	8	N	464	Karotometer
K	F	1	8	N	715	Opthalmic Operating Lamp
K	P	1	8	N	1,244	Phoropter
K	F	1	8	N	395	Refraction Desk
K	F	1	8	N	483	WEB OP Dental Chair
K	F	1	8	U	1,484	Booth Audiometer
K	F	1	8	N	910	Sterilizing Unit
K	F	1	8	N	395	Blickman Table
K	F	2	8	N	718	Ritter EENT Unit
K	F	1	8	N	265	Dental Chair
K	P	1	8	U	460	Maico Audiometer
K	P	1	8	N	632	Beltone Audiometer
J	P	1	8	N	355	Electrotorgue Drill
K	P	1	8	N	350	Fiber Optic
					$20,291	Total
		Dermatology 0306				
K	F	1	8	N	$ 203	Treatment Tables
K	P	1	8	N	410	Microscope
K	F	3	8	N	201	Lamps
K	F	1	8	N		Ultraviolet Lamp
K	P	1	8	N	728	Electrosurgical Machine
K	P	1	8	N	1,322	Audiometer
K	P	1	8	N	303	Opthalnometer
K	P	1	8	N	215	Rose Opthalnic Unit
K	P	1	8	N	285	Suction Apparatus
K	P	1	8	N	435	Lensometer
					$4,584	Total
		Female Medical Appointment 0307				
K	P	2	8	N	$	Otoscope & Opthalmoscope Set
K	P	3	8	N		Stethoscope
K	P	3	8	N		Blood Pressure Cuff
K	F	2	8	N	203	Treatment Tables
					$ 606	Total
		Male Medical 0308				
K	F	1.5	24	N	$ 889	Electro Cardiograph
					$1,334	Total

TABLE II-B-2 (cont'd)

Equipment Code	Fixed Portable	Quantity	Operating Hours	Loading	Purchase Price	Description
			Female Medical Walk-in 0309			
K	P	2	8	N	$	Otoscope & Opthalmoscope Set
K	P	3	8	N		Stethoscope
K	P	3	8	N		Blood Pressure Cuff
K	F	2	8	N	203	Treatment Tables
					$ 606	Total
			Pediatrics 0330			
O	F	1	24	N	$ 275	Medicine Cabinet
N	P	8	8	N	195	Medical Carts
K	F	1	24	N	205	Incubator
O	F	1	24	N	860	Refrigerator
K	P	2	1	U	400	Microscopes
J	P	1	8	N	361	Gomco-Suctioning
N	P	1	8	N	195	Cart
					$4,256	Total
			Emergency Room 0100			
K	P	1	24	N	$ 965	Defibrillator
J	P	3	24	N	286	Suction Machine
O	F	1	24	N	680	Refrigerator
K	P	3	24	N	435	Minuteman Resusitator
P	F	2	24	N	1,796	Ceiling Surgical Lamp
K	P	.5	16	N	889	EKG Machine
K	P	1	24	N	387	Krieselman Resusitator
	P	3	24	N	406	Mobile Radio
	P	1	24	N	7,188	Pontiac Ambulance
	P	1	24	N	5,401	Pontiac Ambulance
	P	1	24	N	7,218	Metropolitan Ambulance
					$29,257	Total

III. OUTPATIENT DEPARTMENT--FUNCTIONAL COSTS

	Walson Army Hospital (WAH)--Fort Dix	Malcolm Grow Hospital--Andrews AFB	U.S. Naval Hospital--Beaufort
A. Total			
1. Cost:	$2,107,596 annually.	$2,232,773 annually.	$431,850 annually.
2. Source:	a. refer to Appendix VII for functional cost breakdown summary sheet. b. refer to Tables III-W-1 thru III-W-34 for elemental figures from which total costs were derived. c. refer to Table III-W-35 for breakdown of cost by type of clinic or unit, and approximate FY69 costs per visit. d. total cost includes cost elements from all clinics and units listed above. It also includes costs of Professional and Nursing Services prorated to clinics, wards, and other functions. Cost does not include clinics in outlying MEDDAC dispensaries, clinics conducted by Army Health Nursing Service and Preventive Medicine (Well Baby, Immunization, VD), Allergy clinic, WAH Dental Clinic, Radioisotopes, special clinics held by chiefs of departments, Endoscopy clinic, Inhalation Therapy, or OT.	a. refer to Appendix VII for functional cost breakdown summary sheet.	a. refer to Appendix VII for functional cost breakdown summary sheet.
B. Personnel			
1. Cost:	$1 642,642 annually: military -- $1,466,103; civilian - - $176,539; function cost -- $1,606,541; non-function cost -- $36,101.	$2,104,041 annually (Figure III-M-1): function cost -- $2,026,611; non-function cost -- $77,430.	$379,533 annually: function cost -- $366,908; non-function cost -- $12,625.
2. Source:	a. (R) cost allocations for MD's and other professional personnel based on • Dept. of Medicine personnel schedule, November 3, 1969; interviews with Chiefs of Medicine, General Medicine, Gastroenterology, and Cardiology, and the Assistant Chief of Pediatrics; and observations in the Medical clinic, Pediatric clinic, and Dept. of Medicine for clinics under the auspices of the Dept. of Medicine.	a. function cost -- No. of personnel assigned to OPD determined from interviews with NCOIC of OPD. Pay rates for military personnel taken from AFM 177-101 (C91). Civilian rates were extracted from USAF salary rates July 1968 (Appendix IV). Benefits for civilians determined from information given in interview with (R) military consultant. b. non-function cost -- time spent by employee outside the function • housekeeping -- from 63 hours spent by 48 personnel in housekeeping chores, estimated by interviewee.	a. only time spent by MD on actual clinic hours was attributed to his contribution to OPD personnel costs. The remainder went either to ward management or to administrative costs. b. (R) interview, with pay rates from AFM 177-101 (C91).

	Ft. Dix	Andrews	Beaufort
B. Personnel Source (cont'd.)	• interview with Chiefs of Surgery, OB/GYN, Orthopedics, Ophthamology, Optometry, General Surgery, and Physical Therapy as well as observations in Orthopedic, Optometry, and ENT clinics for clinics under the auspices of the Dept. of Surgery. • interviews with Chiefs of P&N, Psychology, Social Work, and Psychiatry and the Administrative Assistant, Dept. of P&N; and observation of MHCS for the Neurology clinic and MHCS. • interviews with Chief and Administrative Officer (AO) of Dept. of Clinics and observation of the OIC, ER, and MPS for these 3 units. b. (W) obtained pay rates for each labor grade from "Standard Rates for Military Personnel Services," AFM 177-10 (C91) for Military Personnel and schedule established by DoD (June 5, 1969) directive 5120.39 for civilian personnel, and added 7% fringe benefits for civilian personnel except for MHCS where 7.5% was added due to greater seniority of personnel. c. (W) cost allocations for nursing and clerical personnel based on • Nursing Service personnel rosters (DA-8-93) for November 23 thru 29, 1969. • adjusted figures based upon interviews with Chief, Clinic Nursing Service; NCOIC, ER; Secretaries, Depts. of Medicine and Surgery; Chief, Pediatrics; Administrative Assistant, Dept. of P&N; AO, Dept. of Clinics; and Chief, Physical Therapy. d. WAH determined personnel figures from Nursing Service personnel rosters (DA-8-93) and MD rosters of individual services and departments, November 23, 1969 • MD's assigned to a service of department generally have office space in the clinic. e. refer to Table III-W-36 for personnel cost breakdown by clinic or unit.	• formal training -- TDY time for training purposes from Professional Activities Report FY69. • OJT -- from hours per trainee and instructor, estimated by interviewee. Changeover rate by function from business office. Cost from Appendix VI.	

	Ft. Dix	Andrews	Beaufort
C. Supplies			
1. Cost:	$52,220 annually: medical -- $130; non-medical -- $0; CMS -- $52,090.	$168,807 annually.	$21,759 annually.
2. Source:	a. medical and non-medical cumulative cost run for FY69, showing resource cost by item of expense for each function, received by Management Service Division from Post Data Processing. b. CMS cost obtained by prorating clinics' CMS costs as a percentage of total CMS functional costs; percentage based on a two-day survey of all FY69 CMS requisitions from clinics as a fraction of total. See Appendix XI for all calculations. c. refer to Table III-W-37 for breakdown of CMS supply cost by clinic or unit.	a. from Report of Medical and Non-medical Supply Expense FY69. b. Central Sterile Supply (CSS) -- added into medical-prorated form annual CSS cost for entire medical center given in Report of Medical and Non-medical Supply Expense FY69; 2 months' OPD orders and direct issues data used as the basis for calculations.	a. FY69 Account 310 listing from Fiscal and Supply; SFC codes • 4C10 -- Medical. • 4C20 -- Surgical. • 4C30 -- Orthopedics. • 4C40 -- OB/GYN. • 4C50 -- Pediatrics. • 4C70 -- EENT • 4C99 -- other (includes ER). b. Central Sterile Supply (CSS) -- costs were prorated from SFC code 4H00, according to Ft. Dix and Andrews data; 35% of total 4H00 costs was attributed to OPD.
D. Maintenance			
1. Cost:	$37,618 annually: WAH medical -- $17,696; Ft. Dix Post Engineering -- $19,922.	$33,331 annually: medical -- $11,741; non-medical -- $21,590.	$24,969 annually: medical -- $498; non-medical -- $24,471.
2. Source:	a. medical -- costs allocated by record source and cost charged for parts and labor from all request slips stored in Supply and Service Division 11-68 thru 11-69. b. Post Engineering -- prorated to clinics as follows: total annual costs of labor and material obtained in interview with Post Engineering. Estimate then obtained on percentage of total Post Engineering work done for WAH. Three-month sample of Post Engineering requests taken to distribute the percentage of cost allocated to WAH among its functions. See Appendix IV for all calculations. c. refer to Table III-W-38 for breakdown of costs by clinic or unit.	a. medical labor and parts from medical maintenance chits for entire FY69. b. non-medical -- prorated from total annual maintenance costs (Medical Expense Report CY69) using OPD's percentage share of total hospital maintenance cost calculated from one month's chits.	a. medical -- estimated by counting a 12-month sampling of medical repairman's chits for parts costs, and by prorating salary. b. non-medical -- prorated by total square footage as a percentage of Account 310, SFC Code 7150, which lists total maintenance costs for the hospital building only (e.g., excludes grounds, housing, medical maintenance, etc.).

	Ft. Dix	Andrews	Beaufort
E. Housekeeping			
1. Cost:	$63,574 annually: contract -- $63,574; staff housekeeping -- $0.	$57,037 annually: janitorial -- $45,065; staff housekeeping -- $11,972.	$7,866 annually: janitorial -- $1,116; staff housekeeping -- $3,750.
2. Source:	a. civilian housekeeping agency's contract with WAH for FY69; b. total annual cost to WAH ($431,000 for FY69) was allocated to OPD on a basis of percentage of total sq. ft. cleaned (14.77% = $63,574); c. see Appendix V for all calculations; d. refer to Table III-W-39 for breakdown of cost by clinic or unit.	a. janitorial -- cost of janitor service prorated among functions using each function's percentage share of total sq. ft. cleaned. b. staff -- time spent by staff of OPD in housekeeping, estimated by NCO of OPD.	a. janitorial -- time spent by janitors in OPD was obtained from the Janitorial Work Distribution Chart. b. staff -- estimated from interviews and observation.
F. Training			
1. Cost:	$48,094 annually: formal -- $0; OJT -- $36,101; training dept. -- $11,993.	$66,987 annually: formal -- $43,980; OJT -- $21,478; training dept. -- $1,529.	$10,348 annually: formal -- $6,257; OJT -- $2,618; training dept. -- $1,473.
2. Source:	a. OJT -- a portion of total functional personnel cost was allocated to OJT on the basis of estimates made by observers of the amount of time needed for a student to reach 90% efficiency in each job class being trained. These estimates were factored into a learning curve equation to arrive at OJT costs. See Appendix VI - OJT Costs. b. training dept. -- cost of operating the Nursing Education Office at WAH was derived by summing the salaries of the Nursing Service Education Coordinator (O-4), Orientation Supervisor (O-4), OR class instructor (O-5), and 3 corpsmen (2-E5's and 1-E6) who work in that function. Source of figures was Nursing Service personnel roster, November 23 thru 29, 1969 (DA-8-93). Cost then allocated to OPD as 20% of total.	a. formal -- see Personnel, formal training. b. OJT -- see Personnel, OJT training. c. training dept. -- administration personnel from training department allocated to function by percentage of total training staff.	a. formal -- from announcements of training sessions, lectures, schedules, etc. b. OJT -- from interviews and observations. c. training dept. -- the salary of the one corpsman in charge of training was prorated among the functions according to the number of corpsmen receiving training in each function.

	Ft. Dix	Andrews	Beaufort
G. Prorated Costs			
1. Cost:	$299,549 annually: from Nursing Service -- $33,024; from Professional Service -- $266,525.		
2. Source:	a. See Tables III-W-35 thru III-W-40 for elemental figures and calculations used to determine costs used in prorating Dept. of Medicine, Dept. of Surgery, Dept. of P&N, Dept. of Clinics, and Clinic Nursing Service costs to OPD functions. b. refer to Tables III-W-40 thru 46 for breakdown of costs by clinic or unit.		
H. Capital Equipment			
1. Cost:	$300,906: standard -- $187,917; non-standard-- $112,989.	$306,593.	$108,507.
2. Source:	a. survey of WAH Property Book taken December 8, 9 and 10, 1969 in which two types of equipment were tallied by functional area: • equipment with a unit price greater than $200. • equipment with a unit price less than $200 but for which the number of units in the function brought the total dollar figure above $200. b. WAH had two kinds of equipment price records: • standard equipment for which the price on file represents current market value • non-standard equipment for which the price on file represents original purchase price. c. refer to Table III-W-47 for breakdown of cost by clinic or unit.	a. refer to computer run PCN 43165A, September 30, 1969 (inventory of total hospital equipment worth over $200).	a. cost of equipment over $200, from Beaufort Property Control Listing (August 14, 1969) (computer run), verified by observation.

TABLE III-W-1

FUNCTIONAL COSTS FOR PEDIATRIC CLINIC

	W DETERMINED
Direct Charges:	
Military Labor	100335
Civilian Labor	5258
Supplies - Medical	
Supplies - Non-Medical	
Maintenance - Post	1860
- Medical	1500
	59(p)
Miscellaneous Charges	
Prorated Charges:	
Housekeeping	5947
CMS	3013
CNS	2752
Department	24344
Equipment:	
Cost of Standard	
Cost of Non-Standard	
Total Charges	$145068

TABLE III-W-2

FUNCTIONAL COSTS FOR PEDIATRIC CLINIC

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
3	O4*				
3	O3*				
1	O3	1	O3		
1	E5	1	E5		
2	E4			Post Eng.	1860
1	E3	2	E3		
3	E2	2	E2	Housekeeping	5947
1	GS4			Med. Misc.	76.5 hrs.
		1	E6		59 parts
		1	GS3		
				CMS	3013
Mil.	$114,981.00	$38,313.00		CNS	2752
Civ.	5,658.00	4,907.00 = 5258			
				Dept.	24344
		Doctors			
		4	O3		
		1	O4	Work Load	50072
		Mil:	$62,022.00		

All doctors assigned .75 to clinics 8 doctors

TABLE III-W-3

FUNCTIONAL COSTS FOR EENT CLINIC

	W DETERMINED
Direct Charges:	73487
Military Labor	
Civilian Labor	34764
Supplies - Medical	
Supplies - Non-Medical	
Maintenance - Post	1115
Medical	0
Miscellaneous Charges	
Prorated Charges:	
Housekeeping	4095
CMS	625
CNS	2752
Department	6288
Equipment:	
Cost of Standard	$41208
Cost of Non-Standard	$14568
Total Charges	$123126

TABLE III-W-4

FUNCTIONAL COSTS FOR EENT CLINIC

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
1	O5				
4	O4	2.1	O4		
		2	O3		
5	E5	3	E5		
1	E4	1	E4	Post Maint.	1115
		1	E3		
1	GS4				
		.5	GS5	Housekeeping	4095
		1	E7	Med. Main.	0
				CMS	625
				CNS	2752
Mil: $107,488.00		$73,487.00		Surv. Dept.	6288
Civ: 5,258.00		$32,490.00 = 34764			
				Work Load	21000

Walson Army Hospital
Functional Costs - OPD

TABLE III-W-5

FUNCTIONAL COSTS FOR OPTOMETRY CLINIC

	W DETERMINED
Direct Charges:	
Military Labor	165397
Civilian Labor	32605
Supplies - Medical	
Supplies - Non-Medical	
Maintenance - Post	5214
Medical	2057
	845(p)
Prorated Charges:	
Housekeeping	4095
CNS	2752
Department	3773
Equipment:	
Cost of Standard	$39857
Cost of Non-Standard	$12261
Total Charges	$216738

TABLE III-W-6

FUNCTIONAL COSTS FOR OPTOMETRY CLINIC

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
1	O5	.8	O5		
6	O3	3.8	O3		
1	E8				
1	E7				
5	E5	2	E5		
3	E4	1	E4	Post Eng.	5214
2	E3	3	E3		
2	E2			Housekeeping	4095
1	GS9	1	GS9		
1	GS5	2.5	GS5	Med. Maln.	105.2 hrs.
1	GS4				$845 parts
2	GS3	1	GS3		
1	E1				
		1	E8	CNS	2752
		5	E5		
Mil: $166,234.00		2	E4	Surg. Dept.	3773
Civ: $ 31,560.00					
		1	O5		
		1	O4	Work Load	5104
		Mil: $165,397.00			
		Civ: $ 30,472.00 = 32605			

TABLE III-W-7

FUNCTIONAL COSTS FOR ORTHOPEDIC CLINIC

	W DETERMINED
Direct Charges:	
Military Labor	71823
Civilian Labor	
Supplies - Medical	
Supplies - Non-Medical	
Maintenance - Post	2976
Medical	842
	18(p)
Prorated Charges:	
Housekeeping	9051
CMS	3727
CNS	2752
Department	18866
Equipment:	
Cost of Standard	$11980
Cost of Non-Standard	$ 9065
Total Charges	$110055

TABLE III-W-8

FUNCTIONAL COSTS FOR ORTHOPEDIC CLINIC

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
.5	O5*				
1	O4*				
2	O3*				
1	O3**				
1	E4	3	E4		
2	E3	1	E3		
		1	E2	Post Eng.	2976
1	GS8+				
1	GS7X			Housekeeping	9051
1	GS9**			Med. Main.	43.0 hrs
					$18 parts
1	E6X				
1	E5X	1	E5	CMS	3727
3	E4X				
1	E5+			CNS	2752
1	O1				
				Work Load	32432
Mil: $110,543.50		$25,997.00			
Civ: $ 25,507.00				Surg. Dept.	18866
		Doctors			
		2.5	O3		
		.5	O4		
		.5	O5		
		Mil: $45,826.00			

X Cast
+ Brace
** Podiatrist
* Doctors assigned
.5 to clinic
.5 to ward including OR

Walson Army Hospital
Functional Costs - OPD

TABLE III-W-9

FUNCTIONAL COSTS FOR CARDIOLOGY CLINIC

	W DETERMINED
Direct Charges:	
Military Labor	9517
Civilian Labor	
Supplies - Medical	
Supplies - Non-Medical	
Maintenance - Post	185
- Medical	1229
	299(p)
Miscellaneous Charges	
Prorated Charges:	
Housekeeping	1293
CNS	2752
Department	3043
Equipment:	
Cost of Standard	$212
Cost of Non-Standard	
Total Charges	$18318

TABLE III-W-10

FUNCTIONAL COSTS FOR CARDIOLOGY CLINIC

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
			Doctors		
1	O4	.5	O4		
		.2	O3		
1	E6				
1	E5				
2	E4				
1	E3				
1	GS4			Post Eng.	185
				Housekeeping	1293
				Med. Main.	63 hrs
					$299 parts
				Dept.	3043
				CNS	2752
Mil: $40,209.00		$9,517.20		Workload	3037
Civ: $ 5,658.00					

TABLE III-W-11

FUNCTIONAL COSTS FOR GASTROENTEROLOGY CLINIC

	W DETERMINED
Direct Charges:	
Military Labor	11013
Civilian Labor	
Supplies - Medical	
Supplies - Non-Medical	
Maintenance	0
Miscellaneous Charges	0
Prorated Charges:	
CNS	2752
Department	9129
Equipment:	
Cost of Standard	
Cost of Non-Standard	
Total Charges	$22894

TABLE III-W-12

FUNCTIONAL COSTS FOR GASTROENTEROLOGY CLINIC

PERSONNEL				MISCELLANEOUS	
ASSIGNED NUMBER	GRADE	ACTUAL NUMBER	GRADE	ITEM	COST
1	O4				
1	E6				
1	E4	1	E4		
1	E3				
				Post Eng.	0
				Housekeeping	0
				Med. Main.	0
Mil: $29,978.00		$4,597.00		CNS	2752
		Doctors			
		.45	O4		
				Dept.	9129
		Mil: $6,416.10			

TABLE III-W-13

FUNCTIONAL COSTS FOR NEUROLOGY CLINIC

	W DETERMINED
Direct Charges:	
Military Labor	63,249
Civilian Labor	5,250
Supplies - Medical	
Supplies - Non-Medical	
Maintenance - Post	372
- Medical	982
	128 (p)
Miscellaneous Charges	
Prorated Charges:	
Housekeeping	0
CNS	2,752
Department	13,691
Equipment: (Includes MHCS)	
Cost of Standard	$23,655
Cost of Non-Standard	$27,975
Total Charges	$86,424

TABLE III-W-14

FUNCTIONAL COSTS FOR NEUROLOGY CLINIC

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
1	O4	1	O4		
1	O3	1	O3		
1	E5	3	E6		
		2	E5		
				Post Eng.	372
				Housekeeping	0
				Med. Main.	50.5 hrs.
		1	GS3		128 parts
Mil: $31,833.00					
				CNS	2752
		Mil: $63,249			
		Civ: $ 4,907 = 5250		Surg. Dept.	2515

TABLE III-W-15

GENERAL MEDICAL CLINIC

	W DETERMINED
Direct Charges:	65444
Military Labor	
Civilian Labor	
Supplies - Medical	
Supplies - Non-Medical	
Maintenance - Post	185
Medical	0
Miscellaneous Charges	
Prorated Charges	
Housekeeping	4095
CNS	2752
Department	18258
Equipment:	
Cost of Standard	
Cost of Non-Standard	
Total Charges	$90734

Walson Army Hospital
Functional Costs - OPD

TABLE III-W-16

FUNCTIONAL COSTS FOR GENERAL MEDICAL CLINIC

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
O4A		O4A General Medical Service Doctors			
4	O3*	2.5	O4		
1	GS4				
26A					
1	E4	2.2	O3		
1	GS4				
				Post Eng.	185
				Housekeeping	4095
				Med. Main.	0
				CNS	2752
				Dept.	18258
Mil: $52,361.00		$61,915.20			
Civ: $11,316.00					
		26A General Medical Clinic Clinic Nursing Service		Workload	7781
		1	E3		
		Mil: $3,529.00			

*MD's actually scheduled avg. wk. of 11-3-69

Walson Army Hospital
Functional Costs - OPD

TABLE III-W-17

FUNCTIONAL COSTS FOR PHYSICAL THERAPY

	W DETERMINED
Direct Charges:	
Military Labor	81,542
Civilian Labor	6,953
Supplies - Medical	
Supplies - Non-Medical	
Maintenanee - Post	372
Medical	1,757
	99 (p)
Miseellaneous Charges	
Prorated Charges:	
Housekeeping	7,758
Department	3,773
Equipment:	
Cost of Standard	7,454
Cost of Non-Standard	10,332
Total Charges	$102,254

TABLE III-W-18

FUNCTIONAL COSTS FOR PHYSICAL THERAPY

PERSONNEL				MISCELLANEOUS	
ASSIGNED NUMBER	GRADE	ACTUAL NUMBER	GRADE	ITEM	COST
1	O5	1	O5		
1	O2	1	O3		
1	O1	2	O2		
1	E6	1	E6		
3	E4	3	E4	Post Eng.	372
2	E3	3	E3	Housekeeping	7,758
1	GS5	1	GS5	Med. Main.	89.5 hrs. $99 per hr.

Mil : $63,382.00
Civ: $ 6,498.00

Mil:$ 81542
Civ:$ 6498 = 6953

Walson Army Hospital

Functional Costs--OPD

TABLE III-W-19

FUNCTIONAL COSTS FOR GENERAL SURGICAL CLINIC

	W DETERMINED
Direct Charges:	
Military Labor	$35,397
Civilian Labor	6,054
Supplies - Medical	
Supplies - Non-Medical	
Maintenance - Post	185
Medical	342
	13 (p)
Miscellaneous Charges	
Prorated Charges:	4,095
Housekeeping	4,095
CMS	6,812
CNS	2,752
Department	9,061
Equipment:	
Cost of Standard	6,392
Cost of Non-Standard	3,108
Total Charges	64,711

TABLE III-W-20

FUNCTIONAL COSTS FOR GENERAL SURGICAL CLINIC

PERSONNEL				MISCELLANEOUS	
ASSIGNED NUMBER	ASSIGNED GRADE	ACTUAL NUMBER	ACTUAL GRADE	ITEM	COST
2	O4*				
.5	O3*				
1	E4				
1	E2	1	E5		
		1	GS4	Post Eng.	185
				Housekeeping	4,095
				Med. Main.	17.5 hrs. $13 parts
				CMS	6,812
				CNS	2,752
				Workload	13,678
				Surg. Dept.	12,576

Mil: $42,126.50 $5,634.00

Civ: $5,658.00 = 6054

Doctors

1.25 O4

1.0 O3

Mil: $29,763.50

*Doctors Assigned
.5 clinic
.5 ward including OR

TABLE III-W-21

FUNCTIONAL COSTS FOR GENITOURINARY CLINIC

	W DETERMINED
Direct Charges:	
Milltary Labor	31572
Civilian Labor	
Supplies - Medical	
Supplies - Non-Medical	
Maintenance - Post	372
Medical	508
Miscellaneous Charges	27(p)
Prorated Charges:	
Housekeeping	5172
CMS	9184
CNS	2752
Department	6288
Equipment:	
Cost of Standard	$2261
Cost of Non-Standard	$1865
Total Charges	$55875

TABLE III-W-22

FUNCTIONAL COSTS FOR GENITOURINARY CLINIC

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
		1	E3		
		Mil: $3,529.00			
1	O5				
1	O4			Post Maint.	372
1	E5	1	E5		
		1	E6	Housekeeping	5172
Mil: $37,581.00		$13,228.00		Med. Main.	26 hrs. $27 parts
		Doctors			
		.5	O5		
		.5	O3	CMS	9184
		Mil: $14,815.00		CNS	2752
				Surg. Dept.	6288
				Workload	7001

Walson Army Hospital
Functional Costs- OPD

TABLE III-W-23

FUNCTIONAL COSTS FOR DERMATOLOGY CLINIC

	W DETERMINED
Direct Charges:	
Military Labor	31,092
Civilian Labor	6,953
Supplies - Medical	
Supplies - Non-Medical	
Maintenance - Post	185
Medical	400
	19(p)
Miscellaneous Charges	
Prorated Charges	5,172
Housekeeping	
CMS	124
CNS	2,752
Department	3,043
Equipment:	
Cost of Standard	
Cost of Non-Standard	
Total Charges	$49,740

TABLE III-W-24

FUNCTIONAL COSTS FOR DERMATOLOGY CLINIC

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
	04B				
1	O4*				
	26B				
1	E5				
1	E4	3	E4		
1	E2	1	E2		
1	GS4			Post Eng.	185
		1	GS5	Housekeeping	5,172
				Med. Main.	20.5 hrs.
					19 parts
				CMS	124
				CNS	2,752
Mil: $27,532.00		$16,834.00		Dept.	3,043
Civ: $ 5,658.00		$ 6,498.00		Workload	7,719
		Doctors			
		1	O4		
		Mil: $14,258.00			

*Doctor full time.

TABLE III-W-25

FUNCTIONAL COSTS FOR OB-GYN CLINIC

	W DETERMINED
Direct Charges:	
Military Labor	52,092
Civilian Labor	23,719
Supplies - Medical	
Supplies - Non-Medical	
Maintenance - Post	185
Medical	1,600
	33(p)
Prorated Charges	3,534
Housekeeping	
CMS	3,995
CNS	2,752
Department	12,576
Equipment:	
Cost of Standard	$ 4,443
Cost of Non-Standard	2,578
Total Charges	$100,486

TABLE III-W-26

FUNCTIONAL COSTS FOR OB-GYN CLINIC

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
3	O4				
1	O3				
2	E4	2	E4		
3	E3				
		1	E2		
2	GS3	3	GS3	Post Eng.	185
		1	GS7	Housekeeping	3,534
				Med. Main.	81.5 hrs.
					33 parts
				CMS	3,995
Mil: $74,496.00		$12,237.00		CNS	2,752
Civ: $ 9,814.00		$22,168.00 = 23719			
				Surg. Dept.	12,576
		Doctors			
		2	O3		
		.5	O4		
		.5	O5		
		Mil: $39,855.50		Workload	28,237

*MD's based on actual assignment during week day interview.

TABLE III-W-27

FUNCTIONAL COSTS FOR MENTAL HYGIENE CONSULTATION SERVICE

	W DETERMINED
Direct Charges:	
Military Labor	210,294
Civilian Labor	14,921
Supplies - Medical	130
Supplies - Non-Medical	0
Maintenance - Post	0
Medical	4,467
Miscellaneous Charges	1,170
Prorated Charges:	
Department	9,128
Equipment:	
Cost of Standard	(See Neurology
Cost of Non-Standard	Clinic)
Total Charges	$240,110

TABLE III-W-28

FUNCTIONAL COSTS FOR MENTAL HYGIENE CONSULTATION SERVICE

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
4	O4*	.5	O5		
3	O3+	4	O4		
1	O3x	1	O3		
1	E4x	1	O4		
4	E5+	3	O3		
2	E4+	1	E7		
2	E3+	9	E5		
1	E7x	3	E3		
4	E5x	1	E2		
1	E2x	2	E4		
1	GS4o	1	GS7		
1	GS3o	1	GS5		
2	GS4+o				
Mil: $182,625.00		Mil: $210,294			
Civ: $21,881.00		Civ: $13,945 = 14921			

o Administrative
+ Social Work
x Psychology
* Psychiatry

TABLE III-W-29

FUNCTIONAL COSTS FOR EMERGENCY ROOM

	W DETERMINED
Direct Charges:	
Military Labor	275,292
Civilian Labor	6,054
Supplies - Medical	
Supplies - Non-Medical	
Maintenance - Post O	372
Miscellaneous Charges - CMS	21,560
Prorated Charges:	
Housekeeping	5,172
Department of Clinics	45,125
Equipment:	
Cost of Standard	
Cost of Non-Standard	
Total Charges	$ 353,575

TABLE III-W-30

FUNCTIONAL COSTS FOR EMERGENCY ROOM

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
1	O4	1	O4		
1	O3	1	O3		
1	O3	1	O3		
1	O2	2	O2		
1	O1				
1	O2				
5	E6	4.8	E6		
7	E5	1	E5		
1	E4	4.8	E4		
1	E7	1	E7		
2	GS3				
		1	E3		
		1	E2		
		1	E7		
		3	E4		
		1	E3		
		.75	O5		
		2.25	O3		
		1	GS4		
Mil: $156,230.30		Mil: $181,921.20			
Civ: $ 9,814.00		Civ: $ 5,658.00 = 6,054			
		Doctors			
		.1	O4		
		7.7	O3		
		Mil: $93,371.50			

Walson Army Hospital
Functional Costs-OPD

TABLE III-W-31

FUNCTIONAL COSTS FOR OUTPATIENT CLINIC

	W DETERMINED
Direct Charges:	
Military Labor	95,148
Civilian Labor	11,304
Supplies-Medical	
Supplies-Non-Medical	
Maintenance-Post	3,736
Medical	446
	26
Miscellaneous Charges	
Prorated Charges:	4,095
Housekeeping	
CMS	3,050
Department of Clinics	67,688
Equipment:	
Cost of Standard	$13,741
Cost of Non-Standard	$ 12,098
Total Charges	$185,493

TABLE III-W-32

FUNCTIONAL COSTS FOR OUTPATIENT CLINIC

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
1	O3				
2	E5				
		1	GS4		
2	GS3	1	G33		
		1	E2		
		1	E7	Post Eng.	3,736
		1	E8	Housekeeping	4,095
		1	E4	Med. Main.	21.0 hrs.
					$ 26 parts
		1	E3		
				CMS	3,050
Mil: $23,209.00		$30,141.00			
Civ: $ 9,814.00		$10,565.00		Workload	31,488
		Doctors			
		1.0	O4		
		4.25	O3		
		Mil: $65,007			

*1 MD assigned specif. to OPC only

TABLE III-W-33

FUNCTIONAL COSTS FOR MEDICAL PROCESSING

	W DETERMINED
Direct Charges:	
Military Labor	93,409
Civilian Labor	22,704
Supplies - Medical	
Supplies - Non-Medical	
Maintenance-Post	2,608
Housekeeping	0
Miscellaneous Charges	
Prorated Charges:	
Department of Clinics	11,281
Equipment:	
Cost of Standard	$36,926
Cost of Non-Standard	$18,927
Total Charges	$130,002

TABLE III-W-34

FUNCTIONAL COSTS FOR MEDICAL PROCESSING

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
3	O3	1	GS5		
1	O2	3	GS3		
2	E6	1	E6		
2	E5	3	E5		
4	E4	4	E4		
2	E3	3	E3		
3	E2	4	E2	Post Eng.	2,608
2	E1			Housekeeping	0
1	GS5	Mil: $59,557			
3	GS3	Civ: $21,219 = 22,704			
Mil: $112,468.00					
Civ. $ 21,219.00		Doctors			
		2	O3		
		1	O2		
		Mil: $33,852.00			

TABLE III-W-39

HOUSEKEEPING COST BREAKDOWN

CLINIC OR UNIT	COST
Pediatric	$5,947
ENT	4,095
Eye	4,095
Orthopedic	9,051
Cardiology	1,293
Medical	4,095
Physical Therapy	7,758
Surgical	4,095
Genito Urinary	5,172
Dermatology	5,172
OB/Gyn	3,534
Emergency	5,172
OPC	4,095

TABLE III-W-40

FUNCTIONAL PRORATING COSTS

	WARDS *	CLINICS **	ICU
Department of Medicine	48,688	60,860	12,172
Medical Wards	7,076		
Medical Nursing Service	28,962		
Totals	$84,726	60,860	12,172

*Wards:	Prorated	Cost	**Clinics:	Prorated	Cost
Medical	.80	67,780	Dermatology	.05	3,043
Pediatric	.20	16,945	Gastroenterology	.15	9,129
			Pediatric	.4	24,344
			Cardiology	.05	3,043
			General Medicine	.3	18,258
			Allergy	.05	3,043

TABLE III-W-41

FUNCTIONAL PRORATING COSTS FOR DEPARTMENT OF MEDICINE

PERSONNEL				SUPPLIES		MISCELLANEOUS		PRORATE	
ASSIGNED NUMBER	ASSIGNED GRADE	ACTUAL NUMBER	ACTUAL GRADE	MEDICAL	NON-MEDICAL	ITEM	COST	FUNCTION	RATE
	O4								
1	O5	.6	O5	$46,337	$25,885	Travel	$782	Med. Wards	.4
1	O1	1	O1			Contract		ICU	.1
1	E4					Service	133	Clinics	.5
1	GS5	1	GS5						
1	GS4					Equip-			
1	GS3	2	GS3			ment	4,237		
Mil:	$29,566.00								
Civ:	$17,063.00								
		Mil: 26,893							
		Civ: 16,312 = $17,453							

TABLE III-W-42

FUNCTIONAL PRORATING COSTS FOR DEPARTMENT OF SURGERY

SUPPLIES		MISCELLANEOUS			PRORATE	
MEDICAL	NON-MEDICAL	ITEM	COST	FUNCTION	RATE	AMOUNT
$79,519	$40,400	Travel	$1,527	Wards		$62,884
				Surgical	.3	37,731
				Orthopedic	.1	12,576
				Obstetric	.1	12,576
		Contract Service		Clinics		
				xNeurology	.02	2,515
				xOrthopedic	.15	18,866
				xOB-Gyn	.10	12,576
				xOptometry	.03	3,773
				xGeneral Surgery	.06	9,061
				xCU	.05	6,288
				xEENT	.05	6,288
				OT	.01	1,257
				Physical Therapy	.03	3,773

TABLE III-W-43

FUNCTIONAL PRORATING COSTS FOR DEPARTMENT OF NEUROPSYCHIATRY

PERSONNEL				SUPPLIES		MISCELLANEOUS		PRORATE		
ASSIGNED NUMBER	GRADE	ACTUAL NUMBER	GRADE	MEDICAL	NON-MEDICAL	ITEM	COST	FUNCTION	RATE	AMOUNT
		.5	O5	$1,532	$1,561	Travel	$ 124	Ward	.5	$22,819
		1	O3			Other Contract Service	1,465	N.C.	.3	13,691
		1	GS3					MHCS	.2	9,128
		1	GS7							
		1	GS5							
		Mil: $20,786								
		Civ: $18,852 = $20,171								

TABLE III-W-44

FUNCTIONAL PRORATING COSTS FOR DEPARTMENT OF CLINICS

PERSONNEL				SUPPLIES		MISCELLANEOUS		PRORATE		
ASSIGNED NUMBER	GRADE	ACTUAL NUMBER	GRADE	MEDICAL	NON-MEDICAL	ITEM	COST	FUNCTION	RATE	AMOUNT
1	O5*	.5	O6^{o}	$124,631	$3,829	Travel	$8,439	Medical Processing	.05	11,281
1	O4*	.5	O4*		204	Contract				
1	O3^{o}				$4,033	Service	1,658	Outpatient Clinic	.3	67,688
1	O5^{x}					Equip-				
1	E7^{o}	7	E7			ment	2,500	Emergency Room	.2	45,125
1	E5^{o}							Dispensary	.45	101,529
1	E4^{o}									
2	E3^{o}	2	E3^{o}							
2	E7^{x}									
1	E4^{x}									
		1	GS6$^{\checkmark}$							
1	GS5^{o}	1	GS5^{o}							
3	GS3^{o}									
1	GS4$^{\checkmark}$	2	GS4$^{\checkmark}$							
4	GS3$^{\checkmark}$	3	GS3$^{\checkmark}$							
		1	E3							
Mil: $110,058.00		$44,813.00								
Civ: $ 46,505.00		$39,067.00 = 41,802								

*MD's
^{x}Nurses
^{o}Admin
$^{\checkmark}$Cent. Appt.

TABLE III-W-45

FUNCTIONAL PRORATING COSTS FOR CLINIC NURSING SERVICE

PERSONNEL				SUPPLIES		MISCELLANEOUS		PRORATE	
ASSIGNED NUMBER	ASSIGNED GRADE	ACTUAL NUMBER	ACTUAL GRADE	MEDICAL	NON-MEDICAL	ITEM	COST	FUNCTION	RATE AMOUNT
		1	O5					Dermatology	$2,752
		1	E8					Gastroenterology	2,752
		1	GS7					Pediatric	2,752
								Cardiology	2,752
								General Medicine	2,752
								ENT	2,752
								Eye	2,752
								GU	2,752
								Surgery	2,752
								OB-Gyn	2,752
								Orthopedic	2,752
								Neurology	2,752
								Allergy	2,752
		Mil: $27,796.00							
		Civ: $ 7,667.00 = 7,789							

Walson Army Hospital
Functional Costs - OPD

TABLE III-W-35

UNIT COST BREAKDOWN

CLINIC OR UNIT	TOTAL COST	APPROXIMATE FY69 COST PER VISIT
Pediatric	$145,068	$ 2.90
ENT	123,126	5.86
Eye	216,738	2.03
Orthopedic	110,055	3.39
Cardiology	18,318	6.03
Gastroenterology	22,894	—
Neurology	86,424	10.44
Medical	90,734	11.66
Physical Therapy	102,254	2.86
Surgical	64,711	4.73
Genito Urinary	55,875	7.98
Dermatology	49,740	6.44
OB/Gyn	100,486	3.56
Mental Hygiene	240,110	10.91
Emergency	353,575	5.61
General OPC	185,493	5.88
Medical Processing	130,002	1.94

TABLE III-W-36

PERSONNEL COST BREAKDOWN

CLINIC OR UNIT	MILITARY PERSONNEL	CIVILIAN PERSONNEL
Pediatric	$100,335	$ 5,258
ENT	73,487	34,764
Eye	165,397	32,605
Orthopedic	71,823	—
Cardiology	9,517	—
Gastroenterology	11,013	—
Neurology	63,249	5,250
Medical	65,444	—
Physical Therapy	81,542	6,953
Surgical	35,397	6,054
Genito Urinary	31,572	—
Dermatology	31,092	6,953
OB/Gyn	52,092	23,719
Mental Hygiene	210,294	14,921
Emergency	275,292	6,054
OPC	95,148	11,304
Medical Processing	93,409	22,704

TABLE III-W-37

CMS SUPPLY COST BREAKDOWN

CLINIC OR UNIT	CMS SUPPLIES
Pediatrics	$ 3,013
ENT	625
Orthopedic	3,727
Surgical	6,812
Genito Urinary	9,184
Dermatology	124
OB-Gyn	3,995
Emergency	21,560
OPC	3,050

TABLE III-W-38

MAINTENANCE COST BREAKDOWN

CLINIC OR UNIT	POST	MEDICAL
Pediatric	$1,860	$1,559
ENT	1,115	—
Eye	5,214	2,902
Orthopedic	2,976	860
Cardiology	185	1,528
Neurology	372	1,110
Medical	185	—
Physical Therapy	372	1,856
Surgical	185	355
Genito Urinary	372	535
Dermatology	185	419
OB/Gyn	185	1,633
Mental Hygiene	—	4,467
Emergency	372	—
OPC	3,736	472
Medical Processing	2,608	—

TABLE III-W-46

PRORATED COSTS BREAKDOWN

CLINIC OR UNIT	NURSING	DEPARTMENT
Pediatric	$2,752	$24,334*
ENT	2,752	6,288**
Eye	2,752	3,733**
Orthopedic	2,752	18,866**
Cardiology	2,752	3,043*
Gastroenterology	2,752	9,129*
Neurology	2,752	13,691***
Medical	2,752	18,258*
Physical Therapy	—	3,773**
Surgical	2,752	9,061**
Genito Urinary	2,752	6,288**
Dermatology	2,752	3,043*
OB-Gyn	2,752	12,576**
Mental Hygiene	—	10,298***
Emergency	—	45,125****
OPC	—	67,688****
Medical Processing	—	11,281****

* Department of Medicine
** Department of Surgery
*** Department of Psychiatry and Neurology
**** Department of Clinics

TABLE III-W-47

CAPITAL COSTS BREAKDOWN

CLINIC OR UNIT	STANDARD	NON-STANDARD
ENT	$41,208	$14,568
Eye	39,857	12,261
Orthopedic	11,980	9,065
Cardiology	212	—
Neurology/Mental Hygiene	23,655	27,975
Physical Therapy	7,454	10,332
Surgical	6,392	3,108
GU	2,261	1,865
OB/Gyn	4,443	2,578
OPC/Emergency	13,441	12,098
Medical Processing	36,926	18,927

I. OUTPATIENT DEPARTMENT -- OPERATIONS SOURCE SHEET

1. DD-444 -- Outpatient Reports, composite for Walson Army Hospital, FY69.
2. DD-444 -- Outpatient Reports, Feeders, last 6 months of FY69 (January thru June).
3. Extrapolated from monthly average from DD-444, Outpatient Reports, feeders, January thru June, 1969.
4. Pediatric Clinic Log Book, January, 1969.
5. Extrapolated from average monthly visits obtained from 1., above, for orthopedic, and from 2., above, for brace shop, podiatry, and cast room.
6. Observation of Orthopedic Clinic, October 20 thru November 6, 1969.
7. Optometry Clinic Workload Report, DA Form 2965, December 1968 thru September 1969; monthly average taken and extrapolated to annual approximation.
8. Extrapolated from monthly average, obtained from 1., above.
9. Observation of Optometry Lab and Optometry Clinic, week of October 20, 1969.
10. Observation of EENT Clinic, October 2, 1969.
11. Observation of EENT Clinic, October 28, 1969.
12. Statistics kept by secretary, OB/GYN Service.
13. DA Form 8-262.
14. Statistics kept by secretary, Mental Hygiene Consultation Service.
15. Interview with Chief, Physical Therapy, September 30, 1969.
16. Observation of Physical Therapy, October 2 and 3, 1969.
17. Observation in Outpatient Clinic, October 26 thru 30, 1969.
18. Observation of Medical Processing Service, week of October 13, 1969.
19. Emergency room Log Book, 1969.
20. Observation of Emergency Room, week of October 27, 1969.
21. Trip to Picatinny Arsenal, October 14, 1969.
22. Trip to Patterson Army Hospital, Ft. Monmouth, N.J., October 16, 1969.
23. Trip to Tobyhanna Army Depot, October 22, 1969.
24. Trip to 1611th Dispensary, McGuire AFB, October 17, 1969.

Malcolm Grow Hospital

1. AF 235A FY69.
2. Interview with NCOIC, Internal Medicine Clinic.
3. Interview with NCOIC, General Surgical Clinic.
4. Interview with NCOIC, Pediatrics Clinic.
5. Interview with NCOIC, Dermatology Clinic.
6. Interview with NCOIC, A & I Clinic.
7. Interview with NCOIC, Neurology.
8. Interview with NCOIC, Orthopedic.
9. Interview with NCOIC, Urology.
10. Interview with NCOIC, EENT
11. Interview with NCOIC, OB/GYN.
12. Cardiopulmonary Log Books, samples on October 1, 2 and 3, 1969; data from CY65 to CY68.
13. Interview with NCOIC, Cardiopulmonary.
14. Interview with NCOIC, Psychiatry.
15. Interview with NCOIC, Hematology.
16. Interview with NCOIC, PT.
17. Interview with NCOIC, GPC.
18. Interview with NCOIC, FMC.
19. Interview with NCOIC, IT.
20. Interview with NCOIC, ER.

Beaufort Naval Hospital.

1. NAVMED 1454, FY69; total of lines indicated in Table I-B-1, except for 09 and 10, refractions.
2. NAVMED 1454, line 44.
3. Beaufort Morbidity/Mortality statistics, FY69.
4. During the last quarter of FY69, the female walk-in and appointment clinics were combined. Just prior to the (W) observation period, they were again run separately.

5. NAVMED 1454, FY69, lines 52 and 56.

6. Observation of surgical clinic, October 27, 1969.

7. NAVMED 1454, FY69, line 51.

8. NAVMED 1454, FY69, line 41.

9. Observation of arrivals at dermatology and female medical clinics, September 3, 1969.

10. NAVMED 1454, FY69, line 54.

11. NAVMED 1454, FY69, line 58.

12. NAVMED 1454, FY69, lines 36-37.

13. NAVMED 1454, FY69, lines 49 and 50.

14. NAVMED 1454, FY69, line 60.

15. NAVMED 1454, FY69, line 63.

II. OUTPATIENT DEPARTMENT -- RESOURCE UTILIZATION SOURCE SHEET

Walson Army Hospital

1.

2. Scaled photograph of WAH floor plans provided by Chief of Registrar Div.

Malcolm Grow Hospital

1. Interview with NCOIC, Internal Medicine.

2. Interview with NCOIC, Surgical.

3. Interview with NCOIC, Pediatrics.

4. Interview with NCOIC, Dermatology.

5. Interview with NCOIC, A & I.

6. Interview with NCOIC, Neurology.

7. Interview with NCOIC, Orthopedics.

8. Interview with NCOIC, Urology.

9. Interview with NCOIC, EENT.

10. Interview with NCOIC, OB/GYN.

11. Interview with NCOIC, Cardiopulmonary.

12. Interview with NCOIC, Psychiatry.

14. Interview with NCOIC, Hematology.

15. Interview with NCOIC, GPC.

16. Interview with NCOIC, PT.

17. Interview with NCOIC, IT.

18. Interview with NCOIC, ER.

19. Interview with NCOIC, FMC.

Beaufort Naval Hospital

1. Beaufort Hospital Blueprint, Scale 1/4" = 1', 0".

PHARMACY

WALSON ARMY HOSPITAL (WAH) -- FORT DIX

Mission

Army regulations require that the duties of the WAH Pharmacy Service include writing and filling prescriptions; dispensing pharmaceuticals to wards, clinics, dispensaries, and other health care functions; controlling narcotics; supervising all drug stocks; and consulting with the professional staff.* In addition, Pharmacy performs several functions not stipulated in the regulations: extensive pharmaceutical manufacturing and prepackaging; providing a central intravenous (I.V.) additive service; maintaining poison control data; and assembling and distributing cardiac arrest and first aid kits for the emergency room, dispensaries, and MEDDAC areas.

One reason for Walson Pharmacy's extended activities is that the number of registered pharmacists is presently above quota. Moreover, most are enlisted men with no hospital background who are willing to perform less professional tasks to gain experience. As a result Pharmacy's productivity far exceeds the functional norm.

Existing Operations

Currently operating at full capacity, the pharmacy department would like to expand its services. Three target areas have been proposed: manufacturing and pre-packaging drugs for the Fort Dix MEDDAC; establishing a poison control center (preliminary work with the National Poison Control Clearing House has paved the way for WAH's own Poison Control Center set-up); and initiating a drug Unit Dose drug dispensing system for dispensaries (with the Stockade dispensary receiving first priority). In all three areas the only barrier to immediate implementation is finding adequate space for the additional qualified personnel.

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*As stated in AR-2, Section SV and AR 40-4, paragraph 2-18.

In an effort to expand total operational objectives, the pharmacy department would like to upgrade personnel by tightening training standards and recognizing professionalism by commissioning the pharmacists as Second Licutenants. Such proposals are also an attempt to expand the pharmacy's role in patient care dynamics. This new role, according to WAH's Chief of Pharmacy, will be characterized by greater involvement in the clinical aspects of patient care, including pharmacy ward rounds, case follow through in regard to drug interaction effects, and more direct participation in the work of the primary medical team. The concept of satellite pharmacies located in patient care areas is a case in point. This concept already is a reality in some civilian hospitals and engenders more personal knowledge of the patients' needs and speeds response time on drug orders.

MALCOLM GROW USAF MEDICAL CENTER -- ANDREWS AIR FORCE BASE

Mission

The mission of the Pharmacy Service* includes storing, manufacturing, compounding and dispensing pharmaceuticals; maintaining prescribed records of stored and dispensed pharmaceuticals; complying with state and federal regulations governing the storage and issue of specific drugs and poisons; and conducting on-the-job training of duty personnel.

The Malcolm Grow Pharmacy is responsible for these activities, not only in the hospital per se, but also in the outlying dispensaries at Bolling AFB and the Pentagon. The Officer-in-Charge of Malcolm Grow Pharmacy also serves as pharmaceutical consultant to the Air Force Surgeon General.

Existing Operations

Two major problems exist: the present "first-in, first-out" system for dispensing outpatient prescriptions encourages the formation of large queues during peak clinic hours; many routine, pre-packaged prescription items could

*As stated in AFM 168-4H, Section N, paragraph 1-31.

easily be handled if a separate rapid-service line were initiated.

Inventory control is very difficult under the present system. Stock levels within the pharmacy are controlled by a visual check of shelves; ward inventory manpower is insufficient to provide more than superficial monitoring of ward pharmaceutical stock requests.

As at Walson Army Hospital, expansion is seen as the key trend in pharmacy. Also parallel is the interest shown in establishing a unit dose dispensing system.

Other services suggested for incorporation into the Malcolm Grow Pharmacy mission include: an IV additive program (already implemented at WAH); patient pharmacological profiles; a drug information dissemination program for doctors and nurses; and assumption of ward pharmaceutical duties now handled by ward nurses.

U.S. NAVAL HOSPITAL -- BEAUFORT

Mission

The mission of the Pharmacy Service at Beaufort Naval Hospital includes maintaining stock of medical supplies and insuring their maximum potency; compounding and dispensing drugs to Beaufort inpatients and outpatients; storing, issuing, and maintaining inventory of all narcotics; informing medical, dental, and nursing personnel of new medical and biological preparations. *

Existing Operations

The equipment at the Beaufort Pharmacy is minimal but adequate, since the small manufacturing volume does not justify the use of automated manufacturing and pill-counting devices. Facility layout could be improved by installing separate dispensing and receiving windows to reduce congestion and speed the prescription-filling process. As in the case of Walson and Malcolm Grow hospitals, the trend at Beaufort is to expand, with the focus on unit dose dispensing, an I.V. additive program, and computer control inventories.

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*As stated in NAVHOSPBFT INST. P-5400, p. C-24 through C-29.

DATA PRESENTATION MATRICES

The following matrices and charts detail the data gathered by the Westinghouse teams in the three hospitals' pharmacies. The first matrix delineates pharmacy operations; the second, resource utilization; and the third, functional costs.

1. PHARMACY OPERATIONS

	Walson Army Hospital (WAH) -- Ft. Dix	Malcolm Grow Hospital -- Andrews AFB	U.S. Naval Hospital -- Beaufort
A. Services Rendered	1. Outpatient dispensing:[1,2] a. filling and refilling prescriptions; b. monitoring prescriptions for accuracy; c. labeling prescription containers; d. screening incoming prescriptions for completeness of data.	1. Outpatient dispensing: a. filling and refilling prescriptions; b. filling and maintaining stock of drugs at clinics.	1. Outpatient dispensing: a. filling and refilling prescriptions for hospital and Marine Corps Air Station outpatients; b. monitoring the prescriptions dispensed for accuracy; c. labeling prescription containers; d. surveying incoming prescriptions for completeness of data.
	2. Inpatient dispensing:[1,2] a. maintaining nursing unit drug inventories; b. filling and delivering nursing unit bulk drug orders; c. filling and refilling inpatient prescriptions.	2. Inpatient dispensing: a. maintaining nursing unit drug inventories; b. filling and delivering nursing unit bulk drug orders; c. filling and refilling inpatient prescriptions; d. maintaining stock of standard IV solutions.	2. Inpatient dispensing: a. filling and delivering bulk drug orders for all nursing units; b. filling and refilling prescriptions for hospital inpatients.
	3. Extemporaneous pharmaceutical manufacturing of:[1,2] a. internal and external liquids; b. ointments and creams.	3. Extemporaneous pharmaceutical manufacturing of: a. internal medications; b. external liquids, ointments, creams, and salves.	3. Extemporaneous pharmaceutical manufacturing of: a. internal and external liquid pharmaceuticals; b. ointments and creams.
	4. Prepackaging pharmaceuticals and labeling by content, dosage, and date for distribution to 8 dispensaries, 17 wards, and numerous clinics.[1,2]	4. Prepackaging over 100 pharmaceuticals and labeling by content, dosage, and date for wards, clinics, and outpatient dispensing pharmacy.	4. Prepackaging: a. prepackaging pharmaceuticals for numerous clinics, wards, and the outpatient dispensing pharmacy; included are internal and external liquids, creams, ointments, capsules, and tablets; b. labeling these prepackaged items by content, dosage, and date.
	5. Pharmacy supply:[1,2] a. preparing orders for hospital supply division; b. preparing vault orders for restricted drugs such as narcotics; c. maintaining drug inventories; d. controlling ingredient quality; e. discarding dated items; f. performing preventive maintenance on pharmacy equipment.	5. Pharmacy supply: a. maintaining drug inventories -- level in pharmacy set by last 6-month workload and standard DOD procedures; b. supplying wards with pharmaceuticals -- wards set own inventory level, monitored and maintained by pharmacy; dispensaries order own supply; c. controlling ingredient quality; d. discarding dated items; e. new, non-standard pharmaceuticals added to pharmacy inventory by action of a Therapeutic Agents Review Committee.	5. Pharmacy supply: a. preparing standard and non-standard orders for Hospital Supply Division; b. preparing vault orders for restricted drug items such as narcotics; c. maintaining inventories; d. controlling quality of materials; e. controlling dated items; f. contacting drug representatives.[1]

I. Pharmacy Operations (Cont'd)

	Ft. Dix	Andrews	Beaufort
A. Services Rendered (Cont'd)	6. Special projects:[1, 2] a. maintaining formulary; b. keeping abreast of pharmaceutical state-of-the-art; c. coordinating pharmacy research and development; d. providing poison control information; e. preparing pharmacy newsletter.	6. Special duties (duties frequently performed outside pharmacy offices): a. performed by officers -- administrative officer of the day; special orders; inspection of patients' valuables; b. performed by enlisted men -- NCOIC's for outside details; non-commissioned officer of the day; charge of quarter personnel; attend commander's call.	6. Special duties (duties frequently performed by the pharmacy officer outside of pharmacy): a. performed by officer -- in charge of recreation facilities -- swimming pool and Recreation Room; Officer of the D y; attend Commanders Call; and conducting weekly inspection rounds.
	7. Central intravenous (IV) additive service:[1, 2] a. checking IV orders for compatibility with patient's condition and treatment including the other drugs prescribed for him; b. preparing and delivering IV solutions with additives for 6 nursing units.		
B. Hours of Operation	1. Normal duty hours:[1] a. Monday thru Friday -- 0800 to 1800 hrs.; b. Saturday -- 0800 to 1300 hrs; c. Sundays and holidays -- 1000 to 1200 hrs. 2. Special duty hours:[1] a. central IV additive service -- 0900 to 1200 hrs., Monday thru Friday only; b. prepackaging -- 0800 to 1800 hrs., Monday thru Friday only; c. emergency -- one registered pharmacist on-call during all off hours; d. housekeeping -- housekeeping personnel supervised by one pharmacy employee two nights a week from 1800 to 1900 hrs.	1. Normal duty hours:[1] a. Monday thru Friday -- 0800 to 2200 hrs.; b. weekends and holidays -- 0800 to 2100 hrs. 2. Special duty hours:[1] a. emergency -- one registered pharmacist on 24-hr. call.	1. Normal duty hours: a. Monday thru Friday -- 0800 to 1600 hrs. 2. Special duty hours:[1] a. emergency -- open on an emergency basis during off hours and on weekends, staffed by one pharmacy technician.

1. Pharmacy Operations (Cont'd)

	Ft. Dix	Andrews	Beaufort
C. Workload Flow FY69	1. General:[3] a. total outpatient units dispensed -- 772,603; b. total innatient units dispensed -- 132,310.	1. General:[1] a. total prescription units dispensed -- 466,286; hospital -- 438,579; dispensaries -- 27,707.	1. General: a. Total prescription units dispensed FY69 -- 119,989;[2] (for fluctuation in workload; see Figures I-B-1 thru I-B-3 showing prescriptions filled by quarter, FY64 thru FY69).[3]
	2. Outpatient: a. approx. 25% of total units dispensed, new prescriptions directly filled; 6%, direct refills; 54%, to dispensaries; 15%, to clinics[3] (refer to Figure I-W-1 for fluctuations in workload units by month from July 1968 to December 1969);[3] b. dispensing procedure -- patient presents prescription at one window, waits while it is filled, receives it at another window when notified via intercom.[4] c. estimated peak outpatient periods -- between 0930 and 1100 hrs., and 1400 and 1530 hrs.[4,5] (refer to Figure I-W-2 for outpatient waiting distribution by time of day).[4,5]	2. Outpatient:[1] a. prescriptions dispensed -- 420,559; b. dispensing procedure -- outpatient presents prescription to pharmacist at window in pharmacy area; patient is assigned a number; patient's number is called via intercom when prescription is filled; c. estimated peak outpatient periods -- 1000 to 1200 hrs.; 1400 to 1600 hrs.; 1800 to 2000 hrs. (Figures I-M-1 thru I-M-4 and Tables I-M-1 thru I-M-2 show pharmacy processing time for patients and prescriptions).	2. Outpatient: a. prescriptions dispensed FY69 -- 84,154 b. dispensing procedure for non-narcotic, non-controlled drugs -- patient presents prescription at window, waits until prescription is filled and name is called (see Figures I-B-4 thru I-B-7 for complete dispensing procedures including special procedures for controlled, narcotic, or contraceptive drugs); c. waiting times shown in Figure I-B-8.
	3. Inpatient: a. prescriptions dispensed -- 132,318; (refer to Figure I-W-3 for fluctuations in workload units by month from July 1968 to December 1969);[3] b. dispensing procedure -- two routine deliveries (one in the morning and one in the afternoon) by pharmacy corpsman using a hand cart; daily stock item delivery determined by outpatient dispensing personnel according to Bulk Drug Order Forms (DA-8-236) and from empty drug containers returned from wards; two-bottle system, in which one full container replenishes each empty container returned, maintains floor stock; special deliveries made to a unit upon request from doctor or nurse;[4] c. peak period for inpatient and other bulk dispensing -- 0900 to 1100 hrs.[4]	3. Inpatient:[1] a. prescriptions dispensed -- 45,727; b. dispensing procedure -- deliveries to wards Monday, Wednesday, and Friday of each week, requiring approx. 4 man-hours of work.	3. Inpatient: a. 35,835 prescriptions filled FY69;[2] b. for procedures for filling ward prescriptions, see Figures I-B-9 thru I-B-11.

I. Pharmacy Operations (Cont'd)

	Ft. Dix	Andrews	Beaufort
C. Workload Flow FY69 - (Cont'd)	4. Central IV additive service (serves 6 wards): a. IV's dispensed -- approximately 50 daily;[5] b. dispensing procedure -- standard IV's routinely ordered from Supply and Service; written order for IV's with additives received from doctors or nurses on wards pharmacist then prepares a cart of IV's with prescribed additives, checking for incompatibility with other drugs the patient may be taking; IV's are delivered via freight elevator; STAT orders (often received by phone) filled and delivered in approx. 3 minutes; c. peak hours -- approx. 85% of orders filled between 1000 and 1130 hrs.[6]		
D. Information Flow	1. For monthly volume of pharmacy communications, broken down by communication mode according to source or destination, refer to Table I-W-1. 2. For monthly volume of communication inputs and outputs according to the type of communication, refer to Table I-W-2.	1. For monthly volume of pharmacy communications, broken down by communication mode according to source or destination, refer to Table I-M-3. 2. For monthly volume of communication inputs and outputs according to the type of communication, refer to Table I-M-4.	1. For monthly volume of pharmacy communications, broken down by communication mode according to source or destination, refer to Table I-B-1. 2. For monthly volume of communication inputs and outputs according to the type of communication, refer to Table I-B-2.

Walson Army Hospital
Pharmacy Operations

TABLE I-W-1 PHARMACY INFORMATION FLOW BY SOURCE/DESTINATION

SOURCE/ DESTINATION	RECEIVED BY PHARMACY						SENT BY PHARMACY					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION		648		356		3				76		
AIR EVACUATION												
DENTAL SERVICE												
DISPENSARIES				25344						2160		
FLIGHT MEDICINE												
FOOD SERVICE												
HOUSEKEEPING												
LABORATORIES										4		
MAINTENANCE										120		
MEDICAL RECORDS										4		
NURSING SERVICE						104				16		104
OPERATING ROOM				21						8		
OUTPATIENT DEPT.		12		189061		936				488		65
OUTSIDE WORLD	1584			756			36			240104		
PERSONNEL		16		201				4		258		240
PHARMACY												
PHYSICAL THERAPY												4
PREVENTIVE MED.				3600		24				5		5
PROFESSIONAL SERV												
REGISTRAR										12		
SUPPLY		1		336				12		3289	10	50
VETERINARY MED.										4		
WARD MANAGEMENT				16368		2016				17040		90
RADIOLOGY										4		
PSYCH. & NEURO.				21						4		

TABLE I-W-2
INFORMATION FLOW BY TYPE OF COMMUNICATION

FUNCTION	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Patient Secondary	Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
INPUT											
Pharmacy 06801	6,253	210,800		34		40	11,277		34	5,419	234,199
OUTPUT											
Pharmacy 06801	1,225	214,030		204	36	121	3,392	65	427	129	246,629

Malcolm Grow Hospital
Pharmacy Operations

TABLE I-M-1

PHARMACY PROCESS TIME

Sept. 19, 1969

NO.	TO TYPIST	OUT TYPIST	START FILL	FILL COMPLETED	COMPLETED	PROCESS TIME (min.)
82053	1320	1322	1323	1324	1327	7
58	1325	1327	1327	1328	1324	(retype)
61	1327			1334	1334	7
63	1330	1331	1334	1336	1338	5 (refill)
64	1331	1333	1333	1334	1335	4
66	1334	1336	1336	1337	1339	5
72	1340	1343	1343	1344	1345	5
75	1345	1346	1346	1349	1353	8
77	1346	1351	1354	1355	1355	9 (refill)
98	1421	1424		1432	1432	11
82103	1423	1433	1433	1434	1436	13
05	1425	1434	1434	1435	1441	16
09	1428	1439	1439	1440	1445	17
14	1430*	1443	1442	1443	1447	17
19	1439	1450	1450	1452	1459	15
25	1441	1442	1459	1500	1507	26 (refill)
29	1444	1448	1450	1459	1507	23
31	1445	1500	1500	1501	1507	22 (refill)
33	1448	1501	1502	1504	1508	20
37	1451	1505	1506	1507	1510	19
43	1455	1516	1517	1518	1518	23
45	1459	1517	1517	1519	1521	22
47	1501	1520	1520	1521	1523	22
49	1501	1505	1509	1510	1525	24 (refill)
51	1502	1522	1522	1523	1525	23
54	1508	1509	1509	1510	1528	20 (refill)
56	1525	1525	1526	1526	1528	3

From the beginning of the observation there were three personnel manning this facility at various posts until 1430, at which time an additional man was added. At 1600 another man was added to fill prescriptions.

Malcolm Grow Hospital
Pharmacy Operations

TABLE I-M-1 (Cont'd)

PHARMACY PROCESS TIME

Sept. 20, 1969

NO.	TO TYPIST	OUT TYPIST	START FILL	FILL COMPLETED	COMPLETED	PROCESS TIME (min.)
43	0958	1000	1000	1002	1003	5
44	0959	1001	1001	1002	1005	6
48	1002	1004	1005	1006	1010	8
52	1008	1009	1009	1010	1012	4
53	1009	1010	1010	1011	1012	3
56	1012	1014	1016	1018	1019	7 (2 pres.)
58	1013	1016	1018	1020	1023	10
63	1015*	1020	1023	1024	1026	11
66	1016	1023	1026	1026	1028	12
69	1018	1025	1027	1028	1031	13
72	1021	1027	1028	1028	1032	11
74	1025	1029	1030	1031	1032	7
80	1029	1037	1037	1039	1042	13
82	1031	1038	1039	1040	1042	11
83	1032	1040	1040	1042	1044	12 (3 pres.)
85	1034	1042	1042	1043	1045	11
88	1036	1048	1049	1050	1059	13
91	1037	1051	1051	1052	1059	22
94	1039	1052	1052	1053	1059	20
97	1042	1053	1054	1054	1059	17
99	1044	1055	1056	1059	1101	17 (3 pres.)
02	1046	1057	1058	1059	1102	16
04	1050	1059	1100	1101	1104	14
08	1055	1100	1101	1102	1105	10
10	1059	1102	1103	1105	1107	8
14	1102	1105	1105	1107	1107	5 (refill)
18	1106	1108	1109	1110	1112	6

From the beginning of observation there were four personnel manning this facility: (1) receiving, (1) typing, (1) filling, (1) checking and dispensing. At 1015 another was added to perform the filling task. I believe the presence of an observer disturbed the system to the extent that before queue for filling could develop, personnel entered the system to remove that queue.

Malcolm Grow Hospital
Pharmacy Operations

TABLE I-M-2

PATIENTS AND PRESCRIPTIONS PROCESSED

Sept. 20, 1969

TIME	NEXT IN	NEXT OUT	QUEUE	PRES. # IN	PRES. #OUT
1000	82345	82342	3		
1008	52	46	6		
1010	54	49	5		
1015	64	54	10		
1020	70	57	13		
1025	74	58	16		
1030	82	63	19		
1035	88	76	12	113	095
1040	95	79	16	118	101
1045	82400	84	16	124	108
1050	06	87	19	133	111
1100	12	99	13	137	123
1105	17	82409	12	144	135
1110	21	19	2	146	144
1321			8		
1339			1		
1342			3		
1345			6		
1418			4		
1433			14		
1450		82116	21		
1459		82122	27		
1510		82136	30		
1525		82151	25		

Note: The next in - next out indicates the number of patients in the queue at one time since the service is strictly FIFO. The pres. # in - pres. # out indicates the number of prescriptions in the system at any one time, except for specials, such as narcotics control drugs, which were negligible during the observation period.

Malcolm Grow Hospital
Pharmacy - Operations

TABLE I-M-3
NUMBER OF COMMUNICATIONS BY SOURCE/DESTINATION

SOURCE/DESTINATION	RECEIVED BY PHARMACY						SENT BY PHARMACY					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION												
AIR EVACUATION												
DENTAL SERVICE												
DISPENSARIES												
FLIGHT MEDICINE												
FOOD SERVICE												
HOUSEKEEPING												
LABORATORIES												
MAINTENANCE								2				
MEDICAL RECORDS												
NURSING SERVICE												
OPERATING ROOM												
OUTPATIENT DEPT.		120		30484				172		6220		2278
OUTSIDE WORLD	6400			200	60	600		172		20240		
PERSONNEL												
PHARMACY												
PHYSICAL THERAPY												
PREVENTIVE MED.												
PROFESSIONAL SERV												
REGISTRAR												
SUPPLY		1				1		190		108		2260
VETERINARY MED.												
WARD MANAGEMENT		240		288		20		168		1800		2260
RADIOLOGY												

TABLE I-M-4
TYPE OF COMMUNICATIONS
INPUT AND OUTPUT

FUNCTION	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Patient Secondary	Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
INPUT	1	30440		720						20	31181
OUTPUT		29996		16	89	2	1896	3	15		32017

Beaufort Naval Hospital
Pharmacy Operations

TABLE I-B-1 NUMBER OF COMMUNICATIONS BY SOURCE/DESTINATION

SOURCE/ DESTINATION	RECEIVED BY PHARMACY						SENT BY PHARMACY					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION				3								
AIR EVACUATION												
DENTAL SERVICE				394								
DISPENSARIES												
FLIGHT MEDICINE												
FOOD SERVICE												
HOUSEKEEPING												
LABORATORIES												
MAINTENANCE												
MEDICAL RECORDS												
NURSING SERVICE				802						722		920
OPERATING ROOM				56								
OUTPATIENT DEPT.				6704						5		
OUTSIDE WORLD												
PERSONNEL												
PHARMACY												
PHYSICAL THERAPY				1								
PREVENTIVE MED.												
PROFESSIONAL SERV												
REGISTRAR												
SUPPLY										5		
VETERINARY MED.												
WARD MANAGEMENT												
RADIOLOGY												
EMERGENCY				394								

TABLE I-B-2

TYPE OF COMMUNICATIONS INPUT AND OUTPUT

PHARMACY	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Patient Secondary	Patient Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
INPUT	4843	1				2723			784		8351
OUTPUT	1649				1	5					1655

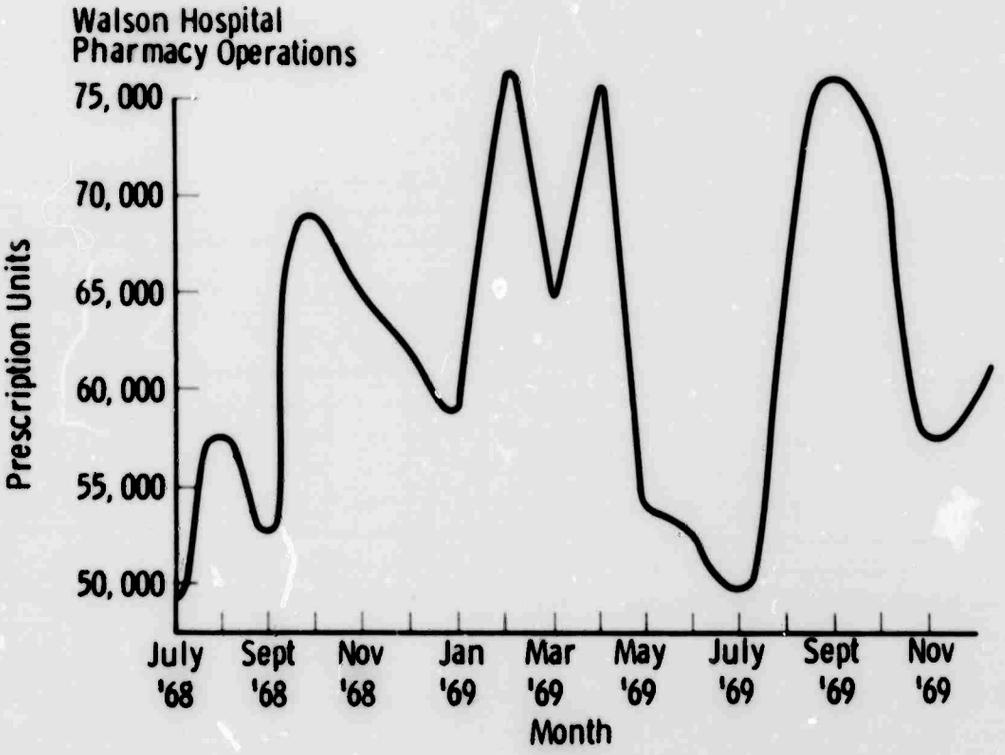

Fig. I-W-1—Fluctuation in outpatient workload units – July 1968 to December 1969[3]

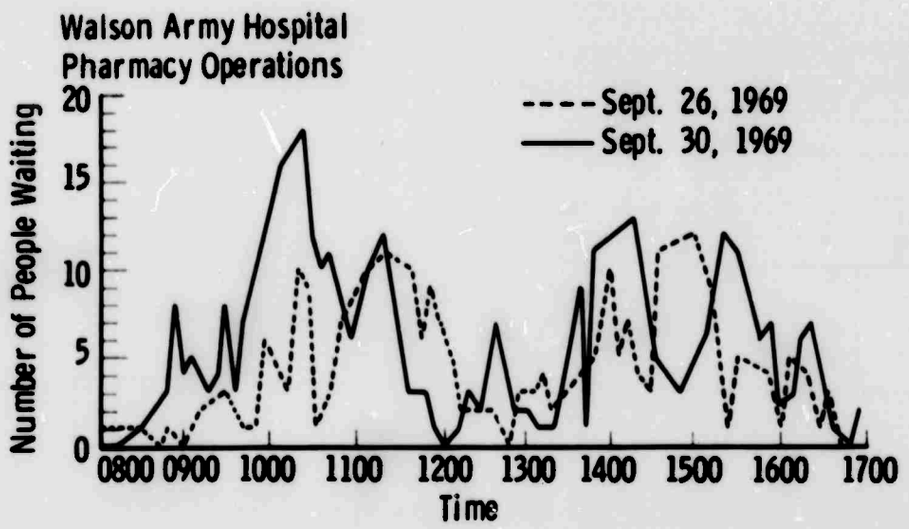

Fig. I-W-2—Outpatient waiting distribution—September 26-30, 1969

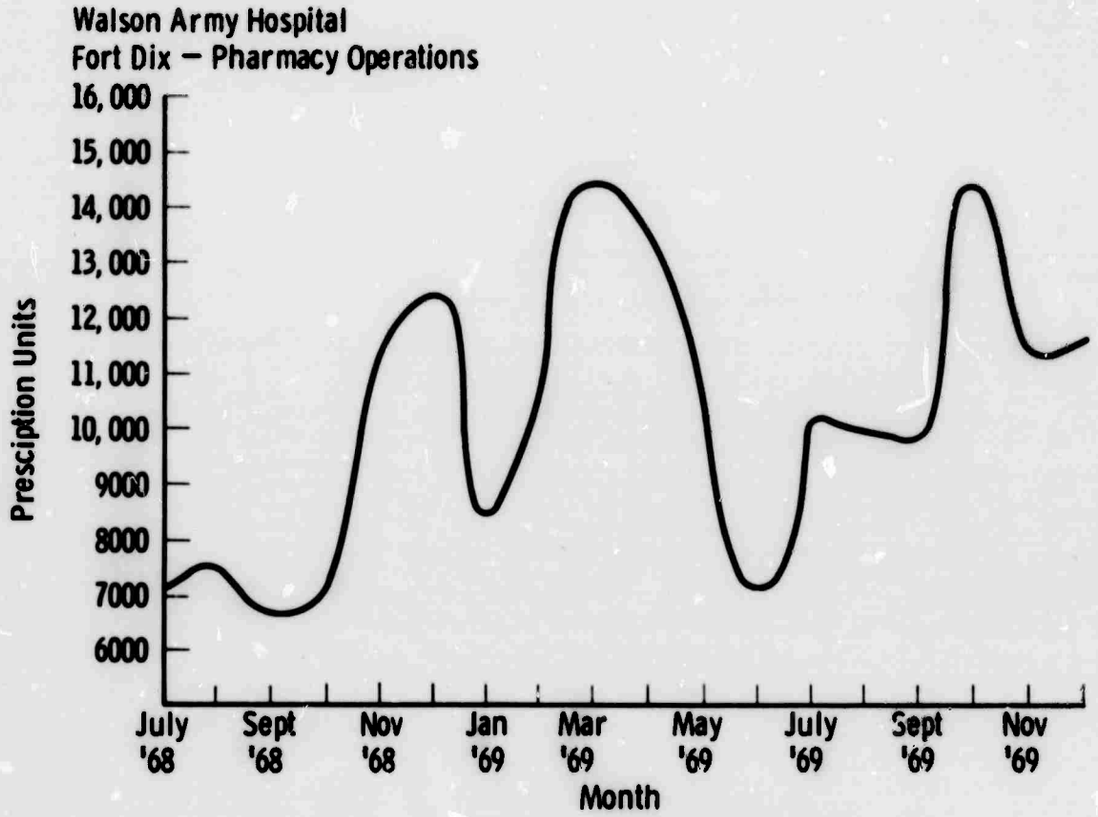

Fig. I-W-3—Fluctuations in inpatient workload units — July 1968 to December 1969

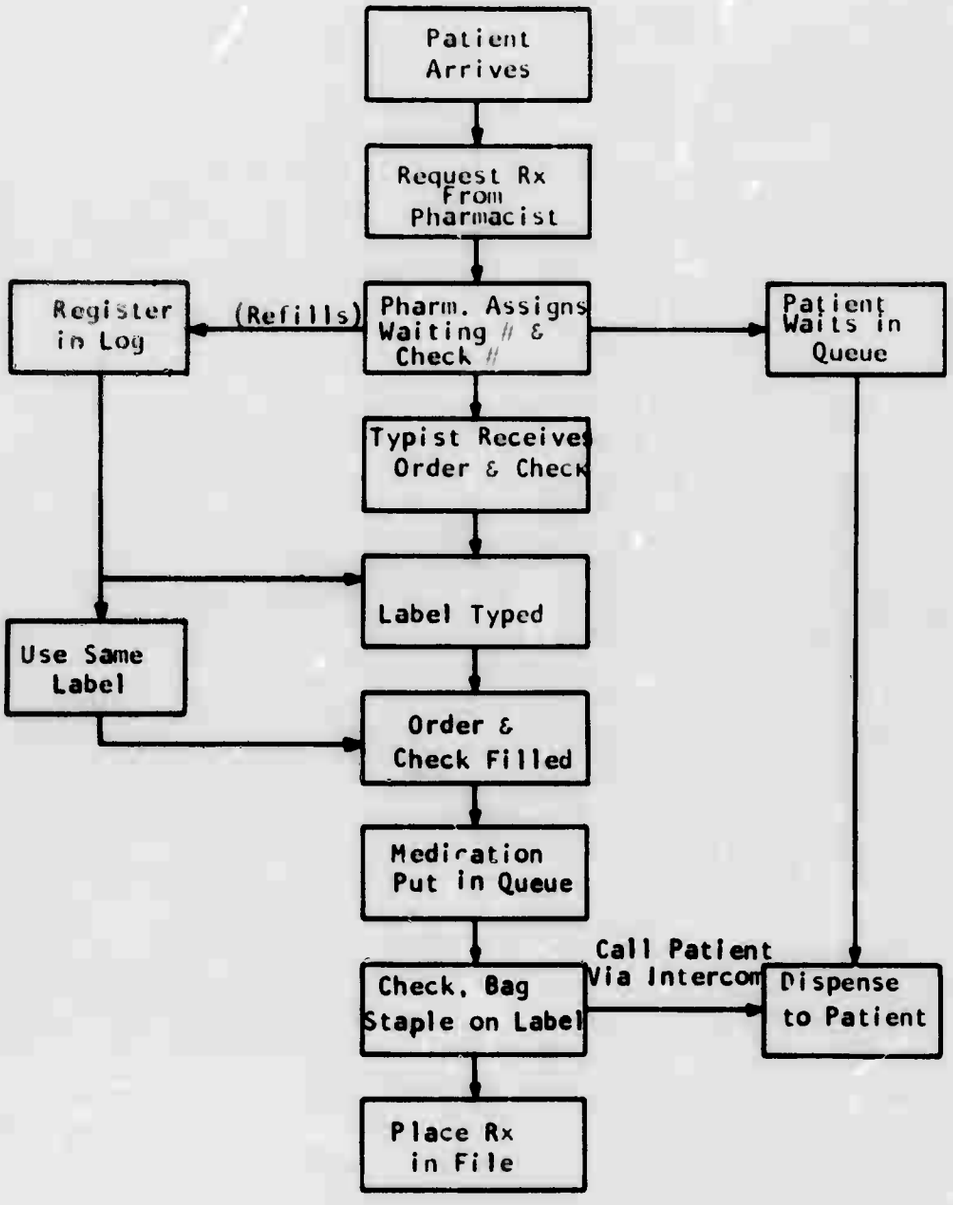

Fig. I-M-1—Dispensing of Pharmaceuticals to outpatients, pharmacy flow chart

Malcolm Grow Hospital
Pharmacy Operations

FIGURE I-M-2

Dwg. 859A593
Pg 1 of

Subject Charted: Pharmacy - Standard Prescription Procedure

Chart Begins _____ Chart Ends _____

Present Method _____ Proposed Method _____ Date _____

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist / Time	TIME Delay / Storage	NOTES
1. Arrival of patient				
2. Wait in reception queue				
3. Pharmacist review prescription				
4. Pharmacist gives waiting number				
5. Pharmacist stamps number on pres				
6. Sends patient to waiting area				
7. Deposits prescription for typist				
8. Wait in queue for typing				
9. Typist creates label for each item				Questions are frequently
				generated and resolved
				here
10. Place in queue for filling				
11. Pickup for filling by tech.				
12. Go to appropriate bin for med.				
13. Go to appropriate bin for container				If necessary, particularly
				pills
14. Count out number of pills				If applicable
15. Insert in container				
16. Place label on container				
17. Place in queue for dispensing				
18. Wait in queue for dispensing				
19. Pickup prescription by queue #				
20. Check drugs against prescription				
21. Place drugs in bag				
22. Staple check to bag				
23. Place prescriptions in file				
24. Page patient				
25. Check patient number				
26. Deliver drugs				

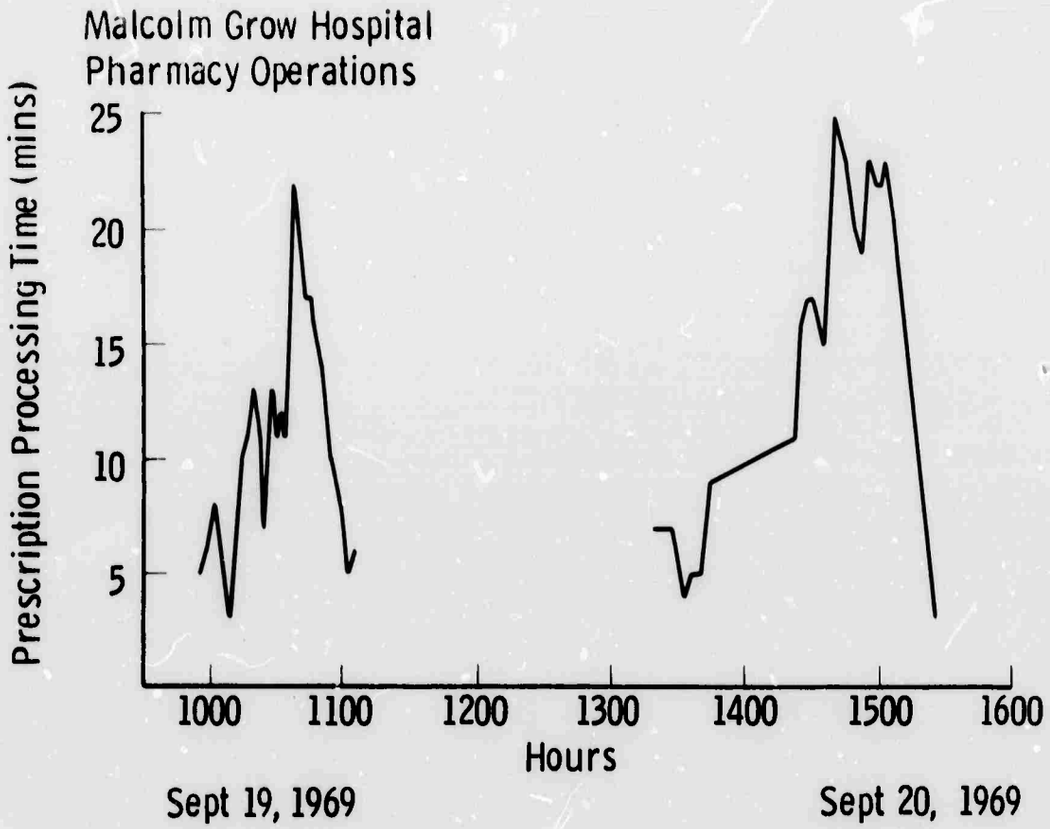

Fig. I-M-3--Processing time

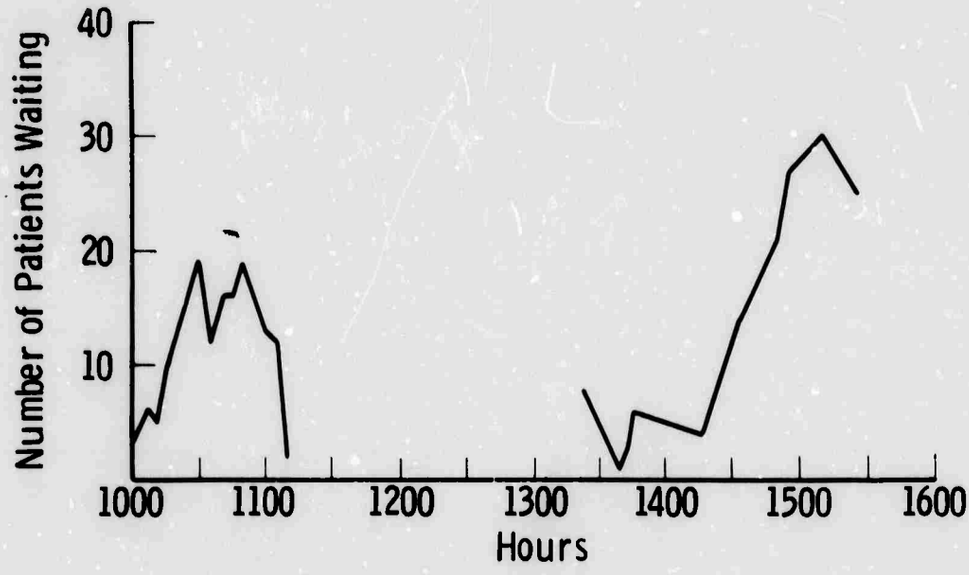

Fig. I-M-4—Patients waiting in queue

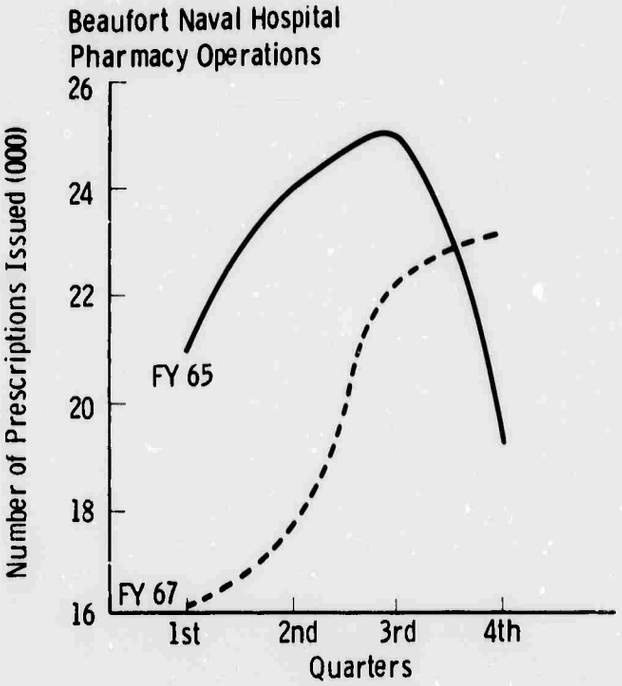

Fig. I-B-1—Number of prescriptions issued per quarter

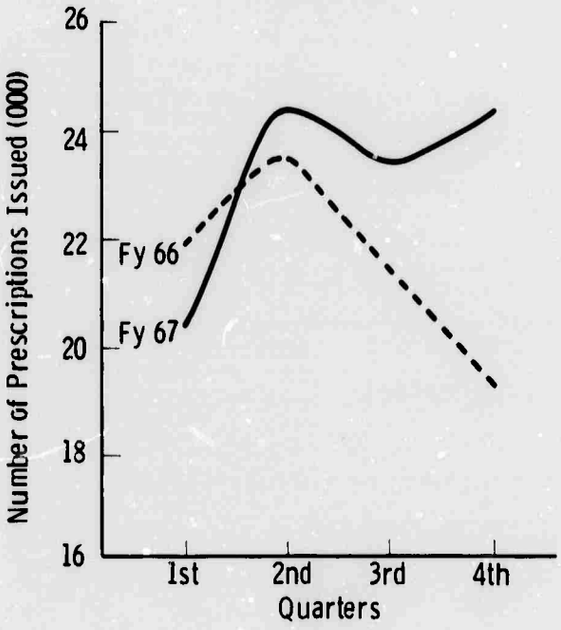

Fig. I-B-2—Number of prescriptions issued per quarter

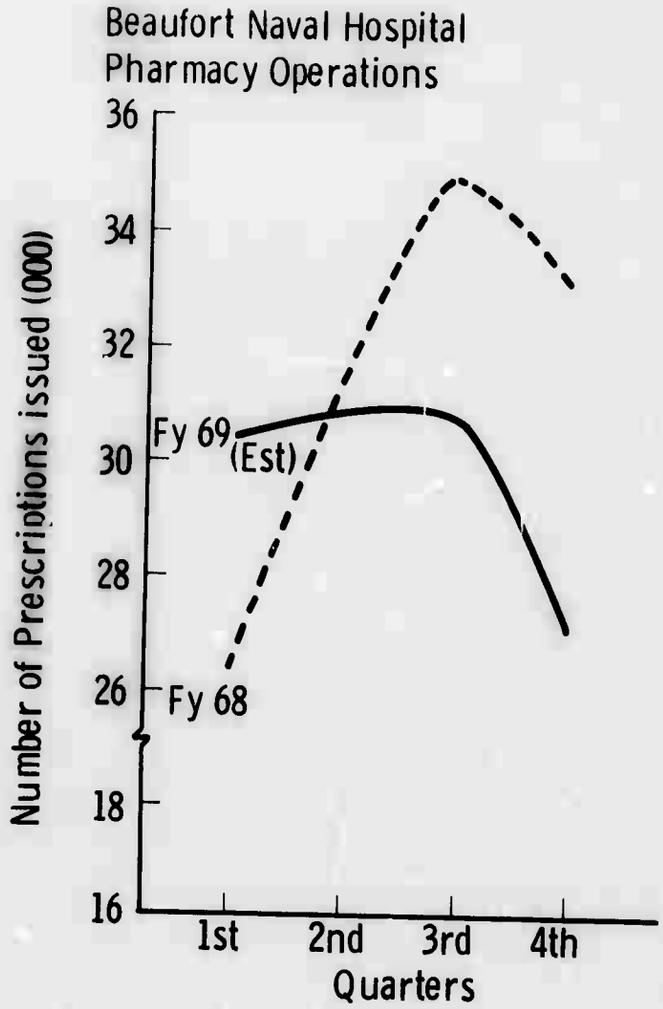

Fig. I-B-3—Numbers of prescriptions issued per quarter

Beaufort Naval Hospital
Pharmacy Operations

Figure I-B-4

Dwg. 859A593
Pg 1 of 2

Subject Charted Filling an outpatient prescription - non-narcotic, non-control

Chart Begins Patient arrives at pharmacy window Chart Ends Prescription Filed

Present Method X Proposed Method Date 9-26-69

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist / Time	TIME Delay / Storage	NOTES
1. Patient arrives at window				
2. Presents prescription				
3. Shows I.D.				
4. Waits in lobby while prescription				
is filled				
5. Corpsman (or pharmacist)				
takes prescription and types label				
6. Stamp label and prescription				If prescription is
with reference number				dispensed in more than
				one vial, the prescription
				is stamped once for each
				vial. Thus, prescriptions
				dispensed will be higher
				than actual prescriptions
				written by doctors.
7. Puts prescription on counter				
8. Another corpsman fills				
prescription				Can check for error.
9. Attaches label to bottle				
10. Patient's name is called				
11. Drug is given to patient				
12. Prescription is put in outpatient				A new prescription is
bin beside window				needed for all refills
				except for "birth control
				pills", which may be
				renewed. (See Flow
				Process Chart -
				"Dispensing contracep-
				tives"). Control drugs
				are kept in separate
				bin.
13. At 4:30 - 5:00 put in file bin				On top of cabinet.

Beaufort Naval Hospital
Pharmacy Operations

Figure I-B-5

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Pg 1 of 1

Subject Charted Filling outpatient prescriptions - Control drug

Chart Begins Patient Arrives at Pharmacy Window Chart Ends Prescription Filed

Present Method X Proposed Method _____ Date 9-26-69

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist / Time	TIME Delay / Storage	NOTES
1-11. See previous flow Fig. I-B-4				
12. Put in bin at extreme right				
hand side of counter				
13. At 4:30 - 5:00 takes to				
controlled drug medication				
record (on counter in AO2)				
checks to see that patient is				
not getting too many drugs.				
14. If questionable, card is turned				
endwise in file				
15. If misuse, send notice out				
to doctor.				
16. Takes back to AOl and				Top of cabinet
files				

Beaufort Naval Hospital
Pharmacy Operations

Figure I-B-6

Dwg. 859A593
Pg 1 of 2

Subject Charted: Obtaining narcotics from pharmacy, outpatient

Chart Begins: Patient Arrives at Pharmacy Window Chart Ends: Prescription Filed

Present Method: X Proposed Method: Date: 9-26-69

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist / Time	TIME Delay / Storage	NOTES
1-5. Same as previously				
6. Prescription and label are				Red stamp
stamped with a different				
sequence number				
7. One corpsman usually does				
entire narcotic filling -				
signs his name, lot #,				
and date on prescription				
8. Stamp on back of prescription -				
patient must sign to acknowledge				
receipt of drug				
9. Prescription put in small				Unless exempt narcotic -
safe at left of window				filed in separate box just
				to the right of window
10. Periodically, one corpsman				and put up on top of
takes prescriptions from				cabinet.
safe, enters in narcotic				
reference file.				
11. Marks date posted in file on				
back of prescription.				
12. Put in large safe.				
13. During the first week of				
the next month -				
inventory. 3 man				
narcotic board				

Beaufort Naval Hospital
Pharmacy Operations

Figure I-B-7

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Subject Charted Filling contraceptive prescriptions (outpatient)

Chart Begins Patient Arrives at Pharmacy Window Chart Ends Prescription Filed

Present Method X Proposed Method _____ Date 9-26-69

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist / Time	TIME Delay / Storage	NOTES
1-4. See previous flow				
5. Types label				Separate typewriter,
				special label
6. Stamps prescription and				
label - with a third				
stamp (separate from				
narcotics and regular)				
7. One corpsman usually				Majority done on
fills and delivers.				Tuesday
8. Filed on birth control				afternoon - Birth
counter and at 4:30				control clinic.
in file to the left of				
window				
9. These are the only				
prescriptions which				
can be refilled				
10. For refill - look up				No new label
stamped number,				needed, just circle
stamp on back of				different numbers
prescription with new				on label.
number and dated.				

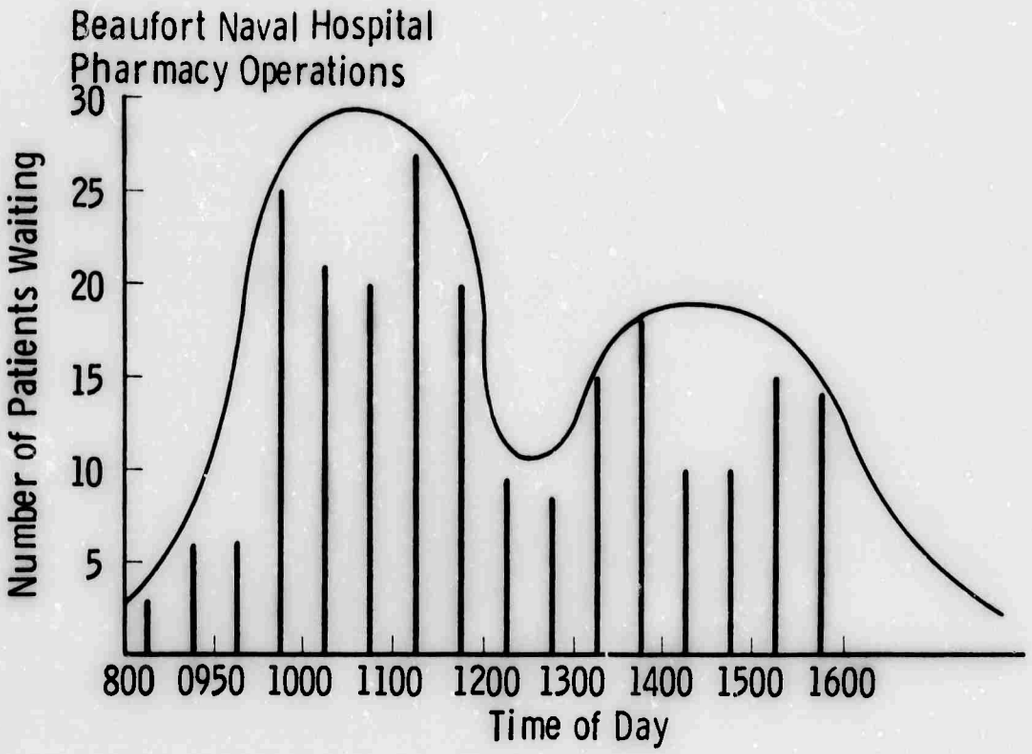

Fig. I-B-8—Pharmacy patient waiting profile*

* One day observation on 26 September 1969.

Beaufort Naval Hospital
Pharmacy Operations

Dwg. 859A533
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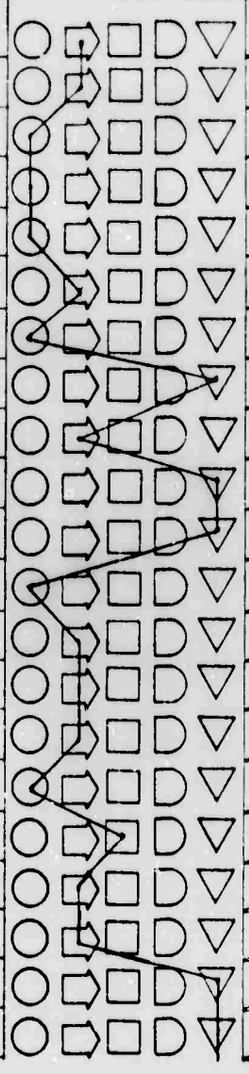
Figure I-B-9

Subject Charted Filling ward prescriptions - non-narcotic, non-control

Chart Begins Corpsman Arrives With Ward Drug List Chart Ends Ward Receipt Filed

Present Method X Proposed Method _____ Date 9-26-69

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist	TIME Delay	NOTES
1. Corpsman brings down list of drugs needed				
2a. If pharmacy corpsmen not busy, they fill immediately				70-80% filled immediately, according to Corpsman
2b. Give back to corpsman				
2c He signs receipt, list is put in bin, and corpsman takes to ward				Corpsman cannot sign for narcotics or control drugs - see separate flow chart
3a. If pharmacy busy - request is left				
3b. Filled by 1:00 p.m.				
3c. Delivered by pharmacy corpsmen at 1:00 to wards				Takes 15-20 minutes; used to take 1-1/2 hrs. when they held all wards-until 1 o'clock
3d. Ward corpsman or nurse signs receipt				
3e. Receipt taken back to pharmacy				
3f. Filed in bin				
4. When bin is full, put in				

Beaufort Naval Hospital
Pharmacy Operations

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Figure I-B-10

Subject Charted: Ward Prescriptions - Narcotics

Chart Begins: Doctor Writes Narcotic Prescription Chart Ends: Prescription Filed

Present Method: X Proposed Method: _____ Date: 9-26-69

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist / Time	TIME Delay / Storage	NOTES
1. Doctor fills out prescription for narcotic				
2. Brought to pharmacy by ward corpsman				If needed before 1300, nurse will take down and sign for it - this is rare.
3. Left on counter				
4. Stamped with narcotic stamp				
5. Pharmacy delivers narcotic and form 1398 which nurses fill out as they dispense drugs				
6. Pharmacy corpsman enters delivery of narcotic in ward log book				
7. Nurse signs on back of prescription.				Corpsman cannot sign.
8. Prescript. brought back to pharmacy and filed in small safe-handled thereafter with regular narcotic scripts.				

Beaufort Naval Hospital
Pharmacy Operations

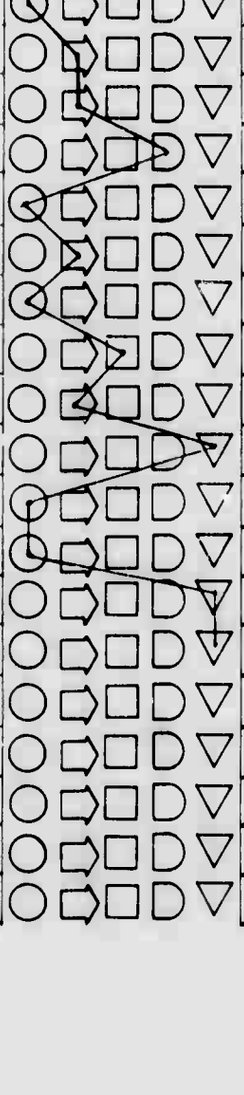
Figure I-B-II

Dwg. 859A593
Pg_ of_

Subject Charted: Ward Prescriptions - Control drugs

Chart Begins: Doctor Fills Out Prescription Chart Ends: Prescription Filed

Present Method: X Proposed Method: Date: 9-26-69

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist / Time	TIME Delay / Storage	NOTES
1. Doctor fills out prescription				
for narcotic				
2. Brought to pharmacy by				
ward corpsman				
3. Left on counter				
4. Filled before 1300				Not given a
5. Delivered at 1300				sequencing number.
6. Nurse signs back of				
prescription				
7. Corpsman brings back				
8. Files in bin				
9. At end of month, scripts				If they must be looked
taken and filed in a				up, control drug
bunch with numbered				file is searched
outpt. control drugs.				until a bunch with
				no numbers are
				found.

II. PHARMACY RESOURCE UTILIZATION

	Walson Army Hospital (WAH) -- Ft. Dix	Malcolm Grow Hospital -- Andrews AFB	U.S. Naval Hospital -- Beaufort
A. Staffing	1. Nineteen employees and one volunteer[1, 2] (refer to Table II-W-1 for breakdown of personnel by position, number, pay grade and hours worked per week). 2. All enlisted men (E4 to E6) but two are registered pharmacists; since most have no prior hospital experience WAH provides hospital orientation.[1] 3. One civilian pharmacist supervises in-patient dispensing; the other, outpatient dispensing.[1]	1. Staff of 2 officers, 14 enlisted men. 2. Also provides the Bolling Dispensary and the Pentagon Dispensary with a pharmaceutical technician (see Table II-M-1). 3. Refer to Table II-M-2 for breakdown of personnel by position, number, pay grade, hours worked per week, and responsibilities.	1. Seven employees; 5 permanent; 2 watch standers, not permanently assigned to department (refer to Table II-B-1 for breakdown of personnel by title, pay grade, number employed in each position, and hours worked per week). 2. Training: a. 3 pharmacy technicians have taken the 8-month Navy course and have good academic backgrounds, but OJT takes 6 months more to make them completely functional in Beaufort environment.
B. Facilities	1. Location: a. pharmacy located in building addition to first floor adjacent to clinics; b. IV additive center located on second floor in CMS area. 2. Floor space: a. total floor space -- approx. 2,991 sq. ft.;[4] b. refer to Table II-W-2 for breakdown by room of sq. ft. and percentage of total area.[4]	1. Location: a. pharmacy located on first floor; b. two storage areas in the basement are assigned to pharmacy. 2. Floor space is approx. 2,250 sq. ft.[1]	1. Location: a. pharmacy is on first floor, opposite admissions and adjacent to patient affairs. 2. Floor space is approx. 1320 sq. ft.[1] (see Table II-B-2 for areas by room and percentage of total) and divided into 4 major areas: a. area 1 -- waiting area for prescriptions; b. area 2 -- prescription preparation and dispensing area; c. area 3 -- compounding area and storage for open purchase items, narcotics, etc.; d. area 4 -- Chief Pharmacist's and assistant's work area.
C. Equipment	1. The following is a partial list of equipment, its location and use:[2] a. blenders, distilling apparatus, filters, pumps, kettles, mixers, tanks, and hood are located in the manufacturing and bottling machine area; they are generally fixed pieces of equipment used in manufacturing liquids, ointments, and creams; b. the special compound room is used for storing manufactured items; c. the bottle filling machines, label-making machine, and tablet and capsule counters are located in the packaging and labeling room. They are used by a group of E1 and E2 Medical Holding Company personnel in preparing some pre-packaged medications. 2. Refer to Appendix 1, Report 011, for a complete list of all pharmacy equipment worth over $200; also shown are quantities and dollar values.	1. The following is a partial list of equipment, its location and use: a. blenders, distilling apparatus, filters, pumps, kettles, mixers, and tanks are located in the drug storage and dispensing areas; b. office equipment is located in the administrative area; c. see Table II-M-3 for a partial list of major equipment; refer to Appendix I, Report 011, for a complete list including quantity and dollar value of all equipment worth over $200.[2]	1. Major pieces of equipment include the standard pharmaceutical distiller, flasks, blenders (including 2 Waring blenders), a Barnstead still, and a vacuum filler. Equipment also includes a supply cart, an ointment press, a label maker, and a pill counter. 2. Equipment utilization: for degrees of utilization of the principal pieces of equipment, see Table II-B-3.[2]

	Ft. Dix	Andrews	Beaufort
D. Work Sampling Studies	1. Observation period: a. one full day (September 29, 1969) to observe and record general procedures (layout, work flow, and patient flow); b. 2 full days (September 30, and October 1, 1969) devoted specifically to work sampling study in which 20 pharmacy employees in 10 job categories and the facilities and equipment related to each job were observed. 2. Procedure: a. task performed by each employee and area of facility in which each task is performed was recorded at random times on special data sheets; b. tasks and areas then grouped and coded for meaningful analysis; c. data keypunched and processed by computer for analysis (see Appendix X for graphic display of data showing percent of time spent by employee type according to task or room, and Appendix II for data processing results which yielded these percentages).		1. Observation period: a. 2 full days (September 24 and 25, 1969) devoted specifically to work sampling study in which 5 pharmacy employees in 5 job categories and the facilities and equipment related to each job were observed. b. one full day (September 26, 1969) devoted to observing pharmacy patient flow. 2. Procedure: a. task performed by each employee and area of facility in which each task is performed; recorded on special data sheets; b. tasks and areas then grouped and coded for meaningful analysis; c. data keypunched and processed by computer for analysis (see Appendix X for graphic display of data showing percent of time spent by employee type according to task or room and Appendix II for data processing results which yielded these percentages).

Walson Army Hospital
Pharmacy Resource Utilization

TABLE II-W-1

PHARMACY PERSONNEL

Function	Position	Pay Grade	Quantity	Hrs./Wk.
Administration	Chief	O-3	1	40
	NCOIC	E-6	1	44
	Clerk-Typist	GS-3	1	40
Manufacturing	Supervisor	E-5	1	44
	Pharmacist	E-4	1	44
	*Prepackagers	E-3	9	28
Out-Pt. Dispensing	Supervisor	GS-9	1	40
	Pharmacist	E-5	1	44
	Pharmacist	E-4	3	44
	Clerks	E-3	2	44
Inpatient Dispensing	Supervisor	GS-11	1	40
	Pharmacists	E-4	3	44
Special Projects	Pharmacists	E-5	1	44

TABLE II-W-2

FACILITIES BREAKDOWN BY SQUARE FEET

AREA	SQUARE FEET	PERCENT OF AREA
Chief's Office	109	3.6%
Records Room	64	2.1
Refrigerator Room	95	3.2
Vault	76	2.5
Packaging Room	158	5.3
Mfg. - Bottling Room	615	20.6
Special Compounds Room	126	4.2
Supplies Rooms (3)	788	26.3
Output Dispensing	486	16.2
Waiting Area	410	13.7
IV Additive Center	64	2.1
Total	2991	100.0%

Malcolm Grow Hospital
Pharmacy Resource Utilization

TABLE II-M-1

PERSONNEL

NUMBER	TITLE	PAY GRADE
1	Chief of Svc.	0-5
1	Assistant Chief of Svc.	0-2
1	Superintendent Pharmacy Svc.	E-9
1	NCOIC Pharmacy	E-7
2	Pharmacy Tech.	E-7
3	Pharmacy Tech.	E-5
1	Pharmacy Tech.	E-4
1	Pharmacy Tech.	E-2
5	A.P.R. Pharmacy Spec.	E-3
Total 16		
1-2	Ambulatory Patients 35 - 40 Hr./Wk. Each	
	Pharmacy - Bolling Dispensary	
1	Pharmacy Tech.	E-7
	Pharmacy Pentagon	
1	Pharmacy Tech.	E-5

Malcolm Grow Hospital
Pharmacy Resource Utilization

TABLE II-M-2

PERSONNEL HOURS AND DUTIES

TITLE	PAY GRADE	NUMBER OF EMPLOYEE S	HR/WK	HR/WK OTHER DEPTS.	RESPONSIBILITIES
Chief of Pharmacy	F/C	1	40	15	Control Supervision
Asst. Chief of Phar.	1st LT	1	40	5	Supervision
Supt. of Phar.	CM Sgt.	1	40	5	Direct Supervisor of Tasks, Admin.
NCOIC Pharmacy	M Sgt.	1	40	5	Administration
Phar. Technician	M Sgt.	2	80	5	Supt. Inpats., Supt. Outpats.
Phar. Technician	S Sgt.	1	40	5	Control of Drugs
Phar. Spec.	S Sgt.	3	120	5	Manufact., Supply, and Dispense Drugs
Phar. Spec.	Arm. 1st C	1	40	5	Outpat. Disp., OJT's Training
A print Phar. Spec.	Arm. 2nd C	5	200	5	Outpat. Disp.

Malcolm Grow Hospital
Pharmacy Resource Utilization

TABLE II-M-3

PARTIAL LIST OF MAJOR EQUIPMENT

DESCRIPTION	PORTABLE OR FIXED	QUANTITY	OPERATING HOURS	PURCHASE VALUE
Typewriter	P	6	14	$ 417
Delivery Truck	P	1	8	490
Refrigerator	F	2	14	260
Liquid Filter	F	1	8	300
Absorption Filter and Task	F	1	8	871
Distiller 5 Gal.	F	1	8	301
Rotary Electric File	F	1	14	3,232
Minimum Counter	F	1	14	1,258
Calculating Machine	P	1	8	417

TABLE II-B-1

PERSONNEL MATRIX

TITLE	PAY GRADE	NUMBER EMPL.	HOURS/ WEEK	HOURS/WEEK OTHER DEPTS.
Chief Pharmacist	0-3	1	40	16 Administrative Watch
Staff Pharmacist	0-2	1	40	16 Administrative Watch
Pharmacy Technician	E-5	2	60+	Including 16 hrs. Duty Watch Every 5 Days; 24 hr. Duty Watch on Weekends
Pharmacy Technician	E-4	1	60+	
Watch Stander	E-5	2	16 per duty	Every 5 Days

TABLE II-B-2

BREAKDOWN OF FLOOR SPACE BY AREA

AREA	SQUARE FEET	PERCENT
Waiting Room	240	18.2
Pharmacy Prep. Room	740	56.0
Four Closets	100	7.6
Office With Two Desks	240	18.2
Total	1320	100.0

TABLE II-B-3

EQUIPMENT UTILIZATION

EQUIPMENT	LOAD Under, Normal, or Over utilized	Cost	COMMENTS
Waring Blender 1 gallon	N	$ 265	
Waring Blender 1 qt.	N	(under $200)	
Barnstead Still	O	$ 329	
Vacuum Filler	U	$ 265	This piece of equipment is only good if dealing with a very large volume.
Hobart Mixer 5 qt.	N	$ 238	
Biological and pharmaceutical Refrigerator	N	$2400	

III. PHARMACY - FUNCTIONAL COSTS

	Walson Army Hospital (WAH) -- Ft. Dix	Malcolm Grow Hospital -- Andrews AFB	U.S. Naval Hospital -- Beaufort
A. Total			
1. Cost:	$688,130 annually.	$634,964 annually.	$164,502 annually.
2. Source:	a. refer to Tables III-W-1 and III-W-2 for elemental figures from which total cost derived and to Appendix VII for functional cost breakdown summary sheet.	a. refer to Table III-M-1 for elemental figures from which total cost derived and to Appendix VII for functional cost breakdown summary sheet.	a. refer to Appendix VII for functional cost breakdown summary sheet.
B. Personnel			
1. Cost:	$127,316 annually: military -- $99,590; civilian -- $27,726; function -- $123,909; non-function -- $3,407.	$111,068 annually: function cost -- $105,058; non-function cost -- $6,010.	$43,473 annually:
	a. Table III-W-2 shows staffing figures used for calculating personnel costs in Pharmacy. These figures were obtained via a "head count" in Pharmacy by a (illegible) observer. b. (illegible) obtained pay rates for each labor grade from "Standard Rates for Military Personnel Services," AFM 177-10 (C91) for Military Personnel and schedule established by DoD 5 June 1968 directive 5120.39 for civilian personnel, and added 7.6% in fringe benefits for civilian labor. c. WAH determined costs from MEDDAC TDA for civilian personnel; from DA [illegible] 2472 (Personnel Information Roster, September 30, 1969) for enlisted personnel; and from a special staffing report prepared by Personnel Division Chief for officers.	a. function cost -- the number of people assigned to pharmacy was determined from interviews with the NCOIC of pharmacy; pay rates for military personnel were taken from AFM 177-101 (C91); civilian rates were extracted from U.S.A.F. salary rates July 1968 (Appendix IX); benefits for civilians were determined from information given in interview with (illegible) military consultant. b. non-function cost (time spent by employee outside the function) • housekeeping -- from hours spent by function personnel in housekeeping chores, (estimated by interviewee); • formal training - TDY time for training purposes, from professional activities report FY69; • OJT -- from hours per trainee and instructur, estimated by interviewee, changeover rate by function, from business office. c. personnel costs for FY69 are listed in Appendix IX.	a. Beaufort name list for October 1969 (computer run for payroll accounting), checked against interviews and observations.
C. Supplies			
1. Cost:	$554,698 annually.	$517,802 annually.	$118,356 annually.
2. Source:	a. cumulative cost run for FY69 showing resource cost by expense item for each function, received by WAH Management Services Division from Post Data Processing.	a. from report of Medical and Non-medical Supply Expense FY69. b. Central Sterile Supply (CSS) -- added into Medical -- [illegible]rorated from annual CSS cost for entire medical center, given in Report of Medical and Non-medical Supply Expense FY69; 2 months' pharmacy orders and direct issues data used as basis for calculations.	a. FY69 Account 310 listing from Fiscal and Supply; "T1" and "T7" codes under SFC Code 4G00, "Pharmacy."

III. Pharmacy - Functional Costs (cont'd.)

	Ft. Dix	Andrews	Beaufort
D. Maintenance			
1. Cost:	$1,116 annually: for Ft. Dix Post Engineering only; no charges for WAH medical maintenance.	$3,468 annually: medical -- $56; non-medical -- $3,412.	$1,952 annually:
2. Source:	a. Post Engineering -- total annual costs of labor and material obtained in an interview with Post Engineering; estimate then obtained on percent of their total work performed for WAH; 3-month sample of Post Engineering requests taken to distribute the percentage of cost allocated to WAH among its functions; see Appendix IV for all calculations.	a. medical -- labor and parts costs from maintenance chits for entire FY69. b. non-medical -- prorated from annual non-medical maintenance cost for entire medical center, given in Medical Expense Report CY69; one month's pharmacy chits used as basis for calculations. c. All maintenance costs from Medical Expense Report CY69.	a. non-medical maintenance -- prorated by total square footage as a percentage of Account 310, SFC Code 7150, which lists total maintenance costs for the hospital building only (e.g., excludes grounds, housing, medical maintenance, etc.). b. Medical maintenance -- estimated by counting a 12-month sampling of medical repairman's chits for parts costs, and by prorating salary.
E. Housekeeping			
1. Cost:	$5,000 annually: housekeeping by contract only; no housekeeping done by pharmacy staff.	$4,658 annually: janitorial -- $2,325; staff -- $2,333.	$566 annually.
2. Source:	a. civilian housekeeping agency's contract with WAH for FY69; total annual cost to WAH ($431,000 for FY69) was allocated to pharmacy on a basis of percentage of total sq. ft. cleaned (1.16%). b. see Appendix V for all calculations.	a. janitorial -- cost of janitor service by sq. ft. b. staff -- time spent by staff in housekeeping, estimated by NCO of function.	a. janitorial -- time spent by janitors in pharmacy was obtained from the Janitorial Work Distribution Chart. b. by staff -- estimated from interviews and observation.
F. Training			
1. Cost:	$3,407 annually: on-the-job training only; no formal training for pharmacy staff.	$3,978 annually: OJT -- $3,677; training department -- $301.	$1,244 annually:
2. Source:	a. a portion of the total function personnel cost was allocated to training on the basis of estimates made by observers of the amount of time needed for a student to reach 90% efficiency in each job class; these estimates were factored into a learning curve equation to arrive at OJT coses (see Appendix VI, OJT Costs).	a. OJT -- see personnel, OJT training above. b. training department -- the cost of training department personnel allocated to each function was determined first by finding the percentage of the total training staff allocated to a given function, and then by calculating this percentage of administrative personnel salaries.	a. formal -- from announcements of training sessions, lectures, schedules, etc. b. OJT -- from interviews and observation; c. training department -- prorating of the salary of the corpsman in charge of training among the functions according to the number of corpsmen receiving training in each function.

III. Pharmacy - Functional Costs (cont'd.)

	Ft. Dix	Andrews	Beaufort
G. Capital Equipment			
1. Cost:	$26,965 : standard -- $3,613; non-standard -- $23,352.	$10,841.	$3,497.
2. Source:	a. survey of WAH property book taken December 8-9-10, 1969, in which two types of equipment were tallied: • equipment with a unit price greater than $200; • equipment with a unit price less than $200 but for which the number of units in the function brought the total dollar figure above $200. b. there are two types of WAH equipment price records: • standard equipment, for which the price on file represents current market value; • non-standard equipment for which the price on file is original purchase price.	a. supply inventory data (using activity document list PCN-43165A, 30 September 69) of all items over $190 and 3 or more items totaling $180.	a. cost of equipment over $200, from Beaufort Property Control Listing (7/14/69 computer run), verified by observation.

Walson Army Hospital
Pharmacy Functional Cost

TABLE III-W-1

FUNCTIONAL COSTS

ITEM	(W) DETERMINED COSTS
Direct Charges	
Military Labor	$ 99,590
Civilian Labor	27,726
Supplies - Medical	554,698
Supplies - Non-medical	0
Maintenance - Post	1,116
Medical	0
Miscellaneous Charges	1,194*
Prorated Charges	
Housekeeping	5,000
Equipment	
Cost of Standard	3,613*
Cost of Non-standard	23,352*
Total Charges	688,130

* Not included in Functional Cost.

Walson Army Hospital
Pharmacy Functional Cost

TABLE III-W-2

FUNCTIONAL COST

PERSONNEL		MISCELLANEOUS	
Assigned No. and Grade	Actual No. and Grade	Item	Cost
1 - 03	.8 - 03	Transportation	$158
1 - E6	1 - E6*	Other Contracted	50
3 - E5	3 - E5*	Equipment	980
9 - E4	8.5 - E4*		
2 - GS9	1 - GS9		
1 - GS3	1 - GS3		
	1 - GS11		
	7.5 - E3		
Military $77,810.00	Military $99,590.80		
Civilian $24,087.00	Civilian $25,720.00		

* Percent of time

Malcolm Grow Hospital
Pharmacy Functional Costs

TABLE III-M-1

FUNCTIONAL COSTS

ITEM	(W) DETERMINED COSTS
Personnel	$111,068
Equipment (over $200 - aquisition cost)	10,841
Supplies	
Medical	517,050
Non-Medical	470
Maintenance	
Medical	56
Hospital	3,412
Housekeeping	192
(Janitorial services only)	2,133
Other	
Central Sterile	282
Operation of Utilities	1,205
Contracts	—
Maintenance	834
Heating Personnel	424
Travel	358
Total	
OJT	2,677
Housekeeping	2,333

I. PHARMACY -- OPERATIONS SOURCE SHEET

Walson Army Hospital

1. Interview with Chief of Pharmacy.
2. Manpower Utilization Survey Report (DA 1404) with WAH pharmacy attachment for FY69.
3. DD Form 444, Outpatient Report.
4. (W) observations, September 30, 1969.
5. (W) observations, September 26, 1969.
6. From estimate by corpsman (a registered pharmacist) in IV additive center.

Malcolm Grow Hospital

1. Interview NCOIC of Pharmacy.

Beaufort Naval Hospital

1. NAVHOSBFT P-5400 (Organization Manual).
2. Naumed 1454, FY69.
3. From Data Pack; FY69 from interview estimate.
4. From one-day observation, September 26, 1969.

II. PHARMACY -- RESOURCE UTILIZATION SOURCE SHEET

Walson Army Hospital

1. Interview with Chief of Pharmacy.
2. (W) observation, September 26-30, 1969.
3. Pharmacy hand receipts and WAH Property Book.
4. Scaled photographs of WAH floor plans, provided by Chief of Registrar Div.

Malcolm Grow Hospital

1. Interview, NCOIC of Pharmacy.
2. Appendix I, Report 011.

Beaufort Naval Hospital

1. From Hospital blueprints, Scale: 1/4" = 1', 0".
2. From interview estimates.

RADIOLOGY

WALSON ARMY HOSPITAL (WAH) -- FORT DIX

Mission

Radiology at Walson Army Hospital is committed to providing diagnostic and therapeutic radiological services as required in the examination, care, and treatment of patients.* These requisite services include X-ray processing and interpretation, radioisotope treatments, and diagnostic X-ray and fluoroscopic examinations. Directly related are the personnel training, film and equipment maintenance, report preparation and submission, and records maintenance which support the primary objective. No radiation therapy is performed at WAH; patients requiring such treatment are referred to Philadelphia Naval Hospital, Walter Reed, or Valley Forge Army Hospital.

Radiology provides X-ray equipment and full-time technicians needed by the Genito-urinary Clinic and the Radioisotope (Nuclear Medicine) Department, although both are separate WAH functions. Under a DoD directive, complete X-ray and fluoroscopic processing and some film interpretation are offered to the McGuire Air Force Base as well as to the Fort Dix Post. As a further extension of its mission, the WAH Radiology Department is responsible for maintaining X-ray equipment and supplying temporary X-ray personnel to the entire Fort Dix MEDDAC.

Existing Operations

Facility layout accounts for most of the Radiology Department's problems. For example:

- The corridors are heavily congested.
- The waiting area is limited to a capacity of six.
- The dark room is poorly designed for maximum efficiency.

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*As stated in AR 40-4, paragraph 2-14.

- Patient arrivals cannot be observed from the technician's quarters.

Other problems include:

- a time-consuming method of taped X-ray identification which should be replaced by a flash system.
- viewing of X-ray prints via an overhead hall light in lieu of an X-ray view box.

The most notable trend at WAH is the increased use of nuclear medicine services, as evidenced by the steadily mounting patient load in the Radioisotopes Department. If the trend continues, this department will outgrow WAH Radiology capacity within five years.

MALCOLM GROW USAF MEDICAL CENTER -- ANDREWS AIR FORCE BASE

Mission

The mission of radiology* at Malcolm Grow is carried out as a cooperative effort by three functional units: Diagnostic Radiology, Medical Physics and Radiation Therapy, and Radioisotopes Clinic.

The major responsibilities of Diagnostic Radiology include X-ray, fluoroscopic, and related examinations; film, processing, interpretation, and record maintenance; reports of diagnostic findings; diagnostic consultation with all professional sections of the hospital; and orientation and training of duty personnel.

Medical Physics and Radiation Therapy provides X-ray, radium, and cobalt therapy treatments; physics surveys, calibrations, dosimetry, and consultations; record maintenance; general support of the radiological physics program particularly by checking for excessive radiation emanating from equipment and other radiation sources; and investigation of any excess radiation exposures within the Air Force Headquarters Command. The department also provides the Air Force Surgeon General's Office with consulting services on radiological physics technology, manpower, facilities, and procurement.

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*As stated in AFM 168-4H, Section N, paragraphs 1-30.

The Radi isotopes Clinic provides radioactive isotopic diagnosis and therapy in support of all clinical specialties in compliance with applicable licensure and handling directives.

Existing Operations

Existing operations are those in the diagnostic section, where the present manual system of film storage and retrieval does not utilize time and manpower; X-ray areas have no direct access to the darkroom; lacking a waiting room, patients must wait in the hall. Moreover, X-ray machines are overworked because of the increasing number of test procedures which require peak, rather than normal power loadings.

At present, both the Radiation Therapy Section and the Radioisotopes Clinic are under-utilized. The trend, however, is toward increased productivity as more physicians avail themselves of the consultative services these departments can provide.

U.S. NAVAL HOSPITAL -- BEAUFORT

Mission

The mission of the Radiology Service at Beaufort Naval Hospital* is divided among three branches: Diagnostic, Therapeutic, and Radiation Safety. The Diagnostic branch performs fluoroscopic, and photo-fluoroscopic studies "within the limitations imposed by equipment and personnel." The Therapeutic branch is responsible for providing radiotherapy services but lacks appropriate equipment, and as such serves in a consulting capacity to the physician. The Radiation Safety branch enforces safety programs, which include a regular photodosimetry program in compliance with directives issued by the Natural Committee of Radiation Protection and the Atomic Energy Commission.

*As defined in the Organization Manual NAVAOSBFT INST. P-5400 p. C-30 and C-31.

The Therapeutic branch has no radiotherapy capabilities; cases requiring superficial or deep treatment are referred to hospitals which have the necessary equipment.

The Urology Clinic has its own X-ray machine. Their films, however, must be developed in the radiology darkroom.

All three branches are headed by the Chief Radiologist. Although Beaufort's single radiologist has a total mission commitment, his time is primarily occupied by the larger demands of the Diagnostic branch. General assistance is provided by X-ray technicians, including three OJT's, who perform many of the routine film taking tasks.

Existing Operation

The unilateral staffing pattern has certain drawbacks. OJT's have had no training in X-ray technology and cannot perform certain procedures independently. The radiologist cannot supervise procedures as he would like because his services are needed extensively for consultation.

Additional Radiology problems are due to poor facilities layout; initial interpretation of X-ray films for technical clarity takes place in a room too small to permit OJT observation; the darkroom lacks access to all test areas; and the lack of a waiting room means patients must wait in the hall.

DATA PRESENTATION MATRICES

The following matrices and charts detail the data gathered by the Westinghouse team on the three hospitals' radiology services. The first matrix delineates radiology operations; the second, resource utilization; the third, functional costs.

I. RADIOLOGY -- OPERATIONS

	Walson Army Hospital (WAH) -- Ft. Dix	Malcolm Grow Hospital -- Andrews AFB	U.S. Naval Hospital -- Beaufort
A. Services Rendered	1. Diagnostic Radiology:[1,4] a. taking, processing, reading, reporting on, storing, and retrieving patient examination films; b. performing all standard radiology tests as well as special tests including mammograms, cholangiograms, otograms, angiograms, myelograms, arteriograms, nephrotomograms, bronchograms, venograms, sialograms, aortograms, pneumoencephalograms, IVP's, fluoroscopic exams, sinograms, parotidgrams. 2. Therapeutic Radiology:[1,4] a. such treatment (except radioisotopy; see below) performed not at WAH but at the Philadelphia Naval Hospital (PNH) or at Walter Reed Army Hospital (WRAH).[1] 3. Radioisotopes:[1,2] a. service consists mostly of diagnostic radiology using tracer doses; b. very little therapeutic radiology at WAH -- minimal treatment of malignancies and thyroids. Patients needing therapy referred to PNH or WRAH. 4. GU Clinic services:[1,4] a. tests performed include IVP's, VCU's, infused IVP's, retrograde pyelograms, urethragrams, and KUB's. 5. MEDDAC Support Service includes:[1,4] a. sending needed WAH radiology staff to remote dispensaries temporarily shorthanded; b. supplying remote dispensaries with radiological maintenance, parts, and equipment; c. providing all other necessary services to meet remote dispensaries' radiological needs.	1. Diagnostic Radiology: a. performing X-ray, fluoroscopic, and related examinations; b. developing, processing, and interpreting all films and fluoroscopic exams; c. preparing reports of diagnostic findings; d. performing all standard diagnostic tests including chest and extremities X-rays, gastronomical-intestinal (GI) series, angiography, and mammography. 2. Therapeutic Radiology: a. performing X-ray, radium, and cobalt therapy treatments; b. providing physics surveys, calibrations, dosimetry, and consultative support. 3. Radioisotopes: a. diagnosing and providing therapy in support of all clinical specialties; b. performing liver, bone, brain, spleen, kidney, lung, and thyroid scans; thyroid uptakes; renograms; blood volumes; red cell survivals; spleen scans; and Schilling tests.	1. Diagnostic Radiology:[1] a. taking, processing, reading, reporting on, storing, and retrieving patient examination films; b. performing all standard tests as well as IVP's, GI series (upper and lower), fluid cystograms, angiograms, and fluorograms. 2. Therapeutic Radiology:[1] a. since therapy equipment antiquated, therapy rarely performed (3 to 4 patients per year), and only on patients requiring unsophisticated treatment. 3. Urology Clinic:[1] a. urology takes routine urinary tract X-rays, but refers all IVP's and other fluoroscopic work to radiology suite. 4. Dispensary services:[1] a. reading all 70 mm films taken of marines at Parris Island and Marine Corps Air Station (MCAS); b. performing all procedures except routine chest X-rays on a consultation basis for Parris Island and MCAS personnel.

I. Radiology -- Operations (cont'd)

	Ft. Dix	Andrews	Beaufort
A. Services Rendered (Cont'd)	6. Full diagnostic radiological services for McGuire AFB and Lakehurst Naval Air Station,[1,3,4] which have no radiologists: a. McGuire has one X-ray machine, but X-rays read at WAll; b. Lakehurst has no radiological facilities. 7. 70 mm chest X-ray station for those with upper respiratory infections (URI's) which are especially prevalent at Armed Forces basic training establishments.[1,4] 8. Reading films taken of inductees by Medical Processing.[1]		
B. Hours of Operation	1. Normal duty hours: a. all Radiology services fully operational 7 days a week from 0800 to 1630 hrs.[4,9] b. Radioisotopes open by appointment from 0830 to 1200 hrs., Monday thru Friday.[2] 2. Special duty hours: a. emergency -- evening and night shift employees (2 and one respectively) considered on call for all off-hour requests;[4,9] b. GU Clinic open (by appointment) from 0800 to 1530 hrs., Monday thru Friday.[8,9]	1. Normal duty hours:[1] a. Diagnostic Radiology -- 0700 to 1700 hrs., Monday thru Friday; b. Radioisotopes -- 0800 to 1700 hrs., Monday thru Friday; c. Radiation Therapy and Medical Physics -- 0800 to 1700 hrs., Monday thru Friday. 2. Special duty hours:[1] a. Diagnostic Radiology -- one man on duty during all off-duty hours; can summon physicians and technicians on call when necessary; b. Radioisotopes -- one technician on call during off-duty hours.	1. Normal duty hours: a. 0730 to 1600 hrs., Monday thru Friday. 2. Special duty hours: a. one technician on duty from 1600 to 0730 hrs; b. one technician on emergency duty throughout the weekend.

I. Radiology -- Operations (cont'd)

	Ft. Dix	Andrews	Beaufort
C. Workload Flow	1. Radiology Department (not including radioisotopes of GU): a. films exposed for CY69 -- 367,798[5,6] (refer to Table I-W-1 which details this data; also refer to Figure I-W-1 showing increase in films exposed from 1960 (hospital's opening) to 1969, and to Figures I-W-2 thru I-W-5 for workload fluctuations from July 1968 to December 1969);[6] b. films read for CY69 (including McGuire, Lakehurst, and Medical Processing films) -- 449,621[1] (refer to Table I-W-1 cited above, for detailed data); c. procedures performed FY69 -- 157,251; 47,706 (30.3%) for inpatients; 109,545 (69.7%) for outpatients[6] (see Table I-W-2 for a one-day breakdown of workload by procedure, and to Table I-W-3 for a one-month sampling of the number of films exposed per procedure together with patient dependency category);[7] special procedures performed at a rate of 1,333 annually (see Table I-W-4 for special exam breakdown for CY68);[7] d. approx. 75,524 patients treated annually[1] (Table I-W-5 shows the referral areas or agencies for a sampling of 1,286 patients; Table I-W-6 samples the demography of patients treated); e. patient flow is diagrammed in Figure I-W-6;[7] f. peak periods -- between 0830 - 1200 and 1300 - 1500 hrs.; peak periods demonstrated by queue lengths are shown in Figures I-W-7 (queue size by hour by day), I-W-8 (queue size by hour by type of queue for 9/19/69 only), and I-W-9 (queue size by hour by queue type for 9/22/69 only -- the 1st day plotted in Figure I-W-7;)[7] g. Queues observed: • in outside hallway and at X-ray admission desk to log in • in hallway within Radiology Department (outside X-ray rooms) waiting to be X-rayed • and in Radiology Department waiting room, waiting either to be X-rayed or to pick up films.	1. Malcolm Grow Medical Center: a. films exposed FY69 -- 181,101[2] • inpatient films -- 37,063 (20%) • outpatient films -- 134,163 (80%).	1. Diagnostic Radiology (refer to Table I-B-1 for breakdown of films exposed and read, patients served, etc.):[2] a. films exposed CY69 (including photo fluorograms) -- 50,302 • inpatient -- 15,560 • outpatient -- 34,742 (refer to Figure I-B-1 for flow chart showing film processing and storing procedures and to Figure I-B-2 for film retrieval procedures); b. films read FY69 -- 56,578 (includes films exposed at dispensaries but read at the hospital);[2] c. fluoroscopic exams -- 1,688[3] • inpatient -- 449 • outpatient -- 1,239 d. patients served FY69 -- approx. 7,085; e. patient flow • scheduling -- inpatients scheduled by telephone call from wards; outpatients walk in for routine or emergency procedures; non-emergency special procedures are prescheduled • processing procedure -- patient is asked at desk if X-rayed before; if so, his previous X-rays (contained in jacket) are pulled; if not, a new jacket is made up for technician who calls patients for exams by jacket sequence (for patient flow charts, refer to Figures I-B-3 thru I-B-5). f. peak periods -- greatest patient waiting time between 0730 and 1030 hrs., largely due to outpatient arrivals and fluoroscopic exams which tie up radiologist's time; minimal afternoon waiting time (refer to Figure I-B-6 for waiting times profile).

I. Radiology -- Operations (cont'd)

	Ft. Dix	Andrews	Beaufort
C. Workload Flow (cont'd)	2. GU Clinic:[8] a. films exposed annually -- approx. 7,722; b. procedures performed annually -- approx. 1,560 (refer to Table I-W-7 for procedural breakdown per day by time, volume, and films exposed per test); c. patient flow in GU Clinic is diagrammed in Figures I-W-10 and I-W-11; d. peak periods -- none since tests are by appointment only.	2. Hospital only: a. films exposed FY69 -- 171,016[2] • inpatient films -- 37,063 (22%) • outpatient films -- 133,989 (78%); b. fluoroscopic exams FY69 -- 3,348[2] • inpatients -- 1,040 • outpatients -- 2,308; c. radiographic procedures FY69 -- 100,455 • "stat" procedures -- 19,500 • special procedures -- 2,450; d. patient flow [1] • no. of patients FY69 -- 100,455 (see Tables I-M-1 and I-M-2 for load breakdown by picture type proportion and origin of demand • scheduling -- inpatients scheduled by phone call from wards; outpatients, on walk-in basis during clinic hours • special procedures by appointment only. e. peak periods -- radiology clinic loads and special procedures, from approx. 0800 to 0930 hrs.; no procedures (except "stat") performed between 1100 and 1245 hrs. and after 1600 hrs.[1,3] f. queues[1] • significant queues develop with early morning load (from 0800 to 0930 hrs.) because routine chest and extremities not taken quickly enough • queues peak at approx. 1000 hrs. until more manpower assigned • activity ebbs significantly until approx. 1230 hrs., when special procedures are set up and the many routine X-ray patients arrive • queues lengthen during early afternoon and diminish at the end of workday.	2. Therapeutic Radiology: a. handles only 3 or 4 patients annually.
	3. Radioisotopes:[2] a. procedures performed annually -- approx. 1,752 (one per patient); b. patient flow -- 1,752 annually; c. peak period -- none since treatments are by appointment only.	3. Dispensaries (Bolling and Pentagon):[1] a. films exposed FY69 -- 9,875; b. films read by requesting physician; c. procedures FY69 -- 6,234 • "stat" -- 127 • special procedures (always referred to hospital) -- approx. 120 per year.	3. Urology Clinic: a. films exposed for urological radiographic procedures[4] • outpatient -- 672 • inpatient -- 96; b. types of procedures[4] • IVP's -- 20 (inpatient -- 4; outpatient -- 16) • retrograde pyleograms -- 7 (inpatient -- 2; outpatient -- 5)

I. Radiology -- Operations (cont'd)

	Ft. Dix	Andrews	Beaufort
C. Workload Flow (Cont'd)		d. no. of patients FY69 -- 6,234; e. patient flow -- scheduling -- patients are either walk-ins or referred by dispensary physicians; standard exams are on a first-come, first-served basis; GI series tests by appointment; f. peak periods -- during sick call, from 0800 to 0900 hrs.	• voiding cystourethrograms -- 129 (inpatient -- 14; outpatient -- 115). 4. Dispensaries: a. films exposed FY69[2] -- 6,276 o at MCAS -- 290 o at Parris Island -- 5,986; b. films are read at Beaufort.
D. Information Flow	1. For monthly volume of radiology communications, broken down by communication mode according to source or destination, refer to Table I-W-8. 2. For monthly volume of communication inputs and outputs according to the type of communication, refer to Table I-W-9.	1. For monthly volume of radiology communications, broken down by communication mode according to source or destination, refer to Table I-M-3. 2. For monthly volume of communication inputs and outputs according to the type of communication, refer to Table I-M-4.	1. For monthly volume of radiology communications, broken down by communication mode according to source or destination, refer to Table I-B-2. 2. For monthly volume of communication inputs and outputs according to the type of communication, refer to Table I-B-3.

TABLE I-W-1

RADIOLOGY WORKLOAD

Films exposed for CY69 totaled 367,798, breaking down to:

Inpatient Films	71,010	19.5%
Outpatient Films	268,836	72.9%
70 mm Films	27,952	7.6%
Total	367,798	100.0%

Films read for CY69 totaled 449,621, breaking down to:

WAH Radiology Films (includes Lakehurst patients)	367,798	81.8%
MAFB Films (Taken at MAFB, read at WAH)	26,977	6.0%
Medical Processing Films	54,846	12.2%
Total	449,621	100.0%

The WAH Radiology workload for FY69 consisted of 157,251 workload units. This is broken down by:

Inpatient	47,706	30.3%
Outpatient	109,545	69.7%
Total	157,251	100.0%

TABLE I-W-2

RADIOLOGY WORKLOAD BY TYPE OF PROCEDURE - SEPT. 16, 1969

PROCEDURE	NO. OF PATIENTS	% OF TOTAL
Skeletal	123	41.6
Chest	112	38.0
Spine	15	5.1
Skull	11	3.7
GI Series	8	2.6
Sinogram	3	1.0
IVP	12	4.1
Abdominal	5	1.7
Esophagram	1	.3
Mamogram	1	.3
Tomogram	3	1.0
TOTAL	295	99.7%

Walson Army Hospital
Radiology Operations

TABLE I-W-3

NUMBER OF FILMS EXPOSED PER PROCEDURE IN ONE MONTH

Skull Procedures	No. of Films	Chest Procedures	No. of Films
Number sampled	37	Number sampled	112
High no. pics.	13	High no. pics.	8
Low no. pics.	3	Low no. pics.	1
Mean no. pics.	5.1	Mean no. pics.	3.9
Median no. pics.	4	Median no. pics.	4
% military & ret. mil.	73% (27)	% military & ret. mil.	50% (56)
% spouses	13.5% (5)	% spouses	37.5% (42)
% children	13.5% (5)	% children	12.5% (1)
Spinal Procedures	**No. of Films**	**G.I. Procedures**	**No. of Films**
Number sampled	51	Number sampled	15
High no. pics.	8	High no. pics.	Not recorded
Low no. pics.	2	Low no. pics.	18
Mean no. pics.	4.1	Mean no. pics.	28
Median no. pics.	5	Median no. pics.	28
% military & ret. mil.	78.4% (40)	% military & ret. mil.	62.7% (10)
% spouses	13.7% (7)	% spouses	33.3% (5)
% children	3.1% (2)		
Skeletal Procedures	**No. of Films**	**IVP Procedures**	**No. of Films**
Number sampled	123	Number sampled	24
High no. pics.	28	High no. pics.	6
Low no. pics.	1	Low no. pics.	6
Mean no. pics.	2.9	Mean no. pics.	6
Median no. pics.	2	Median no. pics.	6
% military & ret. mil.	79.7% (98)	% military & ret. mil.	41.7% (10)
% spouses	7.3% (9)	% spouses	41.7% (10)
% children	12.2% (13)	% children	16.7% (4)
% other	.8% (1)		

TABLE I-W-4

SPECIAL EXAMINATION BREAKDOWN FOR CY68

SPECIAL EXAMINATIONS	NUMBER	PERCENT
Mammograms	292	21.9%
Cholangiograms	31	2.3
Orbitogram	115	8.6
Angiograms	11	.8
Myelograms	15	1.1
Arteriograms	14	1.1
Nephrotomograms	16	1.2
Br nchograms	15	1.1
Venograms	17	1.3
Sinograms	21	1.6
Aortograms	9	.7
Pneumoencephalograms	2	.2
IVP's	770	57.8
Laryngogram	2	.2
Arthrogram	1	.1
Parotidgram	2	.2
TOTAL	1333	100.0%

TABLE I-W-5

REFERRALS OF RADIOLOGY PATIENTS

REFERRAL AREA	NO. PATIENTS	% OF TOTAL	REFERRAL AREA	NO. PATIENTS	% OF TOTAL
WARD 2A	26	.02	EENT	16	.0124
" 2B	15	.0116	ER	247	.1920
" 2C	8	.0002	GU	39	.0303
" 3A	8	.0062	Isotopes Lab	0	.0000
" 3B	1	.0007	Lakehurst	2	.0015
" 4A	2	.0015	McGuire	6	.0040
" 4B	11	.0085	Med. Clinic	13	.0101
" 5A	8	.0002	Med. Processing	32	.0248
" 5B	48	.0373	Neurology Clinic	9	.0069
" 6A	25	.0194	OB-Gyn	11	.0085
" 6B	34	.0264	OPC	114	.0880
" 7A	26	.0202	Orthopedics	186	.1446
" 7B	3	.0023	Pediatrics	26	.0202
" 8A	30	.0233	Prevent. Med.	41	.0318
" 8B	33	.0256	Pulmonary Clinic	1	.0007
" 9A	20	.0155	Surgical Clinic	8	.0062
" 9B	11	.0085	OR	1	.0007
Allergy Clinic	9	.0069	Registrar	2	.0015
Cardiac Clinic	8	.0062	Surgery	8	.0062
Dental Clinic	6	.0046	Mental Hyg.	1	.0007
Dept. Medicine	22	.0171	Recovery	1	.0007
Dermatology	1	.0007	ICU	1	.0007
Dispensaries	154	.1197	Nursery	1	.0007
			Stockade	3	.0023
TOTAL NO. PATIENTS - 1286					

TABLE I-W-6

DEMOGRAPHY OF RADIOLOGY PATIENTS TREATED

WEEK OF OCT. 28, 1969 - NOV. 3, 1969

POPULATION CODES	NUMBER OF PATIENTS	PERCENT
Active Duty Military	1223	67.4%
Retired Military	21	1.2
Spouses	293	16.2
Children - First	121	
Second	64	
Third	44	
Fourth	22	
Fifth	8	
Sixth	4	
Seventh	1	
Eighth	1	
Ninth	2	14.7
Mother	4	
Father	0	
Mother-in-Law	5	
Father-in-Law	0	
Other	1	.6
TOTAL	1814	

TABLE I-W-7

X-RAY PROCEDURES IN GU CLINIC

The types of x-ray procedures performed in the GU Clinic, with approximate times per procedure, exposures per procedure, and volume per day are as follows:

PROCEDURE	TIME	VOLUME (range)	FILMS
IVP	35 min.	0-11	5
VCU	35 min.	0-4	4
Infused IVP	40-90 min.	0-2	6-7
Retrograde Pyelogram	45 min.	0-2	4
Urethragram	45 min.	0-2	4
KUB	10 min.	0-1	1

Walson Army Hospital
Radiology Operations

TABLE I-W-8 NUMBER OF COMMUNICATIONS BY MODE AND SOURCE/DESTINATION

SOURCE/DESTINATION	RECEIVED BY RADIOLOGY						SENT BY RADIOLOGY					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION		75								498	10	4
AIR EVACUATION												
DENTAL SERVICE				600								
DISPENSARIES				4600						4329		
FLIGHT MEDICINE												
FOOD SERVICE												
HOUSEKEEPING												
LABORATORIES												
MAINTENANCE										11		
MEDICAL RECORDS				1000						100		
NURSING SERVICE				20		73						
OPERATING ROOM												
OUTPATIENT DEPT.				8884		4000				6666		
OUTSIDE WORLD							1			1		
PERSONNEL				39		4				12		44
PHARMACY												
PHYSICAL THERAPY												
PREVENTIVE MED.				716						489		
PROFESSIONAL SERV												
REGISTRAR		20		2150						498		
SUPPLY				4						61		
VETERINARY MED.												
WARD MANAGEMENT				10212						7628		
RADIOLOGY												

TABLE I-W-9

TYPE OF COMMUNICATIONS BY INPUT & OUTPUT

FUNCTION	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Secondary Patient	Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
INPUT											
VOLUME OF COMMUNICATION	4000	28491					5		44	73	32613
NUMBER OF COMMUNICATION	1	70					2		12	7	92
OUTPUT											
VOLUME OF COMMUNICATION	20020			115	1	10	55	1	14	39	20255
NUMBER OF COMMUNICATION	4			5	1	1	6	1	9	5	32

TABLE I-M-1

SOURCES OF "WET" OR "STAT" READING LOAD

PLACE	PROPORTION OF THEIR TOTAL DEMAND
Emergency Room	80-90%
Flight surgeon	20-30%
Physical service center	10-20%
Orthopedic	10-25%
Pediatric	10%
Other	5%

Source: sample of "clinic/type of x-ray" demand taken from radiology log and functional matrix developed to indicate load by location placing the demand and type of picture taken.

TABLE I-M-2

TYPES OF X-RAYS AND ORIGIN OF DEMANDS - RADIOLOGY

TYPE OF PICTURE / ORIGIN OF DEMAND ON RADIOLOGY	Chest	Spine	Upper ext.	Lower ext.	Skull	Hips	Abdomen	UGI	Small bowel	Barium enema	Gall Bladder	IVP's	Nasal & Thoracic	Chest w/B. E.	Shoulder	Angiogram	Portables	Misc. bones	Misc. special	TOTALS
Emergency Room	28	6	15	16	12	2	6	1					3	2	2	1		1		95
Gen. Practice	9	2	5			1	2	6			2	2	1						1	31
Med. Serv.	10	2	1					2	1	3		2								21
Allergy	2												1							3
Cardiology	3	1	1					1		1			1						1	9
Neurology	2	1																		3
Pediatric	9			1								2						1		13
Pulmonary	2																			2
Gastro-Uro.							2				2	3								7
Hematology	4									1									2	7
Gynecology	6											1							1	8
Obstetrics	11					2						1								14
Otolaryngo					1			1		1			4		1				1	9
Orthopedic	5	5	15	8		2														35
Podiatry				2																2
Neurosurgery					1															1
Surgery										1										1
Inpatient wards	46	5	1		6		2	4		1	1	3				3	8		2	82
Physical Serv.	16	1	2	2		1		1			1			1					1	26
Flight Surgeon	18	2	1		1			1	1	1		1	1	1					1	29
Dispensaries																				
Dermatology																				
Psychiatric																				
Psychology																				
Endocrinology																				
Internal Med.	2	1												1						4
Opthalmology																				
Optometry																				
Urology																				
Others																				
TOTALS	173	26	41	29	21	8	12	17	2	9	6	15	11	5	3	4	8	2	10	402

Malcolm Grow Hospital
Radiology - Operations

TABLE I-M-3 NUMBER OF COMMUNICATIONS BY SOURCE/DESTINATION

SOURCE/DESTINATION	RECEIVED BY RADIOLOGY						SENT BY RADIOLOGY					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION				43								
AIR EVACUATION												
DENTAL SERVICE												
DISPENSARIES												
FLIGHT MEDICINE												
FOOD SERVICE												
HOUSEKEEPING												
LABORATORIES												
MAINTENANCE										2		
MEDICAL RECORDS												
NURSING SERVICE												
OPERATING ROOM												
OUTPATIENT DEPT.		120		6069		480				3151		1400
OUTSIDE WORLD				140			240			2000		
PERSONNEL												
PHARMACY												
PHYSICAL THERAPY												
PREVENTIVE MED.												
PROFESSIONAL SERV												
REGISTRAR												
SUPPLY		2		1		2		28		421		
VETERINARY MED.												
WARD MANAGEMENT		200		776		192				2206		616
RADIOLOGY												

TABLE I-M-4

TYPE OF COMMUNICATIONS BY INPUT AND OUTPUT

FUNCTION	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Patient Secondary	Patient Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
INPUT											
Diagnostic (3381)	4	2632	8132	168	13		12		61	28	11050
OUTPUT											
Diagnostic (3381)	1116	5668	3980	2516	28	7	518	2	53		13888

BEAUFORT NAVAL HOSPITAL
RADIOLOGY OPERATIONS

TABLE I-B-1

WORKLOAD BY TYPE OF EXAMINATION -- 69-DAY SAMPLE OF RADIOFLUOROSCOPIC LOG (1969)

	No. of Patients (Reg.)	% of Total Patients (Reg.)	No. of Films (Reg.)	% of Total Films (Reg.)	Films Per Patient (Reg.)	No. of Patients (Fluoro)	% of Total Patients (Fluoro)	No. of Films (Fluoro)	% of Total Films (Fluoro)	Films Per Patient (Fluoro)	Total Patients	% of Total Patients	Total Films Exposed	% of Total Films Exposed	Films Per Patient (average)
Dental	12		51	1	4.25	0	0	0	0	0	12	1	51	1	4.25
Emergency	235	14	1209	23	5.14	1		10	0	10.00	236	12	1219	15	5.16
Medical	543	32	1553	29	2.86	127	43	1360	45	10.70	670	34	2913	36	4.34
Obstetrics, Gynecology	1		1			0	0	0	0	0	1	0	1	0	1
Orthopedics	281	16	780	15	2.77	0	0	0	0	0	281	14	780	10	2.77
Pediatrics	19	1	52	1	2.73	5	2	56	2	11.20	24	1	108	1	4.50
Surgery	20	1	74	1	3.70	10	3	112	4	11.20	30	2	186	2	6.20
Ear, Nose & Throat	26	1	121	2	4.65	2	1	18	1	9.00	28	1	139	2	4.96
Urology	6		17		2.83	23	8	226	8	9.82	29	1	243	3	8.37
Dispensaries	9		36		4.00	44	15	356	12	8.09	53	3	392	5	7.39
Wards	513	30	1289	24	2.51	82	28	859	29	10.47	595	30	2148	26	3.61
TOTAL	1665		5183		3.11	294		2997		10.19	1959		8180		4.17

Beaufort Naval Hospital
Radiology Operations

TABLE I-B-2 NUMBER OF COMMUNICATIONS BY SOURCE/DESTINATION

SOURCE/ DESTINATION	RECEIVED BY RADIOLOGY						SENT BY RADIOLOGY					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION												
AIR EVACUATION												
DENTAL SERVICE												
DISPENSARIES												
FLIGHT MEDICINE												
FOOD SERVICE												
HOUSEKEEPING				28						20		
LABORATORIES										925		
MAINTENANCE												
MEDICAL RECORDS				925						925		
NURSING SERVICE				566		48				368		524
OPERATING ROOM				22		12				12		
OUTPATIENT DEPT.				624		216				216		
OUTSIDE WORLD												
PERSONNEL												
PHARMACY												
PHYSICAL THERAPY												
PREVENTIVE MED.												
PROFESSIONAL SERV												
REGISTRAR												
SUPPLY										20		
VETERINARY MED.												
WARD MANAGEMENT												
RADIOLOGY												
EMERGENCY				80						140		140

TABLE I-B-3

TYPE OF COMMUNICATION BY INPUT AND OUTPUT

FUNCTION	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Patient Secondary	Patient Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
INPUT	140	3110					40				3290
OUTPUT		2609					28				2639

Walson Army Hospital
Radiology Operations

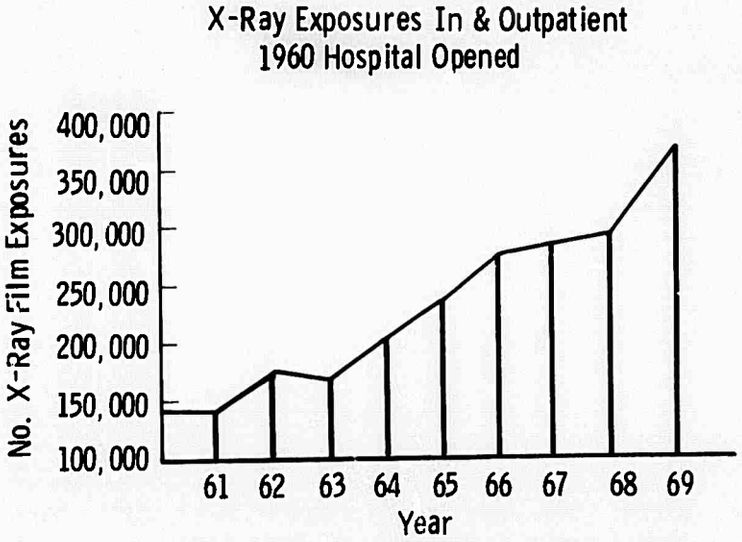


Fig. I-W-1—Increase of films exposed
1960 - 1969

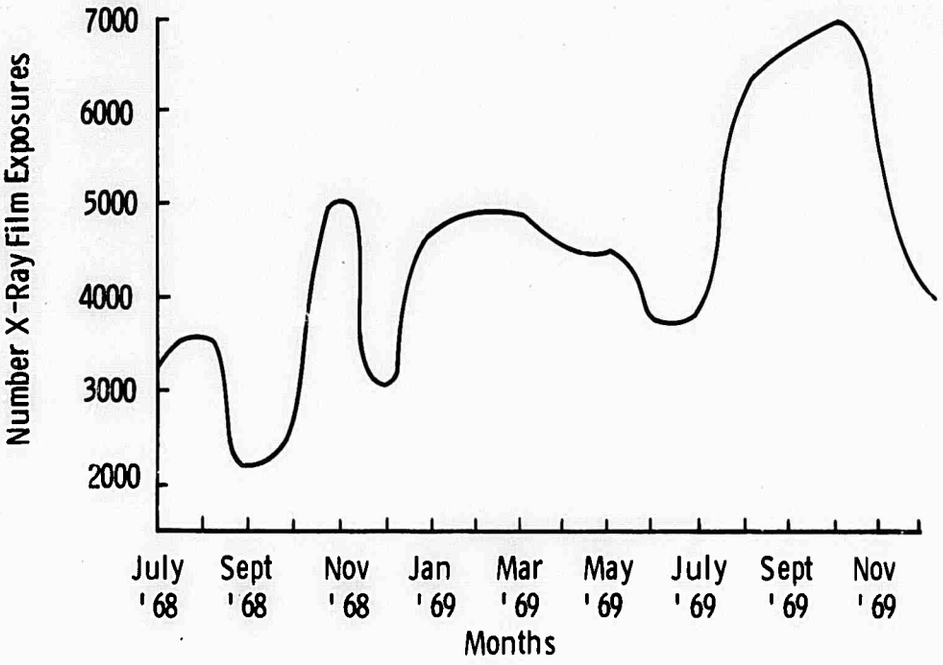


Fig. I-W-2—Workload fluctuations inpatient X-ray
procedures from July 1968 to Dec 1969

Walson Army Hospital
Radiology Operations

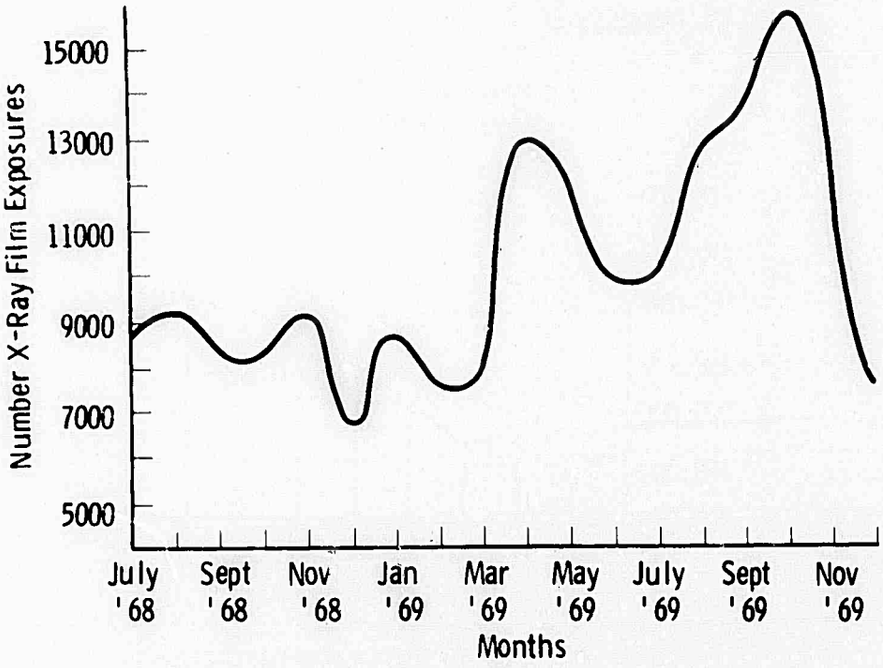


Fig. I-W-3—Workload fluctuations in outpatient X-ray procedures from July 1968 to Dec 1969

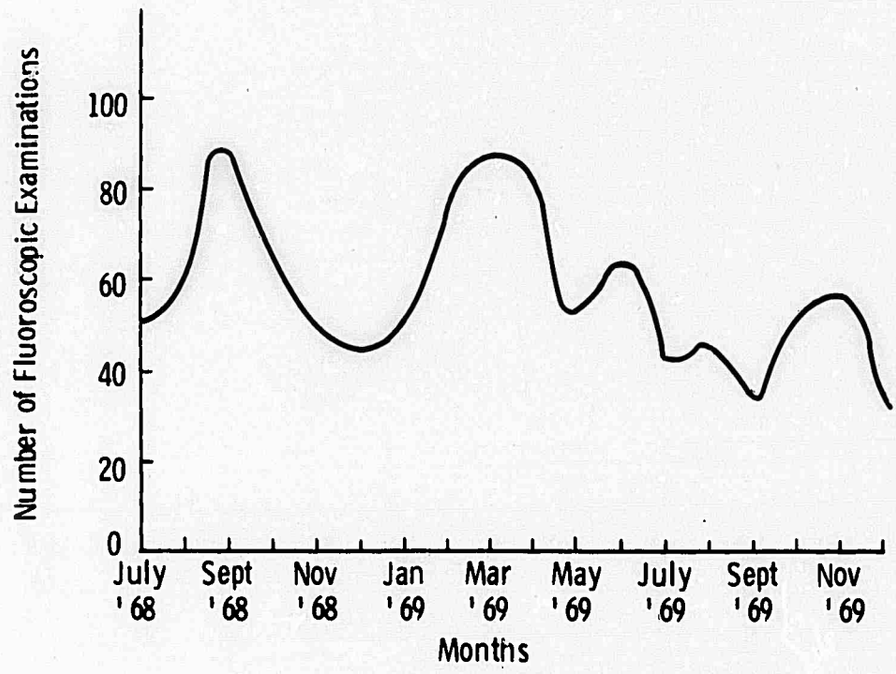


Fig. I-W-4—Workload fluctuations in inpatient fluoroscopic exams from July 1968 to Dec 1969

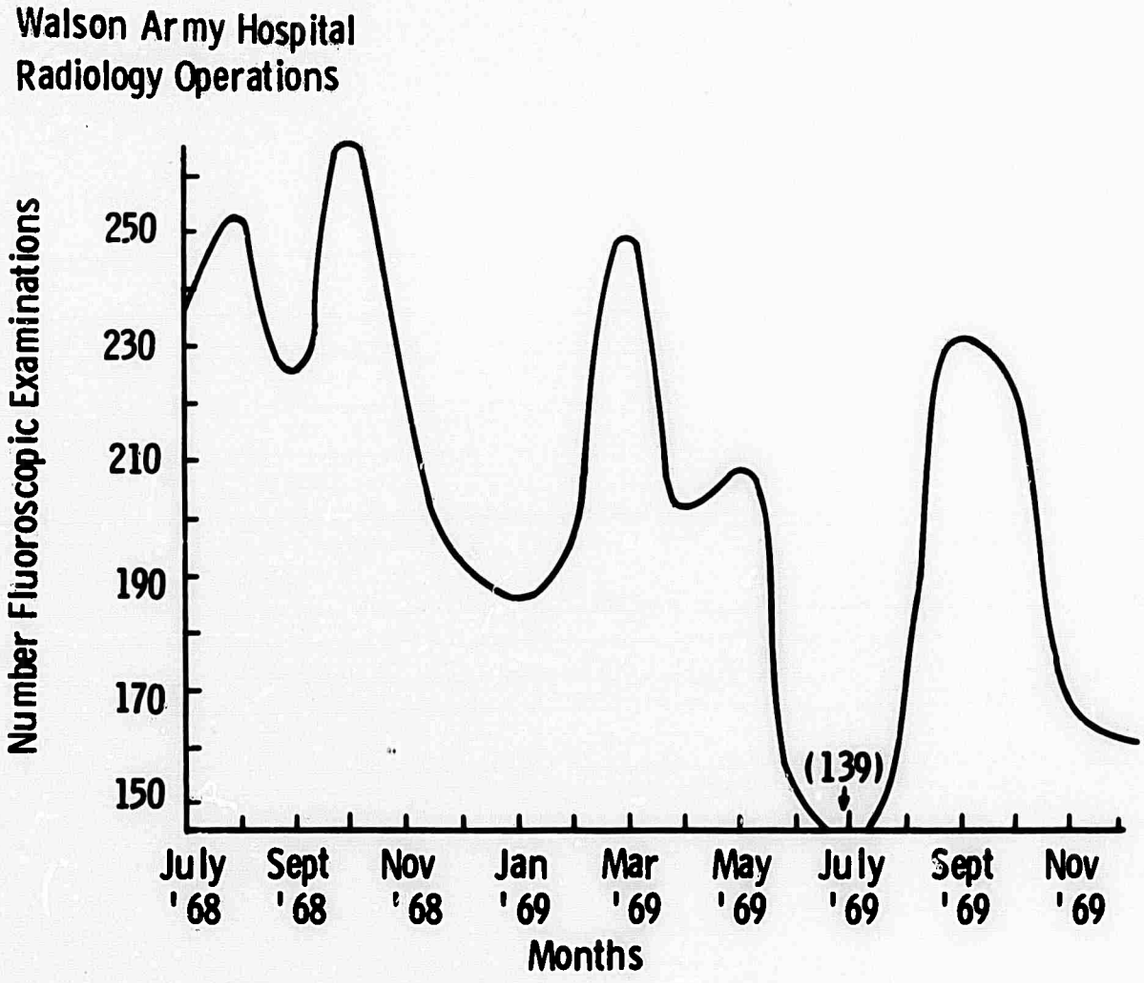


Fig. I-W-5—Workload fluctuations in outpatient fluoroscopic exams from July 1968 to Dec 1969

Walson Army Hospital
Radiology Operations

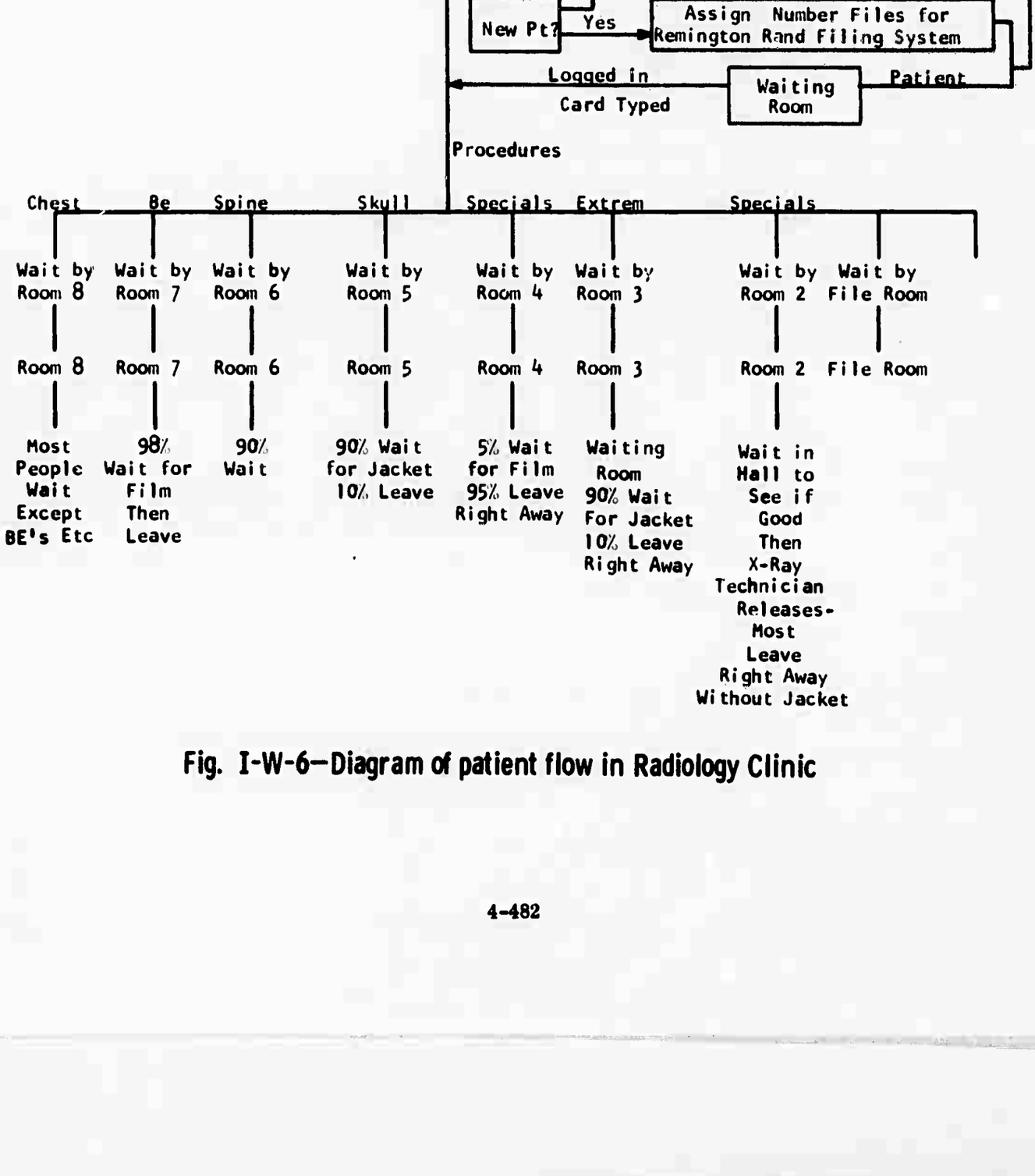


Fig. I-W-6—Diagram of patient flow in Radiology Clinic

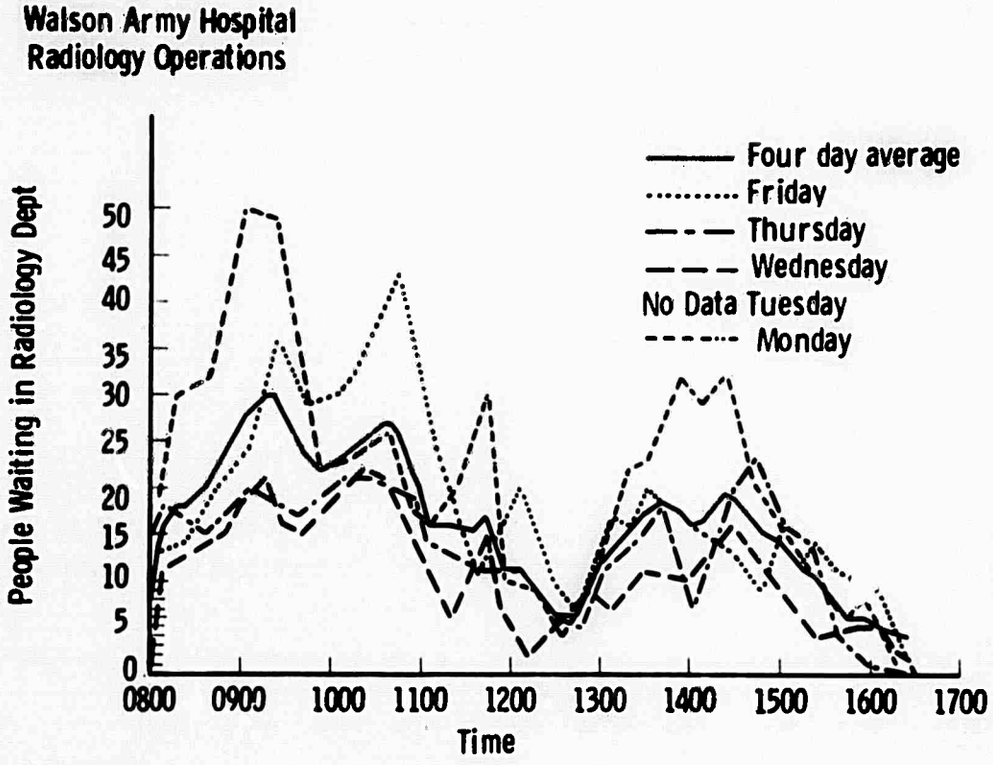


Fig. I-W-7—Queue waiting by hour of day

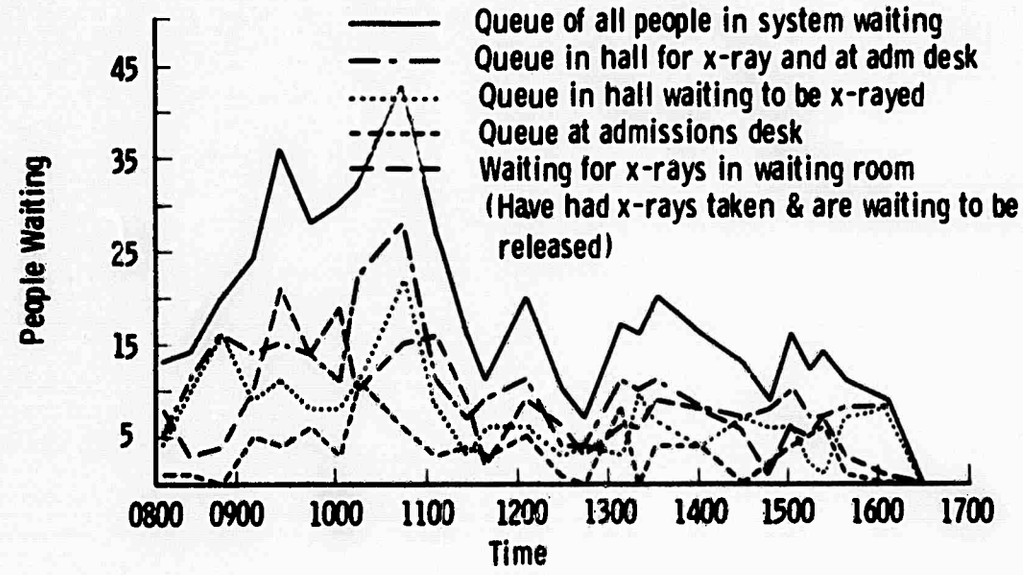


Fig. I-W-8—Plots of various queues on Friday, Sept 19, 1969

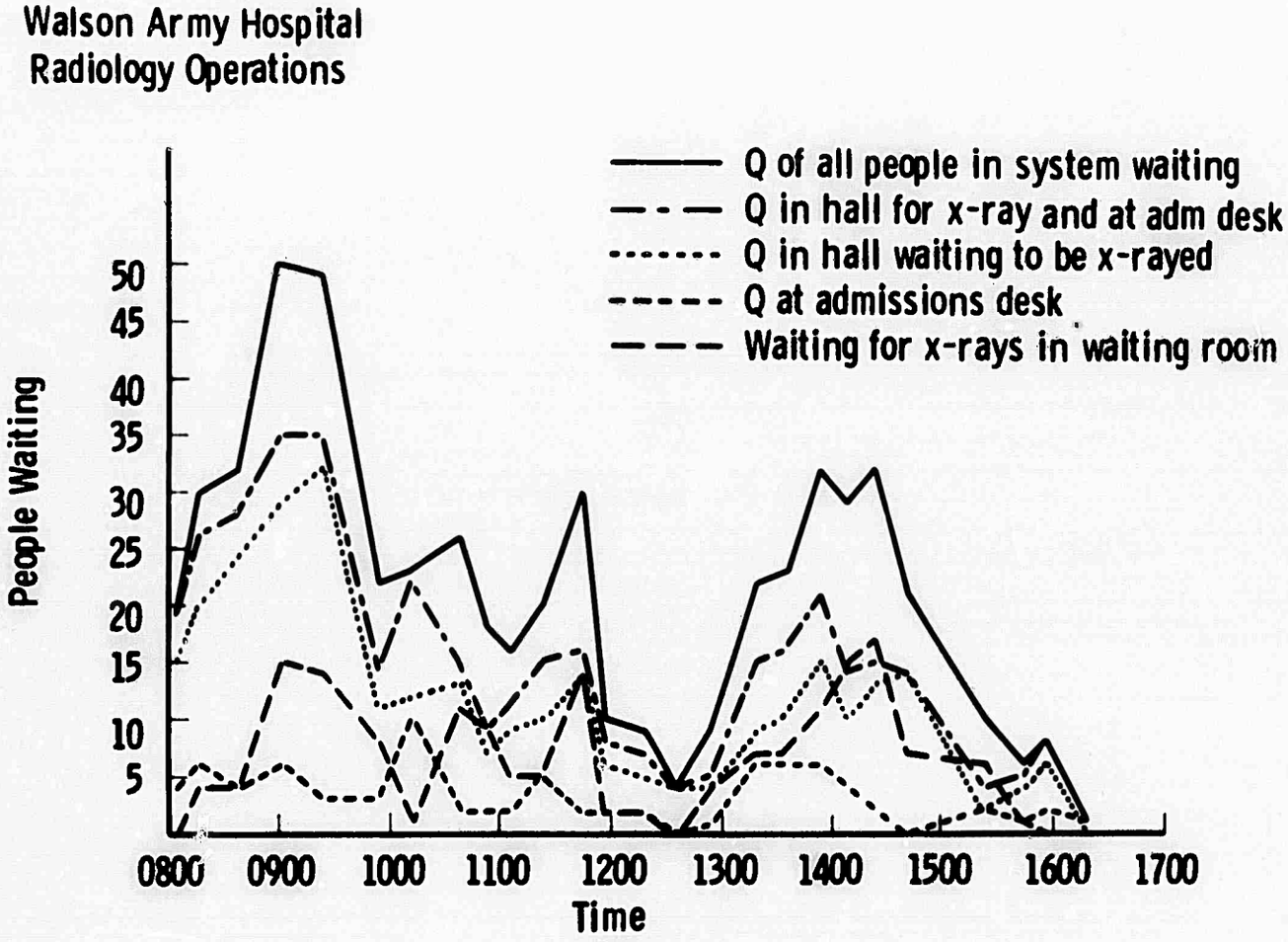
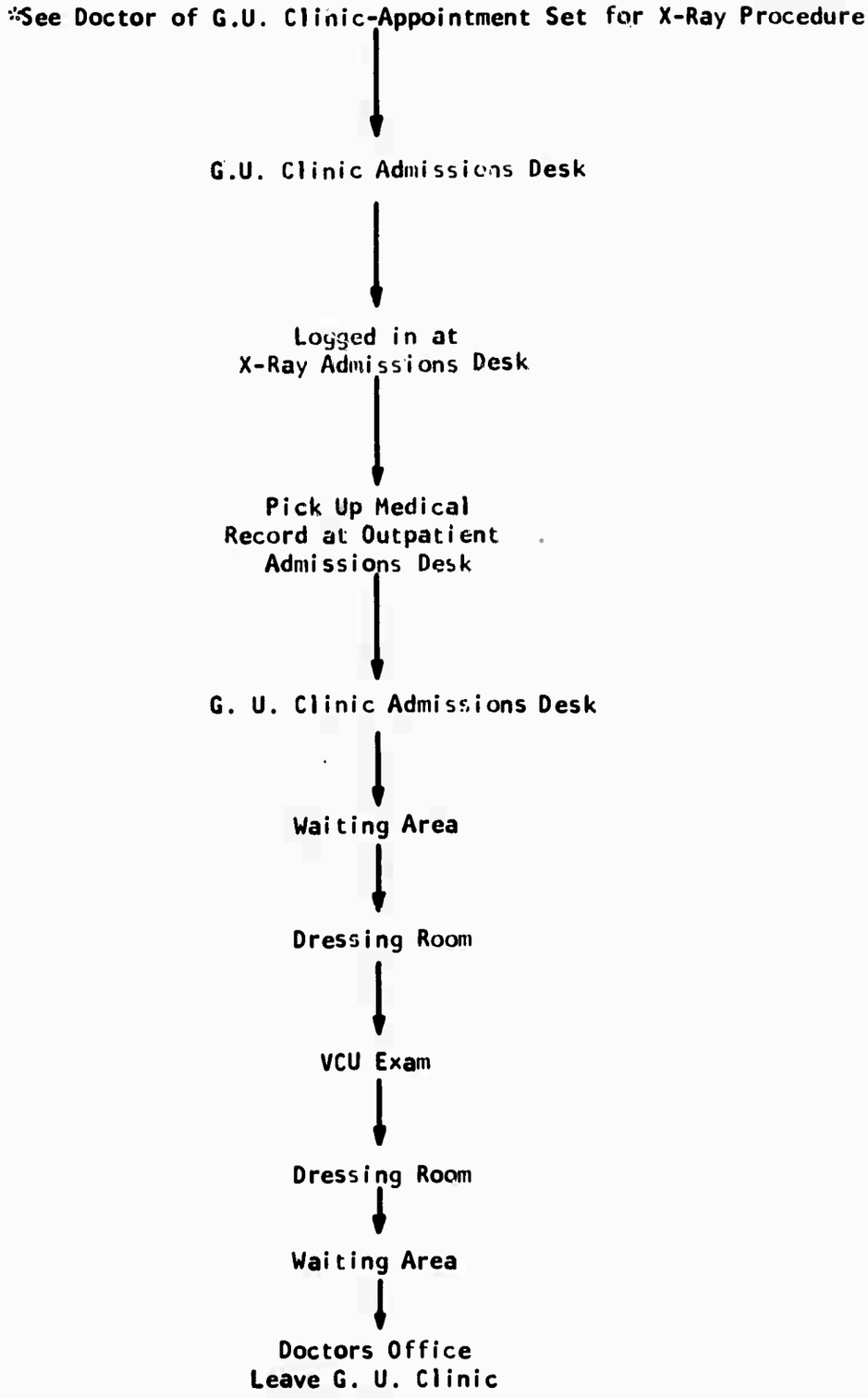


Fig. I-W-9—Plots of various queues on Monday, Sept 22, 1969

Walson Army Hospital
Radiology Operations



*Patients to this Clinic Are Referred Here by a Doctor from Another Clinic, Dispensary, or the Emergency Room.

Fig. I-W-10—Patient flow in G.U. Clinic

Walson Army Hospital
Radiology Operations

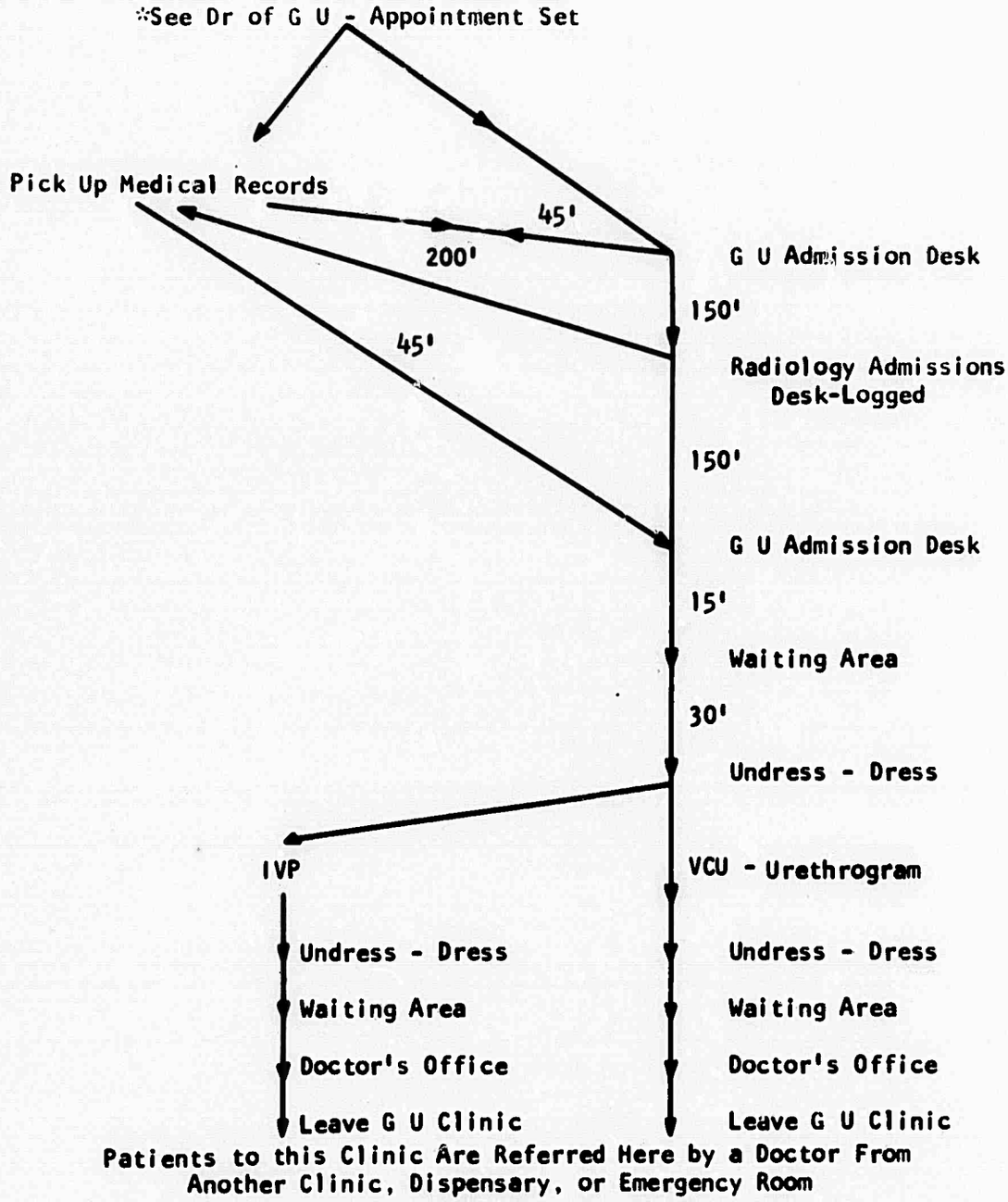


Fig. I-W-11—Patient flow in G. U. Clinic x-ray room

Beaufort Naval Hospital
Radiology Operations

FIGURE I-B-1 Dwg. 859A593

FLOW CHART OF PROCESSING AND STORAGE OF X-RAY FILM Pg_ of_

Subject Charted _____

Chart Begins Inserted for X-ray Chart Ends Filed Permanently

Present Method X Proposed Method _____ Date 8/14

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist / Time	TIME Delay / Storage	NOTES
1. Obtain film from dark room.				
2. Take from film bin and put in cassette (dark room girl).				
3. Put into pass box (rooms #1 and #2).				Pass box is two-sided - left side for exposed &
4. Exposed film put in other side of pass box.				right for unexposed.
5. Film run through processor.				Operator knows process-
6. Film checked for technical quality.				ing finished when she hears film drop into box.
7. Procedure repeated if film is bad				
8. Paper clip film to outside of jacket with chit on top.				
9. If busy, temporarily stored in developing room (43).				
10. Film, chit, & jacket taken to doctor's office & put into his pigeon-hole.				
11. Doctor takes film & dictates notes.				
12. Puts film into envelope & puts chits requiring transcription into basket.				
13. If normal, chit clipped to jacket.				
14. Dictation girl takes chits & types				
15. Films awaiting typing from dictation put in 48-hr. file.				
16. When dictated notes arrive, film pulled from 48-hr. file.				
17. Chit paper clipped to film.				
18. Inserted in jacket.				
19. Jacket is filed.				

Beaufort Naval Hospital
Radiology Operations

Dwg. 859A593
Pg— of—

FIGURE 1-B-2
FLOW CHART OF PULLING OF X-RAYS FROM FILE

Subject Charted —

Chart Begins X-Ray requested Chart Ends Jacket stored

Present Method — Proposed Method — Date —

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist / Time	TIME Delay / Storage	NOTES
1. X-ray is requested by another department				Usually in person by c/m requesting since the film must be hand carried
2. Year X-ray taken obtained				
3. Name looked up - number of envelope obtained				
4. Jacket obtained				
5. Logged out in Room 43				
6. When jacket is returned, name crossed off log				
7. Jacket temporarily stored in Room 43 until it is refiled.				

Beaufort Naval Hospital
Radiology Operations

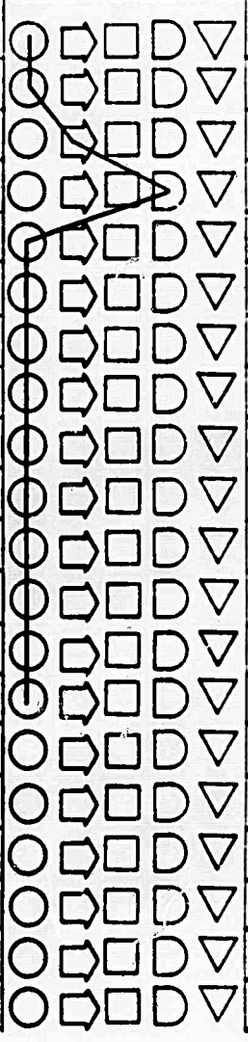
Dwg. 859A593
Pg__ of__

FIGURE I-B-3
FLOW CHART OF X-RAY SCHEDULING PROCEDURE (OUTPATIENTS)

Subject Charted _____

Chart Begins Pt. told he needs an x-ray at clinic Chart Ends Patient leaves with appointment.

Present Method _____ Proposed Method _____ Date _____

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist / Time	TIME Delay / Storage	NOTES
1. Doctor at clinic tells patient he needs an X-ray				
2. Patient walks to radiology				
3. Waits at window				
4. Receptionist (C/M) asks what procedure needed				
5. If X-ray needed immediately or if it is routine X-ray - patient follows sequence shown in Figure I-B-5				
6. If special procedure, patient scheduled in schedule book				MWF: GI's and BE's
7. Given slip of paper telling appointment time				TuTh - IVP's, fluid cystos
				Note: Nothing is done with scheduled appoint-
				ments until the patient
				arrives at his scheduled
				time. (e.g. His previous
				x-rays are not pulled
				until that time.)

Beaufort Naval Hospital
Radiology Operations

FIGURE I-B-4 Dwg. 85M593

FLOW CHART OF X-RAY SCHEDULING PROCEDURE (INPATIENTS) Pg_ of_

Subject Charted _____

Chart Begins Ward sends down chit Chart Ends Patient arrives for X-ray

Present Method _____ Proposed Method _____ Date _____

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist / Time	TIME Delay / Storage	NOTES
1. Ward telephones that inpatient needs an X-ray				
2. Patient is scheduled and nurse told day of appointment				
3. On day of appointment, ward is called to send patient in				Ward patients are usually called all at once in the morning.
4. Patient arrives with chit (requisition) from ward				Either walks (if ambulatory) brought down by another patient, or brought down by corpsman.
5. Hands chit to receptionist				
6. See Figure I-B-5 for filming procedure.				

Beaufort Naval Hospital
Radiology Operations

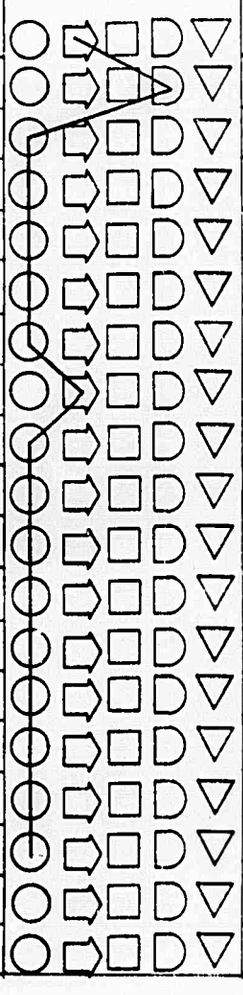
FIGURE I-B-5
FLOW CHART OF X-RAY FILMING PROCEDURE

Dwg. 859A593
Pg_ of_

Subject Charted _____

Chart Begins Chit arrives at X-ray Chart Ends X-ray taken

Present Method _____ Proposed Method _____ Date _____

DESCRIPTION OF EVENT	SYMBOLS	TRANSP Dist / Time	TIME Delay / Storage	NOTES
1. Patient arrives at window				
2. Wait for receptionist				
3. Ask if patient has had X-ray				
before and when.				
4. Look up name in alphabetical				
file				
5. Obtain number				
6. Go to file and get jacket				Filed in one of 3 areas
7. Take out old reports and new				e.g. 67
chit and paper clip on outside				jackets which are pulled
of folder				for '69 use get a '69#
8. Type info on photofluorographic				and all films are put in
log				new jacket - '67
9. Jacket with chit put on desk				alphabetical cross
10. Technician picks up jacket that				reference is put in '69
is on the bottom and takes				index.
picture.				

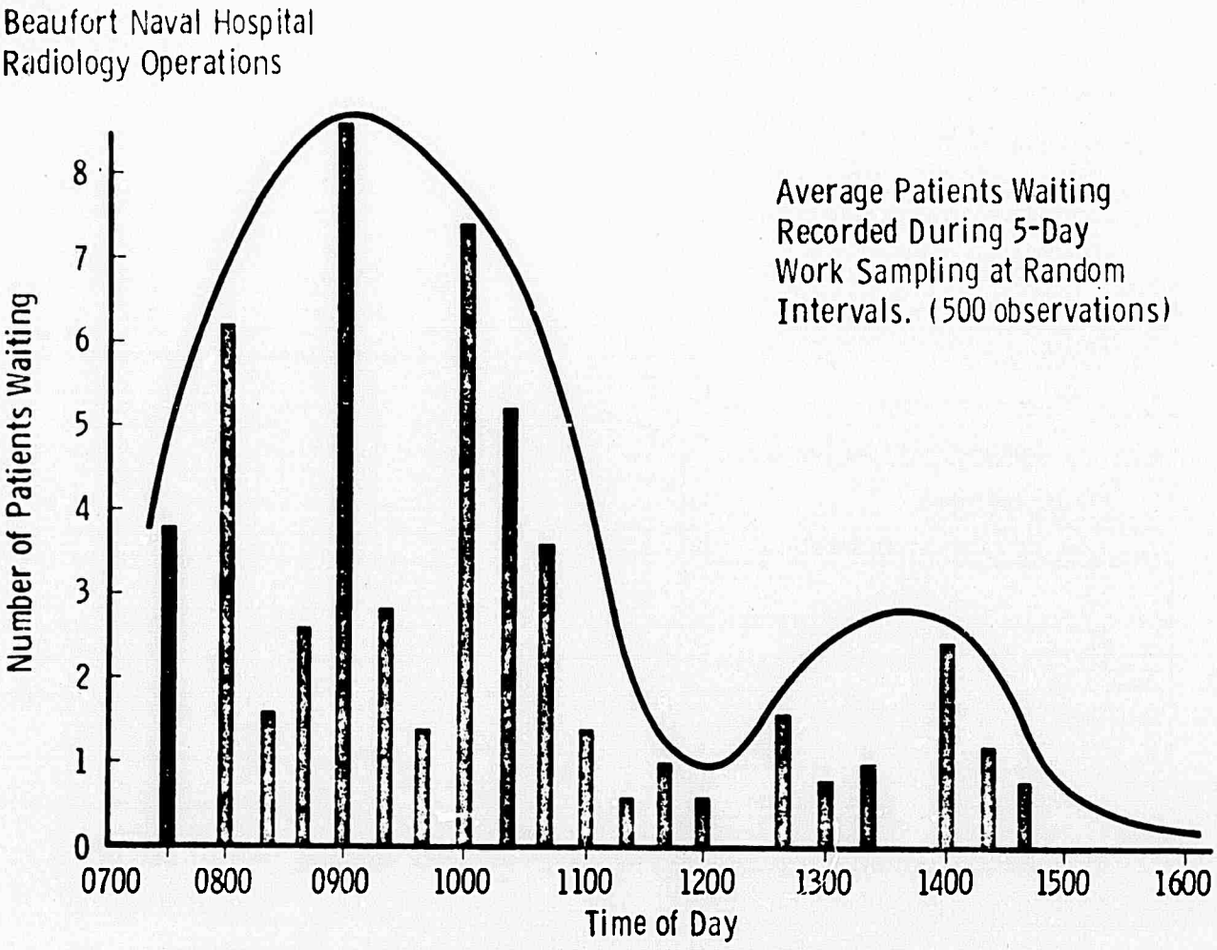


Fig. I-B-6—Profile of patients waiting

II. RADIOLOGY -- RESOURCE UTILIZATION

	Walson Army Hospital (WAH) -- Ft. Dix	Malcolm Grow Hospital -- Andrews AFB	U.S. Naval Hospital -- Beaufort
A. Personnel	1. Thirty-eight employees (refer to Table II-W-1 listing staff and positions).[1,2]	1. Thirty-two employees[1] (refer to Table II-M-1 for complete breakdown by title, pay grade and hours worked per week): a. 8 officers; b. 17 enlisted men; c. 7 civilians.	1. Seven employees including 3 QMT's[1] (refer to Table II-B-1 for breakdown in job categories, number of employees, and pay grades, and to Table II-B-2 for percentage breakdown of time spent on tasks).
	2. Of the 5 radiologists, all but department chief devote approx. 95% of their time to reading films and dictating reports; 1/3 of department chief's time and the NCOIC's total time spent in administrative duties; military and civilian technicians perform identical functions and are assigned by NCOIC to various procedure rooms (room assignment made by type of test), the dark room, wet desk, GU Clinic (on 2-week rotation), OR/Portable, 70 mm (one full-time technician), Radioisotope (headed by Department of Medicine M.D. and staffed by 2-3 technicians), or remote MEDDAC units.[1,3,4]	2. For principal responsibilities of staff members by position, refer to Table II-M-2.	
B. Facilities	1. Location:[2] a. Radiology Department (where most examinations are performed) -- first floor of WAH; b. GU Clinic -- first floor of WAH; c. 70 mm X-ray station -- one unit in hospital annex; one unit on first floor of WAH in deserted elevator shaft; d. Radioisotopes -- 8th floor of WAH for proximity to doctor's office.	1. Location: a. Diagnostic Radiology -- on first floor between clinical labs and clinics; b. Radiation Therapy -- next to Diagnostic Radiology; c. Radioisotopes -- on first floor next to clinical labs.	1. Location a. Radiology Department -- third floor, main corridor opposite operating suites; b. Urology Clinic -- first floor in B-1 stub wing.
	2. Total floor space -- approx. 7,942 sq. ft. (refer to Table II-W-2 for breakdown by room of sq. ft. and percentage of total).[5]	2. Total floor space -- 54,465 sq. ft. (refer to Table II-M-3 for complete sq. ft. breakdown by area).[1]	2. Total floor space -- 1,384 sq. ft. (refer to Table II-B-3 for use of rooms and to Table II-B-4 for staffing, operations, potential improvement, and percentage of total staff time spent in each room).[1]

	Ft. Dix	Andrews	Beaufort
C. Equipment	1. Refer to Appendix I, Report 011 for a complete list including quantity and dollar values of all equipment worth singly or in total over $200.[6] 2. Additional equipment includes:[2,7] a. 70 mm chest X-ray unit in unused elevator shaft; b. 70 mm chest X-ray unit, 300 ma X-ray unit, 500 ma X-ray unit, M-4 auto processor in Medical Processing Section (Hospital Annex area); c. Radiology Department also has closed circuit television equipment for fluoroscopy.	1. Refer to Appendix I, Report 011 for a complete list including quantity and dollar values of all equipment worth singly or in total over $200.	1. Major equipment including locations and use loads is listed in Table II-B-5.[2]
D. Work Sampling Study Procedure	1. Observation period: a. 1/2 day (September 15, 1969) in Radiology Department to observe and record general procedures (layout, work flow, patient flow); b. 5-day period (September 16-22, 1969) devoted specifically to work sampling study in which 41 employees in 14 job categories plus facilities and equipment related to each job were observed. 2. Steps in recording and analyzing data: a. task performed by each employee and area of facility in which each task performed was recorded at random times on special data sheets; b. tasks and areas then grouped and coded for meaningful analysis; c. data keypunched and processed by computer for analysis (refer to Appendix X for graphic display of data showing percent of time spent by employee type according to task or room and Appendix II for processing results which yielded these percentages).	1. Observation period: a. One day in Radiology Department to observe and record general procedures (layout, work flow, patient flow); b. 2 days devoted specifically to work sampling study in which 22 employees in 4 job categories were observed, and their tasks and use of facilities recorded. 2. Steps in recording and analyzing data: a. task performed by each employee and area of facility in which task is performed recorded at random times on special data sheets; b. tasks and areas then grouped and coded for meaningful analysis; c. data keypunched and processed by computer for analysis (refer to Appendix X for graphic display of data showing percent of time spent by employee type according to task or room and Appendix II for processing results which yielded these percentages).	1. Observation period: a. 5-day period (August 11-15, 1969) devoted to work sampling of all employees' activities, facilities and equipment utilization. 2. Steps in recording and analyzing data: a. task performed by each employee and area of facility in which each task is performed recorded at random times on special data sheets; b. tasks and areas then grouped and coded for meaningful analysis; c. data keypunched and processed by computer for analysis (refer to Appendix X for graphic display of data showing percent of time spent by employee type according to task or room and Appendix II for processing results which yielded these percentages).

WALSON ARMY HOSPITAL
RADIOLOGY RESOURCE UTILIZATION

TABLE II-W-1

RADIOLOGY STAFF

TITLE	GRADE	NO.	HOURS/ WEEK	% PATIENT CARE	COMMENTS
Chief Radiologist	O-4	1	44	70	Department Head
Radiologist	O-4	1	44	95	On call in ER 8 hrs./wk.
Radiologist	O-3	3	44	95	above duty hrs.
NCOIC	E-7	1	44	0	Day-to-day operations
Military Techs.	E-5	6	44	95	3 hrs. mandatory
Military Techs.	E-4	5	44	95	training/wk. comes
Military Techs.	E-3	3	44	95	out of duty hours.
Civilian Techs.	GS-7	1	40	95	
Civilian Techs.	GS-6	3	40	95	
Civilian Techs.	GS-5	6	40	95	
Clerk Typists	GS-4	2	40	0	
File Clerks	GS-3	1	40	0	
File Clerks	GS-2	2	40	0	
Dictaphone Op.	GS-4	2	40	0	Type Radiologists Reports
Secretary	GS-5	1	40	0	Chief's Private Sec.

TABLE II-W-2

TOTAL FLOOR SPACE

AREA	SQ. FT.	% OF TOTAL
Radiology Department	6339 Total	(79.8)
Waiting Area	500	(6.3)
Reception Area	300	(3.8)
NCOIC Office	49	(.6)
Chiefs Office	140	(1.8)
Secretary Office	140	(1.8)
Radiologists Offices	310	(3.9)
File Rooms	350	(4.4)
Hallway/Waiting	1100	(13.9)
Fluoroscope Room	525	(6.6)
Dark Room	294	(3.7)
Gen. Proc. Room	441	(5.6)
Extremities Room	440	(5.5)
Spec. Proc. Room	520	(6.5)
Gen. Proc. Room	450	(5.7)
Fluorosc. Room	450	(5.7)
Storage Closets	50	(6.2)
Skull Room	280	(3.5)
70 mm X-ray	844 Total	(10.6)
X-Ray Room	294	(3.7)
Waiting Area	550	(6.9)
GU Clinic	294 Total	(3.7)
Radioisotopes	465 Total	(5.9)
Scanning Room	72	(.9)
Doctors Office	72	(.9)
Lab.	217	(2.7)
Renography Room	52	(.7)
Hot Room	52	(.7)

MALCOLM GROW HOSPITAL
RADIOLOGY RESOURCE UTILIZATION

TABLE II-M-1

RADIOLOGY DEPARTMENT STAFF

TITLE	PAY GRADE	NO. OF EMPLOYEES	HRS./WK.
OIC	05	1	36
Radiologist	05	2	40
Radiologist	04	2	40
Radiologist	03	2	40
Physicist	04	1	40
Radiology Supt.	E-8	1	60
Radiologist Tech.	E-7	1	60
Radiologist Tech.	E-6	1	60
Radiologist Tech.	E-5	2	60
Radiologist Spec.	E-4	3	60
Radiologist Spec.	E-3	8	60
Therapy Tech.	GS-6	1	40
Steno. Secretary	GS-5	1	40
Darkroom Tech.	WB-5	1	40
Typist/Receptionist	GS-4	3	40

TABLE II-M-2

RESPONSIBILITIES OF RADIOLOGY DEPARTMENT STAFF

STAFF MEMBER	RESPONSIBILITY
OIC	Exercise command over military personnel assigned to Radiology Department
OIC & NCOIC	Determine new equipment needs
NCOIC	Allocate manpower, order supply, coordinate schedule of examining rooms
Radiologists	Evaluate patient's condition
Receptionist	Give priority to emergencies
Technician	Maintain quality control of film

TABLE II-M-3

BREAKDOWN OF FACILITIES AREA

DESCRIPTION OF ROOM	QUANTITY	TOTAL AREA (SQ. FT.)
Patient diagnosis exam. rooms	8	2000
Patient waiting area (incl. corridors)	1	400
Doctor's office	8	900
Administrative office	4	500
Film storage files	3	900
Dark rooms	2	445
Linen closets	4	80
Patient dressing areas	10	240
TOTAL AREA		5465

BEAUFORT NAVAL HOSPITAL
RADIOLOGY RESOURCE UTILIZATION

TABLE II-B-1

BREAKDOWN OF PERSONNEL POSITIONS AND DUTIES

POSITION	PAY GRADE	NO. OF PERSONNEL	DUTIES
Radiologist	O-3	1	Read, interpret and dictate all X-rays; conduct all fluoroscopic exams; discuss X-ray results with other doctors.
Chief Technician	E-6	1	Procure and replenish all X-ray film and other supplies; schedule special exams; check films for technical clarity; assist radiologist with arteriograms; supervise OJT's; maintain equipment and notify proper person of breakdown.
Technician	E-5	1	Read films for technical clarity; assist chief technician in supervisory duties; instruct OJT's; perform certain X-ray procedures (e.g. tomograms.
OJT (Corpsman)	E-3	3	Receive patients at window; type name on tag; retrieve old jacket containing films; file new films; assist doctor with fluoroscopes in morning; clean fluoro room and run chest X-ray in afternoon; assist in developing X-rays in darkroom when Job Corps workers not present; take routine films only (chests).
Technician	E-4	1	Follow-ups in BE's and GI's
Job Corps Worker	N.A.	1	Develop film in dark room.

BEAUFORT NAVAL HOSPITAL
RADIOLOGY RESOURCE UTILIZATION

TABLE II-B-2

PERSONNEL UTILIZATION BY TASKS*

PERCENTAGE OF TOTAL STAFF TIME	TASKS	COMMENTS
14	handling film cassettes and checking and developing film	
18	positioning the patient, maneuvering equipment with the patient in the room and X-raying the patient	
4.3	retrieving information; e.g., obtaining developed film	
5.8	recording information; this does not include time taken by the radiologist to read X-rays and dictate reports	
18.8	spent in activities away from the unit; additional quantification is necessary to determine the reason for this high percentage of time	
14.3	idle (performing no useful work)	Improved patient scheduling or a flexible staffing pattern may reduce the idle time.
6.2	travel within the unit	Improved facilities layout which optimize staff and patient flow must be considered for future facilities.

*Source: Based on a 5-day work sampling study of Beaufort Naval Hospital Radiology Department, 8/12/69 thru 8/16/69.

TABLE II-B-3

RADIOLOGY FACILITIES -- FUNCTIONS BY ROOM

ROOM NO.	FUNCTION	COMMENTS
334	Contains desk space for chief technician and a file of various unusual cases observed in Radiology	
336	Radiologist's office and viewing room	
333	Receives patients and storing current year's films. Also contains 48 hr. file which consists of films for which typing of doctor's dictation is pending.	
335	Sleeping and TV room for night watch corpsman	
338	Storage of the two preceding years' films	
337	Storage of cleaning gear	
339 & 340	Men's and women's dressing rooms	
342	Storage of supplies used by technicians and doctors	
344 (Radiographic room #2)	Routine overhead work, IVP's, G.I., and Barium enema follow-ups; chest X-rays performed here	Could do some fluoroscopy here but room is neither dark-adapted nor connected to darkroom
341 (Radiographic room #1)	G.I. follow-ups, chest work, and Tomograms	Direct access to darkroom
343	Used by all technicians to view films and check them for technical clarity	
345	Development and darkroom	Accessible from corridor (double doors) or rooms 347, 341
347	Fluoroscopy and chest work is done here in Radiographic room #3; no Tomograms are done in this room	
349, 350, 351, 352, and 348	Formerly used by Urology; presently not in use	Future plans call for a lounge, a ladies' lounge, therapy, and deep therapy rooms

BEAUFORT NAVAL HOSPITAL
RADIOLOGY RESOURCE UTILIZATION

TABLE II-B-4

FACILITIES UTILIZATION

ROOM NO.	%	MAJOR EQUIPMENT	STAFFING/OPERATION/POTENTIAL IMPROVEMENT
43	8.4	Kodak processor (exit end only) View Boxes (3 or 4)	All corpsmen must use this room to receive developed films and check them for technical clarity before the patients are dismissed from the suite and before the radiologist interprets the films. The chief technician spends more time in this room than any other (23.2%), and makes it his responsibility to check most of the films, to tell the OJT's whether they are taking the pictures properly. *This room is too small for the amount of use it receives, being large enough for only about 2 people. Instances were observed where as many as 4 or 5 people were gathered outside the door to see an interesting case. Patients who wait in the hall are within hearing distance of the discussions of the cases. Pictures which go to outpatient clinics are logged out in this area, creating additional congestion and travel between rooms 33 and 43.
36	7.1	View boxes (≈ 16, in two walls). Telephone	1 Radiologist, 37% of time, dictating reports. Also used to confer with other doctors, who come in for advice on film interpretations and to give directions to the chief technician (who spends 8.6% of his time in this room). *Location is too remote from R/G room #3, where doctor travels frequently for fluoroscopic examinations.
45	6.6	Kodak processor	Developing room - 1 Job Corps worker 40.8% of time. *Does not have pass through from R/G room #3 (see discussion for room 44)
41 and 44	5.6 5.3	X-ray (routine chest, etc.) X-ray (routine and Tomograms)	1 Technician in each, according to patient load, for doing routine work (chest and arm X-rays, etc.) *Room 44 has no pass through box into the darkroom, creating extra travel time for the technician, who takes the film cassettes into R/G room #1 for development, disrupting the activity in that room, and creating the possibility of exposure to X-rays for the technician, who sometimes doesn't knock before entering the room.

BEAUFORT NAVAL HOSPITAL
RADIOLOGY RESOURCE UTILIZATION

TABLE II-B-4 - (Cont'd)

ROOM NO.	%	MAJOR EQUIPMENT	STAFFING/OPERATION/POTENTIAL IMPROVEMENT
(Corridor)	14.2		The corridor uses up a high percentage of personnel time, used for traveling or for standing together for small discussions. It is also the patient waiting area, since the waiting room is too far removed from the activity of the suite. *A more efficient layout will reduce travel time and eliminate seating patients in the corridor.
DESCRIPTION OF HIGH VOLUME USAGE ROOMS			
33	20.3	X-ray filing cabinets typewriter telephone	1 Corpsman, full time, acting as receptionist, and current film retriever, 2-3 corpsmen, in and out, picking up chits before calling patients name, retrieving former pictures, and waiting for more patients to arrive (idle). *High congestion in room shows need to separate reception area from X-ray storage area, and to change technician flow so that they do not enter room to obtain information on the next patient.
47	10.5	Westinghouse fluoroscopic unit (non-dark adapted)	1 Radiologist, 25.2% of his time (90% of the time he spends in R/G rooms). 1 technician, assisting doctor, or doing other routine films unassisted. Serves as the only room for special examinations, since these are scheduled in the morning, sees 91% of its use between 0730 and 1200. The special procedures include: Gall Bladders MWF - max 2/day Upper GI's MWF - max 6/day Barium enemas MWF - max 4/day Cystoscopy Tue, Th - max 5 IVP's Tue, Th - max 3 Scheduling - 5 to 10 days in advance *Remote location from doctors office requires excess travel between the two rooms

BEAUFORT NAVAL HOSPITAL
RADIOLOGY RESOURCE UTILIZATION

TABLE II-B-5

EQUIPMENT UTILIZATION

EQUIPMENT	LOAD USE Under	Normal	ROOM #	COMMENTS
Picker X-Ray Unit	U		352	Equipment is 20 years old - has not been used during the past year.
X-Ray Therapy Table	U		352	" " " " " "
Picker X-ray Unit	U		352	" " " " " "
Stereoscope	U		334	Radiologist prefers not to use this stereoscope
Picker Illuminator		N	343	
Developing Tank	U		345	The automatic processing machine is used at present
Victoreen R Meter		N	334	Used in disaster drills - it is a radiation detector
Portable X-ray Machine	U		331	Old and bulky - not used at present
Victoreen Minometer		N	334	Used only during disaster drills
Admiral Radio Set		N	334	Used during disaster drills
Admiral Radio Set		N	334	Used during disaster drills
Tracerlab Radio Set		N	334	Used during disaster drills
70 mm X-Ray Receiver		N	336	
X-Ray Grid Unit		N	341	Used with portable X-ray unit and in radiology with lateral views
X-Ray Grid Unit		N	349	" " " " " "

TABLE II-B-5 - (Cont'd)

EQUIPMENT	LOAD U	LOAD N	ROOM #	COMMENTS
GE Portable X-Ray Unit		N	331	Used in surgery for routine ortho or emergency operations
Silver Reclaim Unit			345	
X-Ray Illuminator		N	336	Used by Radiologist
Processing Machine		N	343	
Westinghouse X-Ray Machine		N	347	
Transcribing Machine		N	336	
X-Ray Apparatus		N	341	
Cassette		N	347	
Cassette		N	341	
Polaroid Processing Machine		N	349	
500 MA X-Ray Apparatus		N	344	
San Chez Perez	U		347	At present, this machine is used approximately 1/wk. However, this is new piece of equipment and will be used in future
X-Ray table for apparatus		N	344	
Portable X-Ray Illuminator		N	336	

III. RADIOLOGY -- FUNCTIONAL COSTS

	Walson Army Hospital (WAH) -- Ft. Dix	Malcolm Grow Hospital -- Andrews AFB	U.S. Naval Hospital -- Beaufort
A. Total			
1. Cost:	$391,271 annually.	$444,401 annually.	$74,664 annually.
2. Source:	a. refer to Tables III-W-1 and III-W-2 for elemental figures from which total cost derived and Appendix VII for functional cost breakdown summary sheet.	a. refer to Appendix VII for functional cost breakdown summary sheet.	a. refer to Appendix VII for functional cost breakdown summary sheet.
B. Personnel			
1. Cost:	$257,856 annually (includes Radiology and 70 mm. personnel and technicians in RadioIsotope and GU Clinic): military -- $140,774; civilian -- $117,082; non-function cost -- $5,892; function cost -- $251,964.	$293,347 annually: function cost -- $274,928; non-function cost -- $18,419 (see Table III-M-1).	$43,326 annually.
2. Source:	a. Table III-W-2 shows staffing figures used for calculating personnel costs in Radiology; figures obtained from interview with Chief of Radiology, and verified by observation of department. b. (W) obtained pay rates for each labor grade from "Standard Rates for Military Personnel Services," AFM 177-10 (C91) for Military Personnel and schedule established by DoD 5 June 1968 directive 5120.39 for civilian personnel, and added 7.6% in fringe benefits for civilian labor. c. WAH determined personnel figures from MEDDAC TDA for civilian personnel, from DA Form 2472 for enlisted personnel, and from special staffing report prepared by Chief of Personnel Division for Officers.	a. function cost -- the number of people assigned to radiology was determined from interviews with the NCOIC of Radiology; pay rates for military personnel were taken from AFM 177-101(C91); civilian rates were extracted from U.S.A.F. salary rates July 1968 (Appendix IX); benefits for civilians were determined from information given in interview with (W) military consultant. b. non-function cost (time spent by employee outside the function) • housekeeping -- from estimated hours (4 per week) spent by Radiology technicians in housekeeping chores (estimated by person being interviewed) • formal training -- TDY time for training purposes, from Professional Activities Report FY69 • OJT -- from hours per trainee and instructor, estimated by interviewec, changeover rate by function, from business office. personnel costs for FY69 are listed in Appendix IX.	a. (W) interview, with pay rates from AFM177-101(C91).

III. Radiology -- Functional Costs (Cont'd)

	Ft. Dix	Andrews	Beaufort
C. Supplies			
1. Cost:	$95,622 annually: medical -- $94,659; non-medical -- $179; CMS -- $392.	$108,772 annually.	$20,744 annually.
2. Source:	a. medical and non-medical cumulative cost run for FY69, received by Management Services Division from Post DP, showing resource cost by item according to each function. b. CMS cost obtained by prorating department's CMS costs as a percentage of the total for the hospital; percentage based on a 2-day survey of all FY69 CMS requisitions from the department (see Appendix XI for all calculations).	a. from Report of Medical and Non-medical Supply Expense FY69. b. Central Sterile Supply (C.S.S.) added into medical -- prorated from annual CSS cost for entire medical center, given in Report of Medical and Non-medical Supply Expense FY69; 2 months' radiology orders and direct issues data used as basis for calculations.	a. FY69 Account 310 listing from Fiscal and Supply; "T1" and "T7" codes under SFC Code 4F00, "Radiology."
D. Maintenance			
1. Cost:	$24,393 annually: WAH medical maintenance -- $24,021; Post Engineering -- $372.	$30,877 annually: medical -- $12,433; non-medical -- $18,333.	$9,124 annually.
2. Source:	a. medical maintenance -- request slips from November 1968 to November 1969 were reviewed to determine charges to functions for parts and labor; these charges were used for medical maintenance costs. b. Post Engineering -- total annual costs of labor and materiel obtained in an interview with Post Engineering; estimate then obtained on percent of their total work performed for WAH; 3-month sample of Post Engineering requests taken to distribute the percentage of cost allocated among WAH functions; see Appendix IV for all calculations.	a. medical -- labor and parts costs from maintenance chits for entire FY69. b. non-medical -- prorated from annual non-medical maintenance cost for entire medical center, given in Medical Expense Report CY69; one month's chits used as basis for calculations. c. all maintenance costs from Medical Expense Report CY69.	a. non-medical maintenance -- prorated by total square footage as a percentage of Account 310, SFC Code 7150, which lists total maintenance costs for the hospital bullding only (e.g., excludes grounds, housing, medical maintenance, etc.). b. medical maintenance -- estimated by counting a 12-month sampling of medical repairman's chits for parts costs, and by prorating salary.
E. Housekeeping			
1. Cost:	$13,792 annually: by radiology staff -- $0; by civilian agency contract -- $13,792.	$10,861 annually: janitorial -- $10,502; staff -- $359.	$4,202 annually.
2. Source:	a. civilian housekeeping agency's contract with WAH for FY69; total annual cost to WAH ($431,000 for FY69) was allocated to radiology on a basis of percentage of total sq. ft. cleaned (Radiology = 3.20%). b. See Appendix V for all calculations.	a. janitorial -- cost of janitor service by sq. ft. b. staff -- time spent by radiology staff in housekeeping as estimated by NCO of Radiology.	a. janitorial -- time spent by janitors in pharmacy was obtained from the Janitorial Work Distribution Chart. b. by staff -- estimated from interviews and observations.

III. Radiology — Functional Costs (Cont'd)

	Ft. Dix	Andrews	Beaufort
F. Training			
1. Cost:	$5,892 annually.	$18,963 annually: OJT -- $13,664; training department -- $903; formal -- $4,396.	$4,032 annually.
2. Source	a. a portion of the total functional personnel cost was allocated to OJT on the basis of estimates made by observers of the amount of time needed for a student to reach 90% efficiency in each job class; these estimates were factored into a learning curve equation to arrive at OJT costs (see Appendix VI, "OJT Costs"). All radiology training was considered OJT.	a. OJT -- see "Personnel, OJT training" above. b. the percentage of the cost of training department administrative personnel allocated to each function was determined first by finding the percentage of the total training staff allocated to a given function, and then by calculating this percentage of administrative personnel salaries. c. formal -- see "Personnel, formal training" above.	a. OJT -- from interviews and observation b. training department -- prorating the salary of the corpsman in charge of training among functions according to number of corpsmen receiving training in each function. c. formal -- from announcements of training sessions, lectures, schedules, etc.
G. Capital Equipment			
1. Cost:	$329,925: standard — $157,130; non-standard -- $183,073.	$454,968.	$93,453
2. Source:	a. survey of WAH property book taken December 8-9-10, 1969, in which two types of equipment were tallied: • equipment with a unit price greater than $200 • equipment with a unit price less than $200 but for which the number of units in the function brought the total dollar figure above $200. b. there are two types of WAH equipment price records • standard equipment, for which the price on file represents current market value • non-standard equipment, for which the price on file is original purchase price.	a. supply inventory data (using activity document list PCN-43165A, 30 September 69) of all items with purchase price over $200.	a. cost of equipment over $200, from Beaufort Property Control Listing (8/14/69) (computer run), verified by observation.

WALSON ARMY HOSPITAL
RADIOLOGY FUNCTIONAL COST

TABLE III-W-1

ITEM	(W) DETERMINED COSTS
Direct charges	
Military labor	140,774
Civilian labor	117,082
Supplies - medical	94,659
Supplies - non-medical	179
Maintenance	
Post	372
Medical	24,021
Misc. charges C.M.S.	392
Prorated charges	
Housekeeping	13,792
Equipment	
Cost of Standard	157,130
Cost of Non-standard	183,073
Total Charges	$391,271

TABLE III-W-2

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NO.	& GRADE	NO.	& GRADE	ITEM	COST, $
2	O4	2	O4	Equipment	10,278
3	O3	3	O3	Transportation	194
2	E6				
5	E5	6	E5		
5	E4	5	E4		
2	E3	3	E3		
		1	E7		
4	GS5	7	GS5		
4	GS4	4	GS4		
1	GS7	1	GS7		
5	GS6	3	GS6		
3	GS2	2	GS2		
		1	GS3		
Mil.: $137,740.00		Mil.: $140,580.00			
Civ.: $101,847.00		Civ.: $108,812.00			

MALCOLM GROW HOSPITAL
RADIOLOGY FUNCTIONAL COSTS

TABLE III-M-1

ITEM	RADIOLOGY	RADIO-ISOTOPES	RADIATION THERAPY & MED. PHYSICS	TOTALS
Personnel (incldS. tng & housekeeping by staff)	197,281	30,576	65,490	293,347
Equipment (over $200 - acquisition cost)	374,182	80,786	(in Radiology)	454,968
Supplies				
(Medical	92,160	13,692	(in Radiology)	105,852
Non-Medical)	686	76		762
Maintenance	9,788	2,756	(in Radiology)	12,544
(Medical & Hospital)	1,833	(in Radiology)	"	1,833
Housekeeping	595	123	154	872
(Janitorial services only)	6,566	1,369	1,695	9,630
Other				
Central Sterile	1,495	663		2,158
Oper. of Utilities	3,711	744	958	5,413
Contracts	8,355			8,355
Cont. Maint.	2,568	536	663	3,767
Heating Personnel	1,307	272	337	1,916
Travel	801			
TOTALS				
Formal Tng				4,396
OJT		420		13,244
Housekeeping	359			

I. RADIOLOGY -- OPERATIONS SOURCE SHEET

Walson Army Hospital

1. Interview with Chief of Radiology (September 15, 1969).
2. Interview with Chief of Radioisotopes,(September 24, 1968).
3. Interview with CO, 1611th Dispensary, McGuire AFB.
4. Interview with NCOIC, Radiology (October 29, 1969).
5. Ratio of films exposed to number of procedures for CY68 (1.90) used to extrapolate films exposed CY69 from known procedures for CY69 (DD-444, Outpatient Report).
6. DD-444, Outpatient Reports.
7. Observation of Radiology Department and sampling of Department Log Book, week of September 21, 1969.
8. Observation of GU Clinic, September 23, 1969.
9. Radiology Work assignment schedules for July, 1968, and September, 1969.

Malcolm Grow Hospital

1. Interview with NCOIC, Radiology.
2. AF235, FY69, lines 56-57.
3. A sample of 100 random X-ray film file folds was conducted to a quantitative relationship of arrival time to radiology clinic. This information was not available in their log.

Beaufort Naval Hospital

1. All services rendered information from NAVMED 1454, line 19.
2. Sum of films exposed, NAVMED 1454 and dispensary films read, Beaufort Morbidity/Mortality Report, FY69.
3. Extrapolated from one-month sample of Beaufort Radiofluoroscopic log book.
4. Beaufort Morbidity/Mortality Report, FY69.

II. RADIOLOGY -- RESOURCE UTILIZATION SOURCE SHEET

Walson Army Hospital

1. Interview with NCOIC, Radiology.
2. Observation of Radiology Department and GU Clinic, week of September 21, 1969.
3. Interview with Chief of Radioisotopes, September 24, 1969.
4. Interview with Chief of Radiology, September 15, 1969.
5. Scaled photograph of WAH floor plans provided by Chief of Registrar Div.
6. Radiology hand receipts, WAH property book.
7. Observation of Medical Processing Section, October 13, 1969.

Malcolm Grow Hospital

1. Interview with NCOIC, Radiology Department, September 18, 1969.

Beaufort Naval Hospital

1. From Beaufort Hospital blueprints, 1/4" = 1 ft. on scale.
2. From Beaufort Property Control Listing (August 14, 1969.

REGISTRAR

WALSON ARMY HOSPITAL (WAH) -- FORT DIX

Mission

The mission of the Registrar Division is to act as custodian of all medical and clinical records of inpatients and outpatients; administratively admit and discharge patients; provide for the collection of medical data; prepare medical, statistical, and other reports; perform hospital treasurer functions; and prepare claims for medical services obtained by Army military personnel from civilian medical sources.*

The WAH Registrar Division provides the above services and in addition, operates a special Congressional Inquiry Office and helps to administer WAH/McGuire AFB Air Evacuation Program.

Existing Operations

The Registrar Division's major problem is that its growth has not kept pace with the workload increase. The result is what Registrar personnel term "management by exception": since the workload is so heavy and the tasks so time-consuming only the most urgent tasks are performed.

The system is particularly strained by: the upper respiratory infection season, with its overload of admissions and mass transfers to the hospital Annex; coordination of the Absent Sick Program; 500 congressional inquiries per month; and coordination of MEDDAC statistical reporting, which is somewhat decentralized and generally inconsistent.

Added operating stresses are produced by: the existence of one Thermofax duplicating machine for the entire Division; lack of adequate administrative assistance in medical areas; and the current personnel shortages and personnel cost reduction directives.

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*As stated in AR 40-4 para. 2-24.

MALCOLM GROW USAF MEDICAL CENTER -- ANDREWS AIR FORCE BASE

Mission

The mission of the Registrar Offices includes providing administrative support to the medical staff and service as the Patient Squadron Section Commander. Registrar functions include: admission and disposition of patients; administrative control of beds; administration of medical board proceedings; the hospital information desk; a central appointments section; and stenographic services for medical staff physicians.*

As part of its supportive role to the medical staff, the Registrar's Office spends considerable time processing such documents as Medical Board and Retirement physical evaluations, and Line of Duty Determinations. Malcolm Grow Registrar also processes the retirements of all Air Force officers.

Existing Operations

An extensive workload combined with layout, staffing, and equipment problems, constitutes Registrar's basic operational problem. The Admissions/Dispositions service is convenient only to the X-ray, laboratory, emergency room, and outpatient areas. The central stenographic pool and the central appointment desk are not only separated from the clinical areas which they serve, but are also understaffed and underequipped.

However, these are minor problems in view of the mounting workload and the simultaneous cutback in personnel. Malcolm Grow's change in status from hospital to medical center has not only increased the number of clinical specialties and thus Registrar's processing load, but has expanded Registrar's mission: "administrative control of beds" now includes patient movement to referral hospitals. In addition, the DOD "Early Out" program has reduced all hospital manpower by 10 percent which, in turn, has both reduced Registrar's staff and increased the number of retirement physicals to be processed.

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*As stated in the AFM-164-4H, Section F, paragraphs 1-14.

U.S. NAVAL HOSPITAL -- BEAUFORT

Mission

The Beaufort Registrar mission includes: admission and disposition of patients; administrative control of beds; administration of medical board proceedings; operation of the hospital information desk; operation of stenographic services for the medical staff; and custody of inpatients' belongings.*

The term "Registrar" refers to a particular section of the Patient Affairs Branch, which, in turn, ispart of the Personnel and Patient Affairs Division. In practice, however, Registrar at Beaufort is synonomous with the Patient Affairs Branch.

Existing Operations

Of the several problems which interfere with effective implementation of the Registrar function, those involving facilities and personnel are foremost.

Registrar (Patient Affairs) shares an office with Personnel, although this facility is too small to accommodate the operation of both functions. The fact that the Registrar's office is not adjacent to the Admissions Office, Outpatient Records, and Inpatient Archives prohibits these departments sharing Registrar personnel. Such sharing of personnel among these departments would both maximize the use of manpower and make it possible to centralize admissions processing in the Admissions office. Since that office's workload does not justify a full-time employee, new patients are currently processed by Emergency Room corpsmen.

DATA PRESENTATION MATRICES

The following matrices and charts detail the data gathered by the Westinghouse teams on the three hospitals' registrar services. The first matrix delineates registrar operations; the second, resource utilization; and the third, functional costs.

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*As stated in the Beaufort Organization Manual, NAVHOSPBFT INST. P-5400, pp. D-23 and D-24.

I. REGISTRAR -- OPERATIONS

	Walson Army Hospital (WAH) -- Fort Dix	Malcolm Grow Hospital -- Andrews AFB	U.S. Naval Hospital -- Beaufort
A. Services Rendered	1. Admissions and Dispositions (A & D):[1] a. interview patients for information on admission to hospital; b. create identification and information documents for each admitted patient (see Table I-W-1 for itemization); c. prepare, verify, correct, and distribute A & D sheet; d. maintain files of admission data; e. prepare and check Consolidated Morning Report; f. process, verify, and store data on interward transfers, including those to Hospital Annex; g. routine maintenance of A & D equipment; h. OJT of new personnel.	1. Admissions and Dispositions (A & D): a. assign patients to wards; b. arrange for receiving and safeguarding patients' valuables, baggage and clothing; c. initiate preparation of individual clinical and related administrative records; d. compile and maintain data for preparation of reports pertinent to admitted or discharged patients.	1. Admissions: a. interview patients for information on admission to hospital; b. create identification and information documents for each admitted patient; c. prepare admission sheets and send to Data Processing; d. maintain files of admission data.
	2. Statistics section:[2] a. accummulate and produce all relevant cumulative statistics for Fort Dix MEDDAC, in the form of • outpatient reports • beds and patients reports • morbidity reports • special disease reports • special projects • reports on size of population served by WAH	2. Registrar: a. ensure that adequate medical records are prepared and maintained; b. supervise administrative aspects of admission, disposition, and transfer of patients; c. receive, review, and process medical records; d. inform Central Base Personnel Office of patients who will stay more than 90 days; e. review records of patients transferred; f. provide assistance for preparation and maintenance of clinical case records; g. ensure proper reporting and recording of vital statistical data; h. provide aeromedical evacuation (AIREVAC) with administration coordination.	2. Personnel and Patient Affairs:[1] a. prepare and check daily and weekly census report; b. process, verify, and store data on hospital transfers; c. process the patients' discharges; d. orient all new personnel; e. maintain inpatient records; f. accumulate and produce all relevant cumulative statistics for BUMED, in the form of • outpatient reports • beds and patients reports • morbidity and mortality statistics reports • special disease reports • special projects • strength served reports; g. steno pool • type narrative summaries on inpatient discharges • type narrative summaries on medical board cases • other typing as needed; h. handle inquiries from outside regarding Registrar Division; i. handle absent sick program; j. counsel patients on disability discharges; k. Medical Board Processing -- paperwork on disability and medical board discharge cases; l. answer queries from insurance companies, outside doctors, lawyers, etc.; m. determine authorization to distribute medical record information.
	3. Steno pool:[3] a. type narrative summaries on inpatient discharges; b. type narrative summaries on medical board cases; c. code all narrative summaries by TB-Med 15 diagnostic coding system; d. other typing as needed.		
	4. General Information Office:[3] a. handle inquiries from outside regarding Registrar Division; b. handle absent sick program for WAH; c. counsel patients on disability discharges.		

I. Registrar -- Operations (cont'd.)

Ft. Dix	Andrews	Beaufort
V. Services Rendered (cont'd.).	3. Clinic Records Library (CRL):	
	a. retrieve and process medical records and refer incomplete records to responsible physician or departmental chief for correction;	
	b. establish and maintain clinical reference and related indices and provide clinical reference services to staff members;	
	c. compile clinical record statistical data and prepare reports based thereon;	
	d. obtain and/or prepare transcripts of clinical records as requested or required;	
	e. maintain inpatient medical records file.	
5. Congressional Inquiries Office:[3]		
a. investigate all inquiries by congressmen into complaints on treatment received by constituents at WAH.		
6. Medical Board Processing:[3]		
a. paperwork on disability and medical board discharge cases.		
7. Vital statistics:[3]		3. Vital Statistics
a. data processing and generation on all births and deaths at WAH.		a. records for all births and deaths.

	II. Do	Answers	Results
A. Services Rendered (cont'd.)	9. Correspondence:[3] a. answer queries from insurance companies, outside doctors, lawyers, etc.; b. determine authorization to distribute medical record information.		
	9. Air Evac Section:[3] a. administrative control of WAH Air Evacuation Program, shared between Chief, Registrar and Chief, Surgical Nursing Service.		
	10. Baggage Room:[1] a. distribute pajamas to newly admitted patients; b. check in and check out patients' baggage and property.		1. Baggage Room: a. check in and check out patients' baggage and property.
	11. Information Desk:[1] a. answer personnel and telephone inquiries about status of inpatients; b. receive and deliver telegrams for inpatients and hospital staff; c. receive and deliver flowers for inpatients.		5. Information Desk: a. answer personnel and telephone inquiries about status of inpatients; b. operate switchboard for entire hospital; c. receive and deliver telegrams for inpatients and hospital staff; d. receive and deliver flowers for inpatients.
	12. Other Registrar responsibilities:[3] a. vouchers -- all patient-oriented accounts payable paper work; b. OJT of all personnel assigned to Registrar Division; c. part of training of Administrative Residents; d. orient hospital staff to Registrar services; e. technical advice to remote MEDDAC areas.		6. Other registrar responsibilities: a. OJT of all personnel assigned to Registrar Division; b. orient hospital staff to registrar functions.
B. Hours of Operation	1. Normal duty hours:[1,2,3] a. all registrar sections except A & D work 0800 to 1630 hrs., Monday thru Friday;	1. Normal duty hours:[1] a. A & D open 24 hours a day, 7 days a week; b. Other functions open 0800 to 1700 hrs. Monday thru Friday.	1. Normal duty hours: a. all registrar functions except information desk and admissions room — 0730 to 1600 hrs. Monday through Friday.

I. Register -- Operations model

II. Use	Answers	Remarks
B. Hours of operation needed	2. Special duty hours:[1]	2. Special duty hours:
	a. All Health admission desk, baggage room, and information desk 24 hours a day, 7 days a week.	a. admissions room -- open not 24 hours a day, as the surgeon and night is a competent standing duty watch in the ER;
		b. information desk -- since this is also a multi-floored location, it is staffed 24 hours a day, in the evening and night by Medical Records.
C. Workload Use	1. A & D:	1. A & D:
	a. total admissions FY69[1] -- 29,079 • direct admissions -- 28,265 (97.2%) • transfer in -- 1,211 (4.1%) • intercept transfers -- 131 not included in totals	a. total admissions[1] FY69 -- 9,566 • direct admissions -- 9,337 • transfer in -- 1,089 refer to Table I-M-1 for breakdown by beneficiary types;[2]
	b. admissions by patient category • active duty -- 22,265 (77.12%) • Reserve, National Guard -- 2,912 (9.78%) • retired -- 333 (1.90%) • dependents -- 3,570 (12.97%) • other -- 92 (0.23%) Refer to Table I-W-1 for more complete breakdown of annual admissions of detailed categories.[1] Figure I-W-1 shows the fluctuation in the number of admissions and dispositions for WAH on month from July, 1968, to December, 1969.[1] Table I-W-1 shows active duty military population served by WAH for FY69.[2]	b. dispositions[2] FY69 -- 9,536 Refer to Table I-M-2 for breakdown by categories;[2] c. transient patient load for the 24th Casualty Staging Flight Aeromedical Evacuation Unit.[3] -- Table I-M-3 shows the average daily load for 8 months from November, 1968 through June, 1969 as 101. The peak day was December 11, 1968.
	c. dispositions FY69[1] -- 29,091;	
	d. patients interviewed by A & D section FY69[1] -- 3670 (Table I-W-1 shows number, type and destination of some documents completed for each patient interviewed.[1]	
	2. Medical:[2]	
	a. documents prepared FY69 -- approx. 83,172 refer to Table I-W-1 for breakdown of average monthly medical workload by category.	
	3. Non-availability statements:[2]	3. CHIP:[2]
	a. non-availability statements issued FY69 -- 220 (Table I-W-1 shows the annual number of non-availability statements issued by WAH. Registrar's census for inpatients also shows a breakdown by armed services.	a. medical records closed FY69 -- 500,000; b. medical records pulled FY69 -- 100,000.

	Ft. Dix	Andrews	Beaufort
C. Workload Flow cont'd.)	4. Congressional inquiries section:[3] a. approx. 6,000 special congressional inquiries handled annually. 5. Disability separations:[3] a. 279 disability separations processed FY69. 6. Air Evac Section:[3, 4] a. total of 9,328 patients processed in FY69; b. approx. 125 of these patients per month remain at WAH (Table I-W-6 shows number of Air Evac patients received annually at WAH and the average number remaining at WAH per month for FY69, broken down by armed service).		
D. Information Flow	1. For monthly volume of Registrar communications, broken down by communication mode according to source or destination, refer to Table I-W-7. 2. For monthly volume of communication inputs and outputs according to type of communication, refer to Table I-W-8.	1. For monthly volume of registrar communications, broken down by communication mode according to source or destination, refer to Table I-M-1. 2. For monthly volume of communication inputs and outputs according to the type of communication, refer to Table I-M-2.	1. For monthly volume of registrar communications, broken down by communication mode according to source or destination, refer to Table I-B-1. 2. For monthly volume of communication inputs and outputs according to the type of communication, refer to Table I-B-2.

TABLE I-W-1

NUMBER AND TYPE OF IDENTIFICATION AND INFORMATION DOCUMENTS PER PATIENT

3 x 5 information cards (approx. 18 copies) sent to:

Statistic Section	2 (4 for patients from Viet Nam)
A & D File	1
Preventive Medicine	1
Clinical Records	1
Surgical Service	1
Post Office	1
Personnel	1
Chaplain	1
OBGYN Service	1
Information Desk	2
Medical Service	1
Vital Statistics	1
Army Health Nursing	1
Patients' Brigade	1
McGuire Air Force Base	1
VD Clinic	1
Finance (Post, RVN's only)	1

Ward information plate used to make:

Wrist band:	1
Bed card:	1
Clinical record cover sheets:	5
Disposition (clearance) slips:	1
Med. record work sheets:	1
X-ray requests (URI's):	1
Hematology requests (URI's):	1
Personal effects slips:	2
Pts. deposit records:	2
Disposition form (RVN pts.):	2
Ledger card (pay pts.):	1

Walson Army Hospital
Registrar Operations

TABLE I-W-2

BREAKDOWN OF ADMISSIONS BY PATIENT CATEGORY

CATEGORY	# ADMISSIONS		% OF TOTAL	
Active Duty Army	22056		73.30	
Active Duty Navy - Marine	89		.29	
Active Duty Air Force	449		1.49	
Other Active Duty	1		.00	
Total Active Duty		22595		75.12%
Reserves	2836		9.42	
Other Army	103		.34	
Other Navy - Marine	1		.00	
Other Air Force	2		.00	
Total on Active Duty		2942		9.78
Retired Army	366		1.21	
Retired Navy - Marine	83		.27	
Retired Air Force	119		.39	
Other Retired	5		.01	
Total Retired		573		1.90
Dependents Active Duty Army	1578		5.24	
Dependents Active Duty Navy - Marine	195		.64	
Dependents Active Duty Air Force	1277		4.29	
Dependents Retired Army	496		1.64	
Dependents Retired Navy - Marine	138		.45	
Dependents Retired Air Force	180		.59	
Other Dependents	13		.04	
Total Dependents		3877		12.89
*Other Categories	92	92	.29	.29
Total	30079		99.98%	

*Mostly civilian emergencies, ROTC, WACS

(Total not equal to 100% due to rounding)

Walson Army Hospital
Registrar Operations

TABLE I-W-3

BREAKDOWN OF STRENGTH SERVED BY BRANCH OF ARMED SERVICE

SERVICE	AVERAGE STRENGTH SERVED	% OF TOTAL
Army	30589	74.9
Navy-Marine	8264	20.2
Air Force	20	.0
Other	1976	4.8
Total	40849	99.9
		(Total not equal to 100% due to rounding)

TABLE I-W-4

STENO POOL AVERAGE MONTHLY WORKLOAD BY CATEGORY

WORKLOAD CATEGORY	AVERAGE MONTHLY QUANTITY	AVERAGE ANNUAL QUANTITY
Narrative summaries	595	7,140
Work sheets/cover sheets (medical records)	382	4,584
Operation reports	26	312
Medical Board summaries	132	1,584
Consultations	65	780
Surgical short forms	898	10,776
Drafts	244	2,928
Other	217	2,604
Final clinical record cover sheets	1103	13,236
Medical Board proceedings Total	204	2,448
surgery (15 av./mo.)		
medical (89 av./mo.)		
Charts with summaries (final) Total	565	6,780
surgery (396 av./mo.)		
medical (169 av./mo.)		
Total Documents	4,431	53,172

TABLE I-W-5

ANNUAL NUMBER OF NON-AVAILABILITY STATEMENTS
BY REASON/SERVICE

REASON FOR ISSUANCE	NUMBER					
	MATERNITY	MEDICAL	SURGICAL	PEDIATRICS	OTHER	TOTAL
Distance	105	0	0	0 *	0	105
Insufficient number of professional personnel	0	0	57	11	0	57
Shortage of beds	0	0	32	13	7	39
Specialized care beyond responsibility	0	7	6	6	6	19
Total	105	7	95	30	13	220
SERVICE						
Army	53	2	36	11	6	97
Navy - Marine	11	0	15	5	1	27
Air Force	39	5	44	14	6	94
Other	2	0	0	0	0	2
Total	105	7	95	30	13	220

*Included in totals for other catagories.

TABLE I-W-6

AIR EVAC PATIENTS RECEIVED (FY69)

ARMED SERVICE	NUMBER RECEIVED	AVERACE REMAINING/MONTH
Army	5273	16.2
AF	541	1.6
Navy	1016	3.0
Marine	1966	6.1
Others	532	2.0
Total	9328	28.9

Watson Army Hospital
Registrar Operation

TABLE 1-W-7

NUMBER OF COMMUNICATIONS BY MODE ACCORDING TO SOURCE/DESTIONATION

SOURCE/ DESTINATION	RECEIVED BY REGISTRAR						SENT BY REGISTRAR					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION		1		150		72	45	6040		356	10	68
AIR EVACUATION				68								
DENTAL SERVICE				15								
DISPENSARIES				2720								
FLIGHT MEDICINE												
FOOD SERVICE				401				20		30		20
HOUSEKEEPING												
LABORATORIES				18				28		2150		
MAINTENANCE												
MEDICAL RECORDS			1401							6340		
NURSING SERVICE				21	84	28				257		
OPERATING ROOM				48						20		
OUTPATIENT DEPT.				1502				1500		92		
OUTSIDE WORLD	896			5100	5400	10503	1976	3862		11084	7000	14172
PERSONNEL				44						100		4
PHARMACY				1								
PHYSICAL THERAPY				15						20		
PREVENTIVE MED.				1				1500		60		
PROFESSIONAL SERV				1674		2384		3100		2983		23
RECRUITMENT												
SUPPLY				4					17			4
VETERINARY MED.												
WARD MANAGEMENT				671						15200		
RADIOLOGY				20015						2778		

TABLE 1-W-8

TYPE OF COMMUNICATION BY INPUT AND OUTPUT

Rec. 6700

INPUT / OUTPUT	Patient Care Urgent	Patient Care Important	Patient Care Routine	Patient Care Secondary	Patient Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
INPUT											
VOLUME OF COMMUNICATION	1000	20530	1304	5054	3550		5		47	1390	32880
NUMBER OF COMMUNICATION	1	13	4	106	11		2		14	13	164
OUTPUT											
VOLUME OF COMMUNICATION		765		5088	448		16	4	12	1385	7718
NUMBER OF COMMUNICATION		5		24	12		4	1	7	26	79

TABLE I-W-8 (cont'd)

INPUT / OUTPUT	Patient Care Person	Patient Care Important	Patient Care Sub-Important	Patient Secondary	Patient Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
6704 INPUT											
VOLUME OF COMMUNICATION	2726	140		7160	640				1	104	10771
NUMBER OF COMMUNICATION	10	3		9	31				1	2	56
6704 OUTPUT											
VOLUME OF COMMUNICATION		24804	36	14532	20980				1	840	67193
NUMBER OF COMMUNICATION		84	9	41	62				1	1	198
6705 INPUT											
VOLUME OF COMMUNICATION		20		20	3020					17300	20360
NUMBER OF COMMUNICATION		1		1	2					5	9
6705 OUTPUT											
VOLUME OF COMMUNICATION				21562	524					28	22114
NUMBER OF COMMUNICATION				43	2					1	46
6706 INPUT											
VOLUME OF COMMUNICATION				2400						3000	5400
NUMBER OF COMMUNICATION				1						1	2
6706 OUTPUT											
VOLUME OF COMMUNICATION				4200							4200
NUMBER OF COMMUNICATION				1							1

TABLE I-M-1

INPATIENT ADMISSIONS

BENEFICIARY TYPES	BY DIRECT ADMISSION	BY TRANSFER
All Services Active Duty	11,263	2,701
All Services Retired	1,114	42
All Active Duty Dependents	9,063	360
All Retired and Deceased Dependents	931	23
All Other Special Categories	153	19
TOTAL	22,544	3,145

TABLE I-M-2

DISPOSITION OF INPATIENTS

CATEGORY	NUMBER
Total Transferred to Air Force Facilities	102
Total Transferred to Army Facilities	49
Total Tranferred to Navy Facilities	32
Total Tranferred Military - Back to Duty Civilian - Home	8353
TOTAL	8536

TABLE I-M-3

TRANSIENT PATIENT LOAD

MONTH	DAILY AVERAGE	PEAK DAY	NUMBER
November 1968	95	22	158
December 1968	111	14	205
January 1969	89	11	139
February 1969	115	13 & 14	172
March 1969	123	-	198
April 1969	86	16	143
May 1969	104	10-11	157
June 1969	113	5	151

Daily Average for 8 months = 104

Malcolm Grow Hospital
Registrar Operations

TABLE I-M-4

NUMBER OF COMMUNICATIONS BY MODE ACCORDING TO SOURCE/DESTINATION

SOURCE / DESTINATION	RECEIVED BY						SENT BY					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	RADIO-TELETYPE	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	RADIO-TELETYPE	TELEPHONE
ADMINISTRATION				899						23100		
ADJUTANT'S				1		100						
DENTAL SERVICE												
DISPOSITION						90						
FINANCE ALLOTMENT												
FOOD SERVICE												
HOUSEKEEPING												
LABORATORIES				235								
MAINTENANCE												
MEDICAL RECORDS												
NURSING SERVICE												
OPERATING ROOM												
OUTPATIENT DEPT.		100		14976	1					3113		
OUTSIDE WORLD	3200			100	100	999	829	80	180	40		100
PERSONNEL												
PHARMACY		1										
PHYSICAL THERAPY												
PREVENTIVE MED.												
PROFESSIONAL SERV				1373						1189		
RADIOLOGY												
SUPPLY		2				95		39		2206		6
VETERINARY MED.												
WARD MANAGEMENT	2	175		1239		511				17839		36
RADIOLOGY				20								

TABLE I-M-5

TYPE OF COMMUNICATIONS BY INPUT AND OUTPUT

FUNCTION	Patient Care Urgent	Patient Care Important	Patient Care Routine	Patient Surveillance	Administrative	Equipment	Supplies	Facilities	Personnel	other	total
INPUT 3705 Volume			27								27
Number			2								2
OUTPUT 3705 Volume				24							24
Number				1							1
INPUT 3702 Volume		225	1798	369	4995		7			28	7417
Number		3	3	3	31		3			1	46
OUTPUT 3702 Volume		1109	1480	2056	14244	2	431		2		20529
Number		6	8	8	35	2	6		1		66
INPUT 3701 Volume	89	3539	2029	3456	44314		7		1148	36	55313
Number	3	8	25	10	81		3		3	2	144
OUTPUT 3701 Volume			1680	1090	7758	2	434		502		12046
Number			2	16	27	2	7		2		56

Beaufort Naval Hospital
Registrar Operations

TABLE 1-B-1
NUMBER OF COMMUNICATIONS BY MODE ACCORDING TO SOURCE/DESTINATION

SOURCE / DESTINATION	RECEIVED BY: U.S. MAIL	RECEIVED BY: INTERSAT MAIL	RECEIVED BY: TELETYPE	RECEIVED BY: HAND CARRY	RECEIVED BY: WORD-OF-TH	RECEIVED BY: TELEPHONE	SENT BY: U.S. MAIL	SENT BY: INTERSAT MAIL	SENT BY: TELETYPE	SENT BY: HAND CARRY	SENT BY: WORD-OF-TH	SENT BY: TELEPHONE
ADMINISTRATION				71						205		
AIREVACUATION												
DENTAL SERVICE												
DISPENSARIES												
FLIGHT MEDICINE												
FOOD SERVICE										1		
HOUSEKEEPING												
LABORATORIES				2								
MAINTENANCE												
MEDICAL RECORDS										300		
NURSING SERVICE				805						1020		
OPERATING ROOM												
OUTPATIENT DEPT.												12
OUTSIDE WORLD	182			60	40	108	280			308		
PERSONNEL												
PHARMACY												
PHYSICAL THERAPY												
PREVENTIVE MED.												
PROFESSIONAL SERV												
REGISTRAR												
SUPPLY												
VETERINARY MED.												
WARD MANAGEMENT				1108		40				1171		
RADIOLOGY												

TABLE 1-B-2
TYPE OF COMMUNICATIONS BY INPUT AND OUTPUT

FUNCTION	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Secondary Patient	Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
INPUT	-	1639	537	-	-	-	-	-	8	171	2355
OUTPUT	-	1874	644	349	361	-	-	-	174	-	3403

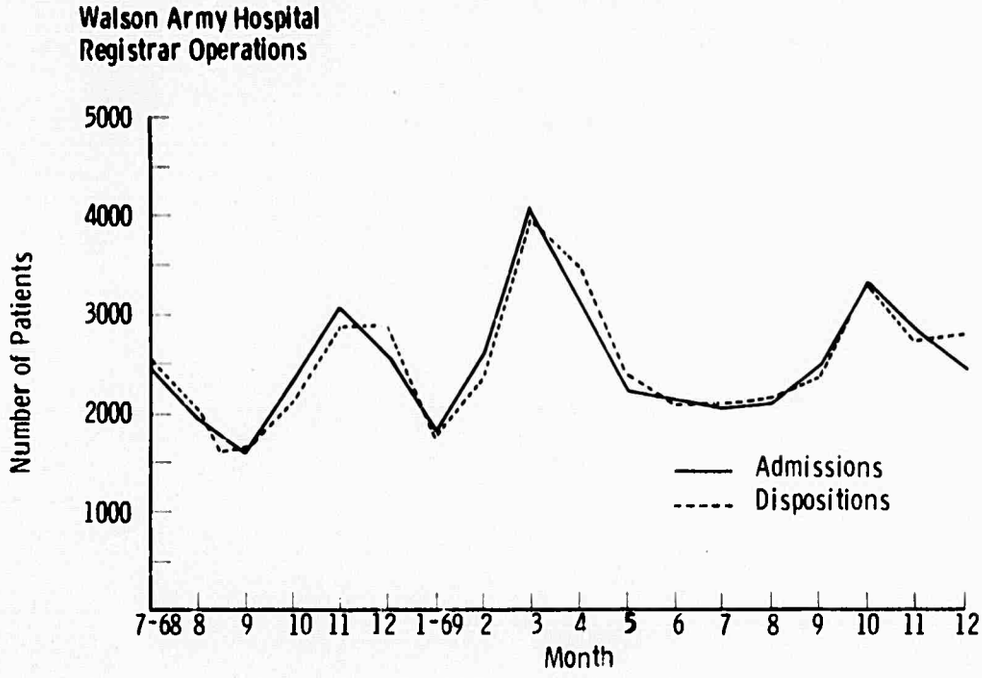

Fig. I-W-1—Fluctuations in admissions and dispositions by month

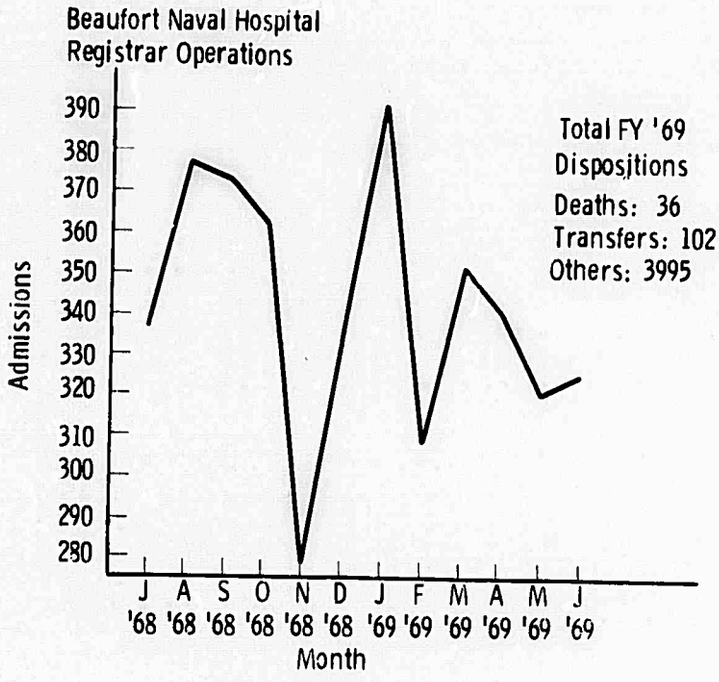

Fig. I-B-1—Admissions for FY '69

II. REGISTRAR -- RESOURCE UTILIZATION

	Walson Army Hospital (WAH) -- Fort Dix	Malcom Grow Hospital -- Andrews AFB	U.S. Naval Hospital -- Beaufort
A. Personnel	1. Sixty employees:[1,2] a. does not include full-time medical records personnel; b. includes A & D information desk, baggage room, statistics section and all other sections except Air Evac. Refer to Table II-W-1 for listing of staff broken down by registrar section and individual occupation. 2. Registrar Division employees spend no time on patient care.[1] 3. A & D staffing by 3 shifts. See Table II-W-2 for staff strength and times of shifts.[2]	1. Forty-five employees: a. military -- 25; b. civilian -- 20 (refer to Table II-M-1 for a complete breakdown by pay grade, job description, and hours worked per week)	1. 10.4 employees (fractional figure due to personnel shared with other functions, e.g. medical records and emergency room): a. refer to Table II-B-1 for breakdown of personnel by rank, title and hours worked per week. 2. Registrar Division employees spend no time in patient care. 3. Admitting room: a. day shift corpsman helps to cover emergency room when no patients waiting to be admitted; b. evening and night shift corpsmen help cover emergency room until there is an admission.
B. Facilities	1. Location: a. Registrar Division -- first floor of WAH in what was previously a ward. The area still resembles a ward layout and is not the most convenient design for registrar operations. b. A & D -- first floor near emergency room; c. information desk -- first floor near A & D and lobby; d. baggage room -- first floor near A & D. 2. Floor space: a. total floor space -- approx. 5,856 sq. ft.;[3] b. refer to Table II-W-3 for breakdown of registrar facilities area in sq. ft. and percent of total space.	1. Location: a. registrar -- first floor in administrative area; b. A & D -- first floor near lab and X-ray; c. CRL -- first floor in administration area. 2. Floor space: a. total floor space -- 5,684 sq. ft.;[1] b. refer to Table II-M-2 for a breakdown by office of sq. ft. and percent of total area.	1. Location: a. Patient Affairs -- first floor, main corridor, to the left of main entrance; b. admitting room -- first floor, main corridor, across from Pharmacy and around the corner from the ER; c. information desk -- main foyer, to left of main entrance; d. bag room -- basement, below ER. 2. Floor space: a. total floor space -- 2,884 sq. ft.[1] b. refer to Table II-B-2 for breakdown of registrar facilities by area in sq. ft. and percent of total space.

II. Registrar — Resource Utilization (cont'd.)

	Ft. Dix	Andrews	Beaufort
C. Equipment	1. Refer to Appendix I, report 011, for a complete list of all Registrar Division equipment.[1]	1. Refer to Appendix I, Report 011, for list of Registrar Division equipment valued over $200.	1. Registrar equipment consists mainly of typewriters, copying machines and dictaphones for preparing the necessary documents for admission, discharge, and statistical summaries.
	2. Refer to Appendix I, report 011, for a complete list of all A & D equipment, including quantity and dollar value of all equipment worth over $200.[1]	2. Refer to Appendix I, Report 012, for a complete list of all A & D equipment valued over $200.	
D. Work Sampling Study	1. No work sampling study conducted for any Registrar section.	1. No work sampling study conducted for any Registrar section.	1. No work sampling study conducted for any Registrar section.

Walson Army Hospital
Registrar Resource Utilization

TABLE II-W-1

REGISTRAR STAFF BY FUNCTION AND OCCUPATION

FUNCTION	POSITION	PAY GRADE	NUMBER	HRS./WK.
Office of Chief	Chief	O-4	1	50
	Assistant Chief	O-3	1	40
	NCOIC	E-8	1	45
	Secretary	GS-5	1	40
Admissions &	Supervisor	GS-6	1	50
Disposition	Clerks	GS-3	9	40
	Clerk Typist	GS-4	2	40
	Clerk	E-4	3	44
	Clerk	E-3	2	44
Information Desk	Clerk	GS-3	5	40
	Supervisor	GS-5	1	45
	Clerk	GS-4	1	40
	Clerk	E-5	1	40
	Clerk	E-2	1	40
Baggage Room	Baggage Handler	WG-3	4	40
Steno Pool	Supervisor	GS-6	1	40
	Stenographer	GS-4	6	40
General Infor-	Absent Sick Clerk	E-6	1	44
mation Office	Gen. Info. Clerk	E-5	1	44
	Absent Sick Clerk	E-4	1	44
Vital Statistics	Supervisor	GS-4	1	40
Congressional	Spec. Inq. Officer	O-3	1	40
Inquiry	Spec. Inq. Clerk	E-5	1	44
	Spec. Inq. Clerk	E-3	1	44
Medical Boards	Supervisor	GS-4	1	40
	Clerks	E-3	2	44
	Clerks	E-4	1	44
Correspondence	Corres. Clerk Typist	GS-4	2	40
Vouchers	Clerk	GS-4	1	40
	Clerk	GS-2	1	40
Treasurer	Supervisor	GS-5	1	40
	Acct. Maint. Clerks	GS-4	2	40
	Acct. Maint. Asst.	E-3	1	44
Total			60	

Source: Interview with Chief, Registrar; Interview with Supervisor, A&D; Interview with Supervisor, Statistics Section.

Walson Army Hospital
Registrar Resource Utilization

TABLE II-W-2

ADMISSIONS AND DISPOSITION STAFF STRENGTHS BY SHIFTS

First Shift (0800 to 1630 hrs.)	1 supervisor (GS-6) 3 clerks (E-4) 7 clerks (GS-3)
Second Shift (1600 to 2400 hrs.)	2 clerks (GS-3) 2 clerks (E-3)
Third Shift (2400 to 0800 hrs.)	2 clerk-typists (GS-4)
Second Shift Sat. and Sun.	2 clerks (E-3)

Walson Army Hospital
Registrar Resource Utilization

TABLE II-W-3

REGISTRAR FACILITIES BREAKDOWN BY AREA

	SQ. FEET	SUBTOTALS SQ. FT.	%	SUBTOTAL %
Registrar				
Med. Boards Room	336		5.73	
Chief Registrar Office	336		5.73	
Statistical Section Office	336		5.73	
Special Inquires Office	336		5.73	
Vital Statistics Room	196		3.34	
Ass't. Registrars Office	196		3.34	
Secretaries Office	180		3.07	
Administrative NCO Office	300		5.12	
Total Registrar		2216		37.79%
A&D				
Storage Closet	64		1.09	
Waiting Room	224		3.82	
Latrine	50		.85	
Vault for Cashier	50		.85	
Treasurer's Office	130		2.21	
Cashier's Office	112		1.91	
Admission Desk	300		5.12	
Waiting Area	1050		17.93	
Total A&D		1980		33.78%
Info. Desk				
Information Desk	92	92	1.57	1.57%
Baggage Room				
Baggage Room	1568	1568	26.77	26.77%
TOTALS	5856		99.99	

Subtotals:		%	Sq. Ft.
Registrar	=	37.79	2216
A&D	=	33.78	1980
Info.	=	1.57	92
Bag. Room	=	26.77	1568

Malcolm Grow Hospital
Registrar Resource Utilization

TABLE II-M-1

REGISTRAR PERSONNEL

DESCRIPTION	PERSONNEL CODE	PAY GRADE	QUANTITY	HOURS/WEEK
NCOIC- Registrar	B	E8	1	40 hrs.
Assistant NCOIC-chief clerk	A	E6	1	44 hrs.
NCOIC-Medical record release	B,A	E6	1	54 hrs.
Clerk typist medical record release	E	E5	1	49 hrs.
Clerk typist third party liability	E	E3	1	49 hrs.
Patient control	E	E5	1	44 hrs.
Clerk typist registrar	E	E3	1	40 hrs.
Biometric & chart work-up NCOIC	B	E7	1	44 hrs.
Asst NCOIC biometric & chart work up	D	E4	1	44 hrs.
1st. SGT patient squadron section	B	E7	1	55 hrs.
NCOIC medical boards	B	E6	1	44 hrs.
Medical board - clerical	E	E4	1	45 hrs.
NCOIC outpatient records	B	E6	1	49 hrs.
Outpatient records clerk	D	E5	2	50 hrs.
Outpatient records clerk	F	E4	6	50 hrs.
NCOIC - clinical record library	B	E5	1	54 hrs.
Clinical library technician	D	E4	1	45 hrs.
Assistant registrar, C.O. patient squadron	B	03	1	50 hrs.
Assistant registrar	C	02	1	49 hrs.
Registrar - chief	A	GS-13	1	40 hrs.
Tumor board librarian - registrar	E	GS-6	1	40 hrs.
Air evac clerk-registrar	E	GS5	1	40 hrs.
Statistician-registrar	E	GS4	1	40 hrs.
Clerk typist-registrar	E	GS4	1	40 hrs.
Receptionist-info desk	E	GS4	1	40 hrs.
Steno pool leader	B	GS-6	1	40 hrs.
Steno pool - clerk typists	E	GS4	7	40 hrs.
Central appointment leader	B	GS-8	1	40 hrs.
Central appointment clerk typists	E	GS-4	5	40 hrs.

Malcolm Grow Hospital

Registrar Resource Utilization

TABLE II-M-2

BREAKDOWN OF AREA

DESCRIPTION	FACILITIES CODE	SQUARE FEET	PERCENT OF TOTAL
OFFICE			
Registrar's	B	200	3.5%
Medical board	B	804	14.1%
Medical records release & 3rd party liability	B	190	3.3%
STORAGE			
Clinical records library	C	942	16.6%
Chart work up office	B	423	7.4%
Tumor registry	B	78	1.4%
Statistical office	B	96	1.7%
Vault	C	96	1.7%
SERVICE			
Toilets (3)	E	161	2.8%
Information desk	D	96	1.7%
Steno pool office	B	590	10.4%
Registrar admin office space (3)	B	358	6.3%
Outpatient records	C	1262	22.2%
A&D (2)	B	130	2.3%
Cashier	B	108	1.9%
Printing room	B	100	1.6%
Office-patient interviewing	B	50	.9%
TOTAL		5,684	

Beaufort Naval Hospital
Registrar Resource Utilization

TABLE II-B-1

PERSONNEL BREAKDOWN

NO. OF PERSONNEL	RANK	HOURS/WEEK	TITLE
Patient Affairs			
.95*	E-8	40	Supervisor Patient Affairs
.95*	E-6	40	Asst. Supv. Patient Affairs
2.0	E-4	40	Coder - File Clerks
1.0	GS5	10	Clerk Typist
1.0	GS3	40	Clerk Typist
Admissions			
0.5*	E-3	40	Admitting Clerk
Information Desk			
1.0	E-4	40	Information Desk Clerk
Bag Room			
1.0	E-6	40	Supervisor Bag Room
2.0	E-3	40	Bag Room Attendants

* Time shared with functions such as Medical Records and Emergency Room

TABLE II-B-2

BREAKDOWN OF REGISTRAR FACILITIES AREA

FACILITY	AREA IN SQUARE FEET	PERCENT OF AREA
Admissions Room	300	10
Information Desk	180	6
Patient Affairs	1012	35
Baggage Room	1392	48
Total	2884	

III. REGISTRAR -- FUNCTIONAL COSTS

	Walson Army Hospital (WAH) -- Ft. Dix	Malcom Grow Hospital -- Andrews AFB	U. S. Naval Hospital -- Beaufort
A. Total			
1. Cost:	$281,627 annually.	$280,010 annually.	$64,924 annually.
2. Source:	a. refer to Tables III-W-1, III-W-2, and III-W-3 for elemental figures from which total costs were derived, and to Appendix VII for functional cost breakdown summary sheet.	a. refer to Appendix VII for functional cost breakdown summary sheet.	a. refer to Appendix VII for functional cost breakdown summary sheet.
B. Personnel			
1. Cost:	$251,770 annually: civilian -- $187,570; military -- $86,614; all function costs.	$270,012 annually: function cost -- $239,834; non-function cost -- $30,178.	$60,469 annually.
2. Source:	a. cost includes A&D, information desk, baggage room, statistics section, and all other registrar functions except Air Evac and congressional inquiries; b. ⓦ obtained pay rates for each labor grade from "Standard Rates for Military Personnel Services," AFM 177-10 (C91) for Military Personnel and schedule established by DoD (June 5, 1969) directive 5120.39 for civilian personnel, and added 7.0% in fringe benefits for civilian labor; c. WAH determined costs from MEDDAC TDA for civilian personnel, from DA Form 2472 for enlisted personnel and from personnel division special staffing report for officers.	a. function cost -- the number of people assigned to the Registrar Division was determined from interviews with the NCOIC of Registrar; pay rates for military personnel were taken from AFM 177-101 (C91); civilian rates were extracted from USAF salary rates July 1968 (Appendix IX); benefits for civilians were determined from information given in interview with ⓦ military consultant (Appendix IX); b. non-function cost -- time spent by employee outside the function • housekeeping -- from hours spent by personnel in housekeeping chores, estimated by interviewee • formal training -- TDY time for training purposes from Professional Activities Report FY69 • OJT -- from hours per trainee and instructor, estimated by interviewee. Changeover rate by function from business office.	a. Beaufort name list for October 1969 (computer run for payroll accounting), checked against interviews and observations.
C. Supplies			
1. Cost:	$3,108 annually: medical -- $1,527; non-medical -- $1,581.	$3,183 annually.	$1,207 annually.
2. Source:	a. cumulative cost rum for FY69, showing resource cost by item for each function, received by Management Services Division from Post Data Processing.	a. from Report of Medical and Non-medical Supply Expense FY69.	a. FY69 Account 310 listing from Fiscal and Supply, SFC Code 4L10, Patient Affairs.

III. Registrar -- Functional Costs (cont'd.)

	Ft. Dix	Andrews	Beaufort
D. Maintenance			
1. Cost:	$240 annually: Ft. Dix Post Engineering -- $240.	$768 annually: all non-medical.	$1,932 annually: all non-medical.
2. Source:	a. Ft. Dix Post Engineering -- total annual costs of labor and materiel obtained in an interview with Post Engineering; estimate then obtained on percent of their total work performed for WAH; 3-month sample of Post Engineering requests taken to distribute the percentage of cost allocated to WAH among its functions; see Appendix IV for all calculations.	a. prorated from annual maintenance cost for Andrews given in Medical Expense Report CY69; one month's chits used as basis for calculations.	a. non-medical maintenance -- calculated by multiplying percentage share of total hospital sq. footage by total maintenance costs for the hospital building only (e.g., excludes grounds, housing, medical maintenance, etc.) listed in Account 310, SFC Code 7150.
E. Housekeeping			
1. Cost:	$4,095 annually: all on civilian contract.	$5,543 annually: janitorial services -- $5,094; staff housekeeping -- $449.	$696 annually:
2. Source:	a. civilian housekeeping agency's contract with WAH for FY69; the total annual cost to WAH ($431,000 for FY69) was allocated to individual functions on a basis of sq. ft. cleaned; registrar -- .95% or $4,095 (See Appendix V for all calculations).	a. janitorial -- cost of janitor service prorated for department from percentage of total hospital floor space; b. staff -- housekeeping time spent by registrar staff, estimated by NCO of Registrar.	a. janitorial -- time spent by janitors in Patient Affairs was obtained from the Janitorial Work Distribution Chart; b. minimal housekeeping by staff.
F. Training			
1. Cost:	$5,634 annually: all OJT.	$30,682 annually: OJT -- $29,729; training dept. -- $953.	$1,653 annually: formal -- $94; OJT -- $939; training dept. -- $620.
2. Source:	a. a portion of the total function personnel cost was allocated to training on the basis of estimates made by observers to the amount of time needed for a student to reach 90% efficiency in each job cla[illegible] These estimates were factored into a learn[illegible]rve equation to arrive at OJT costs (see Appendix VI -- OJT Costs).	a. OJT -- see Personnel, OJT training; b. training dept. -- the cost of training department personnel allocated to each function was determined first by finding the percentage of the total training staff allocated to a given function, and then by calculating this percentage of administrative personnel salaries.	a. formal -- from announcements of training sessions, lectures, schedules, etc. b. OJT -- from interviews and observation. c. training department -- prorating the salary of the corpsman in charge of training among the functions according to the number of corpsmen receiving training in each function.

III. Registrar -- Functional Costs (cont'd.)

	Ft. Dix	Andrews	Beaufort
G. Capital Equipment			
1. Cost	$62,736: standard -- $34,948; non-standard -- $27,788.	$37,982.	$3,801 annually.
2. Source:	a. survey of WAH property book taken December 8, 9 and 10, 1969, in which two types of equipment were tallied • equipment with a unit price greater than $200 • equipment with a unit price less than $200 but for which the number of units in the function brought the total dollar figure above $200. b. there were two types of WAH equipment price records • standard equipment in which the price on file represents current market value • non-standard equipment, in which the price on file is original purchase price.	a. refer to computer run PCN 43165A 30 SEP 69 (inventory of total hospital equipment).	a. cost of equipment over $200, from Beaufort Property Control Listing (8/14/69) (computer run), verified by observation.

Walson Army Hospital
Registrar Functional Costs

TABLE III-W-1

FUNCTIONAL COSTS

ITEM	(W) DETERMINED COSTS
Direct charges	
Mil. labor	86,614
Civil. labor*	187,570
Supplies - medical	1,527
Supplies - non-med.	1,581
Maintenance	240
Misc. charges	
Prorated Charges Housekeeping Dept.	4,095
Space	
Square feet	
Cost	
Equipment	
Cost of standard	40,699
Cost of non-standard	32,360
Total Charges	

* Includes 7.0% Fringe Benefit

TABLE III-W-2

REGISTRAR

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NO.	& GRADE	NO.	& GRADE	ITEM	COST, $
1	O4	1	O4	Cont. Serv.	2,099
1	O3	.9	O3	Housekeeping	4,095
		.7	E8	Maintenance	240
1	E8	2	E5	All Registrar	
1	E3	1	E4	Standard Equipment	34,948
		1	E6	Non-st'd Equipment	27,788
		10	GS4		
		1.4	GS6		
		2	GS5		

Walson Army Hospital
Registrar Functional Costs

TABLE III-W-3

A&D (including baggage, info.)

PERSONNEL			
ASSIGNED		ACTUAL	
NO.	& GRADE	NO.	& GRADE
1	O3*	.1	O3*
2	E5*		
2	E6*		
2	E4*	3	E4*
1	E3*	2	E3*
1	GS6*	.6	GS6*^{o}
2	GS4*	2	GS4*
12	GS3*	8	GS3*
5	GS3^{o}	5	GS3^{o}
4	WB1^{x}	4	WB1^{x}
		4	MH

Mil.: $68,675.20
Civ.: $101,267.00

Total Reg. & A/D
Mil.: 86,614
Civ.: 187,570

o = Info.
x = Baggage
* = A&D

I. REGISTRAR -- OPERATIONS SOURCE SHEET

Walson Army Hospital

1. Interview with Supervisor, A & D.
2. Interview with Supervisor, Statistical Section.
3. Interview with Chief, Registrar.
4. Beds and Patients Reports, DA 2832.
5. Workload Reports, DA-2496, Submitted to Registrar.

Malcolm Grow Hospital

1. Interview with NCOIC, Registrar.
2. AF235 B.
3. AF235 C.

Beaufort Naval Hospital

1. NAVAOSPBFT P-5400 (Organization Manual).
2. Naumed 1454, FY69.

II. REGISTRAR -- RESOURCE UTILIZATION SOURCE SHEET

Walson Army Hospital

1. Interview with Chief, Registrar.
2. Interview with Supervisor, A & D.
3. Scaled photograph of WAH floor plans, provided by Chief of Registrar Div.
4. Survey of WAH Property Book.

Malcolm Grow Hospital

1. Interview with NCOIC.

Beaufort Naval Hospital

1. From Beaufort Hospital blueprints, 1/4" = 1'.

WARD MANAGEMENT

WALSON ARMY HOSPITAL (WAH) -- FORT DIX

Mission

The Ward Management function in the Walson Army Hospital is performed by a consortium of the Departments of Medicine, Surgery, Psychiatry and Neurology, and the Nursing Service. Nursing Service personnel handle the day-to-day ward operations, while the professional departments are responsible for overall medical guidance and direction.

The Ward Management mission of the Nursing Service is to provide proper inpatient nursing care in accordance with the policies and procedures outlined by the hospital commander.* The professional departments are charged with providing inpatient diagnostic service, care, and treatment, as required, for all patients assigned or referred to the departments.**

At Walson Army Hospital, the mission is accomplished by the year round operation of 17 wards (9 surgical, 7 medical, 1 psychiatric), operation of one to four additional care units during the upper respiratory infection (URI) season, and the year round operation of operating room and anesthesiology facilities. The ward system consists of:

1 Male Surgical

1 Female Medical Surgical

1 Pediatric

1 OB/GYN, including Labor and Delivery and Nursery Units

1 Air Evac (surgical)

1 Psychiatric

2 General Surgical

2 Orthopedic (surgical)

3 URI

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*As stated in AR 40-1, 40-4, and 40-6.

**As stated in AR 40-4.

2 General Medical

2 Intensive Care (medical, surgical).

Existing Operations

Major problems in Ward Management begin with the general shortage of personnel. All neurosurgery and chest surgery cases must be sent to Valley Forge because WAH has no neurosurgeon or chest surgeon on the staff. WAH has eight operating rooms, but the staff shortage permits only 50 percent to 75 percent utilization. Nurses are few and the turnover is high, presumably due to the Viet Nam war. Medical ward management is taxed particularly during URI season when there are extreme fluctuations in workload and complex coordination and shifting of the nursing staff becomes necessary.

Available nursing personnel currently spend much of their time performing such non-professional tasks as following equipment requisitions and cleaning beds. Since the nurse at the nursing station is the first person seen upon entering a ward, she is interrupted by visitors, food, medical supplies, linen deliveries,and anyone seeking information. Stationing a medical clerk by the door could eliminate 90 percent of the interruptions. The location of nursing stations in general does not permit adequate communication with patients and physicians. The nurse's visual check is required. The physician's office is often separated from the station by a treatment room without benefit of an intercom system.

The total communication problem is extensive. Shift termination reports are often lost somewhere in the medic-nurse-physician communication circuit, making the coordination of personnel scheduling with special units, such as WAC Company, impossible. In addition, the admissions routine does not include alerting the nursing station so that nurses can prepare for a patient's arrival.

If the present decline in the number of reenlistments among army nurses continues, ward management operations could be severely affected.

MALCOLM GROW USAF MEDICAL CENTER -- ANDREWS AIR FORCE BASE

Mission

The mission of Ward Management is to provide intensive, moderate, and light nursing care to inpatients at Malcolm Grow Hospital.* This is a shared responsibility by physicians and nursing personnel.

The physician assumes complete responsibility for evaluating the patients' condition, for administering the prescribed therapeutic program, and for the professional management of each patient under his care.

The unit charge nurse monitors the nursing care of all patients within the unit by: maintaining good relationships with patients, their families, and medical personnel; arranging for any assistance required to meet the patient's total needs; supervising treatments and medications ordered by the physicians; maintaining accurate, descriptive records of medical treatments; assigning and supervising nursing personnel; assisting in the orientation and teaching of nursing personnel; directing those housekeeping activities which are the responsibility of nursing personnel; carrying out administrative policies and procedures in conformity with medical service facilities practices. Ward Management responsibilities are entrusted to 14 functional units:

Ward JB, for orthopedic inpatients;

Ward 1E, for inpatient care of top echelon personnel, including the President of the United States and the Secretary of the Air Force;

Wards 2A and 2B, surgical nursing care for commissioned officers and enlisted personnel;

Ward 2H, medical care for female dependents and Air Force personnel;

Ward 3A, for pediatric medical, surgical, and orthopedic problems;

Ward 3D, the Labor and Delivery Suite and the Nursery for new-borns;

Wards 4A and 4B, for neuropsychiatric care;

Wards 5A and 5B, major medical care for enlisted personnel and commissioned

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*As stated in AFM168-4H, Chapter 7, Section A, paragraph 7-2 and 7-3.

officers, respectively.

The surgery suite and the recovery room are also considered ward management functions since they involve the direct treatment of inpatients. However, cardiac monitoring, although part of the ward management operations, is organizationally and physically removed from the Ward Management function.

Existing Operations

Three problems were noted by the Westinghouse study team. First, Malcolm Grow Hospital has no Intensive Care Unit and all intensive care is performed at bedside in the ward. Surgical patients requiring intensive care are mixed with general care surgical patients on Ward 2A. The same is true of orthopedic intensive care patients on JB. Wards 5A and 5B contain all medical patients, whether they require moderate care, intensive care, or cardiac care; Wards 5A, 5B, and 1E have cardiac care capabilities provided via hard-wire or telemetry hookup to the central monitoring system located in the Cardiology Clinic.

The second problem is the lack of sufficient wall oxygen and suction units. Although nursery, recovery, surgical, and VIP areas have adequate equipment in each room, the labor room and the wards, with two each, do not.

A third, and more general problem involves the shortage of ward medical technicians. The result of this shortage is that available ward technicians must work 12-hour shifts.

U.S. NAVAL HOSPITAL -- BEAUFORT

Mission

The Ward Management function at Beaufort Naval Hospital is basically the responsibility of the physician, aided by the nurse who follows the sequence of care prescribed by the physician. Organizationally, the Nursing Service consists of three branches divided according to responsibility.*

The Clinical Nursing Branch executes the physician's orders for patient care; analyzes, evaluates, and plans the services to be rendered; makes recommendations for the improvement of patient care; and conducts in concert with the physician patient education programs.

The Education and Training Branch provides orientation, in-service education, and on-the-job training programs for professional and non-professional, military and civilian nurses.

The Nursing Specialties Branch provides specialized services to wards or units concerned with patient care, including training programs for personnel in each specialty area.

Currently, the administrative and directive tasks are performed by the Chief of Nursing. Nursing education is coordinated by the Assistant Chief, with the help of one corpsman, assigned as a nursing coordinator, to maintain records of corpsmen and assist in manpower allocation.

The Ward Management system consists of 11 areas on five floors, essentially divided by type of service (Medical 1A and 1B, Surgical 2A and 2B, OB/GYN SOQ, Orthopedic 3A, etc.), by sex (women on floors four SOQ, and five SDQ, Labor and Delivery only), and on some wards by type of care (Pediatrics Ward and Nursery, intensive care in ICU). In this study the operating room and related facilities and staff were considered part of the Ward Management system.

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*As stated in the Beaufort Organization Manual, NAVHOSPBFT INST. P-5400.

Existing Operations

Poor layout of facilities and some equipment insufficiently account for most of Beaufort's ward management problems. The operating room has no ceiling track radiography equipment and must rely on a portable machine for all surgical X-rays. The ICU does not have its own suction equipment and must borrow one from Central Sterile Room, which is not always available when needed. The space occupied jointly by ICU and the Recovery Room was designed as a five-bed unit, but must frequently accommodate more. However, the most serious situation encountered is the storage of oxygen tanks in the operating suite corridor where an explosion could endanger and/or trap personnel and patients in the OR wing.

The present facilities design, in which units are spread out in opposite wings of the building makes ward checks difficult and time-consuming -- particularly for the evening/night/weekend military nursing supervisor. Ward Nurses are generally overburdened with administrative tasks, since there are no ward checks to relieve them of the clerical work. Their teaching load is also heavy because incoming corpsmen often require extensive orientation and OJT before becoming fully operational.

DATA PRESENTATION MATRICES

The following matrices and charts detail the data gathered by the Westinghouse teams on the three hospitals' ward management function. The first matrix delineates ward operations; the second, resource utilization, and the third, functional costs.

F. WARD MANAGEMENT -- OPERATIONS

	Walson Army Hospital (WAH) -- Fort Dix	Malcolm Grow Hospital -- Andrews AFB	U.S. Naval Hospital -- Beaufort
Services Rendered	1. Medical care (under the auspices of the Departments of Medicine, Surgery, and Psychiatry and Neurology (P&N):[6] a. providing medical, surgical, and psychiatric diagnoses and treatment for WAH inpatients; b. conducting residency training for MD's.	1. Providing direct patient care to all hospital inpatients as prescribed by physician or dentist in attendance; maintaining sanitary and orderly condition of facilities, and ensuring adequacy of equipment at all times in the following wards: a. Ward 3D • (labor and delivery) -- complete obstetrical care during labor, delivery, and immediate post partum for WAF's and AF dependents • (nursery) -- care for all newborn infants before release; b. Ward 3A (pediatrics) -- medical and surgical care for children 12 years and younger; c. Wards 4A and 4B (psychiatric) -- psychiatric care for Andrews BLHCS; d. Wards 2A and 2B (surgical) -- intensive, moderate, and light care for surgical patients; e. Wards 5A and 5B (medical) • all levels of care for medical patients • continous coronary care monitoring as necessary; f. Ward JB (orthopedics) -- care for orthopedic patients; g. Ward 3B (OB/GYN) -- obstetrical and gynecological care; h. Ward 2H (female) -- medical and surgical care for female patients; i. Ward 1E (VIP) -- regular services, for both inpatients and outpatients plus • hand-carrying consultations to all clinical areas • hand-carrying all papers • providing escort for Ward 1E inpatients throughout hospital • providing escort for all VIP outpatients throughout clinical areas • providing chaperones for female outpatients seen by Ward 1E physicians • delivering newspapers and filled prescriptions to VIP patients • making repeated trips to dining facilities for preparation of special meals (either special foods or off-hours meals) for VIP's • making constant coffee and juice runs • special housekeeping, cleaning, and dusting in the ward	1. Providing facilities, equipment, nursing service, and supporting staff for the following wards: a. Ward A-1 -- light care facility opened only upon demand, e.g., during the observation period resulting from high influx of pneumonia patients; b. Ward A-2 (medical ward) -- all levels of care for patients admitted to the medical service; c. Ward A-3 (orthopedics) -- complete care for orthopedic inpatients exclusive of those ambulatory patients or those with multiple diagnoses who are admitted to Ward A-1 or A-2, respectively; d. Ward B-1 -- overflow ward for disaster situations (not in use at the time of observation); e. Ward B-2 (infected surgical ward) -- complete care for surgical patient with postoperative infections; f. Ward B-3 (clean surgical ward) -- care for all preoperative surgical patients and all postoperative patients once they are released from the recovery room without infection or complications; g. Sick Officers' Quarters (SOQ) -- medical and surgical care for dependents and officers; h. Sick Dependents' Quarters (SDQ) -- care for obstetrical patients both before and after delivery; i. Nursery -- care and observation of all newborn infants in regular nursery beds and isolettes for babies form prematurely or with complications; j. Pediatrics -- care for all children 12 years and younger admitted to hospital, exclusive of occasional orthopedics cases or those requiring intensive care; k. Intensive Care Unit (ICU) • care for all critically ill patients whose doctors prescribe intensive care • recovery room services for all patients coming out of surgery.

I. Ward Management -- Operations (Cont'd)

	Ft. Dix	Andrews	Beaufort
A. Services Rendered (cont'd)		• making extra trips to get equipment; VIP ward handles all medical specialties for VIP patients and therefore needs wide variety of equipment • making calls to coordinate clinic treatment in order to minimize VIP patients waiting time;	
	2. Nursing Care (under the auspices of the Medical, Surgical, and Clinic Nursing Services):[5,6,7,8] a. providing nursing care to WAH inpatients, to include • bathing and feeding • monitoring vital signs • administering shots, enemas, etc. • application of dressing, bandages, hot and cold packs • performing special procedures such as colestomies and tracheotomies • using special equipment, such as orthopedic appliances, oxygen tents, croupette, respirators, etc. • collecting lab specimens • administering blood transfusions and IV's; b. observing and interpreting patient symptoms and rendering appropriate care; c. reporting condition of acutely ill patients; d. reporting on epidemiology (URI's and other contagious diseases) for preventive medicine purposes; e. maintaining sanitation, cleanliness, and general comfort and safety of wards; f. instructing patients about their illnesses and treatment; g. conferring with visitors on patient's general condition and needs; h. interpreting and enforcing hospital visiting policies; i. investigating patient or visitor complaints; j. providing adequate staffing by RN's, LPN's, nurses' aides, medical corpsmen, and clerical personnel on wards, and adjusting staff strength as necessary; k. preparing nursing care plans for acutely or seriously ill patients; l. maintaining detailed patient treatment records;	2. Surgical Suite: a. providing facilities (including recovery room) and equipment to assist surgeons, anesthesiologists, and anesthetists; b. providing preoperative and postoperative care and handling of patients; c. providing sterile techniques and safety precautions within the suite.	2. Providing operating room (OR) facilities, equipment, and associated supporting staff necessary for the performance of surgical procedures by operating surgeons and anesthetists.

	Ft. Dix	Andrews	Beaufort
A. Services Rendered (cont'd)	m. maintaining adequate supply and equipment levels (stock, trays, etc.); n. performing general administrative tasks • admission, transfer, discharge • checking doctors' orders • scheduling clinic appointments upon MD's request • ordering lab tests and X-rays upon MD's request • ordering and serving meals • arranging transportation and escort for non-ambulatory patients; o. routine equipment maintenance. 3. Nursing training:[5,8] a. in-service education; b. orientation; c. OJT. 4. Hospital Annex -- light nursing care for convalescent URI patients.[6] 5. URI admitting team (wards 7A, 7B, 8A):[6,8] a. instructing routine URI admission patients on treatment; b. taking temperatures; c. collecting urine specimens; d. completing short admission form; e. assigning beds. 6. AIR EVAC section:[7,8] a. informing nursing service in advance of incoming patients; b. providing transportation of AIR EVAC patients from McGuire AFB to Ward 4A, WAH. 7. Operating Room (OR):[9,10] a. performing scheduled and emergency operative procedures on WAH patients; b. administering anesthetic and resuscitative agents.		

I. Ward Management -- Operations (Cont'd)

	Ft. Dix	Andrews	Beaufort
B. Hours of Operation	1. Normal duty hours:[5,6,7,8,9,10] a. WAII and Annex wards -- 24 hours a day, 7 days a week (Annex wards open only in URI season, October to March); b. Nursing Service -- 0730 to 1630 hrs. Monday thru Friday; c. MD's (rounds) -- 0700 to 1000 hrs., 1500 to 1630 hrs., and 1900 to 2100 hrs. daily; d. URI admitting team -- 0900 to 1700 hrs. Monday thru Saturday and 1500 to 2400 hrs. Sunday; e. OR -- 0700 to 1530 hrs. Monday thru Friday; f. visiting hours -- 1400 to 1630 and 1900 to 2100 hrs. daily.	1. Normal duty hours: a. general ward care -- 24 hours a day, 7 days a week; b. supporting services (clinic and auxiliary) -- 0800 to 1700 hrs. Monday thru Friday; c. surgical suite -- 0700 to 1600 hrs. Monday thru Friday; d. labor and delivery -- 0700 to 1600 hrs. Monday thru Friday.	1. Normal duty hours: a. wards -- 24 hours a day, 7 days a week; b. routine admissions to wards -- 0800 to 1600 hrs; c. discharges from wards -- 0900 to 1500 hrs.; d. OR -- 0730 to 1530 hrs., Monday thru Friday.
	2. Special duty hours:[5,9,10] a. OR -- 24-hour call, 7 days a week, for one or 2 nurses and one medical corpsman, on rotation; b. wards -- 24-hour call for one MD to cover medical wards, one for surgical wards, and one for P&N wards.	2. Special duty hours: a. supporting services -- emergency call from 1700 to 0800 hrs. Monday thru Friday and 24 hours a day on weekends; b. surgical suite -- emergency operations at any time of day or week; technicians, nurses, anesthetists and surgeons on call during off-duty hours; c. labor and delivery -- civilian physician on call 2 nights a week; military physicians on call the remaining 5 nights; nurses, technicians, and anesthetists on call during off-duty hours.	2. Special duty hours: a. emergency admissions at any time; b. OR -- emergency surgery at any time.

	Ft. Dix	Andrews	Beaufort
C. Workload Flow	1. Workload volume:[1] a. total WAH admissions FY69 -- 30,079 • direct -- 28,765 (95.6%) • transfer in -- 1,314 (4.4%) • interward transfers FY -- 131 (Refer to Table I-W-1 for breakdown of admissions from each of several categories for active duty and retired military, dependents and others.[2] Refer to Table I-W-2 for percentages of AD and other admissions by ward and ratio of "other" to active duty admissions;[2] refer to Figure I-W-1 for a plot of total admissions compared with URI admissions for CY69; to Figure I-W-2 for a plot of URI admissions comparing military and civilian rates for CY69); and to Figure I-W-3 for a plot of total admissions comparing military and civilian rates for CY69. See Registrar, Operations matrix, workload flow section, for more detail on admissions and dispositions (A&D); b. average WAH census FY69 -- 1,041 • ward inpatients -- • patients on convalescent leave -- ; c. patient days on census FY69 -- 387,172; d. patient days occupying beds FY69 -- 346,929 (refer to Table I-W-3 for average occupancy of each of WAH's 18 wards, together with annual patient days for each ward);[2] e. live births FY69 -- 1,194; f. hospital deaths FY69 -- 79; g. surgical operations FY69 -- 20,185 • major -- 2,519 • minor -- 17,666 (for a sample breakdown of the types of operative procedures performed, refer to Table I-W-4, which gives a percentage breakdown by condition of the 40 patients occupying beds on Ward 2A (male surgical) on November 19, 1969); h. average beds occupied FY69 -- 639 • AD Army -- 506; AD Navy -- 4; AD Air Force -- 12 • dependents -- 60 • others -- 57.	1. General workload: a. total hospital admissions FY69 -- 8,586;[1] b. average MGH census FY66 -- 419.21;[2] c. patient days on census FY69 -- 153,015;[3] d. patient days occupying beds FY69 -- 117,550;[4] e. average beds occupied FY69 -- 322.05;[5] f. peak periods • daily -- 0700 to 1100 hrs., 7 days a week, except for Wards 2A and 2B, labor and delivery, surgical suite and recovery room; see appropriate sections below • seasonally -- January thru March and mid-September to late November for all units.	1. Ward A-1 (light care) a. can hold 50 light care patients who are generally on the industrial therapy program and require minimal supervision; b. workload intermittent, depending upon beds occupied in Ward A-2.

	Ft. Dix	Andrews	Beaufort
C. Workload Flow (cont'd)	2. Patient flow: a. A&D -- this information is in the WAH Registrar matrix, workload flow section; b. typical ward (ward 2A)[3] • refer to Table I-W-5 for a percentage and total breakdown of patients leaving Ward 2A by destination (for 3 days of observation, November 18 thru 20, 1969, and a percentage breakdown by means of transportation for the 3 days • refer to Figure I-W-4 for the number of patients leaving the ward by hour of the day by day, and to Figure I-W-5 for the number of patients leaving the ward excluding those leaving for meals, for the 3 days of observation; c. OR • patient scheduled for OR time slot; OR secretary fills out patient's pre-operative form; anesthesiologist visits ward the day before operation to get information on type of anesthetic to use • 15 min. before operation in progress finished, OR calls ward to ready patient; OR corpsmen bring patient and pre-operative form down on elevator; OR secretary logs patient in log book, using information on pre-operative form • after operation, patient taken to recovery room (Ward 2-C) and then returned to his ward;	6. Ward 3D (labor and delivery): a. workload volume • annual deliveries -- 1,470[11] • approx. 10% of deliveries are induced labor;[12] b. patient flow • anesthesiology serves delivery room on complicated calls • patient stay -- approx. 12 hours in labor for first born; approx. 8 hours in labor for subsequent children in delivery; approx. one hour for uncomplicated delivery; c. peak periods -- more births occur during the day shift since a significant number of labors are now induced by the physician.	2. Ward A-2 (medical): a. 59-bed capacity, with an average census of approx. 45 during observation period; b. approx. 50% light care, 49% moderate, and 1% heavy care patients.[1]
	3. Peak periods: a. wards • AIR EVAC -- peaks sporadically with arrivals from MAFB • URI -- seasonal loads occur during approx. 100-150 days of URI season, somewhere between October and March; daily peak loads occur in morning, when 75% of URI patients arrive. These patients come from the dispensaries sick call in busloads of 30 to 50;	8. Ward 3A (pediatrics):[14] a. workload volume • occupancy rate of 70% for 16 beds and 16 cribs • usually only one patient under intensive care at any given time • tonsillectomy patients annually -- approx. 208; b. patient flow • average stay -- approx. 4 days • parents visit daily around 0900 to 1000 hrs.; nursing time is taken up handling these visits • parents are also encouraged to visit during meal hours to help feed the children.	3. Ward A-3 (orthopedics): a. 59-bed ward holding approx. 40 patients during observation period; b. approx. 15% light care, 55% moderate care, and 30% heavy care patients.[1]

	Ft. Dix	Andrews	Beaufort
C. Workload Flow (cont'd)	b. OR -- peak arrival load of operative patients falls between 0700 and 1200 hrs. Refer to Table I-W-6 for a plot of arrivals by time.[4]	I. Ward Management -- Operations (Cont'd) 9. Wards 4A and 4B (psychiatric):[15] a. workload volume • occupancy rate for 55 beds -- 75%; send any overflow patients to convalescent ward in casualty staging area • 18 to 24 patients in neurology placed in intensive care annually; b. patient flow • patients arrive with special diagnoses and/or for observation • physician sees patient upon admission and periodically thereafter during the patient's stay • suicidal patients are watched constantly by one or 2 personnel, and are housed in ward 4B; length of their stay ranges from a week to 3 months • definitive treatments or long-term therapy are not given here; but dispositions (e.g. discharge from military service to a VA hospital, back to duty with a duty profile change, limited duty, or return to duty with complete remission) are determined here • neurology patients housed in ward 4A -- most go home on convalescent leave; 3 or 4 out of 34 such patients remain on the ward a full 2 to 3 months (the process time for medical discharge proceedings). 4. Wards 2A and 2B (surgical): a. workload volume • 2,306 patients annually[8] -- 461 intensive care, 692 moderate care, and 1,153 light care patients (usually ambulatory) • 2,555 to 3,650 intermitting positive pressure breathing (IPPB) treatments given annually; b. patient flow[9] • patient arrives from A&D desk with handful of admission papers • nurse takes vital signs, administrative data, abbreviated patient history, and assigns patient a bed; patient valuables sent home with family or secured by MSA office downstairs; patient clothes stored on ward in a closet	4. Ward B-2 (infected surgical): a. 50-bed ward with approx. 15 beds occupied during observation period; b. 50% light, 25% moderate, and 25% heavy care patients. 5. Ward B-3 (clean surgical): a. 50-bed ward with approx. 40 beds occupied during observation period; b. approx. 50% light care, 50% moderate care patients; c. intensive and heavy care patients are held in in the recovery room and transferred to ICU if necessary.

	Ft. Dix	Andrews	Beaufort
C. Workload Flow (cont'd)		• patient gets limited preoperative instruction and a battery of tests (lab and X-ray) that day or morning of the next working day • patient goes into surgery in morning; returns from recovery room in early afternoon • patients rooms assigned according to level of care required; patients requiring more intensive care are located nearest the nursing station • patient stay -- approx. one day in intensive care; approx. 4 days in moderate care; approx. 6 days in light care; AD military may spend part of light care stay on convalescent leave, particularly medical board case patients, who may take as long as 3 months to process; e. peak periods[9] • new admissions -- Monday thru Thursday (mornings), Sunday afternoons • postoperative patients -- return from surgery and recovery room Monday thru Friday between 1400 to 1600 hrs.	
		2. Wards 5A and 5B (medical):[6] a. workload volume • 2,417 patients annually -- 461 intensive care, 691 moderate care, and 1,265 light care patients • an estimated 80% light care patients are on pass or leave at any given time; b. patient flow • patient admission and clinical testing procedures similar to those in Wards 2A and 2B • patient rooms assigned by military rank and by type of medical problem, officers in Ward 5B, enlisted men in 5A; both wings have a cardiac monitoring room near the nursing station; light care patients generally in ward areas at end of hall • patient stays are generally longer here than on wards 2A and 2B since many patients have medical problems which are direct or indirect grounds for medical board proceedings • patient stays -- approx. 3 days in intensive care; approx. 4 days in moderate care; approx. 3 days in light care -- actually occupying a bed.	6. SOQ: a. 38-bed ward with approx. 12 to 20 beds occupied during observation period; b. approx. 20% light, 60% moderate, and 20% heavy care patients.

I. Ward Management -- Operations (Cont'd)

	Ft. Dix	Andrews	Beaufort
C. Workload Flow (cont'd)		3. Ward JB (orthopedic):[7] a. workload volume • filled to 95% capacity at all times (68 beds total) • approx. 1,500 surgeries annually for ward patients; b. patient flow • patient stays range from one month to 2 years • average patient stay -- 8 weeks • typical orthopedic patient (e.g., a knee injury) spends 2 weeks after surgery in JB ward in traction and/or casts; then spends about 4 weeks on convalescent leave from this ward; usually he returns for a second operation and/or treatment of complications, requiring another 2 weeks in JB ward.	7. SDQ: a. 28-bed ward with an average census of 13 patients; b. 75% moderate, and 25% intensive care patients.
		5. Ward 3B (OB/GYN): a. workload volume • approx. 7,300 to 8,400 patients annually -- from 5,500 to 6,300 GYN and from 1800 to 2100 OB[1] • filled to 70 to 80% capacity at any given time (43 beds total) • half of patients OB and half GYN; b. patient flow[10] • average OB stay -- approx. 3 days • average GYN stay -- one day; some stay as long as 5 days.	8. Nursery a. 7 Isoletts -- 3 occupied during observation, and 3 Incubators -- 2 occupied.
		7. Ward 3D (nursery): a. workload volume -- 1,470 births annually;[11] b. patient flow[13] • normal newborns delivered at Malcolm Grow Hospital are brought across hall from labor and delivery to nursery by labor and delivery personnel and placed (unwashed) in isolette with cradle warmer for several hours • baby then washed, weighed, measured, photographed, and foot printed, and placed in regular nursery bassinette • pediatrician usually circumcises male infants on second day • pediatrician sees all infants at least once • premature infants given intensive care in incubators, with warmers, oxygen, etc. as necessary	9. Pediatrics: a. 8-bed ward with a generally high occupancy of 6 or 7 patients; b. 15% light, 25% moderate, and 60% heavy care patients.

	Ft. Dix	Andrews	Beaufort
C. Workload Flow (Cont'd).		• infants delivered elsewhere than Malcolm Grow labor and delivery rooms are cared for in a "suspect" nursery, isolated from other infants to minimize crossinfections • average stay is between 2 and 3 days • new mothers see and feed their infants twice a day -- once in the morning and once in the late afternoon; at that time nursery personnel place babies in a special cart and roll them across the hall to maternity ward; mothers either nurse or bottle-feed their own infants; no visitors allowed on maternity ward at that time • other feedings given by nursery personnel.	
		10. Ward 2H (female):[16] a. workload volume • normally one intensive care, one terminal care, 25 moderate care, and 3 or 4 light care patients at any given time; most patients are medical cases; b. patient flow • administration of care to a woman takes longer than administration of same level of care to a man • 2 beds equipped for cardiac monitoring • typical patients include Hodgkin's disease, leukemia, hematological disorders, internal medicine problems, pulmonary disease, drug injections, infectious diseases, cardiac patients, and carcinomas • carcinoma patients are the most common; they may be in for chemotherapy or radiation for a time (one or several weeks), then home (several months), then return for more treatment (a week), then as an outpatient for a while (varied months to years), then return as a terminal carcinoma case (a month or more).	10. ICU: a. intensive care section (refer to Figures I-B-1 thru I-B-6 for daily fluctuation in beds occupied)[2] • approx. 364 patients annually • approx. 923 patient-days annually • average patient-days -- 2.53 • average beds occupied -- 2.54 b. recovery room (refer to Table I-B-1 for a one month sample of the recovery room log, showing the number of patients by day and total duration of stay in minutes) • approx. 1,042 patients annually[3] • 100 patients October 1969;[4] average patient stay -- 3.54 hrs.; average patients per day -- 3.22.
		11. Ward 1E (VIP):[17] a. workload volume • 7 or 8 of the 9 beds usually filled • medical and surgical cases, 66% moderate care and 33% light care patients • the ninth bed (no. 3 suite) is reserved for the President or the Secretary of the AF and therefore is almost never used; b. patient flow • average stay -- one to 2 weeks.	11. OR: a. 1,432 surgical procedures FY68 (refer to Table I-B-2 for percentage breakdown by specialty[4] and to Figure I-B-7 for monthly variation for FY68[4]).

	Ft. Dix	Andrews	Beaufort
C. Workload Flow (cont'd)		13. Surgical suite:[19] a. workload volume • 4,200 anesthetic procedures annually -- 420 locals, 1,260 nerve or ganglion blocks, and 2,520 generals • 4,200 operations annually -- 1,980 major, 2,220 minor • available no. of surgical ward beds limits the no. of operations performed; b. patient flow • OR technician brings patient to surgery area • patient undergoes surgery • if patient is under local anesthetic and there are no complications after surgery, he is returned to ward • if patient is under a general anesthetic, he is taken to recovery room by a nurse or circulating technician; c. peak periods • seasonally January to March and mid-September to November • daily Monday thru Friday 0700 to 1100 hrs. 12. Recovery room:[18] a. workload volume • approx. 3,990 patients annually • approx. 15 per day; b. patient flow • patients brought in as stated below, in surgical suite • patients returned to ward by recovery room or surgery suite technician when he is stable and no longer under the effects of anesthetic; c. peak periods -- Monday thru Friday, 1100 to 1400 hrs.	
D. Information Flow	1. For monthly volume of ward management communications, broken down by communication mode according to source or destination, refer to Table I-W-7. 2. For monthly volume of communication inputs and outputs according to the type of communication, refer to Table I-W-8.	1. For monthly volume of ward management communications broken down by communication mode according to source or destination, refer to Table I-M-1. 2. For monthly volume of communication inputs and outputs according to the type of communication, refer to Table I-M-2.	1. For monthly volume of ward management communications broken down by communication mode according to source or destination, refer to Table I-B-3. 2. For monthly volume of communication inputs and outputs according to the type of communication, refer to Table I-B-4.

WALSON ARMY HOSPITAL

OPERATIONS - WARD MANAGEMENT

TABLE I-W-1

ADMISSIONS BREAKDOWN

CATEGORIES		NUMBER IN SAMPLE	FACTOR	ADMISSIONS
Active Duty Military:				
Recruits		389	.6664	16525
Per Party Army Dix		133	.2277	5647
Air Force		8	.0136	337
Navy		1	.0017	43
Medic Area		21	.0359	890
Stockade		9	.0154	382
Air Evac		23	.0393	974
Total		584	1.000	24798
Retired, Dependent, and Others:				
Retired		17	.1393	971
Retired Dependent:	Adult	9	.0738	513
	Daughter	4	.0327	229
	Son	5	.0409	284
Active Duty Dependent	Wives	62	.5084	3542
	Daughter	13	.1065	742
	Son	6	.0491	342
	Adult	3	.0245	170
Other		3	.0245	170
Total		122		6963

TABLE I-W-2

SAMPLE ACTIVE DUTY MILITARY ADMISSIONS BREAKDOWN

WARD	ACTIVE DUTY MILITARY		OTHER		RESERVES NATIONAL GUARD	
	NUMBER	FACTOR	NUMBER	FACTOR	NUMBER	FACTOR
2A Male Surgical	54	.0668 x	7	.0328 x	7	.1750
2B Medical Surgery Female	3	.0036 x	48	.2253 x		
2C Surgery ICU	1	.0012				
3A Pediatrics			38	.1784 x		
3B Obstetrical			62	.2918 x		
4B Psychiatric	2	.0024 x	6	.0281 x	2	.0500
5A URI	145	.1774 x			2	.0500
5B Septic Surgery	35	.0428 x	9	.0422 x	1	.0250
5B Stockade	9	.0110			0	
6A Orthopedic	15	.0183 x	8	.0375 x	1	.0250
6B Orthopedic	22	.0269 x			2	.0500
7A URI	159	.1946 x			1	.0250
7B URI	75	.0917 x	9	.0422 x	0	
8A URI	265	.3243 x			1	.0250
8B Pren. & Cont. Dis.	10	.0122 x	4	.0187 x	2	.0500
9A General Medical	15	.0182 x	7	.0328 x	1	.0250
9B Medical ICU	7	.0085	15	.0704	2	.0500
AS					18	.4500
Sample Total	817	.9999	213	1.0002	40	1.0000

Yearly Total

$$\frac{\text{Other}}{\text{ADM + Reserves, Nat'l Guard}} = \frac{6963}{24798} = .2807$$

Sample (taken from July, Aug., Nov., and Feb. 1968)

$$\frac{\text{Other}}{\text{ADM + Reserves, Nat'l Guard}} = \frac{213}{857} = .2485$$

TABLE I-W-3

AVERAGE OCCUPANCY*

WARD	BEDS	AVERAGE OCCUPANCY	DAY/YEAR	PATIENT DAYS
2A	45	32	366	11712
2B	42	26	366	9516
3A	34	10	366	3660
3B	32	19	366	6954
3BN		13	366	4758
4A	67		366	
4B	54	21	366	7686
5A	55	33	366	12078
5B	73	37	366	13542
6A	53	38	366	13908
6B	46	34	366	12444
7A	73	54	366	19764
7B	64	36	366	13176
8A	73	58	366	21228
8B	59	42	366	15372
9A	58	43	366	15738
9B	53	24	366	8784

*Source: WAH Admission/Disposition Reports (A & D Sheets). Sample taken of 12 random days in July, December, October, and November 1968.

TABLE I-W-4

WARD 2 A SAMPLE BREAKDOWN OF OPERATIVE CONDITIONS

NUMBER CONDITIONS ON SAMPLE DAY (11/19/69)		PERCENTAGE	TOTAL PERCENTAGE
	General:		(60%)
1	Acute Appendicitis - 3	(2.5%)	
2	Small Bowel Obstruction - 1 - 4	(5%)	
11	Hernia 8-4 3-3	(27.5%)	
1	Recurrent Thyroglossal Duct Cysts - 3	(2.5%)	
2	Varicose veins - 4 - 3	(5%)	
1	Gun shot chest - 4	(2.5%)	
1	Ulcer (stomach) - 4	(2.5%)	
1	Scar revision - 4	(2.5%)	
1	Chronic Brain Syndrome - 2	(2.5%)	
1	Compression L-1 (spine compression)- 4	(2.5%)	
2	Gall Bladder - 3 - 3	(5%)	
24			
	Genito Urinary		(27.5%)
1	Urinary retention - 3	(2.5%)	
4	Epididymitis (inflammation) - 2	(10%)	
2	Phimosis (circumcision) - 3	(5%)	
1	Infected R Kidney - 4	(2.5%)	
1	Scrotol (Sinus) - 4	(2.5%)	
1	Hematuria - 1 (Blood in urine)	(2.5%)	
1	CA Prostrate - 2	(2.5%)	
11			
	Eye:		(10%)
1	Cataract - 1	(2.5%)	
1	Acute Retinitis - 4	(2.5%)	
2	Macular degeneration - 4	(5%)	
4			
	ENT:		(2.5%)
1	Fracture Mandible - 3		
1			

TABLE I-W-5

SAMPLE BREAKDOWN OF PATIENT TRIPS OFF WARD 2 A

	DAY ONE (NOV. 18)		DAY TWO		DAY THREE	
DESTINATIONS	NUMBER OF TRIPS	PERCENTAGE	NUMBER OF TRIPS	PERCENTAGE	NUMBER OF TRIPS	PERCENTAGE
Lunch	17	59%	12	39%	23	62%
Operating room			8	26%		
Physical therapy	2	7%	2	6.5%	3	8%
X-ray	2	7%	3	10%	2	5%
Lab	1	3.5%				
Dental Clinic	3	10%	2	6.5%	1	2.7%
Dermatology Clinic	1	3.5%				
Eye Clinic			2	6.5%	1	2.7%
Surgical Clinic			1	3%	4	11%
GU Clinic			1	3%	1	2.7%
EKG					1	2.7%
ENT					1	2.7%
OR Prep.	3	10%				
Totals	29	100%	31	100.5%	37	99.5%

Means of transportation:	Ambulatory	Wheel Chair	Stretcher	
Day One:	86%	14%	0	
Day Two:	61%	13%	26%	(Note: General Surgery Day)
Day Three:	95%	5%	0	

TABLE I-W-6

OPERATING ROOM ARRIVALS BY TIME*

HOURS	NUMBER OF PATIENTS
0700	10
0800	29
900	22
1000	17
1100	11
1200	9
1300	6
1400	2
1500	2
1600	0
1700	2
1800	0
1900	1
2000	2
2100	0
2200	0
2300	0
2400	0

*Source: OR Log Book sample of 113 patients.

Walson Army Hospital
Operations - Ward Management

TABLE 1-W-7 NUMBER OF COMMUNICATIONS BY MODE ACCORDING TO SOURCE/DESTINATION

SOURCE/ DESTINATION	RECEIVED BY WARD MANAGEMENT						SENT BY WARD MANAGEMENT					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION				92						349	16	24
AIR EVACUATION												
DENTAL SERVICE												
DISPENSARIES												
FLIGHT MEDICINE												
FOOD SERVICE				10132						12136		
HOUSEKEEPING												
LABORATORIES				70004						68600		
MAINTENANCE												
MEDICAL RECORDS				200						2160	2160	
NURSING SERVICE					3016	880				838	680	120
OPERATING ROOM				360						472		
OUTPATIENT DEPT.				717	1					360		
OUTSIDE WORLD										828		
PERSONNEL												
PHARMACY				1360						1064		28
PHYSICAL THERAPY				112	40					56		
PREVENTIVE MED.												
PROFESSIONAL SERV				755		560				7265		540
REGISTRAR				21554						927		
SUPPLY				111		192				1639	387	263
VETERINARY MED.												
WARD MANAGEMENT												
RADIOLOGY				9805						14788		

TABLE 1-W-8

NUMBER OF COMMUNICATIONS BY TYPE ACCORDING TO INPUT AND OUTPUT

	Patient Care Urgent	Patient Care Important	Patient Care Routine	Non-Emergent	Secretary Typical	Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
6440 INPUT												
VOLUME OF COMMUNICATION	74	25509		393		19	4		1	40		26040
NUMBER OF COMMUNICATION	3	27		5		2	2		1	2		42
6440 OUTPUT												
VOLUME OF COMMUNICATION	100	10130		670	56	10	1090	5	64	2		12727
NUMBER OF COMMUNICATION	2	23		6	2	1	12	2	3	1		29
6441 INPUT												
VOLUME OF COMMUNICATION	68	6178		433		19	6		1	40		6745
NUMBER OF COMMUNICATION	3	25		6		2	2		1	2		40
6441 OUTPUT												
VOLUME OF COMMUNICATION	40	5606		1125	56	15	281	5	60	2		7190
NUMBER OF COMMUNICATION	1	22		7	2	2	8	3	2	1		47

NOT REPRODUCIBLE

WALSON ARMY HOSPITAL

OPERATIONS - WARD MANAGEMENT

TABLE I-W-8

NUMBER OF COMMUNICATIONS BY TYPE ACCORDING TO INPUT AND OUTPUT

INPUT / OUTPUT	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Patient Secondary	Patient Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
6442 INPUT											
VOLUME OF COMMUNICATION	88	5920	7	393		19	6		1	20	6454
NUMBER OF COMMUNICATION	3	26	1	6		2	2		1	1	42
6442 OUTPUT											
VOLUME OF COMMUNICATION	40	4962		676	56	21	633	5	64		6457
NUMBER OF COMMUNICATION	1	21		6	2	2	8	2	3		45
6443 INPUT											
VOLUME OF COMMUNICATION	94	26416	4	521		19	10		1	20	27085
NUMBER OF COMMUNICATION	4	28	1	6		2	2		1	1	45
6443 OUTPUT											
VOLUME OF COMMUNICATION	40	7293		310	56	19	858	5	64	2	8647
NUMBER OF COMMUNICATION	2	27		6	2	2	11	2	2	1	55
6444 INPUT											
VOLUME OF COMMUNICATION	224	27476		1053		19	6		1	120	28899
NUMBER OF COMMUNICATION	3	27		6		2	2		1	2	43
6444 OUTPUT											
VOLUME OF COMMUNICATION	40	6242		1117	56	11	106	5	64	2	7643
NUMBER OF COMMUNICATION	1	23		9	2	2	8	2	3	1	51

VALSON ARMY HOSPITAL

OPERATIONS - WARD MANAGEMENT

TABLE I-W-8

NUMBER OF COMMUNICATIONS BY TYPE ACCORDING TO INPUT AND OUTPUT

INPUT / OUTPUT	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Patient Secondary	Patient Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
6445 INPUT											
VOLUME OF COMMUNICATION	100	5676	19	353			6		1	100	6254
NUMBER OF COMMUNICATION	2	25	2	6			2		1	1	39
6445 OUTPUT											
VOLUME OF COMMUNICATION	20	5626		45	56	10	34	5	64	2	5862
NUMBER OF COMMUNICATION	1	23		3	2	1	5	2	3	1	41
6446 INPUT											
VOLUME OF COMMUNICATION	68	6480	4	553		12	6		1	100	7224
NUMBER OF COMMUNICATION	2	26	1	6		1	2		1	1	40
6446 OUTPUT											
VOLUME OF COMMUNICATION	20	5266		885	59	10	103	5	64	2	6414
NUMBER OF COMMUNICATION	1	22		7	2	1	7	2	3	1	46
6447 INPUT											
VOLUME OF COMMUNICATION	73	6056	4	433		2	6		1	40	6615
NUMBER OF COMMUNICATION	3	24	1	6		19	2		1	2	58
6447 OUTPUT											
VOLUME OF COMMUNICATION	100	5834		190	56	15	289	69		1	6554
NUMBER OF COMMUNICATION	2	23		6	2	2	7	5		1	48

WALSON ARMY HOSPITAL

TABLE I-W-8

OPERATIONS - WARD MANAGEMENT

NUMBER OF COMMUNICATIONS BY TYPE ACCORDING TO INPUT AND OUTPUT

INPUT / OUTPUT	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Patient Secondary	Administrative Patient	Equipment	Supplies	Facilities	Personnel	Other	Total
6448 INPUT											
VOLUME OF COMMUNICATION	74	5308		313		19	6		1	40	5761
NUMBER OF COMMUNICATION	3	23		5		2	2		1	2	38
6448 OUTPUT											
VOLUME OF COMMUNICATION	60	6006		502	56	29	323	5	64	1	7046
NUMBER OF COMMUNICATION	1	22		6	2	2	6	2	3	1	45
6449 INPUT											
VOLUME OF COMMUNICATION	66	4956	4	43		19	6		1	20	5115
NUMBER OF COMMUNICATION	2	16	1	2		2	2		1	1	27
6449 OUTPUT											
VOLUME OF COMMUNICATION	42	2647		52	56	23	556	5	64	1	3446
NUMBER OF COMMUNICATION	2	16		3	2	2	7	2	3	1	38
6450 INPUT											
VOLUME OF COMMUNICATION	68	5156		183		19	6		1	120	5553
NUMBER OF COMMUNICATION	2	24		5		2	2		1	2	38
6450 OUTPUT											
VOLUME OF COMMUNICATION	40	5886		669	56	12	287	5	64	1	7020
NUMBER OF COMMUNICATION	2	22		7	2	2	8	2	3	1	49

WILSON ARMY HOSPITAL

OPERATIONS - WARD MANAGEMENT

TABLE I-W-8

NUMBER OF COMMUNICATIONS BY TYPE ACCORDING TO INPUT AND OUTPUT

6451

INPUT / OUTPUT	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Patient Secondary	Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
6451 INPUT											
VOLUME OF COMMUNICATION	66	4836	40	67		12	6		1	40	5068
NUMBER OF COMMUNICATION	2	23	1	5		1	2		1	2	37
6451 OUTPUT											
VOLUME OF COMMUNICATION	22	5370		70		10	217	5	64	2	5760
NUMBER OF COMMUNICATION	2	21		6		1	8	2	3	1	44
6464 INPUT											
VOLUME OF COMMUNICATION	74	13276	4	896		12	10		1	40	14313
NUMBER OF COMMUNICATION	3	24	1	6		1	2		1	2	40
6452 OUTPUT											
VOLUME OF COMMUNICATION	100	6074		358	76	10	89	5	64	2	6778
NUMBER OF COMMUNICATION	2	23		6	3	1	7	2	3	1	48
6450 INPUT											
VOLUME OF COMMUNICATION	74	25944	4	799		19	14		1	40	26895
NUMBER OF COMMUNICATION	3	24	1	7		2	2		1	2	42
6453 OUTPUT											
VOLUME OF COMMUNICATION	80	6042		238	56	26	595	5	64	2	7108
NUMBER OF COMMUNICATION	2	23		6	2	2	8	2	3	1	49

WALSON ARMY HOSPITAL

TABLE I-W-8

OPERATIONS - WARD MANAGEMENT

NUMBER OF COMMUNICATIONS BY TYPE ACCORDING TO INPUT AND OUTPUT

INPUT / OUTPUT	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Patient Secondary	Patient Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
6454 INPUT											
VOLUME OF COMMUNICATION	74	26044	4	519		19	14		1	40	26715
NUMBER OF COMMUNICATION	2	27	1	6		2	2		1	2	43
6454 OUTPUT											
VOLUME OF COMMUNICATION	80	5966		214	56	13		5	44	2	6380
NUMBER OF COMMUNICATION	2	24		6	2	2	8	2	2	1	49
6455 INPUT											
VOLUME OF COMMUNICATION	180	26816		663		12	6		1	120	27798
NUMBER OF COMMUNICATION	2	26		6		1	2		1	2	40
6455 OUTPUT											
VOLUME OF COMMUNICATION	40	5946		877	56	10	90	5	64	2	7090
NUMBER OF COMMUNICATION	1	23		9	2	1	8	2	3	1	50
6456 INPUT											
VOLUME OF COMMUNICATION	200	7817		863		12	6		1	120	9019
NUMBER OF COMMUNICATION	2	27		6		1	2		1	2	41
6456 OUTPUT											
VOLUME OF COMMUNICATION	20	5482		1117	56	10	103	5	64	2	6859
NUMBER OF COMMUNICATION	1	23		9	2	1	7	2	3	1	49

Malcolm Grow Hospital
Operations - Ward Management

TABLE I-M-1
NUMBER OF COMMUNICATIONS BY MODE ACCORDING TO SOURCE/DESTINATION

SOURCE/ DESTINATION	RECEIVED BY						SENT BY					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION				44						48		
AIR EVACUATION												
DENTAL SERVICE				10036		80						
DISPENSARIES						18						
FLIGHT MEDICINE												
FOOD SERVICE		4		2404		26				1460		916
HOUSEKEEPING				405						250		
LABORATORIES				1600		1854		2000		7962		1228
MAINTENANCE										8		
MEDICAL RECORDS												
NURSING SERVICE						136						
OPERATING ROOM												
OUTPATIENT DEPT.		616		1646		3610		242		5062		686
OUTSIDE WORLD				22		1700		10				1644
PERSONNEL												
PHARMACY		12		460		318		242		678		
PHYSICAL THERAPY												
PREVENTIVE MED.												
PROFESSIONAL SERV												
REGISTRAR				8640		752		124		4363		1040
SUPPLY		4				37		84		1828	160	78
VETERINARY MED.												
WARD MANAGEMENT												
RADIOLOGY				1688		493		200		1944		320

Malcolm Grow Hospital
Ward Management - Operations

TABLE I-M-2

TYPE OF COMMUNICATIONS BY INPUT AND OUTPUT

FUNCTION	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Patient Secondary	Patient Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
Ward 2A and 2B 3441											
Input	140	1086	804	2176	550		46		29	20	4017
Output	70	1345	1560	400	451		511	27	2	80	4446
Ward 5A and 5B 3442											
Input	700	862	694	1950	570		40			24	4840
Output	80	2808	3796	16	797		500	25	5		8027
Ward 3B 3447											
Input		4									4
Output											
Ward 3B 3448											
Input		400									400
Output		400			80						480
Labor and Delivery 3445											
Input		2040	180	220	240		20			500	3200
Output		980		56	410		548	35	30	940	2499
Nursery 3449											
Input		140			140						280
Output		400			120						520
Ward 4A and 4B 3440											
Input			20		120						140
Output											
Wards Others 3443											
Input	440	4940	2826	12208	4260		360			56	25090
Output	40	4668	2060	900	2340		1460	270			11738
Recovery/ Surgery 3411											
Input	20	20	372	420	40		20			20	912
Output		1148		20			675	25	2		1870

TABLE I-B-1

SAMPLE MONTH RECOVERY ROOM LOG

OCTOBER 1969	TIME (MINUTES)	PATIENTS
1	500	5
2	1090	5
3	1300	5
4	350	1
5	0	0
6	375	2
7	705	4
8	675	3
9	810	3
10	700	3
11	0	0
12	0	0
13	700	3
14	400	4
15	990 (approx.)	4
16	1580 (approx.)	7
17	325 (approx.)	1
18	0	0
19	0	0
20	1436 (approx.)	7
21	1933 (approx.)	7
22	865	4
23	1721 (approx.)	6
24	1415	7
25	255	1
26	0	0
27	970	5
28	420	3
29	85	1
30	1385	7
31	340	2

TABLE I-B-2

SURGICAL PROCEDURES BREAKDOWN

SPECIALITY AREA	TOTAL NUMBER * OF PROCEDURES	PERCENTAGE OF TOTAL
General Surgery	1294	39%
Orthopedics	597	18
Gynecology	332	10
Obstetrics	66	2
Urology	299	9
ENT	498	15
Eye	133	4
Dentistry	33	1

* July 1, 1963 to April 22, 1969.

Beaufort Naval Hospital
Ward Management - Operations

TABLE I-B-3
Number of Communications by Mode According to Source/Destination

SOURCE/DESTINATION	RECEIVED BY NURSING						SENT BY NURSING					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION			1472						4			
AIR EVACUATION												
DENTAL SERVICE												
DISPENSARIES												
FLIGHT MEDICINE												
FOOD SERVICE			2744						2180			
HOUSEKEEPING			180						202			
LABORATORIES			2764						1688			
MAINTENANCE			12						12			
MEDICAL RECORDS			915						1457			20
NURSING SERVICE												
OPERATING ROOM			140						217			
CLINICS			580						202			180
OUTSIDE WORLD												
PERSONNEL												
PHARMACY			802						722			920
PHYSICAL THERAPY												
PREVENTIVE MED.												
PROFESSIONAL SERV												
REGISTRAR												
SUPPLY			164		72				208			
VETERINARY MED.												
WARD MANAGEMENT												
RADIOLOGY			566		48				368			524

TABLE I-B-3 (cont'd)

SOURCE/DESTINATION	RECEIVED BY OR						SENT BY OR					
	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE	U.S. MAIL	INTERNAL MAIL	TELETYPE	HAND CARRY	WORD-MOUTH	TELEPHONE
ADMINISTRATION			204						1			
AIR EVACUATION												
DENTAL SERVICE			20									
DISPENSARIES												
FLIGHT MEDICINE												
FOOD SERVICE												
HOUSEKEEPING			20						01			
LABORATORIES			121									
MAINTENANCE			8		20							
MEDICAL RECORDS												
NURSING SERVICE			217						104			
OPERATING ROOM												
CLINICS			80						12			
OUTSIDE WORLD												
PERSONNEL												
PHARMACY			56									
PHYSICAL THERAPY												
PREVENTIVE MED.												
PROFESSIONAL SERV												
REGISTRAR												
SUPPLY			10									
VETERINARY MED.												
WARD MANAGEMENT												
RADIOLOGY			22		12				12			
EMERGENCY									15			

Beaufort Naval Hospital
Ward Management - Operations

TABLE 4-B-4

NUMBER OFCOMMUNICATIONS BY TYPE ACCORDING TO INPUT AND OUTPUT

FUNCTION	Patient Care Urgent	Patient Care Important	Patient Care Non-Important	Patient Secondary	Administrative	Equipment	Supplies	Facilities	Personnel	Other	Total
A-2 Nursing: Input	2876		728			56		9			3669
Output	1873	30	632	188	4	35		22	472		3256
B-2 Nursing: Input	671		369	12		56	4	9			1116
Output	459	421	240	48	4	59		21			1252
A-3 Nursing: Input	665		268	16		42		9			992
Output	419	421	240	48		49		22			1199
B-3 Nursing: Input	714		364	28		56		9			1171
Output	684	421	240	48	4	59		22			1478
ICU Nursing: Input	390		80			40		9			519
Output	287		29	48		38		2			404
SOQ Nursing: Input	1073		280	28		56	8	4			1449
Output	842	421	240	48		58		3			1612
SDQ Nursing: Input	2693	1	364	2		84		4			3148
Output	1990	424	240	160		58		4			2876
Nursing Service: Input	1013	9	5	160		3		20			1210
Output	8		452			3		43			506
Nursing Coordinator Input								20			20
Output								28			28
Total-Nursing: Total Input	10095	10	2995	240		393	12	93			13294
Total Output	6562	2138	2313	588	12	359		167	472		12611
Operating Room:											
Input	116		8			28		5	15		172
Output	281			226	13	82	4				606

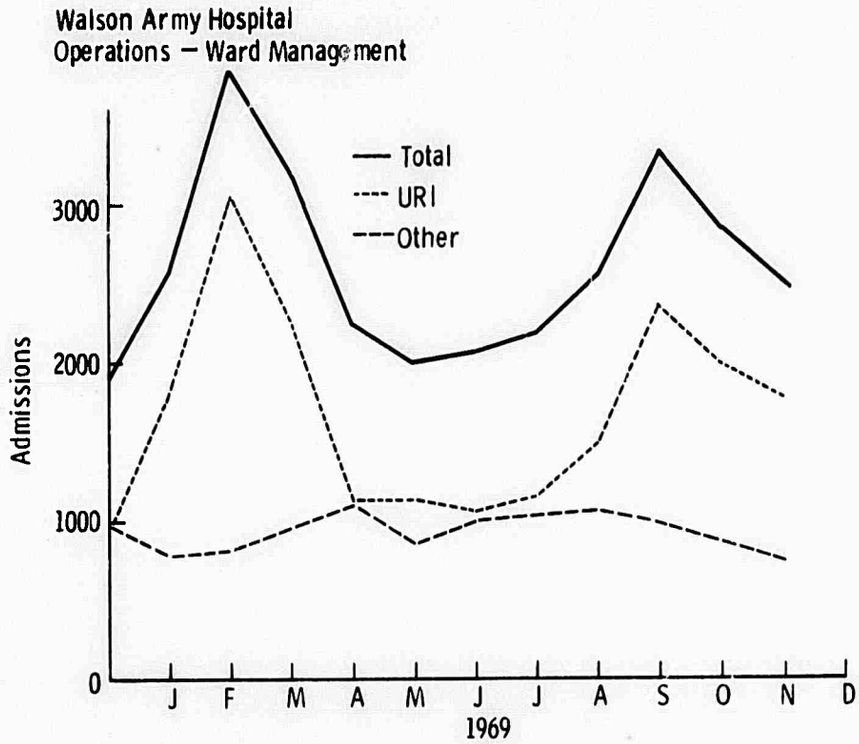

Fig. I-W-1—Comparison of total and URI admissions

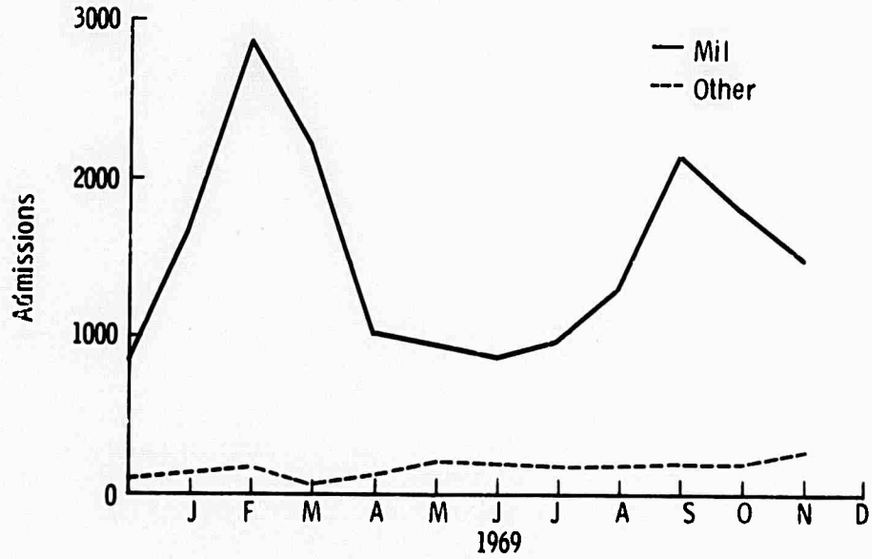

Fig. I-W-2—Comparison of military and civilian components of URI admissions

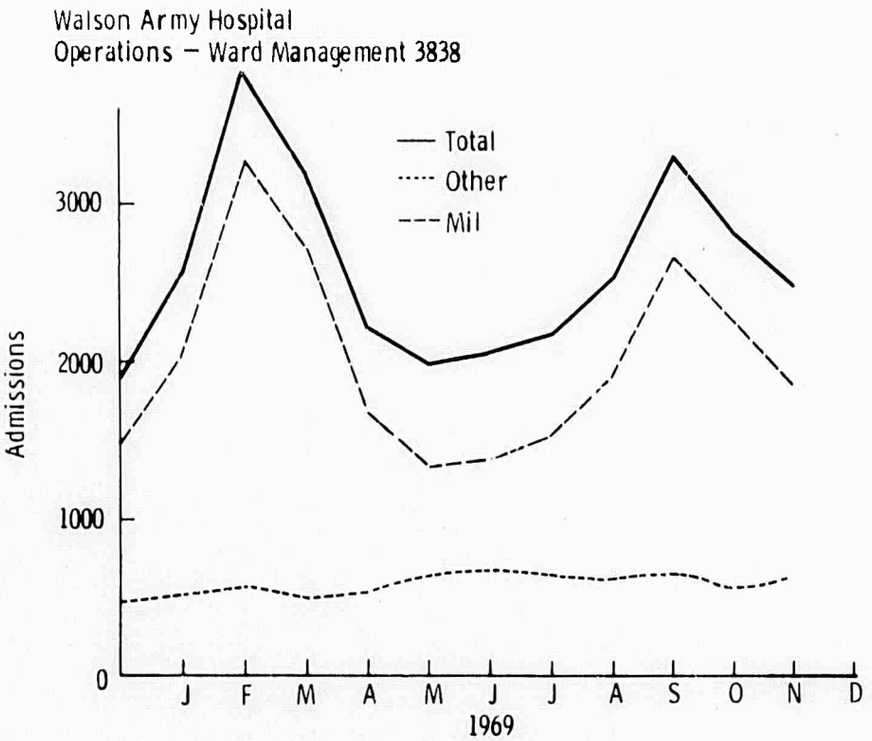

Fig. I-W-3—Comparison of military and civilian components of total admissions

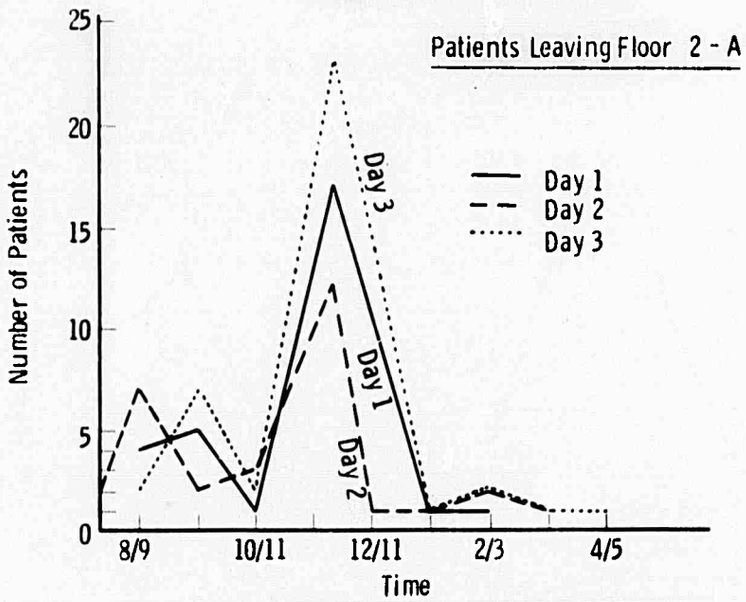

Fig. I-W-4—Time plot of patient trips off Ward 2 A

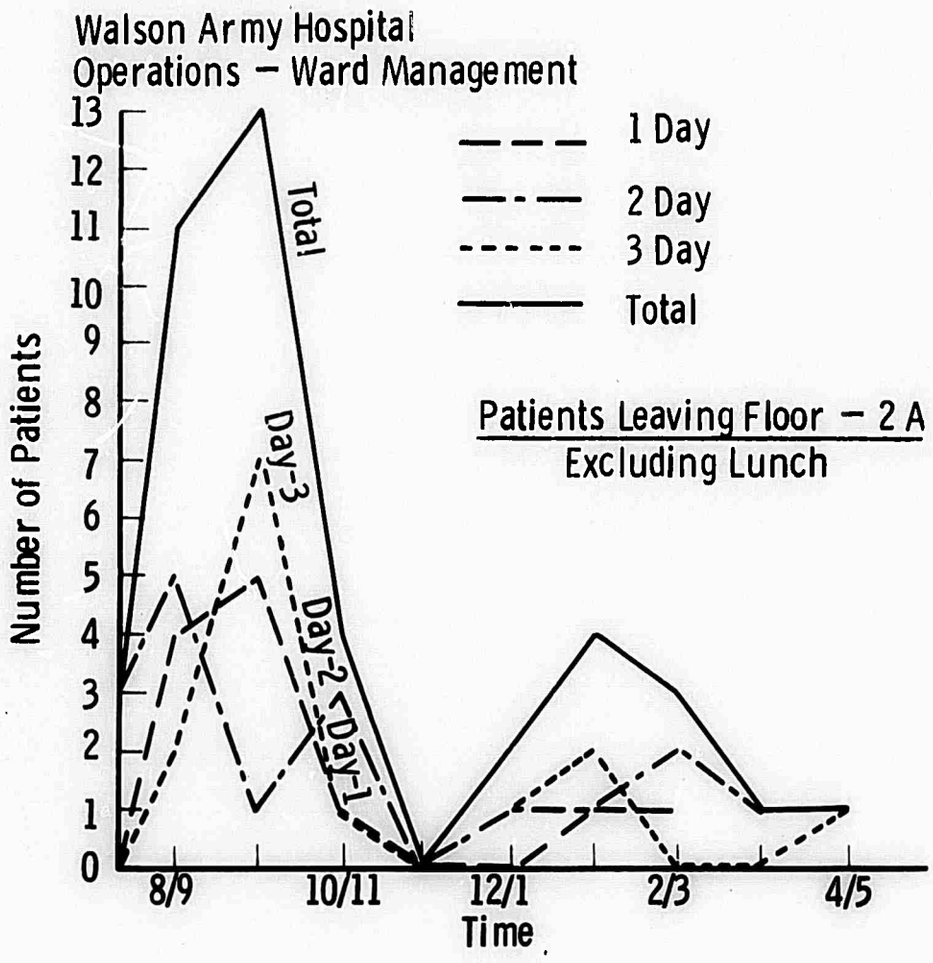

Fig. I-W-5—Time plot of patient trips off ward 2 A excluding lunch

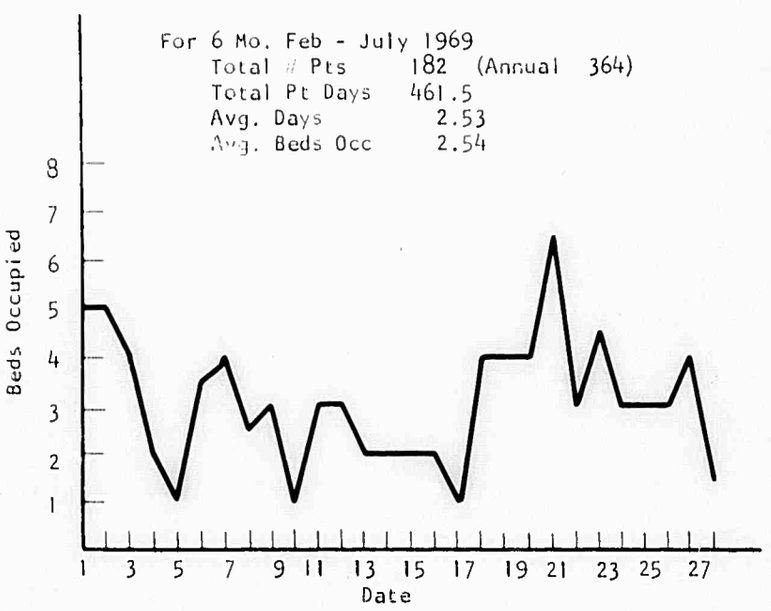

Fig I-B-1—February daily fluctuations in ICU beds

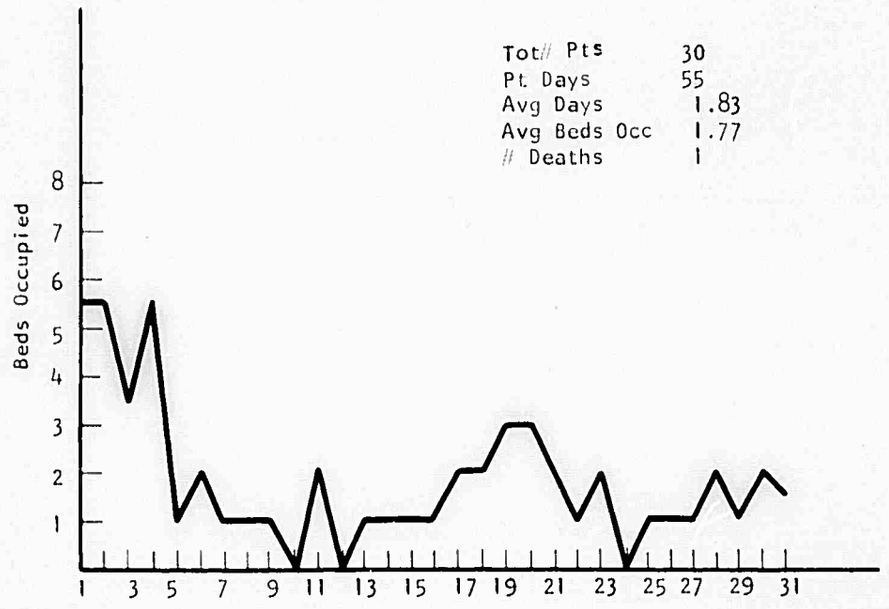

Fig. I-B-2—March daily fluctuations in ICU beds

Beaufort Naval Hospital
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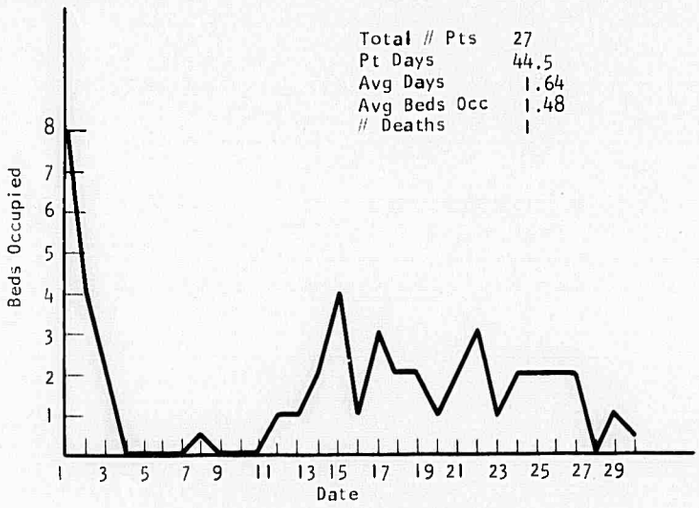

Fig. I-B-3—April fluctuations in ICU beds

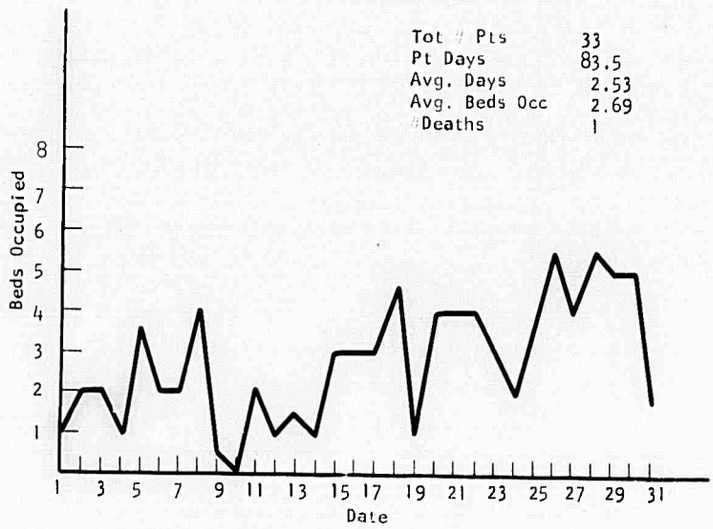

Fig. I-B-4—May daily fluctuations in ICU beds

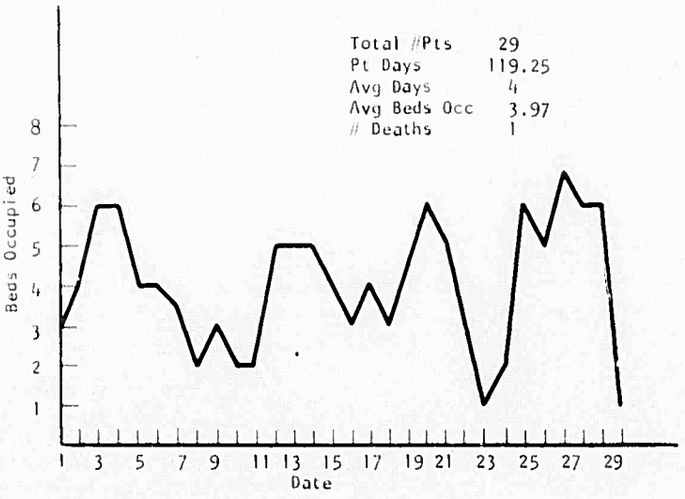

Fig. I-B-5—June daily fluctuations in ICU beds

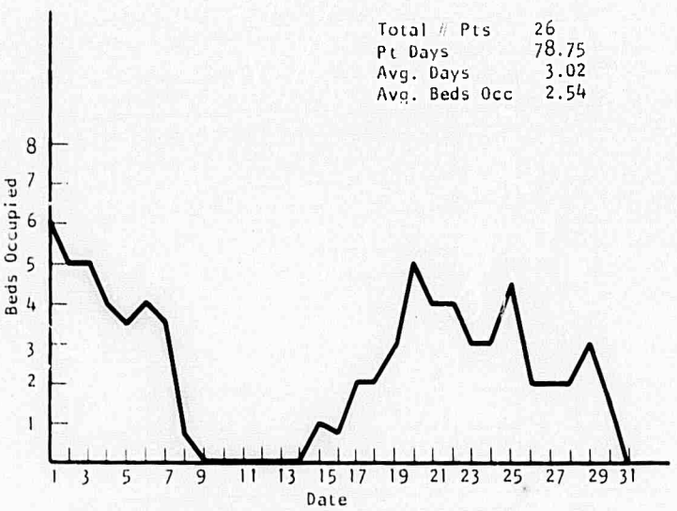

Fig. I-B-6—July daily fluctuations in ICU beds

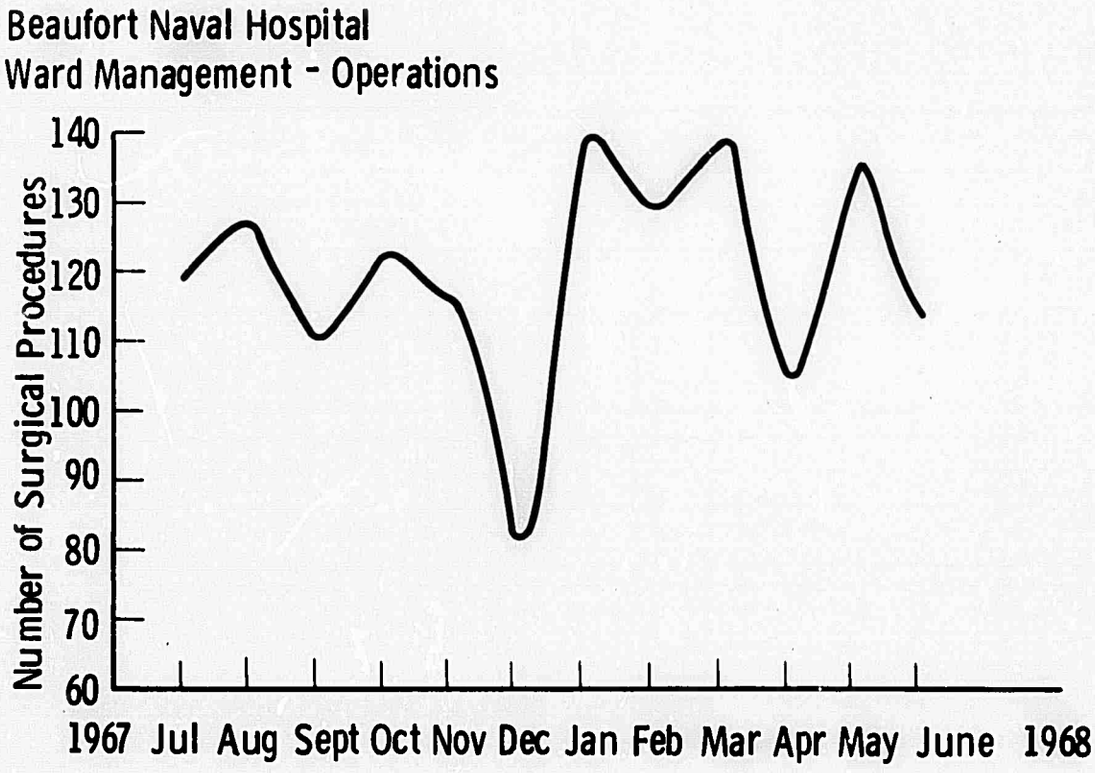

Fig. I-B-7 —FY68 monthly variations in Operating Room volume

B. WARD MANAGEMENT -- RESOURCE UTILIZATION

	Walson Army Hospital (WAH) -- Fort Dix	Malcolm Grow Hospital -- Andrews AFB	U.S. Naval Hospital -- Beaufort
A. Personnel	1. 122 employees: a. includes all full-time WAH ward and Annex ward, OR, nursery, URI admitting team, and AIR EVAC section personnel, and all nursing supervisory personnel directly connected with ward management or nurses' training; b. does not include nursing administrators (chief nurse, chief wardmaster), or MD's assigned from Departments of Medicine, Surgery, and P&N; c. for a complete breakdown of all personnel by function, number, position, pay grade, and hours worked per week, refer to Table II-W-1. 2. Refer to Figure II-W-1 for a percentage breakdown of time devoted to various tasks for RN's, medical corpsmen, medical clerks, and medical hold.[1]	1. 341 employees: for a breakdown of all personnel by position, number, pay grade, and hours worked per week, refer to Appendix I, Report 011.	1. For breakdown of personnel by position, number, pay grade, and hours worked per week for each ward, refer to Appendix I, Report 011: a. for normal staffing patterns for each ward, refer to Table II-B-1; b. during the observation period, there were 6 nursing trainees receiving OJT, rotating among wards to gain experience in all specialties (refer to Table II-B-2 for rotation schedule).
		2. Ward 3A (pediatrics): a. chief nurse has overall responsibility for patients on ward; b. NCOIC has overall responsibility for ward administration, supplies, and facilities.	2. Ward A-1 (light care): a. care of these patients is the responsibility of the medical specialty doctors who provide care for Ward A-2; b. nurse in charge of Ward A-2 is responsible for nursing care in Ward A-1, and generally makes only 2 trips to Ward A-1 per shift to check with the corpsmen, make rounds and check and dispense narcotics.
		3. Wards 4A and 4B (psychiatric): a. 95% of technicians arrive with third-level training (they have qualified psychiatric ward technician training) and need approx. 3 months OJT before they can fully assume responsibilities; b. technicians have major support role in psychiatric ward therapy, i.e. running group therapy sessions, etc; c. arriving corpsmen have third-level training, but are not trained in pediatrics.	3. Ward B-3 (clean surgical): a. regularly covered by MD's in surgical service, as well as by urologist, dentist, ophthalmologist, otolayrngologist, when they have admitted inpatients to the ward.
		4. Ward 2A and 2B (surgical): a. charge nurse has responsibility for teaching, counseling, and evaluating staff; b. charge nurse's time consumed in large part by administrative paperwork.	4. SOQ: a. one MD has primary responsibility for rounds, charting, consultation, etc., and has an office on the ward floor; other coverage by MD's from medical and surgical service as required.

II. Ward Management -- Resource Utilization (Cont'd)

	Ft. Dix	Andrews	Beaufort
A. Personnel (cont'd)		5. Ward 5A and 5B (medical): a. each physician spends approx. 1.5 hours per week in training medical technicians; b. wards no longer have residents or interns, and staff spends considerable time locating physicians from other areas when they are needed; c. ward personnel must perform basic equipment maintenance.	5. SDQ: a. civilian nurses supervised by one military nurse, who also makes rounds through the nursery and pediatrics.
		6. Ward 3D (labor and delivery): a. Director OB is involved in research which therefore places a great administrative load on staff; b. charge nurse establishes working schedules and determines when new personnel are capable of working alone; c. all nurses need at least 6 months training before they can work alone; even experienced nurses need orientation to standard operating procedures; d. most civilians have at least 5 years' experience before working in labor and delivery.	6. Nursery: a. pediatricians supervise infants' care; b. civilian nurses supervised by military nurses from SDQ during day and by nurses doing round duty evening and night.
		7. Ward 1E (VIP): a. ward provides a nurse once a month for blood drive; b. most technicians spend 30 percent of their time off the ward in errands and hand-carrying medical records, lab requests, escorting patients, etc; c. medical technicians are on 12-hour shifts; d. medical technicians spend one month OJT on ward; e. physicians serving the ward are usually department chairmen.	7. Pediatrics ward: a. handled by pediatricians with consultation with medical and surgical doctors as needed; b. no corpsmen assigned directly to pediatrics.
		8. Ward 3B (orthopedic): a. charge nurse is full-time administrator; b. medical technicians work 12-hour shifts; c. medical technicians spend 50% of their time escorting patients to auxiliary services; d. OJT period for technicians is 2 weeks; e. grand rounds Wednesday afternoons puts additional duty loads on ward staff.	8. Labor and delivery: a. covered by doctors in OB/GYN service, 3 of whom are completely qualified OB men; the 4th has an internship in OB and handles routine obstetrics.

	Ft. Dix	Andrews	Beaufort
A. Personnel (cont'd)		9. Ward 3B (OB/GYN): a. charge nurse does administrative work, except for assignment of rooms (the department chairman has this responsibility); b. nurses and nurses' aides need from 6 to 8 weeks OJT before they can assume responsibilities alone. 10. Ward 3D (nursery): a. technicians need 4 to 6 weeks OJT; they are assigned with first-level training. 11. Ward 2H (female): a. team nursing used in this ward. 12. Surgical suite: a. all enlisted personnel subject to commander's call; officers, to in-services training and attendance one hour per month for training in their departments; b. 5 of the 33 surgeons administer care in surgery area at any given time; c. technicians need 3 months OJT; d. usually 20% of assigned personnel require additional training.[1]	9. OR: a. the military nurse in charge of the operating room has additional duties as supervisor of Central Sterile Supply (CSS).
B. Facilities	1. Location: a. WAH wards -- second through ninth floors of hospital (refer to Table II-W-2 for list of all wards by type and number of beds); b. Annex wards -- in Hospital Annex area approx. one-half mile from WAH; c. OR -- second floor of hospital; d. nursery -- third floor of hospital; e. labor and delivery -- third floor of hospital; f. nursing administration and education -- first, fourth, fifth, sixth, and ninth floors, and in basement addition (preventive medicine area) of hospital; g. AIR EVAC section -- hospital basement.	1. Location: a. Ward 3A (pediatrics) -- third floor; b. Ward 4A and 4B (psychiatric) -- on fourth floor; shares space with neurology clinic; c. Wards 2A and 2B (surgical) -- second floor, across hall from surgery suite and recovery room; d. Wards 5A and 5B (medical) -- fifth floor (cardiac monitors located on first floor); e. Ward 3D (labor and delivery) -- third floor, adjacent to nursery; f. Ward 1E (VIP) -- first floor between OPD and administrative areas; g. Ward JB (orthopedic) -- in basement in an outlying wing, removed from either clinic, therapy or surgery areas; h. Ward 3B (OB/GYN) -- adjacent to the nursery; i. Ward 3D (nursery) -- third floor, between labor and delivery and OB/GYN Ward;	1. Location: a. Wards A-1, A-2, and A-3 -- located on floors one, two, and three, respectively, of the north wing of the hospital; b. Wards B-1, B-2, and B-3 -- floors one, two, and three, respectively, of the wing opposite the north wing; c. SOQ -- fourth floor of the hospital; d. SDQ -- fifth floor; e. nursery -- fifth floor, between labor and delivery rooms and the OB Ward beds; f. labor and delivery -- fifth floor, adjacent to nursery; g. pediatrics -- fourth floor, at the west end of the SOQ Ward; h. ICU -- stub wing B-3, adjacent to Ward B-3 (surgical); i. OR -- third floor, main corridor, opposite Radiology.

II. Ward Management -- Resource Utilization (Cont'd)

	Ft. Dix	Andrews	Beaufort
B. Facilities (cont'd)	2. Floor space:[2] a. total floor space -- approx. 38,386 sq. ft.: b. refer to Table II-W-3 for area breakdown by type of room for each of the WAH Wards.	j. Ward 2H (female) -- second floor in added wing above administrative areas; k. surgical suite and recovery room -- on second floor, opposite Wards 2A and 2B. 2. Floor space: a. total floor space -- 43,841 sq. ft.: b. refer to Table II-M-1 for area breakdown by ward and by room.	2. Floor space:[1] a. total floor space -- 41,674 sq. ft.: b. refer to Table II-B-3 for area breakdown of each unit, and percentage of total.
C. Equipment	1. Refer to Appendix I, Report 011, for a complete list of all equipment allocated to ward management at WAH.	1. Ward management equipment worth over $200 is listed in Appendix I, Report 011, for surgical suite; Ward 2A-2B, Ward 5A-5B and Ward 3D. 2. For complete inventory of equipment for these and the remaining ward management areas, refer to computer run PCN 43165A September 30, 1969 (inventory of total hospital equipment worth over $200).	1. Refer to Table II-B-4, and to Appendix I, Report 011 for a complete list of ward management equipment worth over $200.
D. Work Sampling Study	1. Observation period: a. one day (November 17, 1969) in Ward 2A (male surgical) to observe and record general procedures (layout, work flow, patient flow) and conduct interviews; b. three-day period (November 17 thru 19, 1969) devoted specifically to work sampling study in which 8 employees in 6 job categories plus facilities and equipment related to each job were observed between 0730 and 2400 hrs.	1. Observation period: a. one day on Ward 2A (September 18, 1969) to observe and record general procedures (layout, work flow.) One day on Ward 5A (October 11, 1969) for same purpose; b. one-day period (November 11, 1969) devoted specifically to work sampling study on Ward 2A in which 6 employees in 4 job categories plus facilities and equipment related to each job were observed. c. 2-day period (October 12 and 15, 1969) devoted to a similar work sampling study on Ward 5A in which 8 employees in 5 job categories plus facilities and equipment related to each job were observed.	1. Observation period: a. seven-day period (September 12 thru 18, 1969) devoted specifically to work sampling studies of personnel and of equipment and facilities related to each job in selected areas, as follows • first shift, Friday September 12, observation of 4 Ward A-2 employees in 4 job categories • first shift, Saturday, September 13, observation of 3 Ward A-2 employees in 3 job categories • Sunday, September 14, observation of weekend nursing supervisor activities • first shift, Monday, September 15, observation of 4 Ward A-2 employees in 4 job categories • second shift, Tuesday, September 16, observation of 3 Ward A-2 employees in 3 job categories • Wednesday, September 17, observation of evening nursing supervisor activities • Thursday, September 18, observation of night nursing supervisor activities.

	Ft. Dix	Andrews	Beaulort
D. Work Sampling Study (cont'd)	2. Steps in recording and analyzing data: a. task performed by each employee and area of facility in which each task performed were recorded at random times on special data sheets; b. tasks and areas then grouped and coded for meaningful analysis; c. data keypunched and processed by computer for analysis (refer to Appendix X for graphic display of data showing percent of time spent by employee type according to task or room, and to Appendix II for processing results which yielded these percentages).	2. Steps in recording and analyzing data: a. task performed by each employee and area of facility in which each task performed recorded at random times on special data sheets; b. tasks and areas then grouped and coded for meaningful analysis; c. data keypunched and processed by computer for analysis (refer to Appendix X for graphic display of data showing percent of time spent by employee type according to task or room, and to Appendix II for processing results which yielded these percentages).	2. Steps in recording and analyzing data: a. task performed by each employee and area of facility in which each task performed were recorded at random times on special data sheets; b. tasks and area then grouped and coded for meaningful analysis; c. data keypunched and processed by computer for analysis (refer to Appendix X for graphic display of data showing percent of time spent by employee type according to task or room, and to Appendix II for processing results which yielded these percentages).

TABLE II-W-1

STAFF BREAKDOWN

FUNCTION	POSITION	PAY GRADE	QUANTITY	HRS./ WEEK
Ward 2A (Male Surgery)	Head nurse	O-3	1	40
(15)	RN	O-2	1	40
	RN	O-1	1	40
	RN	GS-8	2	40
	Wardmaster	E-7	1	44
	Corpsman	E-6	1	44
	Corpsman	E-5	2	44
	Corpsman	E-4	4	44
	Special Forces Trainee	E-6	1	40
	Clerk	E-3	1	44
Ward 2B (Female Surgery & Med.)	Head Nurse	GS-9	1	40
	RN	O-2	2	40
(20)	RN	GS-8	3	40
	*Wardmaster	E-7	1	40
	*Corpsman	E-3	3	35
	*Corpsman	E-2	4	35
	*Ward clerk	E-3	1	35
	LPN	GS-4	2	40
	Nurses aide	GS-3	3	40
Ward 2C (Surgery ICU and Recovery)	Head nurse	O-3	1	40
	RN	O-2	2	40
(25)	RN	GS-7	5	40
	RN	GS-6	1	40
	Wardmaster	E-8	1	44
	Corpsmen	E-6	4	44
		E-5	2	44
	Spec. Forces Trainee	E-6	1	40
	Corpsmen	E-4	1	44
	Corpsmen	E-3	2	44
	Clerks	E-2	2	44
	LPN's	GS-4	3	40
Ward 3A (Ped.)	Head Nurse	O-2	1	40

TABLE II-W-1 (cont'd.)

STAFF BREAKDOWN

FUNCTION	POSITION	PAY GRADE	QUANTITY	HRS./WEEK
	RN	O-2	1	40
(23)	RN	GS-8	1	40
	RN	GS-7	3	40
	Wardmaster	E-7	1	44
	*Corpsman	E-6	1	35
	*Corpsman	E-5	1	35
	*Corpsman	E-3	2	35
	*Corpsman	E-2	6	35
	*Clerk	E-2	1	35
	LPN	GS-4	3	40
	LPN	GS-3	2	40
Ward 3B (OBGYN)	Head nurse	O-4	1	40
	RN	O-2	1	40
(22)	RN	GS-8	6	40
	*Wardmaster	E-5	1	40
	*Corpsmen	E-5	1	35
	*Corpsmen	E-3	3	35
	*Corpsmen	E-2	4	35
	LPN	GS-4	1	40
	Nurses aide	GS-4	3	40
	Nurses aide	GS-3	1	40
Nursery	RN	O-2	2	40
(21)	RN	GS-8	5	40
	*Corpsmen	E-3	2	35
	*Corpsmen	E-2	7	35
	Nurses aide	GS-3	5	40
Ward 4A (Air evac.)	RN	GS-9	1	40
(12)	RN	O-2	1	40
	Wardmaster	E-7	1	44
	Corpsmen	E-5	1	44
	Corpsmen	E-4	2	44
	Corpsmen	E-3	2	44
	Corpsmen	E-2	1	44
	Litter bearers	WB-2	3	40
Ward 4B (Psych.)	RN	O-3	1	40
(26)	RN	O-2	2	40
	Head nurse	GS-7	1	40

TABLE II-W-1 (cont'd.)

STAFF BREAKDOWN

FUNCTION	POSITION	PAY GRADE	QUANTITY	HRS. / WEEK
	RN	GS-7	3	40
	Wardmaster	E-7	1	44
	Psych. specialists	E-6	2	44
	Psych. specialists	E-5	5	44
	Psych. specialists	E-4	2	44
	Corpsmen	E-3	1	44
	**Psych. specialist	E-4	1	35
	*Psych. specialist	E-5	1	35
	*Corpsmen	E-3	2	35
	*Corpsmen	E-2	1	35
	***Clerk	E-4	1	28
	LPN	GS-3	1	40
	Nurse's aide	GS-3	1	40
Ward 5A (General surgery)	Wardmaster	E-7	1	44
(7)	Corpsman	E-5	2	44
	Corpsman	E-4	1	44
	Corpsman	E-3	1	44
	Corpsman	E-2	1	44
	Clerk	E-4	1	28
Ward 5B (Med.-surg.)	Head nurse	O-3	1	40
(15)	RN	O-3	1	40
	RN	O-2	3	40
	RN	GS-8	2	40
	Wardmaster	E-7	1	44
	Spec. forces trainee	E-6	1	40
	Corpsmen	E-5	2	44
	Corpsmen	E-3	3	44
	*Corpsmen	E-2	1	35
Ward 6A (ortho.)	Head nurse	O-4	1	40

TABLE II-W-1 (cont'd.)

STAFF BREAKDOWN

FUNCTION	POSITION	PAY GRADE	QUANTITY	HRS./WEEK
6B (ortho.)	Assistant head nurse	O-3	1	40
(26)	RN	O-3	1	40
	RN	O-2	2	40
	RN	GS-8	4	40
	Wardmaster	E-7	1	44
	Spec. forces trainee	E-6	1	40
	Corpsmen	E-7	1	44
	Corpsmen	E-6	5	44
	Corpsmen	E-5	5	44
	Corpsmen	E-4	1	44
	Corpsmen	E-3	3	44
	Corpsmen	E-2	1	44
URI Admitting team	*NCOIC	E-5	1	35
(4)	Clerks	E-5	1	55
	Clerks	E-4	2	44
Ward 7A (URI)	Head nurse	O-4	1	40
7B	RN	O-3	1	40
(27)	RN	O-1	3	40
	RN	GS-7	6	40
	Wardmaster	E-7	1	44
	Wardmaster	E-6	1	44
	Corpsmen	E-7	1	44
	Corpsmen	E-5	7	44
	Corpsmen	E-4	1	44
	Corpsmen	E-3	5	44
Ward 8A (URI)	Head nurse	O-3	1	40
8B (pneumonia)	RN	O-2	2	40
(25)	RN	O-1	3	40
	RN	GS-7	3	40
	Wardmaster	E-7	1	44
	***Corpsmen	E-7	1	35
	Asst. Ward-master	E-7	1	44
	Corpsmen	E-5	4	44
	****Corpsmen	E-4	1	35

TABLE II-W-1 (cont'd.)

STAFF BREAKDOWN

FUNCTION	POSITION	PAY GRADE	QUANTITY	HRS./WEEK
	Corpsmen	E-4	5	44
	Corpsmen	E-3	2	44
	Corpsmen	E-2	1	44
Ward 9A (gen. med.)	Head nurse	O-3	1	40
(17)	RN	O-3	1	40
	RN	GS-7	4	40
	Wardmaster	E-7	1	44
	Corpsman	E-6	2	44
	Psych. spec.	E-6	1	44
	****Corpsman	E-5	1	35
	Corpsman	E-5	1	44
	Corpsman	E-4	1	44
	Corpsman	E-3	2	44
	Corpsman	E-2	2	44
Ward 9B (med. ICU)	Head nurse	O-4	1	40
(32)	RN	O-2	4	40
	RN	GS-7	5	40
	Wardmaster	E-8	1	44
	Spec. forces trainee	E-6	1	40
	Corpsman	E-8	1	44
	Corpsman	E-6	3	44
	Corpsman	E-5	3	44
	Corpsman	E-4	4	44
	Corpsman	E-3	3	44
	Corpsman	E-2	3	44
	Nurse's aides	GS-3	3	40
OR	Nursing supv.	O-5	1	40
(38)	Head nurse	O-4	1	40
	RN	O-3	2	40
	RN	O-2	3	40
	RN	GS-7	1	40
	Students	O-2	2	20
	Students	O-1	5	20
	Anesth. supv.	O-5	1	48
	Anesth. head nurse	O-4	1	40

TABLE II-W-1 (cont'd.)

STAFF BREAKDOWN

FUNCTION	POSITION	PAY GRADE	QUANTITY	HRS./WEEK
	Anesth. RN	O-4	1	40
	Anesth. RN	O-2	1	40
	NCOIC	E-7	1	44
	Assistant NCOIC	E-6	1	44
	OR Spec.	E-6	5	44
	OR Spec.	E-5	5	44
	*****OR Spec.	E-6	1	35
	OR Spec.	E-4	2	44
	OR Spec.	E-3	2	44
	Clerk	GS-4	2	40
Annex Wards (URI)	Head nurse	O-4	1	40
(24)	RN	O-1	7	40
	Wardmaster	E-6	1	44
	*****Corpsmen	E-6	1	35
	*****Corpsmen	E-5	3	35
	*****Corpsmen	E-4	6	35
	*****Corpsmen	E-3	2	35
	*****Corpsmen	E-2	2	35
	****Corpsmen	E-4	1	35
Air Evac Section	NCOIC	E-7	1	44
(13)	Shift leaders	E-6	1	44
	Shift leaders	E-5	2	44
	Shift leaders	E-4	2	44
	Drivers	E-3	1	44
	Drivers	E-2	1	44
	Driver	WB-7	5	40
Medical svc.	Med. nursing supv.	O-4	1	40
(3)	NCOIC	E-7	1	44
	***Clerk	E-4	1	28
Surgical svc.	Surg. nursing supv.	O-4	1	40
(3)	NCOIC	E-7	1	44
	***Clerk	E-2	1	28
Nurses training	Education Co-ordinator	O-4	1	40
(4)	Orientation	O-5	1	40

TABLE II-W-1 (cont'd.)

STAFF BREAKDOWN

FUNCTION	POSITION	PAY GRADE	QUANTITY	HRS./WEEK
	Orientation	O-4	1	40
	NCOIC	E-6	1	44

* WAC's
** 1387th Bln.
*** Medical Holding Company
**** 22nd Ambulance Company
***** 4th Field Hospital

TABLE II-W-2

WARD TYPE AND CAPACITY

WARD	TYPE	NUMBER OF BEDS
2A	Male surgical	45
2B	Medical and surgical women	42
2C	Surgical ICU and recovery	13 + 5RR
3A	Pediatric	34
3B	Obstetrical	32
4A	Air evac.	67
4B	Psychiatric ward	54
5A	General Medicine	73
5B	Septic surg.	55
6A	Orthopedic	53
6B	Orthopedic	46
7A	URI	73
7B	URI	64
8A	URI	73
8B	Pneumonia & contagious disease	59
9A	General medicine	58
9B	Medical ICU	33

TABLE II-W-3

FACILITIES BREAKDOWN

	DESCRIPTION	SQ. FEET	PERCENT
6440	4 bed room ob-gyn	256	4.22
	2 bed room ob-gyn	182	3.00
	Private room ob-gyn	170	2.80
	Bath room ob-gyn	292	4.81
	Supply closet ob-gyn	20	.32
	Waiting room and lounge	180	2.92
	Kitchen	140	2.30
	Doctor's office ob-gyn	120	1.97
	Nurse's office ob-gyn	210	3.46
	Utility room ob-gyn	170	2.80
	10 bed ward ob-gyn	650	10.71
	Soiled linen storage ob-gyn	25	.41
	Clean linen storage ob-gyn	60	.98
	Observation nursery	250	4.12
	Newborn nursery	250	4.12
	Premature nursery	250	4.12
	Septic nursery	190	3.13
	Workroom nursery	125	2.06
	Nurses station nursery	125	2.06
	Formula room	30	.49
	Workroom nursery	100	1.64
	Storage nursery	70	1.15
	Crib storage nursery	210	3.46
	Nurses locker L & D	90	1.48
	Labor room L & D	100	1.64
	Delivery room L & D	324	5.34
	Scrub room : L & D	60	.98
	Work room L & D	120	1.97
	Break room L & D	160	2.63
	Dressing room L & D	190	3.13
	Doctor's lockers L & D	170	2.80
	Soiled linen storage L & D	75	1.23
	Clean linen storage L & D	75	1.23
	Sterile supply L & D	75	1.23
	OB Doctor on call office	170	2.80
	Clinical equip. storage	36	.59
	Supply room	36	.59
	Labor bed	60	.98

TABLE II-W-3 (cont'd)

FACILITIES BREAKDOWN

	DESCRIPTION	SQ. FEET	PERCENT
	Nurses station	130	2.14
	CMS storage area	90	1.48
	Total	6066	
6441	12 bed ward	360	19.71
	Latrine	196	10.73
	7 bed ward	250	13.69
	3 bed ward	140	7.66
	7 bed ward	210	11.50
	Supply closet	30	1.64
	Clean linen supply closet	50	2.73
	Soiled linen supply closet	20	1.09
	2 bed room	100	5.47
	Doctor's office	110	6.02
	Treatment room	100	5.47
	Nurse's station	150	8.21
	Utility room	110	6.02
		182	
6442			
	11 bed ward	320	16.30
	3 bed room	144	7.33
	VIP suite	144	7.33
	Latrine	130	6.62
	Supplies	35	1.78
	2 bed room	90	4.58
	3 bed room	110	5.60
	6 bed room	150	7.64
	Lounge	180	9.16
	Kitchen	60	3.05
	Utility room	100	5.09
	Nurse's station	135	6.87
	Doctor's office	90	4.58
	Private room	100	5.09
	Clean linen storage	35	1.78
	Soiled linen storage	15	.76

TABLE II-W-3 (cont'd)

FACILITIES BREAKDOWN

	DESCRIPTION	SQ. FEET	PERCENT
	Cart storage area	20	1.01
	Clothing room	25	1.27
	Equipment storage	80	4.07
		1963	
6443			
	7 bed ward	150	7.26
	5 bed ward	150	7.26
	Latrine	130	6.29
	Supplies	20	.96
	4 bed room	120	5.81
	5 bed room	120	5.81
	3 bed room	125	6.05
	7 bed ward	200	9.68
	6 bed ward	190	9.20
	Closet	15	.72
	Prep room	70	3.38
	Supplies	30	1.45
	Clean linen	45	2.17
	Soiled linen	20	.96
	2 bed room	120	5.81
	Doctor's office	120	5.81
	Kitchen	100	4.84
	Utility room	120	5.81
	Nurse's station	140	6.77
	One bed room	80	3.87
		2065	
6444			
	Latrine	180	7.61
	6 bed ward	216	9.14
	10 bed ward	312	13.20
	Closet	30	1.26
	4 bed room	150	6.34
	2 bed room	110	4.65
	Kitchen	70	2.96
	Supplies	30	1.26

TABLE II-W-3 (cont'd)

FACILITIES BREAKDOWN

	DESCRIPTION	SQ. FEET	PERCENT
	Clean linen	45	1.90
	Soiled linen	20	.84
	Nurses station	150	6.34
	Doctors office	100	4.23
	Utility room	110	4.65
	15 bed ward	420	17.77
	14 bed ward	420	17.77
		1265	
6445			
	Kitchen	49	1.69
	Outdoor rec. area	930	32.08
	Lounge	144	4.96
	8 bed rooms	144	4.96
	10 bed room	240	8.27
	8 bed rooms	144	4.96
	2 bed wards (8)	432	14.90
	6 bed wards	120	4.13
	3 bed wards	144	4.96
	Latrine	50	1.72
	Storage	75	2.58
	Nurse's station	52	1.79
	Eating area	62	2.13
	Latrine	49	1.69
	Utility room	96	3.31
	Treatment room	56	1.93
	Doctor's office	40	1.37
	Clothing storage	40	1.37
	Soiled linen	32	1.10
		2899	
6446			
	14 bed ward	420	18.22
	12 bed ward	391	16.97
	Isolation room	110	4.77
	Forms closet	20	.86
	Utility room	110	4.77
	Doctors office	100	4.34

TABLE II-W-3 (cont'd)

FACILITIES BREAKDOWN

	DESCRIPTION	SQ. FEET	PERCENT
	Nurse's station	150	6.51
	Inhalation therapy room	196	8.50
	Closet	20	.86
	Latrine	180	7.81
	3 bed room	96	4.16
	6 bed room	216	9.37
	7 bed room	210	9.11
	Storage closet	35	1.51
	Supplies	30	1.30
	Soiled linen	20	.86
		2304	
6447			
	Supplies	32	1.29
	Soiled linen closet	32	1.29
	Clean linen closet	40	1.61
	Lounge	140	5.65
	3 bed wards (2)	140	5.65
	6 bed room	165	6.66
	Latrine	196	7.91
	10 bed wards (2)	841	33.92
	11 bed room	420	16.96
	Utility room	75	3.02
	Nursing station	85	3.43
	Doctor's office	80	3.23
	1 bed ward (2)	160	6.46
	Bath rooms	70	2.82
		2476	
6448			
	Kitchen	140	6.81
	4 bed room	260	12.63
	3 bed wards (4)	290	14.09
	1 bed room	75	3.64
	VIP room	100	4.86
	2 bed wards (2)	90	4.37

TABLE II-W-3 (cont'd)

FACILITIES BREAKDOWN

	DESCRIPTION	SQ. FEET	PERCENT
	Utility room	50	2.43
	Nurse's station	78	3.79
	Doctor's office	70	3.40
	10 bed wards (2)	609	29.60
	Bath rooms	50	2.43
	Clean linen	50	2.43
	Soiled linen	40	1.94
	Supply	45	2.18
	Latrine	110	5.34
		2057	
6449			
	Nurses station	48	7.21
	Equipment and supply	45	6.76
	Utility room	52	7.81
	Latrine	40	6.01
	5 bed room	220	33.08
	4 bed wards (2)	260	39.09
		666	
6450			
	Coat room	60	2.05
	Soiled linen	59	2.02
	Clean linen	65	2.22
	2 bed wards (6)	500	17.14
	Treatment room	196	6.71
	Nurse's station	198	6.78
	Bathroom	160	5.48
	Play room	130	4.45
	4 bed room	198	6.78
	3 bed wards (2)	230	7.88
	Formula room	70	2.39
	6 bed rooms (2)	765	26.22
	Doctor's office & sec.	221	7.57
	Bath room	65	2.22
		2917	

TABLE II-W-3 (cont'd)

FACILITIES BREAKDOWN

	DESCRIPTION	SQ. FEET	PERCENT
6451			
	2 bed wards (8)	360	18.91
	5 bed wards (2)	205	10.35
	8 bed wards (2)	288	14.55
	8 bed room	300	15.15
	9 bed room	240	12.12
	4 bed ward (2)	180	9.09
	Utility room	120	6.06
	Patient's clothing room	40	2.02
	Treatment room	36	1.81
	Latrine	100	5.05
	Nurse's station	110	5.55
		1979	
6452			
	Supplies	30	1.10
	Soiled linen	25	.92
	Clean linen	35	1.29
	2 bed wards (2)	200	7.38
	Doctor's office	90	3.32
	Nurse's station	96	3.54
	Utility room	60	2.21
	12 bed room	465	17.17
	14 bed wards (2)	930	34.35
	Patient's latrine	115	4.24
	Latrine	55	2.03
	9 bed room	216	7.97
	4 bed wards (2)	165	6.09
	8 bed room	180	6.64
	Bathrooms	45	1.66
		2707	
6453			
	Lounge	145	6.80
	3 bed wards (2)	180	8.44
	6 bed room	150	7.03
	Latrine	100	4.69

TABLE II-W-3 (cont'd)

FACILITIES BREAKDOWN

	DESCRIPTION	SQ. FEET	PERCENT
	12 bed wards (2)	736	34.53
	13 bed room	265	12.43
	Utility room	70	3.28
	Nurses station	80	3.75
	Doctors office	75	3.51
	2 bed wards (2)	160	7.50
	Clean linen	50	2.34
	Soiled linen	35	1.64
	Supplies	45	2.11
	Bath rooms	40	1.87
		2131	
6454			
	Lounge	120	6.67
	6 bed room	130	7.23
	3 bed wards (3)	210	11.68
	2 bed wards (2)	126	7.01
	4 bed room	120	6.67
	10 bed room	310	17.25
	11 bed room	310	17.25
	Utility room	65	3.61
	Nurses station	85	4.73
	Doctors office	75	4.17
	Clean linen	40	2.22
	Soiled linen	32	1.78
	Storage, supplies	40	2.22
	Bath rooms	50	2.78
	Latrine	84	4.67
		1797	
6455			
	7 bed wards (2)	270	14.19
	3 bed wards (3)	280	14.72
	2 bed room	60	3.15
	6 bed room	108	5.67
	14 bed room	308	16.19
	15 bed room	336	17.66

TABLE II-W-3 (cont'd)

FACILITIES BREAKDOWN

	DESCRIPTION	SQ. FEET	PERCENT
	Utility room	75	3.94
	Nurse's station	81	4.25
	Doctor's office	80	4.20
	Doctor's call room	80	4.20
	Clean linen room	35	1.84
	Soiled linen room	30	1.57
	Supplies	35	1.84
	Bath rooms	40	2.10
	Latrine	84	4.41
		1902	
6456			
	6 bed room	150	7.83
	4 bed wards (2)	180	9.39
	10 bed room	150	7.83
	2 bed wards (2)	100	5.22
	14 bed wards (2)	745	38.90
	15 bed room	185	9.66
	Utility room	60	3.13
	Nurse's station	75	3.91
	Doctor's office	65	3.39
	Clean linen	30	1.56
	Soiled linen	25	1.30
	Supplies	30	1.56
	Bath rooms	35	1.82
	Latrine	85	4.43
		1915	

SUB TOTALS:	%
6440: 6066	15.80
6441: 182	.47
6442: 1963	5.11
6443: 2065	5.37
6444: 2360	6.14
6445: 2899	7.55
6446: 2304	6.00
6447: 2476	6.45
6448: 2057	5.35

TABLE II-W-3 (cont'd)

FACILITIES BREAKDOWN

SUB TOTALS: (cont'd.)	PERCENT
6449: 666	1.73
6450: 2917	7.59
6451: 1979	5.15
6452: 2707	7.05
6453: 2131	5.55
6454: 1797	4.68
6455: 1902	4.95
6456: 1915	4.98
38386	

Malcolm Grow Hospital
Ward Management
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TABLE II-M-1

WARD AREAS BY SQUARE FEET AND PERCENT OF TOTAL AREA

AREA	SQUARE FEET	PERCENT
PSYCHIATRIC WARD (4A and B)		
4 bed wards (4)	2900	25.88
1 bed rooms (2)	200	1.78
utility room	384	3.42
occupational therapy	120	1.07
bed rooms (3)	300	2.67
janitor's closet	35	.31
storage room	160	1.42
nurse's stations	375	3.34
visitor's lounge	240	2.14
day room	300	2.67
2 bed rooms (4)	3000	26.77
clean linen	110	.98
soiled linen	80	.71
6 bed rooms (2)	3000	26.77
Total	11204	
SURGICAL (2A)		
bed rooms	3552	67.91
office	640	12.23
storage	100	1.91
supplies	160	3.05
bathroom	528	10.09
lounge	250	4.78
Total	5230	
MEDICAL WARDS (5A and 5B)		
stairwells	360	3.79
ward 5B patient rooms	2224	23.47
ward 5A patient rooms	3552	37.48
visitor's lounge	224	2.36
ward 5B bathrooms	454	4.79
ward 5A bathrooms	528	5.57
mechanical wards	216	2.27
ward 5B nurse station	189	1.99
ward 5A nurse station	189	1.99
ward 5B office examination room	172	1.81
ward 5A office examination room	172	1.81
utility room	384	4.05
ward clerk's desk	88	.92
ward 5B storage closets	108	1.13
ward 5A storage closets	100	1.05
janitor's closet	35	.36
supplies storage room	160	1.68
nurses lockers and toilets	320	3.37
Total	9475	

Malcolm Grow Hospital
Ward Management
Resource Utilization

TABLE II-M-1 (cont'd)

AREA	SQUARE FEET	PERCENT
FEMALE (2H)		
2 bed rooms (14)	2990	68.24
1 bed rooms (2)	380	8.67
toilets	490	11.18
clean linen	80	1.82
soiled linen	60	1.36
patient clothing	32	.73
medical room	47	1.07
examination and treatment	104	2.37
nurse's station	98	2.23
bathroom	100	2.28
Total	4381	
PHYSICAL WARD MANAGEMENT		
bed rooms	3552	67.91
office	640	12.23
storage	100	1.91
supplies	160	3.05
bathroom	528	10.09
lounge	250	4.78
Total	5230	
LABOR AND DELIVERY (3D)		
nurse's station	80	3.23
patient preparation and examination room	137	5.54
patient toilet	25	1.01
recovery area within labor room	120	4.85
labor room	382	15.46
delivery room	643	26.03
scrub-up room	84	3.40
utility closet	28	1.30
utility room	144	5.82
kitchen	162	6.55
staff showers	27	1.09
staff sleeping and locker rooms	262	10.60
staff toilet	54	2.18
anesthesia and miscellaneous storage room	50	2.02
soiled linen and trash room	80	3.23
sterile supply room	112	4.53
clean linen room	80	3.23
Total	2470	

TABLE II-M-1 (cont'd)

AREA	SQUARE FEET	PERCENT
VERY IMPORTANT PERSONS WARD (IE)		
bed rooms	1520	53.57
sitting rooms	700	24.67
nurse's station	116	4.08
office	161	5.67
utility room	140	4.93
toilets	200	7.04
Total	2837	
ORTHOPEDIC WARD (JB)		
2 bed rooms (33)	6273	80.86
toilets (24)	288	3.71
utility (2)	150	1.93
storage	58	.74
examination rooms (2)	314	4.04
1 bed room (2)	232	2.99
nurse station	216	2.78
litter room	29	.37
clean linen room (2)	107	1.37
soiled linen room (2)	90	1.16
Total	7757	
OBSTETRIC - GYNOCOLOGY WARD (3B)		
4 bed rooms (2)	768	14.60
visitor's room	256	4.86
bed rooms (2)	288	5.47
clean linen	45	.85
soiled linen	24	.45
2 bed rooms (3)	576	10.95
4 bed rooms (2)	800	15.21
3 bed ward	680	12.93
bed room (4)	576	10.95
nurse's station	200	3.80
bath and toilets	400	7.62
baths	50	.95
toilets	50	.95
clothing room	48	.91
technician room	256	4.86
ward clerk	48	.91
examination and office	192	3.65
Total	5257	

Malcolm Grow Hospital
Ward Management
Resource Utilization

TABLE II-M-1 (cont'd)

AREA	SQUARE FEET	PERCENT
NURSERY (3D)		
bottle wash room	140	5.87
soiled linen	60	2.51
clean linen	75	3.14
formula room	432	18.13
nursery (2)	608	25.52
examination room	64	2.68
examination room	64	2.68
work area	200	8.39
suspect	192	8.06
work room	80	3.35
nursery	465	19.52
Total	2382	
SURGICAL SUITE		
nursing station, recovery room	234	3.23
storage room, recovery room	16	.22
utility room, recovery room	60	.82
10 bed, recovery room	841	11.61
doctor's locker, shower and toilet	98	1.35
nurse's locker, shower and toilet	98	1.35
doctor's lounge	345	4.76
clean up and work room	144	1.98
special equipment sterilizing and storage room	26	.35
instrument and supply storage room	12	.16
operating rooms	2165	29.89
stairwell	112	1.54
NCOIC and operating supervisors office	112	1.54
anesthesia equipment room	176	2.42
anesthesia supply storage rooms	90	1.24
instrument storage room	50	.69
substerile preparation rooms	200	2.76
sterilizer closets	150	2.07
scrub up rooms	200	2.76
hallways	1392	19.21
nursing stations-O.R. suite	120	1.65
sterile supply storage room	120	1.65
janitor's closets	36	.49
plaster and splint preparation storage rooms	140	1.93
cysto table storage room	72	.99
X-ray machine storage room	48	.66
salvage linen room	66	.91
anesthesiology office	120	1.65
Total	7243	

Malcolm Grow Hospital
Ward Management
Resource Utilization

TABLE II-M-1 (cont'd)

SUB TOTALS

AREA	SQUARE FEET	PERCENT
PSYCHIATRIC WARD (4A and B)	11204	16.62
SURGICAL WARD (2A)	5230	7.76
MEDICAL WARDS (5A and 5B)	9475	14.05
FEMALE WARD (2H)	4381	6.50
PHYSICAL WARD MANAGEMENT	5230	7.76
LABOR AND DELIVERY (3D)	2470	3.66
VERY IMPORTANT PERSONS WARD (IE)	2837	4.20
ORTHOPEDIC WARD (JB)	7757	11.51
ORSTETRIC - GYNOCOLOGY WARD (3B)	5257	7.80
NURSERY (3D)	2382	3.53
SURGICAL SUITE	7243	10.74
PEDIATRIC (3A)	3925	5.82

Beaufort Naval Hospital
Ward Management - Resource Utilization

TABLE II-B-1

WARD STAFFING PATTERNS

FUNCTION	NORMAL STAFF	NUMBER	DESCRIPTION	DAY SHIFT	EVENING AND NIGHT SHIFT	WEEKEND
Ward A-1	Doctors		From A-2			
(Light Care)	Nurse		From A-2			
	Corpsman	1		Full time	Full time	(a)
Ward A-2	Doctors	5	Medical Specialties			
(Medical)	Nurse	1	Military (also on A-1)	Full time	(b)	(c)
	Corpsmen	6		3	2;1	2;1 (a)
Ward A-3	Doctors	3	Orthopedists			
(Orthopedic)	Nurse	1		Full time	(b)	(c)
	Corpsmen	5		2	2;1	2;1 (a)
Ward B-2 (Dirty Surgical)	Doctors	4	Surgical Service			
	Nurse	1		Full time	(b)	(c)
	Corpsmen	6		2	2;1	2;1 (a)
Ward B-3 (Clean Surgical)	Doctors		same as B-2 (also dentist, urologist, opthamologist, otolaryngologist if have patients)			
	Nurse	1		Full time	(b)	(c)
	Corpsmen	8		3	2;1	2;1(a)
SOQ (Sick Officers Quarters - Med./Surg.)	Doctors		From Medical Service, as required.			
	Nurses	4	2 Civilian; 2 Military	1 (Min)	1 (Min.)(b)	1 (Min.) (c)
	Corpsmen	9		4	2;1	2;1 (d)
SDQ (Sick Dependents Quarters -OB Ward)	Doctors	4	OB-Gyn.			
	Nurses	4	Civilian	1 (Min.)	1 (Min.)(b)	1 Min.)(c)
		1	Mil. (Also on Nursery & Pediatrics)	Super-visor	(b)	(c)
	Corpsmen					(d)

TABLE II-B-1 - (Cont'd)

FUNCTION	NORMAL STAFF	NUMBER	DESCRIPTION	DAY SHIFT	EVENING AND NIGHT SHIFT	WEEKEND
Nursery	Doctors		From Pediatrics			
	Nurses	2	Civilian	2	2(b)	(c)
		1	Military (from SDQ)	Super-visor	(b)	(c)
	Corpsmen	5		2	1;1	(a)
	Civilian Aides	2		2		
Pediatrics	Doctors	5	Pediatricians (Med./Surg. Consultants as needed).			
	Nurse	1	Civilian	1	1(b)	1(c) (d)
	Corpsmen					
	Civilian Aides	6		5	1	
Labor and Delivery	Doctors	4	From OB/Gyn Service		1 on call	
	Nurses	3	Civilian			
	Corpsmen	3		1	1;1	(a)
OR	Doctors		With OR privileges			
	Nurses	1	Civilian, GS4			
		1	Military, Supervisor (also on Central Sterile Supply)			
	Corpsmen	5		2	2;1	(a)

(a) Covered by corpsmen on duty watch broken into two shifts: 0650-2100; 2045-0700.
(b) One military nurse has responsibility for:
(1) Wards A-1, A-2, A-3, B-2;
(2) Ward B-3 if not covered by ICU nurse;
(3) Checking SOQ, SDQ, Nursery, and Pediatrics which are staffed by civilian nurses.
(c) Similar to (b)
(d) An additional corpsman acts as a night float who covers where load is heaviest - SOQ, SDQ, or Pediatrics.

TABLE II-B-2

DISTRIBUTION OF SIX OJT NURSING TRAINEES

TRAINEE	ASSIGNMENT (DAYLIGHT SHIFT)
1	Ward A-2 (occasionally covering A-1)
1	Ward A-3
1	Ward B-3
1	Ward B-2
1	ICU
1	OPD

TABLE II-B-3

FACILITIES BREAKDOWN

FUNCTION	DESCRIPTION	AREA IN SQUARE FEET	PERCENT OF AREA	PERCENT OF TOTAL AREA
A-2	Ward	1792	20.82	
	Quiet rooms and baths	1536	17.85	
	Storage areas	2004	23.29	
	Doctor's offices	352	4.09	
	Treatment rooms	160	1.85	
	Nurse's station	192	2.23	
	Nurse's rooms	320	3.71	
	Isolation area	1248	14.50	
	Solarium - well pat.	600	6.97	
	Solarium - TV room	400	4.64	
	Total	8604		16.65
A-1	Essentially the same facilities and area as A-2			
B-2	Dirty utility room	100	1.46	
	Heads and bath	628	9.19	
	Galley	140	2.05	
	Cleaning gear storage	36	.52	
	Conference room	112	1.64	
	Clean exam room	140	2.05	
	Dirty exam room	168	2.46	
	Supplies storage	200	2.92	
	Nurse's station	168	2.46	
	Strong rooms with bath	800	11.71	
	Ward	3536	51.78	
	Solarium	800	11.71	
	Total	6828		13.21
A-3	Private room and bath	270	4.64	
	Quiet room	672	11.56	
	Head area	160	2.75	
	Stretcher area	64	1.10	
	Exam room	180	3.09	
	Nurses lounge	150	2.58	
	Storage	75	1.29	
	Corpsmen lounge	150	2.58	
	Cleaning gear storage	75	1.29	
	Galley	150	2.58	
	Linen storage	120	2.06	
	Ward	1792	30.84	
	Nursing station	192	3.30	

TABLE II-B-3 - (Cont'd)

FACILITIES BREAKDOWN

A-3 (Cont'd)					
	Solarium - well patients		600	10.32	
	Solarium - TV room		400	6.88	
	Ward heads and shower		728	12.53	
	Dirty linen		32	.55	
		Total	5810		11.24
B-3	Ward		3540	57.39	
	Nurse's station		168	2.72	
	Solarium and strong rooms		1600	25.94	
	Exam rooms		308	4.99	
	Utility rooms		240	3.89	
	Storage and conference		312	5.05	
		Total	6168		11.93
ICU	Recovery room area		558	24.43	
	Intensive care area		558	24.43	
	Isolation room		266	11.64	
	Storage room		144	6.30	
	Work rooms		252	11.03	
	Nursing station, etc.		506	22.15	
		Total	2284		4.42
SOQ	Ward		3400	41.56	
	Utility rooms		384	4.69	
	Treatment rooms		192	2.34	
	Toilets		288	3.52	
	Nurse's stations		128	1.56	
	Storage		460	5.62	
	Linen (clean)		96	1.17	
	Doctors office		256	3.12	
	Baths		576	7.04	
	Pediatric		2400	29.33	
		Total	8180		15.83
Operating	Operating rooms		1349	25.90	
Room	Scrub and prep rooms		513	9.85	
	Sterilizer and prep rooms		452	8.68	
	Instrument and sterile supplies		437	8.39	
	Linen pack room		374	7.18	
	Duty watch bed room		414	7.95	
	Air conditioning and pump room		308	5.91	
	Anesthesiology prep room		165	3.16	
	Oxygen and gas cylinder room		120	2.30	
	Locker and bath room		285	5.47	
	Office space		130	2.49	
	Main corridor containing stretchers		660	12.67	
		Total	5207		10.07

TABLE II-B-3 - (Cont'd)

FACILITIES BREAKDOWN

SDQ	Formula room		390	4.53	
	Nursery		810	9.42	
	Labor and delivery		1200	13.96	
	Ward		3072	35.75	
	Utility rooms		315	3.66	
	Baths		400	4.65	
	Recovery room		646	7.51	
	Toilets		310	3.60	
	Exam rooms		240	2.79	
	Other		1000	11.63	
	Doctor's offices		210	2.44	
		Total	8593		16.62

TABLE II-B-4

EQUIPMENT LIST

EQUIPMENT CODE	FIXED-PORTABLE	QUANTITY	OPERATING HOURS	LOADING	PURCHASE PRICE	DESCRIPTION
Ward A-2						
P	F	1	0	U	$ 410	Water Sterilizer
P	F	1		N	1457	Autoclave for Bedding
J	P	2	0	U	462	Oxygen Tents
J	P	1		N	560	Bennett Machine
N	P	4		N	352	Wheel Chairs
N	P	3		N	498	Stretchers
K	P	1		N	200	Opthalmoscope
J	P	1		N	347	Gomco Intermittent Suction Pump
O	F	1		N	860	Refrigerator
O	P	2		N	635	Chart Racks
O	P	1		N	495	Portable Commode
K	F	1		N	431	Examining Table
O	F	1		N	235	Water Cooler
O	P	1		N	214	Stand and Cabinet
Ward A-3						
J	P	1		U	240	Portable Suction Unit
K	F	1	1.0	N	833	Treatment Table
J	P	1		N	462	Oxygen Tent
J	P	1		N	390	Oxygen Tent
O	F	1		N	235	Water Cooler
C	P	2		N	595	Wheeled Stretchers
O	F	1		N	296	Medicine Cabinet

TABLE II-B-4 - (Cont'd)

EQUIPMENT LIST

Ward B-2						
K	F	2		U	431	Treatment Table
Q	F	1		N	217	Treatment Cabinet
N	P	1		N	195	Treatment Cart
O	F	1		N	269	Medicine Cabinet
K	P	1		N	209	CRM Carrier
O	F	1		N	235	Water Cooler
N	P	1		N	430	Gurney
N	P	4		N	352	Wheel Chairs
O	F	1		U	410	Sterilizer
O	F	1		N	860	Refrigerator
P	P	1		N	250	TV
Ward B-3						
P	F	1		N	431	Treatment Table
O	P	1		N	271	Chart Rack
P	F	1		N	301	Treatment Surgical Light
O	P	2		N	195	Treatment Cart
N	P	1		N	605	Gurney
O	F	2		N	860	Refrigerator
J	P	1		N	581	Bird Respirator
J	P	1		N	742	Bird Respirator
N	P	1		N	276	Wheeled Stretcher
O	F	1		N	235	Water Cooler
ICU						
N	P	1	24	N	375	Emergency Cart
N	P	1	24	N	195	Treatment Cart
N	P	1	24	N	375	ICU Cart
J	P	1	24	N	700	Int.-Ext. Pacemaker
J	P	1	24	N	1600	EKG
J	P	1	24	N	1200	EKG Recorder
P	F	8	24	N		ICU Beds

TABLE II-B-4 - (Cont'd)

EQUIPMENT LIST

ICU - (Cont'd)						
O	P	1	24	N	250	Ice Chest
O	F	1	24	N	860	Refrigerator
J	P	1	24	N	286	Suction Pump
J	P	1	24	N	390	Oxygen Tent
P	P	1	24	N	830	Circollectric Bed
J	P	1	24	N	697	Bird Respirator
SOQ (includes Gyn and Surgery)						
O	F	2	24	N	860	Refrigerators
K	F	1	24	N	833	Exam Table
O	F	1	24	N	235	Water Cooler
P	F	1	24	N	410	Sterilizer
N	P	1	24	N	333	Tomac Shelf Truck
P	F	2	24	N	410	Sterilizers
N	P	1	24	N	195	Treatment Cart
SDQ (OB & Delivery)						
O	P	1	24	N	1227	Anesthesia Machine
J	P	1	24	N	335	Infusion Pump
J	P	2	24	N	840	Infant Resuscitator
J	P	2	24	N	361	Suction Apparatus
J	F	2	24	N	1260	OB Gyn Table
J	F	3	24	N	1270	Sterilizer
J	P	9	24	N	890	Infant Isolettes
J	P	3	24	N	770	Incubators
J	P	7	24	N	400	Stretcher Beds
J	P	2	24	N	252	Infant Conveyor
N	P	1	24	N	1565	Transportation Incubator
J	P	1	24	N	700	Obstetrical bed
P	P	1	24	N	295	Incubator Rocker
O	F	3	24	N	860	Refrigerator

TABLE II-B-4 - (Cont'd)

EQUIPMENT LIST

SDQ (OB & Delivery) - (Cont'd)						
J	F	1	24	N	1260	OB Gyn Exam Table
J	P	3	24	N	207	Suction Pump Elec.
O	F	1	24	N	250	Chest Freezer
P	F	1	0	U	895	Glove Conditioner
J	P	1	24	N	1308	Oscillating bed - Peds.
O	P	1	24	N	348	Solution warmer - Nursery
OR						
O	F	8	24	N	230	Instrument Cabinet
J	P	4	24	N	1502	Anesthesia Apparatus
J	F	4	24	N	1817	Operating Table
J	F	3	24	N	3849	Operating Room Light
J	P	1	24	N	748	Scale in Bed
J	F	2	24	N	1444	Operating Table
J	F	1	24	N	1822	Pediatric Operating Table
J	F	1	24	N	285	Oral Anesthesia Table
J	P	1	24	N	1888	Anesthesia Machine
J	P	1	24	N	877	Anesthesia Ventilator
J	P	1	24	N	1466	Thermia Unit
J	P	1	24	N	703	Electrosurgical Apparatus
J	F	1	24	N	230	Solution Warmer
J	P	1	24	N	800	Scopette
P	F	1	24	N	4768	Sonic Energy Instrument Cleaner

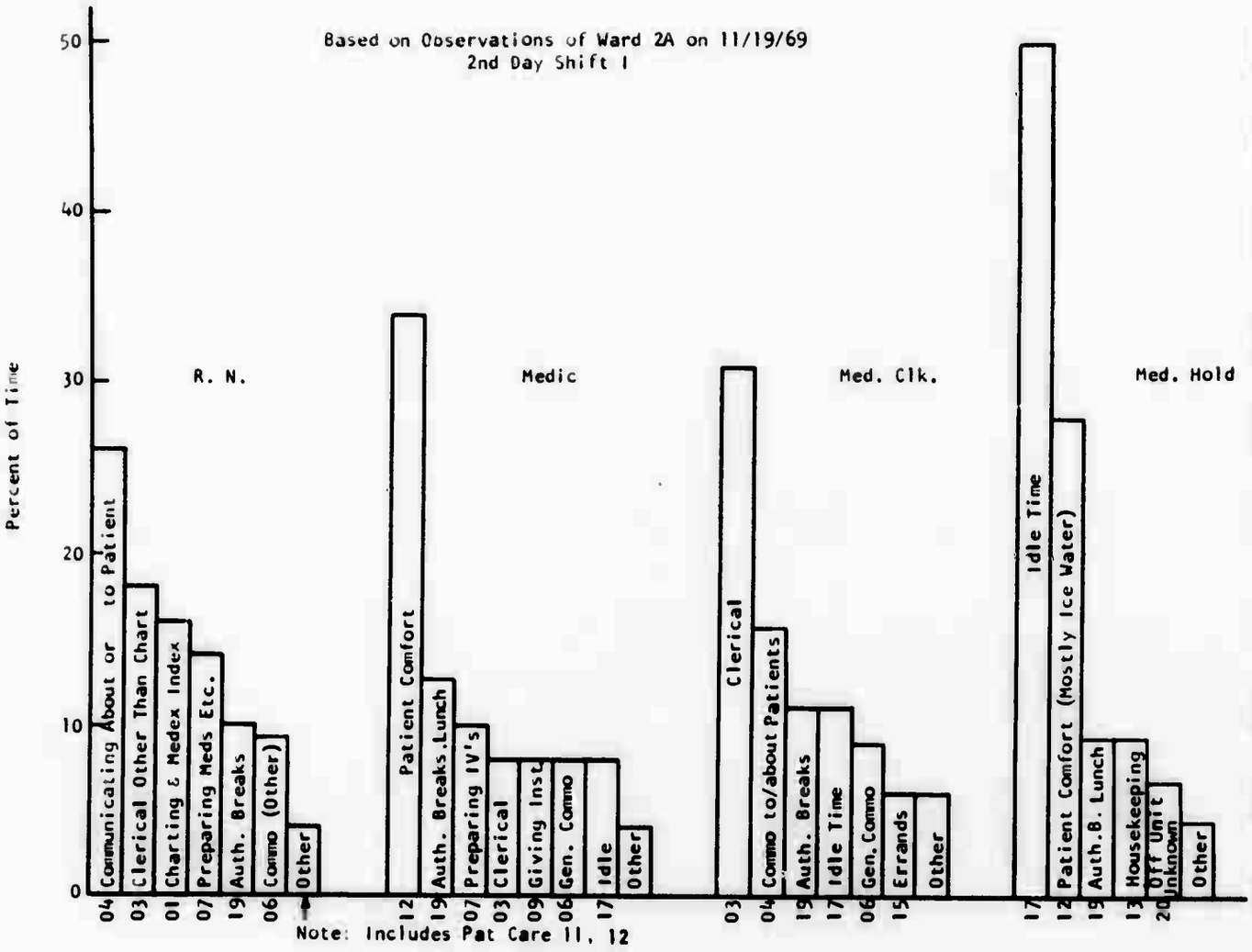
TABLE II-B-4 - (Cont'd)

EQUIPMENT LIST

OR - (Cont'd)

P	P	3	24	N	340	Vacuum Cleaner
P	F	2	24	N	1430	Sink Scrubber
J	F	1	24	N	215	Gas Absorber Unit
N	P	2	24	N	336	Tomac Shelf Truck
J	P	3	24	N	210	Infatomatic Tourniquet
J	P	1	24	N	534	Electrosurgery Unit
J	P	1	24	N	216	Operating Table Extension
J	P	1	24	N	240	Bone Surgery Set
J	P	3	24	N	406	Electric Dermatome
J	P	1	24	N	309	Surgical Lamp Stand
J	P	2	24	N	680	Bennet Resuscitator
J	P	2	24	N	770	Surgical Air Drill
G	F	1	24	N	6159	Gasclave
N	P	1	24	N	885	Sterilizer Loading Car
P	F	1	24	N	352	Power Supply
N	P	4	24	N	584	Stretcher
J	P	1	24	N	249	Abdominal Retractor
J	P	1	24	N	245	Pelvic Culdoscope
P	F	1	24	N	2251	Water Still
J	P	1	24	N	487	Waugh Electric Locator
N	P	1	24	N	405	Surgiclip Loader
I	F	1	24	N	3860	Cardiac Care System
O	F	2	24	N	510	Sink
J	P	1	24	N	207	Suction Machine

Walson Army Hospital
Resource Utilization - Ward Management



Note: Includes Pat Care 11, 12

Fig. II-W-1—Daily workload

III. WARD MANAGEMENT -- FUNCTIONAL COST

	Watson Army Hospital (WAH) -- Fort Dix	Malcolm Grow Hospital -- Andrews AFB	U.S. Naval Hospital -- Beaufort
A. Total			
1. Cost:	$3,639,319 annually.	$3,154,646 annually.	$809,436 annually.
2. Source:	a. cost for ward management includes cost elements from wards, OR, Annex wards, URI admitting team, labor and delivery, nursery, AIR EVAC section, and professional and nursing service (prorated among ward management, OPD, and other functions). Refer to Tables III-W-1 thru III-W-20 for elemental figures from which costs derived as follows: medical wards(III-W-1 and III-W-2), surgical wards(III-W-3 and III-W-4), URI wards(III-W-5 and III-W-6), pediatric wards (III-W-7 and III-W-8), psychiatric(III-W-9 and III-W-10), medical intensive care(III-W-11 and III-W-12), obstetrical, etc. (III-W-13 and III-W-14), orthopedic wards(III-W-15 and III-W-16), AIR EVAC wards (III-W-17 and III-W-18), OR(III-W-19 and III-W-20). b. refer to Appendix VII for functional cost breakdown summary sheet. c. refer to Tables III-W-21 thru III-W-24 for calculations made in prorating professional services costs to ward management.	a. refer to Appendix VII for functional cost breakdown summary sheet.	a. see Appendix VII for functional cost breakdown summary sheet which total cost derived.
B. Personnel			
1. Cost:	$2,965,972 annually: military -- $2,213,916; civilian -- $752,056; function cost -- $2,728,143; non-function cost -- $233,829.	$2,698,128 annually: Function cost -- $2, 572,045; non-function -- $126,083.	$718,266 annually: function cost -- $673, 112; non-function cost -- $45, 154.
2. Source:	a. (Σ) figures determined from nursing service personnel time schedules, DA Form 8-93; dated November 23 thru 29, 1969. These were modified and adjusted based on interview with NCOIC, Surgical Nursing Service; NCOIC, Medical Nursing Service; Head Nurses on Wards 3B, 5A, 5B, 8A, 9A, OR, and Anesthesiology; and observation of Ward 2A; b. (Σ) obtained pay rates for each labor grade from "Standard Rates for Military Personnel Services," AFM 177-10 (C91) for Military Personnel and schedule established by DoD 5 June 1968 directive 5120.39 for civilian personnel, and added 7.0% fringe benefits for civilian labor. Exception is OR, where 9.3% fringe benefits were added due to greater seniority of personnel; c. (Σ) figures included all nursing and clerical personnel assigned full-time to a ward plus a proration of MD's costs based on:	a. function cost -- the number of personnel assigned to ward management was determined from interviews with NCOIC of ward management; pay rates for military personnel were taken from AFM 177-101 (C91); civilian rates were extracted from USAF salary rates July 1968 (Appendix IX). Benefits for civilians were determined from information given in interview with (Σ) military consultant. b. non-function cost -- time spent by employees outside the function • housekeeping -- from 235 hours spent by 54 personnel in housekeeping chores, estimated by interviewee • formal training -- TDY time for training purposes, from Professional Activities Report FY69	a. Bezufort name list for October 1969 (computer run for payroll accounting), checked against interviews and observation; b. breakdown of MD time between ward management and OPD was made by allocating to OPD only those hours spent in clinics during normal duty hours; the rest were assigned either to ward management or to administrative duties, according to interviews with MD's.

	Ft. Dix	Andrews	Beaufort
B. Personnel (cont'd) 2. Source: (cont'd)	• dept. of Medicine personnel schedule November 23 thru 29, 1969 • interview with Chief of Medicine for medical wards • interviews with Chief of various surgical specialties (general, orthopedic, OB/GYN, ophthalmology) and Chief of Surgery, which generated estimates of MD ward time for surgical wards • interviews with Chief and Administrative Assistant, P&N service, for estimates of MD time on the psychiatric ward. d. WAH determined costs from Nursing Service Personnel Rosters (DA-8-93) for all personnel. e. see Table III-W-25 for WAH cost breakdown by type of ward.	• OJT -- from hours per trainee and instructor, estimated by interviewee. Changeover rate by function from business office.	
C. Supplies			
1. Cost:	$201,670 annually: medical -- $40,659; non-medical -- $38,085; CMS -- $122,926.	$247,455 annually.	$53,296 annually.
2. Source:	a. medical and non-medical cumulative cost run for FY69, showing resource cost by item of expense for each function, received by Management Service Division from Post Data Processing. Since supply expense for all but OR and AIR EVAC was charged to professional services (Depts. of Medicine, Surgery, P&N) the bulk of medical and non-medical supplies [illegible]up as prorated costs. b. CMS c[illegible]ained by prorating wards' CMS costs as a percentage of total; percentage based on a two-day survey of all FY69 CMS requisitions from wards (see Appendix XI for all calculations).	a. from Report of Medical and Non-medical Supply Expense FY69. b. Central Sterile Supply (CSS) -- added into medical prorated form annual CSS cost for entire medical center given in Report of Medical and Non-medical Supply Expense FY69; 2 months' ward management orders and direct issues data used as the basis for calculations.	a. FY69 account 310 listing from Fiscal and Supply; T1 and T7 codes under SFC codes 4A10, Medical Service; 4A20 OB/GYN; 4A50, Pediatrics; 4A70, EENT; and 4A99, S0Q. b. Central Sterile Supplies costs, SFC code 4H00, were divided between ward management and OPD, 65% to ward management and the remaining 35% to OPD (percentage breakdown based on averaging WAH and Andrews Hospital data).
D. Maintenance			
1. Cost:	$93,307 annually: Post Engineering -- $82,037; WAH medical maintenance -- $11,270.	$69,359 annually: medical -- $5,714; non-medican -- $63,645.	$31,694 annually.
2. Source:	a. Post Engineering -- prorated to wards as follows: total annual costs of labor and material obtained in interview with Post Engineering. Estimate then obtained on percent of total work done for WAH. Three month sample of Post Engineering requests taken to distribute the percentage of cost allocated to WAH among its functions. See Appendix IV for all calculations.	a. medical -- labor and parts from medical maintenance chits for entire FY69. b. non-medical maintenance -- prorated from annual non-medical maintenance costs for entire medical center given in Medical Expense Report CY69; one month's ward management chits used as the basis for calculations.	a. medical -- estimated by counting a 12-month sampling of medical repairman's chits for parts costs, and by prorating salary. b. non-medical -- prorated by total square footage as a percentage of Account 310, SFC Code 7150, which lists total maintenance costs for the hospital building only (e.g., excludes grounds, housing, medical maintenance, etc.).

	Ft. Dix	Andrews	Beaufort
D. Maintenance (cont'd)			
2. Source: (cont'd)	b. medical maintenance -- allocated by recording source and cost charged for parts and labor from all request slips stored in Supply and Service Division ff-68 through ff-69. c. refer to Table III-W-26 for cost breakdown by type of ward.		
E. Housekeeping			
1. Cost:	$135,806 annually: all on janitorial contract.	$148,748 annually: janitorial -- $111,877; staff housekeeping -- $33,871.	$16,972 annually: janitorial -- $2,450; staff housekeeping -- $14,552.
2. Source:	a. civilian housekeeping agency's contract with WAH for FY69. The total annual cost to WAH ($431,000 for FY69) was allocated to individual functions on a basis of sq. ft. cleaned (wards = 31.51% or $135,806). See Appendix V for all calculations. b. refer to Table fff-W-27 for housekeeping cost breakdown by type of ward.	a. janitorial -- cost of janitor service by sq. ft.. b. staff -- time spent by staff of ward management in housekeeping, estimated by NCO of ward management	a. janitorial -- time spent by janitors in wards and OR was obtained from the Janitorial Work Distribution Chart. b. staff -- estimated from interviews and observation.
F. Training			
1. Cost:	$297,794 annually: formal -- $127,081; training dept. -- $59,965.	$117,039 annually: formal -- $57,156; OJT -- $35,056; training dept. -- $24,827.	$33,732 annually: formal -- $10,622; OJT -- $20,010; training dept. -- $3,100.
2. Source:	a. formal -- cost derived by summing salaries of all students assigned to the following areas: o OR classroom (2-O2's, 5-O1's) o AMC orientation (3-O1's) o special forces training (3-E5's, 3-E6's) Figures obtained from Nursing Service Personnel Rosters (DA-8-93) for November 23 thru 29, 1969). b. OJT -- a portion of total function personnel cost was allocated to OJT on the basis of estimates made by observers of the amount of time needed for a student to reach 90% efficiency in each job class being trained. These estimates were factored into a learning curve equation to arrive at OJT costs. See Appendix V, OJT costs. c. training dept. -- cost of operating the nursing education office at WAH was derived by summing the salaries of the Nursing Service Education Coordinator (O4), Orientation Supervisor (O4), OR class instructor (O5), and 3 corpsmen (2-E5's and 1-E6) who work in that function. Source of figures was Nursing Service Personnel Roster, November 23 thru 29, 1969 (DA-8-93); cost then allocated to ward management as 80% of total.	a. formal -- see Personnel, formal training. b. OJT -- see Personnel, OJT training. c. training dept. -- the cost of training dept. administrative personnel allocated to each function was determined first by finding the percentage of the total training staff allocated to a given function and then calculating this percentage of administrative personnel salaries.	a. formal -- from announcements of training sessions, lectures, etc. b. OJT -- from interviews and observation. c. training department -- prorating of salary of the one corpsman in charge of training among the functions according to no. of corpsmen receiving training in each function.

	Ft. Dix	Andrews	Beaufort
G. Capital Equipment			
1. Cost:	$595,012; standard -- $18,021; non-standard -- $407,991.	$140,835.	$102,250.
2. Source:	a. survey of WAH Property Book taken December 8, 9, and 10, 1969 in which two types of equipment were tallied by functional area • equipment with a unit price greater than $200 • equipment with a unit price less than $200 but for which the number of units in the function brought the total dollar figure above $200; b. WAH had two kinds of equipment price records • standard equipment, for which the price on file represents current market value • non-standard equipment, for which the price on file represents original purchase price; c. refer to Table I-W-28 for capital equipment cost breakdown by type of ward.	a. refer to computer run PCN 43165A, September 30, 1969 (inventory of total hospital equipment worth single, or in total over $200).	a. cost of equipment over $200, from Beaufort Property Control Listing (August 14, 1969) (computer run), verified by observation.
H. Prorated Cost			
1. Cost:	$182,599 from Dept. of P&N -- $22,818; Dept. of Surgery -- $62,884; Dept. of Medicine -- $67,935; Dept. Med/Surg Nursing Services -- $28,962.		
2. Source:	a. functional costs were obtained for Dept. of Medicine, Dept. of Surgery, Dept. of P&N, and Medical and Surgical Nursing Services using the same methodology followed for all functional costs. These costs were prorated to wards using estimates given by the Chief of each Service, as follows: • medicine -- .4-wards, .1-ICU • surgery -- .5-wards • P&N -- .5-wards • nursing -- 1.0-wards • See Tables III-W-21 thru III-W-24 for elemental figures.		

TABLE III-W-1

FUNCTIONAL COSTS FOR MEDICAL WARDS

	W DETERMINED
Direct Charges:	
Military Labor	$253,335
Civilian Labor	129,107
Supplies - Medical	
Supplies - Non-Medical	
Maintenance	17,595
Miscellaneous Charges	11,485
Prorated Charges:	24,997
Department	67,780
Equipment:	
Cost of Standard	39,167
Cost of Non-Standard	134,609
Total Charges	$531,947

TABLE III-W-2

FUNCTIONAL COSTS FOR MEDICAL WARDS

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
		Ward 5B			
		1	O3		
		1.5	O2		
		1	GS8		
		1	E8		
		2	E5		
		3	E3		
		1	E2		
		Mil.: $61,901.00			
		Civ.: $ 8,470.00			
		Ward 8B			
		.5	O3		
		1.0	O2		
		1.5	O1		
		1.5	GS7		
		1.0	E8		
		1.0	E5		
		2.0	E4		
		2.0	E3		
		2.0	E2		
		Mil.: $64,939.50			
		Civ.: $11,170.50			
		Ward 9A			
		2	O3		
		4	GS7		
		1	E8		
		3	E6		
		2	E5		
		1	E4		
		2	E3		
		2	E2		
		Mil.: $85,780.00			
		Civ.: $29,788.00			
		Doctors			
		.05	O4		
		3.25	O3		
		Mil.: $40,715.25			

TABLE III-W-3

FUNCTIONAL COSTS FOR SURGICAL WARDS

	W DETERMINED
Direct Charges:	
Military Labor	$363,417
Civilian Labor	124,835
Supplies - Medical	
Supplies - Non-Medical	
Maintenance	10,431
Miscellaneous Charges	9,928
Prorated Charges:	
Housekeeping	21,054
Department	37,731
Equipment:	
Cost of Standard	25,287
Cost of Non-Standard	42,851
Total Charges	$567,396

TABLE III-W-4

FUNCTIONAL COSTS FOR SURGICAL WARDS

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
		Ward 2A			
		1	O3		
		1	O2		
		1	O1		
		2	GS8		
		1	E7		
		1	E6		
		2	E5		
		4	E4		
		1	E3		
		1	E1		
		Mil.: $ 81,657.00			
		Civ.: $ 16,940.00			
		Ward 2B			
		1	GS9		
		2	O2		
		3	GS8		
		2	GS4		
		3	GS3		
		4	E2		
		4	E3		
		1	E8		
		Mil.: $ 55,335.00			
		Civ.: $ 61,037.00			

TABLE III-W-4 (Cont'd.)

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
			Ward 2C		
		1	O3		
		2	O2		
		1	GS6		
		5	GS7		
		1	E8		
		3	GS4		
		4	E6		
		2	E5		
		1	E4		
		2	E3		
		2	E2		
		Mil.: $101,373.00			
		Civ.: $ 60,741.00			
			Ward 5A		
		1	E8		
		2	E5		
		2	E4		
		1	E3		
		1	E2		
		1	O3		
		1.5	O2		
		1	GS8		
		Mil.: $ 64,037.00			
		Civ.: $ 8,470.00			
			Nursing Surgical Service		
		1	O4		
		1	E8		
		1	E3		
		Mil.: $ 27,894.00			
			General Surgical Clinic		
		1.6	O3		
		2.0	O4		
			Urology		
		.25	O5		
		.25	O3		

Walson Army Hospital
Functional Costs - Ward Management

TABLE III-W-4 (Cont'd.)

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
			Eye		
		.05	O3		
		.05	O5		
			ENT		
		.3	O4		
		Mil.: $60,788.00			

TABLE III-W-5

FUNCTIONAL COSTS FOR URJ WARDS

	W DETERMINED
Direct Charges:	
Military Labor	$305,168
Civilian Labor	54,936
Supplies - Medical	
Supplies - Non-Medical	
Maintenance	15,723
Miscellaneous Charges	1,193
Prorated Charges:	
Housekeeping	21,334
Equipment:	
Cost of Standard	23,341
Cost of Non-Standard	89,025
Total Charges	$398,804

TABLE III-W-6

FUNCTIONAL COSTS FOR URI WARDS

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
			Annex Wards		
		1	O4		
		7	O1		
		2	E6		
		3	E5		
		7	E4		
		2	E3		
		2	E2		
		Mil.: $142,631.00			
			Admitting Team		
		2	E5		
		2	E4		
		Mil.: $ 20,462.00			
			Ward 7A		
		.5	O4		
		.5	O3		
		1.5	O2		
		2.5	GS7		
		.5	GS6		
		1	E6		
		4	E5		
		4	E3		
		Mil.: $ 72,300.50			
		Civ.: $ 21,883.50			
			Ward 7B		
		.5	O4		
		.5	O3		
		1.5	O2		
		2.5	GS7		
		.5	GS6		
		2	E8		
		3	E5		
		1	E4		
		1	E3		
		Mil.: $ 73,296.50			
		Civ.: $ 21,883.50			

TABLE III-W-6 (Cont'd.)

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
		Ward 8A			
		.5	O3		
		1.0	O2		
		1.5	O1		
		1.5	GS7		
		1	E8		
		3	E5		
		4	E4		
		Mil.: $72,257.50			
		Civ.: $11,170.50			
		Doctors			
		.30	O4		
		.05	O3		
		Mil.: $ 4,874.45			

TABLE III-W-7

FUNCTIONAL COSTS FOR PEDIATRIC WARD

	W DETERMINED
Direct Charges:	
Military Labor	$ 99,674
Civilian Labor	61,630
Supplies - Medical	
Supplies - Non-Medical	
Maintenance	4,150
Miscellaneous Charges	2,378
Prorated Charges:	
Housekeeping	7,111
Department	16,945
Equipment:	
Cost of Standard	
Cost of Non-Standard	
Total Charges	$191,831

TABLE III-W-8

FUNCTIONAL COSTS FOR PEDIATRIC WARDS

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
		Ward 3A			
		2	O2		
		3	GS7		
		1	GS8		
		1	E8		
		1	E6		
		1	E5		
		1	E3		
		8	E2		
		3	GS4		
		2	GS3		
		Mil.: $61,178.00			
		Civ.: $57,599.00			
		Doctors			
		2.7	O4		
		Mil.: $38,496.00			

TABLE III-W-9

FUNCTIONAL COSTS FOR PSYCHIATRIC WARDS

	W DETERMINED
Direct Charges:	
Military Labor	$172,959
Civilian Labor	42,374
Supplies - Medical	
Supplies - Non-Medical	
Maintenance	4,853
Miscellaneous Charges	802
Prorated Charges:	-
Housekeeping	7,112
Department	22,819
Equipment:	
Cost of Standard	
Cost of Non-Standard	
Total Charges	$250,919

TABLE III-W-10

FUNCTIONAL COSTS FOR PSYCHIATRIC WARDS

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
		Psychiatric Wards			
		.5	.05		
1	O4	2.8	.04		
3	O3	.1	.03		
1	E7				
3	E6				
8	E5				
1	E4				
3	E3				
2	GS4				
1	GS3				
Mil.:	$141,984.00	$49,961.00			
Civ.:	$ 16,223.00				
		Ward 4B			
		2	O2		
		4	GS7		
		1	O3		
		1	E8		
		2	E6		
		6	E5		
		4	E4		
		3	E3		
		1	E2		
		2	GS3		
	Mil.:	$122,998.00			
	Civ.:	$ 39,602.00			

TABLE III-W-11

FUNCTIONAL COSTS FOR MEDICAL INTENSIVE CARE UNIT

	W DETERMINED
Direct Charges:	
Military Labor	$176,022
Civilian Labor	55,593
Supplies - Medical	
Supplies - Non-Medical	
Maintenance	6,371
Miscellaneous Charges	5,903
Prorated Charges:	
Housekeeping	7,111
Department	12,172
Equipment:	
Cost of Standard	11,498
Cost of Non-Standard	45,073
Total Charges	$263,172

TABLE III-W-12

FUNCTIONAL COSTS FOR MEDICAL INTENSIVE CARE UNIT

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
		Med. ICU			
		1	O4		
		2	O2		
		5	GS7		
		2.0	E8		
		3	E6		
		3	E5		
		4	E4		
		3	E3		
		3	E2		
		3	GS3		
		Mil.: $152,140.00			
		Civ.: $ 51,956.00			
		Doctors			
		2.5	O3		
		Mil.: $23,882.00			

TABLE III-W-13

FUNCTIONAL COSTS FOR OBSTETRICAL UNITS

	W DETERMINED
Direct Charges:	
Military Labor	137,596
Civilian Labor	155,411
Supplies - Medical	
Supplies - Non-Medical	
Maintenance	6,034
Miscellaneous Charges	15,834
Prorated Charges:	
Housekeeping	17,541
Department	12,576
Equipment:	
Cost of Standard	24,962
Cost of Non-Standard	21,225
Total Charges	344,992

TABLE III-W-14

FUNCTIONAL COSTS FOR OBSTETRICAL UNITS

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
		Ward 3B			
		1	O4		
		1	O2		
		6	GS8		
		4	GS4		
		1	GS3		
		2	E5		
		3	E3		
		4	E2		
		Mil.: $58,255.00			
		Civ.: $78,359.00			
			O2		
		Ward 3BN			
		2	O2		
		5	GS8		
		5	GS3		
		2	E3		
		7	E2		
		Mil.: $48,299.00			
		Civ.: $66,885.00			
		Doctors			
		.3	O5		
		.8	O4		
		1.2	O3		
		Mil.: $31,042.30			

Walson Army Hospital
Functional Cost - Ward Management

TABLE III-W-15

FUNCTIONAL COSTS FOR ORTHOPEDIC WARDS

	W DETERMINED
Direct Charges:	
Military Labor	$180,990
Civilian Labor	36,252
Supplies - Medical	
Supplies - Non-Medical	
Maintenance	11,565
Miscellaneous Charges	8,005
Prorated Charges:	
Housekeeping	14,223
Department	12,576
Equipment:	
Cost of Standard	5,776
Cost of Non-Standard	9,282
Total Charges	$263,611

TABLE III-W-16

FUNCTIONAL COSTS FOR ORTHOPEDIC WARDS

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
			Ward 6A		
		.5	O4		
		1	O3		
		1	O2		
		2	GS8		
		1.5	E8		
		2	E6		
		1.5	E6		
		1	E5		
		3	E3		
	Mil.: $87,000.50				
	Civ.: $16,940.00				
			Ward 6B		
		.5	O4		
		1	O3		
		1	O2		
		2	GS8		
		.5	E8		
		1.5	E6		
		4	E5		
		1	E4		
		1	E2		
	Mil.: $75,660.50				
	Civ.: $16,940.00				
			Doctors		
		1.0	O3		
		.2	O4		
		.2	O5		
	Mil.: $18,330.40				

TABLE III-W-17

FUNCTIONAL COSTS FOR AIR EVAC

	W DETERMINED
Direct Charges:	
Military Labor	$105,465
Civilian Labor	71,598
Supplies - Medical	
Supplies - Non-Medical	11,936
Maintenance	1,057
Miscellaneous Charges	802
Prorated Charges:	
Housekeeping	8,059
Equipment:	
Cost of Standard	3,799
Cost of Non-Standard	2,209
Total Charges	$198,917

Walson Army Hospital
Functional Costs - Ward Management

TABLE III-W-18

FUNCTIONAL COSTS FOR AIR EVAC

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
		Ward 4A			
		1	GS9		
		1	O2		
		1	E8		
		1	E5		
		2	E4		
		2	E3		
		1	E2		
		3	WB2		
		Mil.:	$60,730.80		
		Civ.:	$ 9,590.00		
Inc. 4A Ward, Registrar Sec., & Surgery People					
1	O3				
2	O1				
		1	E8		
1	E6	1	E6		
1	E5	2	E5		
1	E3				
2	E2				
1	E7				
5	E6				
1	E4	2	E4		
5	E3	1	E3		
6	E2	1	E2		
3	GS6				
5	WB7	5	WB7		
3	WB2	3	WB2		
Mil.:	$129,399.00		$44,735.00		
Civ.:	$ 76,920.80		$57,324.80		

TABLE III-W-19

FUNCTIONAL COSTS FOR OPERATING ROOM

	W DETERMINED
Direct Charges:	
Military Labor	$391,172
Civilian Labor	20,320
Supplies - Medical	40,659
Supplies - Non-Medical	26,149
Maintenance	15,525
Miscellaneous Charges	66,656
Prorated Charges:	
Housekeeping	7,284
Equipment:	
Cost of Standard	53,191
Cost of Non-Standard	63,717
Total Charges	$567,765

TABLE III-W-20

FUNCTIONAL COSTS FOR OPERATING ROOM

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
	OR Incl. Anesth.			Travel	342
3	O4	3	O4	Equipment	4333
2	O3	2	O3		
1	O5	2	O5		
2	O4	1	O2		
1	O5	3	O1		
1	O4				
2	O3				
13	O1				
		1	E8		
1	E7				
5	E6	7	E6		
7	E5	5	E5		
1	E4	2	E4		
		2	E3		
1	GS7	1	GS7		
2	GS4	2	GS4		
1	GS5				
Mil.:	$354,200.00	$241,531.00			
Civ.:	$ 25,261.00	$ 18,763.00			
		Anesth.			
		1	O4		
		3	O3		
		Urology			
		.25	O5		
		.25	O3		
		Eye			
		.15	O3		
		.15	O5		
		ENT			
		.6	O4		

Walson Army Hospital
Functional Costs - Ward Managment

TABLE III-W-20 (Cont'd.)

PERSONNEL				MISCELLANEOUS	
ASSIGNED		ACTUAL			
NUMBER	GRADE	NUMBER	GRADE	ITEM	COST
			Gen. Surg.		
		1.2			
		1.5	O4		
			OB Gyn.		
		.2	O5		
		.2	O4		
		.8	O3		
			Ortho		
		.3	O5		
		.3	O4		
		1.5	O3		
		Mil.: $149,641.80			

TABLE III-W-21

FUNCTIONAL COSTS FOR DEPARTMENT OF NEUROPSYCHIATRY

PERSONNEL				SUPPLIES		MISCELLANEOUS	
ASSIGNED		ACTUAL					
Number	Grade	Number	Grade	Medical	Non-Medical	Item	Cost
		.5	O5	1532	1561	Transportation	124
		1	O3			Other Contract	1465
		1	GS3				
		1	GS7				
		1	GS5				
		Mil.: 20,786					
		Civ.: 18,852					

TABLE III-W-22

FUNCTIONAL COSTS FOR DEPARTMENT OF SURGERY

PERSONNEL				SUPPLIES		MISCELLANEOUS	
ASSIGNED		ACTUAL					
Number	Grade	Number	Grade	Medical	Non-Medical	Item	Cost
				79519	40400	Travel	1527
						Contractual Ser.	797
						Equipment	3525

TABLE III-W-23

FUNCTIONAL COSTS ON MEDICAL NURSING SERVICE

PERSONNEL				SUPPLIES		MISCELLANEOUS	
ASSIGNED		ACTUAL					
Number	Grade	Number	Grade	Medical	Non-Medical	Item	Cost
		1	O4				
		1	E8				
		1	E4				

TABLE III-W-24

FUNCTIONAL COSTS FOR DEPARTMENT OF MEDICINE

PERSONNEL				SUPPLIES		MISCELLANEOUS	
ASSIGNED		ACTUAL					
Number	Grade	Number	Grade	Medical	Non-Medical	Item	Cost
1	O5	1.0	O5	46337	25885	Travel	782
1	O1	1	O1			Contract. Serv.	133
1	E4					Equipment	4237
1	GS5	1	GS5				
1	GS4						
1	GS3	2	GS3				
Mil.: $29,566.00		$33,969					
Civ.: $17,063.00		$16,312					

TABLE III-W-25

PERSONNEL COST BREAKDOWN

TYPE OF WARD	MILITARY	CIVILIAN
Medical	$281,003	$129,107
Surgical	363,417	124,835
URI	305,618	54,936
Pediatric	99,674	61,630
Psychiatric	172,959	42,374
Medical ICU	176,022	55,593
OB, etc.	137,596	155,411
Orthopedic	180,890	36,252
AIR EVAC	105,465	71,598
OR	391,172	20,320

TABLE III-W-26

MAINTENANCE COST BREAKDOWN

TYPE OF WARD	COST
General Surgical	$10,431
Orthopedic	11,565
OB	6,034
Psychiatric	4,853
General Medical	17,595
ICU	6,371
Pediatric	4,153
URI	15,723
AIR EVAC	1,057

TABLE III-W-27

HOUSEKEEPING COST BREAKDOWN

TYPE OF WARD	COST
General Surgical	$21,054
Orthopedic	14,223
OB	17,451
OR	7,451
Psychiatric	7,112
General Medical	24,997
ICU	7,111
Pediatric	7,111
URI	21,334
AIR EVAC	8,059

TABLE III-W-28

CAPITAL EQUIPMENT COST BREAKDOWN

TYPE OF WARD	COST
General Surgical	$ 68,138
Orthopedic	15,058
OB	46,187
OR	116,908
General Medical	173,776
ICU	56,571
URI	112,366
AIR EVAC	6,008

I. WARD MANAGEMENT -- OPERATIONS SOURCE SHEET

Walson Army Hospital

1. Beds and Patients Reports, DA Form 2789, FY69.
2. WAH Admission/ Disposition Reports (A & D Sheets) and sample taken of 12 days in July, December, October, and November, 1968.
3. Observation of Ward 2A, November 18 thru 20, 1969.
4. OR Log Book _____, sample of 113 patients.
5. Interview with Chief, Nursing Service.
6. Interview with NCOIC, Medical Nursing Service.
7. Interview with NCOIC, Surgical Nursing Service.
8. Various SOP documents provided by Chief, Nursing Service.
9. Interview with Head Nurse, OR.
10. Interview with Head Nurse, Anesthesiology.

Malcolm Grow Hospital

1. AF 235, FY69.
2. Patient days on census, divided by 365.
3. AF 235 b, lines 1C plus 1D, FY69.
4. AF 235 b, line 1D, FY69.
5. Patient days occupying beds FY69, divided by 365.
6. Interview with NCOIC, medical wards.
7. Interview with NCOIC, orthopedic ward.
8. Extrapolated from one day's observations using average patient stay.
9. Interview with NCOIC, surgical wards.
10. Interview with NCOIC, OB/GYN.
11. AF 235 b, line 50, FY69.
12. Interview with NCOIC, labor and delivery.
13. Interview with NCOIC, nursery.
14. Interview with NCOIC, pediatrics ward.
15. Interview with NCOIC, psychiatric ward.
16. Interview with NCOIC, female ward.

17. Interview with NCOIC, VIP ward.

18. Interview with NCOIC, recovery room.

19. Interview with NCOIC, surgical suite.

Beaufort Naval Hospital

1. Based on interview estimate.

2. Six-month sample of ICU log book, February to July, 1969.

3. Beaufort Morbidity/Mortality Report, FY69.

4. One-month sample of recovery room log book.

II. WARD MANAGEMENT -- RESOURCE UTILIZATION SOURCE SHEET

Walson Army Hospital

1.

2. Scaled photograph of WAH floor plans, provided by Chief of Registrar Div.

Malcolm Grow Hospital

1. All information on personnel training and manner in which time is spent from interviews with respective NCOIC's.

Beaufort Naval Hospital

1. Beaufort Hospital blueprints, 1/4" = 1'.

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A P P E N D I X

APPENDIX I*

Information System Computer Runs

APPENDIX II*

Work Sampling Computer Runs and Coding Sheets

APPENDIX III*

Medical Records Summaries

*Because of their size, these appendices have been placed on microfilm. Two copies of each appendix were submitted to the DoD Project Officer on 24 November, 1970.

APPENDIX IV

POST ENGINEERING PRORATED COSTS

WALSON ARMY HOSPITAL

TABLE IV-1
POST MAINTENANCE, PRORATED COSTS

AREA	FACTOR	PRORATED COST	WARD	FACTOR	PRORATED COST
Pharmacy	.0066	1116	2A	.0154	$2603
Food Service	.0796	13459	2B	.0176	2976
EENT Clinic	.0066	1115	2C	.0243	4108
A/D	.0022	372	3A	.0243	4108
OPC	.0221	3736	3B	.0176	2976
Med. Suppl.	.0022	372	3C	.0110	1860
Adm.	.2256	38144	L&D	.0044	744
Prevent Med.	.0154	2604	4A	.0353	5968
GU Clinic	.0022	372	4B	.0287	4853
CMS	.0154	2604	4C	.0110	1860
RR	.0022	372	5A	.0265	4480
ICU	.0044	744	5B	.0353	5968
Ortho Clinic	.0176	2976	5C	.0110	1860
Air Evac.	.0309	5224	6A	.0331	5596
Lab	.0154	2604	6B	.0309	5225
Med. Clinic	.0011	185	6C	.0044	744
Surg. Clinic	.0011	185	7A	.0376	6357
OR	.0110	1860	7B	.0110	1860
Pediatric Clinic	.0110	1860	7C	.0088	1488
ER	.0022	372	8A	.0154	2604
PT	.0022	372	8B	.0243	4108
Neurology Clinic	.0022	372	8C	.0044	744
Dermatology	.0011	185	9A	.0353	5968
OT	.0011	185	9B	.0265	4480
OB-Gyn	.0011	185	9C	.0044	744
X-Ray	.0022	372			
EKG	.0011	185			

TABLE IV-2
WALSON ARMY HOSPITAL POST
MAINTENANCE - COST BREAKDOWN

Personnel

WG 10	-	10	x $5.64	x 40 x 52	=	$117,312
WG 9	-	2	x 4.75	x 40 x 52	=	19,740
GS 11	-	.5		11,223	=	5,611
						142,663

Total labor for all Medical Bldg. $176,913*

Total Supplies All Medical Bldgs. $ 23,470

WAH	=	.7 x	23470	= 16,429
Annex	=	.2 x	23470	= 4,694
Dental	=	.05 x	23470	= 1,173

Labor Chargeable to WAH = $142,663 x 1.07** = $152,649

Labor Chargeable to Annex = (176,913 - 152,649) x .2/.3 = 16,174

Labor Chargeable to Dental = (24,264) .05/.3 = 4,125

	WAH	ANNEX	DENTAL
Labor	$152,649	$16,174	$4,125
Materials	16,429	4,694	1,173
Total	$169,078	$20,868	$5,298

*Dispensary = 8/12 ($5,298) = $3,500

*Dental = $5,298 - 3,500 = $1,798

*Annex

Med. Processing	1/8	x 20858	=	2607
URI Wards	1/8	x 20858	=	2607
Annex Kitchen	1/8	x 20858	=	2607
Optical Lab.	1/8	x 20858	=	2607
Dental Clinic	1/8	x 20858	=	2607
Optometry Clinic	1/8	x 20858	=	2607
Dispensary	1/8	x 20858	=	2607
Blood Donor Center	1/8	x 20858	=	2607

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APPENDIX V

CONTRACT HOUSEKEEPING PRORATED COSTS

WALSON ARMY HOSPITAL

Walson Army Hospital
Appendix V

TABLE V-I

CONTRACT HOUSEKEEPING - PRORATED COST

WARDS	PRORATED COST
2A	7283.90
2B	7283.90
2C	3017.00
OR	7283.90
3A	7111.50
3B	7111.50
3N	4310.00
4A	7111.50
4B	7111.50
5A	7111.50
5B	7111.50
6A	7111.50
6B	7111.50
7A	7111.50
7B	7111.50
8A	7111.50
8B	7111.50
9A	7111.50
9B	7111.50
L&D	6120.20
X-Ray	1,3792.00
Inh. Ther.	0.00
CMS	4094.50

CLINICS	PRORATED COST
Pediatric	5947.80
GU	5172.00
OB-Gyn	3534.20
Surgical	4094.50
Ortho	9051.00
ER	5172.00
Dermatol.	5172.00
ENT	4094.50
OPC	4094.50
Medical	4094.50
Opthamol.	4094.50
Special	517.20
Prevent Med.	1,3964.40
Dental	3534.20
Allergy	517.20
Cardiology	1293.00

AREA	PRORATED COST
Pharmacy	4999.60
Registrar	4094.50
A/D	1,2714.50
Med. Rec.	2586.00
POT	0.00
Mgt. Serv.	1293.00
Nursing Ser.	2586.00
Admin.	11,9300.80
Personnel	4741.00
Supply	8620.00
Maintain.	3232.50
Adi.	0.00
Lab	1,6809.00
Air Evac.	948.20
PT	7758.00
Dental Clinic	1,4223.00

TABLE V-2
PERCENT OF TOTAL AREA FOR HOUSEKEEPING

WARD	%	CLINIC	%	AREA	%
2A	1.69	Pediatrics	1.38	Pharmacy	1.16
2B	1.69	GU	1.20	Registrar	.95
2C	.70	OB-Gyn	.82	A/D	3.95
OR	1.69	Surgical	.95	Med, Rec.	.60
3A	1.65	Ortho.	2.10	POT	.00
3B	1.65	ER	1.20	Mgt. Ser.	.30
3N	1.00	Dermatol.	1.20	Nursing Ser.	.60
4A	1.65	ENT	.95	Admin.	27.68
4B	1.65	OPC	.95	Personnel	1.10
5A	1.65	Medical	.95	Supply	2.00
5B	1.65	Opthamol.	.95	Maintain	.75
6A	1.65	Special	.12	Adj.	.00
6B	1.65	Prevent Med.	3.24	Air Evac.	.22
7A	1.65	Dental	.82	Lab.	3.90
7B	1.65	Allergy	.12	PT	1.80
8A	1.65	Cardiology	.30	Dental Clinic	3.30
8B	1.65			Total	100.00
9A	1.65				
9B	1.65				
L&D	1.42				
X-ray	3.20				
Inh. Ther.	.00				
CMS	.95				

$431,000 for FY69 Housekeeping

TABLE V-3
HOSPITAL AREA

Area	Square Feet	%
First Floor	89,698	29.27
1st Fl. Add.	12,848	4.19
Basement	89,698	29.27
Basement Add.	4,070	1.32
Prevent Med.	10,670	3.48
Second Floor	21,200	6.91
Third Floor	17,600	5.74
Fourth Floor	10,100	3.29
Fifth Floor	10,100	3.29
Sixth Floor	10,100	3.29
Seventh Floor	10,100	3.29
Eighth Floor	10,100	3.29
Ninth Floor	10,100	3.29
Total	306,384 sq. ft.	99.92

APPENDIX VI

OJT COSTS

WALSON ARMY HOSPITAL - MALCOLM GROW HOSPITAL

APPENDIX VI

ESTIMATING OJT COSTS

Let us suppose that the learning curve can be approximated by an exponential function of the following form

$$y(t) = ae^{-bt} \tag{1}$$

where a and b are constants whose values we must determine.

We can determine a & b in the following way: suppose we are given t_1 and t_2, the times at which 90% and 10%, respectively, of a man's effort is spent in training. Then we can write the following pair of simultaneous equations:

$$y_1 = 0.90 = ae^{-bt_1} \tag{2}$$

$$y_2 = 0.10 = ae^{-bt_2}$$

These can be solved for a and b as follows: dividing the first equation in (2) by the second, we have

$$y_1/y_2 = 0.9/0.1 = e^{-b(t_1 - t_2)} \tag{3}$$

Taking the natural logarithm of each side,

$$\ln 9 = +b(-t_1 + t_2) \tag{4}$$

from which we can evaluate b:

$$b = \frac{\ln 9}{(t_2 - t_1)} \tag{5}$$

Returning to equations (2), and multiplying the first by the second, we obtain

$$y_1 y_2 = (0.9)(0.1) = a^2 e^{-b(t_1 + t_2)} \tag{6}$$

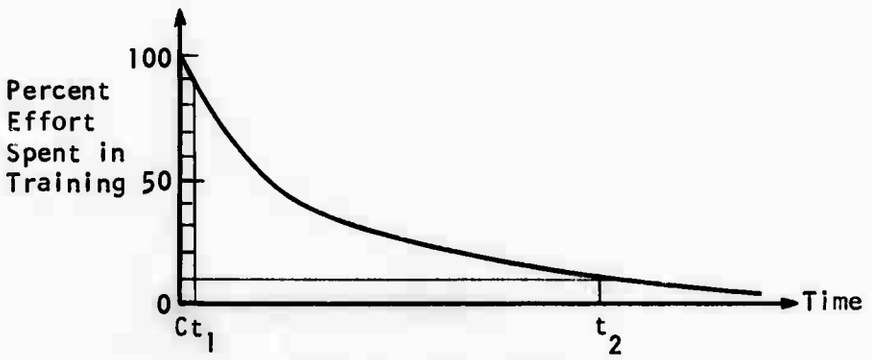

Fig. VI-1 A Learning Curve

From which we can evaluate a:

$$a = \left(0.09e^{+b(t_1 + t_2)}\right)^{1/2}$$

$$a = 0.3e^{b/2(t_1 + t_2)} \tag{7}$$

We now return to Figure VI-1, and observe that the cost of training at any time t is precisely:

$$c(t) = P \cdot y(t) \tag{8}$$

Where c(t) is the cost of learning at time t; P is the salary costs of the trainee plus that of the teacher; and y(t) is the percent of the trainee's efforts spent in learning at time t.

It can be written then, that the total training costs C_T for this man along this curve is represented by the time integral of c(t). That is

$$C_T = \int_{t_i}^{t_f} c(t)\, dt \tag{9}$$

where t_i is the time he starts learning on the job; t_f, the time he is fully competent; and dt is an increment of the training period during which he is being paid to learn.

We now rewrite equation (9) as follows:

$$C_T = \int_{t_i}^{t_f} P_x \cdot y(t)\, dt \tag{10}$$

$$= P \int_{t_i}^{t_f} a \cdot e^{-bt} dt \tag{11}$$

$$= P \cdot \left(\frac{a}{-b} \right) \cdot e^{-bt} \Bigg|_{t_i}^{t_f} \tag{12}$$

$$C_T = - \frac{Pa}{b} \left(e^{-bt_f} - e^{-bt_i} \right) \tag{13}$$

We now note the fact that, in our case $t_i = t_o = 0$. Also at t_i, we assume that all (100%) of the man's effort is spent in training ($y(t_o) = 1.00$). Likewise, at t_f, we assume he is completely finished with his job familiarization (continuing inservice training and temporary duty full-time studies will be considered separately); that is, we assume that $y(t_f) = 0$. For the assumed exponential learning curve, this corresponds to $t_f = t_\infty = \infty$.

We now rewrite equation (13):

$$C_T = -\frac{Pa}{b} \left(e^{-bt_\infty} - e^{-bt_o}\right)$$

$$C_T = -\frac{Pa}{b} \left(e^{-\infty} - e^{-0}\right) = -\frac{Pa}{b} (0-1)$$

Therefore we have

$$C_T = \frac{Pa}{b} \tag{14}$$

Recognizing vacation & leaves, we assume W working weeks per year, and obtain that

$$C_T \left[\text{in dollars}\right] = \frac{P\left[\begin{matrix}\text{Annual pay in} \\ \text{dollars}\end{matrix} \over \text{year}\right] \cdot a \left[\text{dimensionless}\right]}{b\left[\text{in weeks}^{-1}\right] \cdot W\left[\frac{\text{weeks}}{\text{year}}\right]} \tag{15}$$

We can use equation (15) when a and b have been calculated from

$$b\left[\text{weeks}^{-1}\right] = \frac{2.197}{(t_2 - t_1)\left[\text{in weeks}\right]} \tag{16}$$

and

$$a\,[\text{dimensionless}] = 0.3 \exp\left(\frac{b\left[\text{weeks}^{-1}\right]}{2} (t_1 + t_2)[\text{weeks}]\right) \tag{17}$$

The quantity P can be further defined as

$$P = P_s + d \cdot f \cdot P_t$$

Where P_s is the trainee's annual pay rate

P_t is the trainer's annual pay rate

$d = t/s$ is the trainer-to-trainee ratio

f is the fraction of the trainer's time spent in teaching rather than in other productive work. Unless specific data indicates otherwise, f will be assumed to be on the order of 10%.

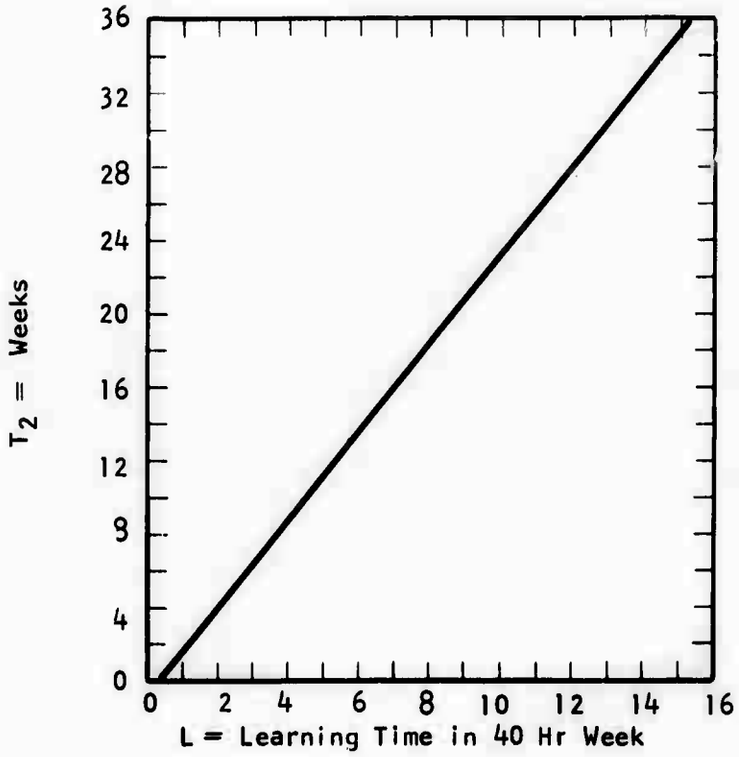

Fig. VI-2—OJT learning curve

TRUNCATING THE LEARNING CURVE - THE ERROR INVOLVED

The error involved in truncating the integration of the area under the learning curve in Figure VI-3 at time t_2 instead of at t_f is given by:

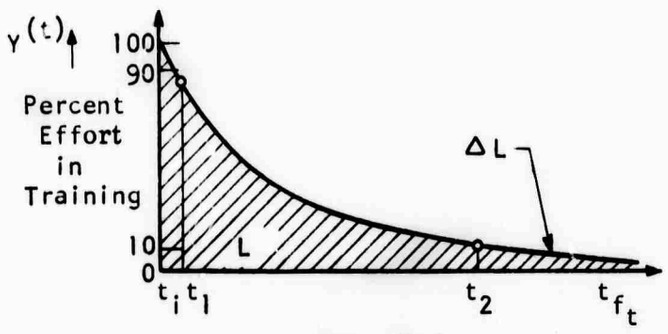

Fig. VI-3

$$\epsilon = \frac{\Delta L}{L} = \frac{\left(\begin{array}{c}\text{area under curve} \\ \text{from } t_2 \text{ to } t_f\end{array}\right)}{\left(\begin{array}{c}\text{area under curve} \\ \text{from } t_o \text{ to } t_f\end{array}\right)} \quad \ldots \quad (A)$$

Now we have that

$$L = \int_{t_i}^{t_f} y(t)dt = \int_{t_i}^{t_f} ae^{-bt}\,dt \ldots (B)$$

By similar reasoning

$$\Delta L = \int_{t_2}^{t_f} y(t)dt = \int_{t_2}^{t_f} ae^{-bt}dt \ldots (C)$$

Therefore

$$\epsilon = \frac{\Delta L}{L} = \frac{\int_{t_2}^{t_f} ae^{-bt}dt}{\int_{t_i}^{t_f} ae^{-bt}dt} = \frac{\left(\frac{a}{-b}\right)\left(e^{-bt_f} - e^{-bt_2}\right)}{\left(\frac{a}{-b}\right)\left(e^{-bt_f} - e^{-bt_i}\right)} \quad \ldots (D)$$

That is

$$\epsilon = \frac{0 - 1^{-bt_2}}{0 - 1} = e^{-bt_2} \quad \ldots (E)$$

but $$b = \frac{\ln 9}{t_2 - t_1} = \frac{2.197}{t_2 - t_1} \quad \ldots (F)$$

thus

$$\epsilon = \frac{1}{\exp\left(2.197 \cdot \frac{t_2}{t_2 - t_1}\right)} \quad \ldots (G)$$

The error for the following examples has been evaluated in Table A below.

TABLE A

T_1 (weeks)	t_2 (weeks)	Error
0.4	1.0	2.6 %
0.6	8.0	9.4 %
1.0	48.0	10.6 %

TABLE VI-1

ESTIMATING OJT LEARNING TIMES

t_1 TIME ONE	t_2 TIME TWO	L LEARN TIME
0.4000	1.0000	1.0632
0.4000	2.0000	1.1351
0.4000	3.0000	1.4932
0.4000	4.0000	1.8823
0.4000	5.0000	2.2808
0.4000	6.0000	2.6835
0.4000	7.0000	3.0884
0.6000	8.0000	3.6221
0.6000	10.0000	4.4299
0.6000	12.0000	5.2419
0.8000	16.0000	6.9892
1.0000	20.0000	8.7365
1.0000	24.0000	10.3652
1.0000	36.0000	15.2649
1.0000	48.0000	20.1726

All Times In Weeks

TABLE VI-2

MILITARY ANNUAL PAY RATES

PAY GRADE	ARMY	NAVY	MARINE CORPS	AIR FORCE
0-10	$36,277	$36,083	$39,264	$37,615
0-9	30,388	30,100	29,895	31,883
0-8	27,413	28,056	28,118	28,576
0-7	24,340	24,874	24,570	25,383
0-6	21,959	22,316	22,542	23,288
0-5	17,689	18,723	18,381	19,508
0-4	14,258	15,739	15,350	16,404
0-3	11,941	13,279	13,323	12,840
0-2	9,970	9,845	9,835	9,721
0-1	7,280	7,211	7,449	7,960
W-4	14,150	14,476	13,962	14,328
W-3	12,099	12,509	11,934	12,708
W-2	10,684	10,716	10,721	
W-1	8,942	9,455	9,305	
E-9	11,533	11,603	11,918	11,344
E-8	10,107	10,317	10,245	10,000
E-7	8,865	8,944	9,030	8,911
E-6	7,594	7,751	7,707	7,911
E-5	5,634	6,299	5,859	6,877
E-4	4,597	4,993	4,502	5,166
E-3	3,529	3,668	3,403	3,593
E-2	3,043	2,869	2,904	2,891
E-1	2,822	2,673	2,771	2,613
Cadets and Midshipmen	3,007	2,956		2,951

(W = 48 weeks/year)

TABLE VI-3

CIVILIAN PAY RATES

ANNUAL RATES FOR GS-RATED PERSONNEL

UNITED STATES AIR FORCE AIR FORCE SYSTEMS COMMAND
CLASSIFICATION ACT SALARY RATES
EFFECTIVE JULY 1968

GRADE	STEP RATES									
GS	1	2	3	4	5	6	7	8	9	10
1	$3,889	$4,019	$4,149	$4,279	$4,408	$4,538	$4,668	$4,798	$4,928	$5,057
2	4,231	4,372	4,513	4,655	4,796	4,937	5,078	5,219	5,360	5,501
3	4,600	4.753	4,907	5,060	5,214	5,367	5,521	5,674	5,828	5,931
4	5,145	5,316	5,487	5,658	5,829	6,000	6,171	6,342	6,513	6,684
5	5,732	5,924	6,115	6,307	6,498	6,690	3,831	7,073	7,265	7,456
6	6,321	6,532	6,743	6,955	7,166	7,377	7,588	7,799	8,010	8,221
7	6,981	7,214	7,447	7,680	7,913	8,146	8,379	8,612	8,845	9,078
8	7,699	7,956	8,213	8,470	8,727	8,984	9,241	9,498	9,755	10,012
9	8,462	8,744	9,026	9,308	9,590	9,872	10,154	10,436	10,718	11,000
10	9,297	9,607	9,917	10,227	10,537	10,847	11,157	11,467	11,777	12,087

GRADE	STEP RATES									
GS	1	2	3	4	5	6	7	8	9	10
11	10,203	10,543	10,883	11,223	11,563	11,903	12,243	12,583	12,923	13,263
12	12,174	12,580	12,986	13,392	13,798	14,204	14,610	15,016	15,422	15,828
13	14,409	14,889	15,369	15,849	16,329	16,809	17,289	17,769	18,249	18,729
14	16,946	17,511	18,076	18,641	19,206	19,771	20,336	20,901	21,466	22,031
15	19,780	20,439	21,098	21,757	22,416	23,075	23,734	24,393	25,052	25,711
16	22,835	23,596	24,357	25,118	25,879	26,640	27,401	28,162*	28,923*	
17	26,264	27,139	28,014*	28,889*	29,764*					
18	30,239*									

* Actual rate is $28,000. Rate shown may be authorized if level V of the Executive pay schedule is reached.

Eligibility for step increases occurs after 52 weeks in Steps 1, 2 and 3 - after 104 weeks in Steps 4, 5, and 6 - after 156 weeks in Steps 7, 8, and 9.

NOTE:

(Annual Pay Rate) = (GS Salary Rate) · (Fringe Benefit Factor)

Assume the following fringe benefit factors:
GS1 - GS5: FBF = 1.075
GS6 - GS15: FBF = 1.0858

Walson Army Hospital
Appendix VI

TABLE VI-4

DOD REGULAR WAGE RATE SCHEDULE
FOR WASHINGTON, D.C. AREA

	Min.	WG-NON SUPERVISORY			WL-LEADER			WS-SUPERVISORY				
STEP / GRADE	incr.	1	2	3	1	2	3	1	2	3	4	5
1	.03	2.11	2.20	2.29	2.32	2.42	2.52	3.01	3.17	3.34	3.51	3.67
2	.04	2.42	2.52	2.62	2.66	2.77	2.88	3.29	3.48	3.66	3.84	4.03
3	.04	2.73	2.84	2.95	3.00	3.12	3.24	3.58	3.78	3.98	4.18	4.38
4	.05	2.82	2.94	3.06	3.10	3.23	3.36	3.67	3.88	4.08	4.28	4.49
5	.05	2.92	3.04	3.16	3.21	3.34	3.47	3.76	3.97	4.18	4.39	4.60
6	.05	3.03	3.16	3.29	3.34	3.48	3.62	3.87	4.09	4.30	4.52	4.73
7	.05	3.17	3.30	3.43	3.48	3.63	3.78	4.00	4.22	4.44	4.66	4.88
8	.05	3.29	3.43	3.57	3.62	3.77	3.92	4.11	4.34	4.57	4.80	5.03
9	.08	3.47	3.61	3.75	3.81	3.97	4.13	4.28	4.51	4.75	4.99	5.23
10	.11	3.65	3.80	3.95	4.01	4.18	4.35	4.45	4.69	4.94	5.19	5.43
11	.15	3.83	3.99	4.15	4.21	4.39	4.52	4.62	4.87	5.13	5.39	5.64
12	.19	4.02	4.19	4.36	4.43	4.61	4.79	4.83	5.10	5.37	5.64	5.91
13	.22	4.20	4.38	4.56	4.63	4.82	5.01	5.10	5.39	5.67	5.95	6.24
14	.23	4.39	4.57	4.75	4.83	5.03	5.23	5.43	5.73	6.03	6.33	6.63
15	.21	4.58	4.77	4.96	5.04	5.25	5.46	5.81	6.13	6.45	6.77	7.10
								6.23	6.57	6.92	7.27	7.61
								6.71	7.08	7.45	7.82	8.20
								7.24	7.64	8.04	8.44	8.84
								7.81	8.25	8.68	9.11	9.55

Night Differentials: 2nd Shift 15¢ 3rd Shift 18¢

NOTE: (1) To convert to annual pay rate, assume 30 days leave out of 210 working days annually

$$\text{Annual Pay Rate} = (\text{Hourly wages}).\left(\frac{8 \text{ hrs.}}{\text{day}}\right).\left(\frac{210 \text{ days}}{\text{year}}\right).(\text{fringe benefit factor})$$

(2) Assume the following fringe benefit factors:
WB & FBF = 1.070
WL, WF, WS FBF = 1.0855

(3) $W = 250 - 30 = \frac{220 \text{ days}}{\text{year}} = \frac{44 \text{ weeks}}{\text{year}} = W$

TABLE VI-5

WALSON ARMY HOSPITAL OJT COSTS

Where: Total Cost = $\frac{\text{(Annual Pay of Student + \% of Instructors Pay) X } \mathcal{L}}{\text{\# Weeks}}$

$\mathcal{L}$ = Point on learning curve for each t_2 (Table 1 & Graph of t_2 to $\mathcal{L}$)

\# Weeks = 48

% of Instructors Pay Usually 10%

$C_t = (P.L)/W$

AREA	COST
WARD MANAGEMENT	110,748.00
DISPENSARIES	6,153.00
CLINICS	36,101.00
DIETARY	6,136.00
RADIOLOGY	5,892.00
CLINICAL LABS	20,589.00
DENTAL	40,637.00
NURSING SERVICE	2,454.00
CMS	2,988.00
PHARMACY	3,407.00
OR	19,549.00
ADMIN. ETC.	21,514.00
TOTAL	276,168.00

TABLE VI-6

WALSON ARMY HOSPITAL - OJT COSTS

Ward Management

C_t	=	$\frac{(11,941 + 1,425)(1.1)}{48}$ (9)		2,756
C_t	=	$\frac{(7,280 + 1,194)(4.5)}{48}$ (76)		60,377
C_t	=	$\frac{(7,447 + 1,425)(1.5)}{48}$ (25)		6,931
C_t	=	$\frac{(5,634 + 1,327)(.8)}{48}$ (125)		14,502
C_t	=	$\frac{(3,529 + 1,101)(2)}{48}$ (73)		13,806
C_t	=	$\frac{(5,658 + 1,194)(2)}{48}$ (23)		11,358
C_t	=	$\frac{(1,194 + 1,425)(1.1)}{48}$ (11)		660
C_t	=	$\frac{(4,372 + 1,010)(.8)}{48}$ (4)		358
			Total	110,748

Dispensaries

C_t	=	$\frac{(7,447 + 1,425)(1.5)}{48}$ (.2)		55
C_t	=	$\frac{(4,597 + 1,010)(1.1)}{48}$ (31)		3,983
C_t	=	$\frac{1}{48}$ (3,529 + 1,010) (2) (11)		1,997
C_t	=	.0203 (1,194 + 1,425) (1.1) (2)		118
			Total	6,153

Clinics

C_t	=	.0208 (11,941 _ 1,425) (1.1) (2.5)		736
C_t	=	.02 (7,280 + 1,194) (4.5) (8)		6,356

TABLE VI-6 (Cont'd.)

Clinics

C_t	=	.02 (7,447 + 1,425) (1.5) (.8)	222
C_t	=	.02 (4,597 + 1,010) (1.1) (118)	15,163
C_t	=	.02 (3,529 + 1,010) (2) (43)	8,133
C_t	=	.02 (4,907 + 1,010) (1.5) (6)	1,066
C_t	=	.02 (1,194 + 1,425) (1.5) (36)	2,829
C_t	=	.02 (9,970 + 1,425) (2) (3.5)	1,596
		Total	36,101

Dietary

C_t	=	.02 (11,941 + 1,768) (1.1) (1.5)	453
C_t	=	.02 (9,970 + 1,768) (1.1) (2)	517
C_t	=	.02 (4,597 + 997) (1.1) (13)	1,600
C_t	=	.02 (3,529 + 997) (1.5) (2)	272
C_t	=	.02 (4,907 + 997) (1.5) (1.8)	319
C_t	=	.02 (4,838 + 1,122) (.8) (3.9)	372
C_t	=	.02 (4,838 + 1,122) (1.1) (3.4)	446

TABLE VI-6 (Cont'd.)

C_t	= .02 (6,585 + 1,122) (.8) (1.3)	161
C_t	= .02 (6,316 + 724) (4.5) (3)	1,901
C_t	= .02 (5,414 + 1,122) (.8) (.9)	95
	Total	6,136

Radiology

C_t	= .02 (11,941 + 1,782) (1.5) (5)	2,059
C_t	= .02 (4,597 + 1,010) (1.5) (12)	2,019
C_t	= .02 (3,529 + 1,010) (4.5) (3)	1,226
C_t	= .02 (6,498 + 1,010) (1.5) (2.2)	496
C_t	= .02 (4,907 + 1,010) (1.1) (.7)	92
	Total	5,892

Clinical Labs

C_t	= .02 (11,941 + 1,425) (1.5) (3.5)	1,404
C_t	= .02 (4,597 + 1,492) (1.5) (31)	5,663
C_t	= .02 (3,529 + 1,492) (8.5) (12)	10,243
C_t	= .02 (6,498 + 1,492) (3.6) (5.6)	3,222
C_t	= .02 (4,907 + 1,492) (1.1) (.4)	57
	Total	20,589

Dental

C_t	= .02 (11,941 + 2,195) (2) (56.25)	31,806
C_t	= .02 (4,597 + 1,194) (1.1) (27)	3,440

TABLE VI-6 (Cont'd.)

C_t	= .02 (3,529 + 1,194) (2) (14)		2,645
C_t	= .02 (7,447 + 1,194) (.8) (.8)		111
C_t	= .02 (4,907 + 1,010) (1.1) (1.8)		235
C_t	= .02 (6,498 + 2,388) (1.5) (9)		2,400
		Total	40,637

Nursing Service

C_t	= .02 (11,941 + 1,768) (1.1) (4)		1,207
Ct	.02 (4,597 + 1,010) (1.1) (9)		1,111
Ct	.02 (3,529 + 1,010) (1.1) (1)		100
Ct	.02 (4,907 + 1,010)(1.5) (.2)		36
		Total	2,454

CMS

C_t	.02 (11,941 + 1,768) (2) (.5)		275
Ct	.02 (4,597 + 1,010) (1.5) (10)		1,683
Ct	.02 (3,529 + 1,010) (2.8) (3)		763
Ct	.02 (4,907 + 1,010) (1.5) (1.5)		267
		Total	2,988

Pharmacy

Ct	.02 (11,941 + 1,768) (1.5) (.5)		206
C_t	.02 (9,590 + 1,194) (1.1) (.1)		24
Ct	.02 (4,597 + 1,010) (1.5) (13)		2,187
Ct	.02 (3,529 + 1,010) (1.5) (7)		954
Ct	.02 (4,907 + 1,010) (1.5) (.2)		36
		Total	3,407

TABLE VI-6 (Cont'd.)

OR

C_t	.02 (11,941 + 2,211) (1.1) (3.5)		1,090
C_t	.02 (7,280 + 1,782) (2) (8)		2,900
C_t	.02 (11,941 + 2,744) (4.5) (5.7)		7,534
C_t	.02 (8,470 + 1,782) (1.1) (.2)		46
C_t	.02 (6,498 + 1,782) (3.6) (.4)		239
C_t	.02 (4,597 + 1,782) (3.6) (15)		6,890
C_t	.02 (3,529 + 1,782) (4) (2)		850
		Total	19,549

Administration

C_t	.02 (11,941 + 1,768) (1.1) (17)		5,128
C_t	.02 (9,970 + 1,425) (2.8) (4)		2,553
C_t	.02 (4,597 + 1,153) (1.1) (74)		9,361
C_t	.02 (3,529 + 1,153) (1.5) (13)		1,826
C_t	.02 (4,907 + 1,153) (1.1) (13)		1,733
C_t	.02 (9,590 + 1,425) (1.5) (.45)		149
C_t	.02 (4,838 + 1,425) (1.5) (3.6)		677
C_t	.02 (4,838 + 1,153) (.8) (.9)		87
		Total	21,514

TABLE VI-7

OJT BREAKDOWN

Ward Management	Total No.	Turn-over Factor %	Yearly No. "Students"	t_1 Weeks	t_2 Weeks	Instructor	S/I	Instruction Time Factor
Mil. N. O3	18	.50	9	.6	2.0	O4	1.0	.1
Mil. N. O1 & O2	38	2.00	76	1.0	10.0	O3	1.0	.1
Civ. N.	50	.20	25	.6	3.0	O4	1.0	.1
E4 - E9	125	1.00	125	.2	1.0	O3	1.0	.1
E1 - E3	73	1.00	73	.6	4.0	E8	1.0	.1
Aides	23	.10	23	.6	4.0	O3	1.0	.1
Doctors	21.25	.50	11	1.0	2.0	O4	1.0	.1
Escorts	11	.30	4	.2	1.0	E8	1.0	.1
Dispensaries								
Civ. N.	1	.20	.2	.6	3.0	O4	1.0	.1
E4	31	1.00	31	.4	2.0	E8	1.0	.1
E3	11	1.00	11	.6	4.0	E8	1.0	.1
Doctors	3.85	.50	2	.6	2.0	O4	1.0	.1
Clinics								
ANC O3	5	.50	2.5	.6	2.0	O4	1.0	.1
ANC O1 & O2	4	2.00	8	1.0	10.0	O3	1.0	.1
Civ. N.	4	.20	.8	.6	3.0	O4	1.0	.1
E4	118	1.00	118	.4	2.0	E8	1.0	.1
E3	43	1.00	43	.6	4.0	E8	1.0	.1
Clerks	30	.20	6	.4	3.0	E8	1.0	.1
Doctors	71.55	.50	36	1.0	3.0	O4	1.0	.1
MSC	7	.50	3.5	1.0	4.0	O4	1.0	.1

TABLE VI-7 (Cont'd.)

Dietary	Total No.	Turn-over Factor %	Yearly No. "Students"	t_1 Weeks	t_2 Weeks	Instructor	S/I	Instruction Time Factor
O3	3	.50	1.5	.2	2.0	O5	1.0	.1
O2	2	1.00	2	.4	2.0	O5	1.0	.1
E4	13	1.00	13	.4	2.0	O2	1.0	.1
E3	2	1.00	2	.4	3.0	O2	1.0	.1
Clerks	9	.20	1.8	.4	3.0	O2	1.0	.1
Handlers	39	.10	3.9	.2	1.0	SB11	1.0	.1
Servers	34	.10	3.4	.2	2.0	SB11	1.0	.1
Bakers & Cooks	26	.05	1.3	.2	1.0	SB11	1.0	.1
Asst. Cooks	15	.20	3.0	1.0	10.0	WL8	1.0	.1
Helpers	9	.10	.9	.2	1.0	SB11	1.0	.1
Radiology								
O3	5	1.00	5	.4	3.0	O4	1.0	.125
E4	12	1.00	12	.4	3.0	E8	1.0	.1
E3	3	1.00	3	.6	10.0	E8	1.0	.1
Technicians	11	.20	2.2	.4	3.0	E8	1.0	.1
Clerks	7	.10	.7	.4	2.0	E8	1.0	.1
Clinical Labs								
O3	7	.50	3.5	.4	3.0	4	1.0	.100
E4	31	1.00	31	.6	3.0	3	1.0	.125
E3	12	1.00	12	2.0	20.0	3	1.0	.125
Technicians	28	.20	5.6	1.0	8	3	1.0	.125
Clerks	4	.10	.4	.4	2.0	03	1.0	.125

TABLE VI-7 (Cont'd.)

Dental	Total No.	Turn-over Factor %	Yearly No. "Students"	t_1 Weeks	t_2 Weeks	Instr-uction	S/I	Instruction Time Factor
Dentists	75	.75	56.25	1.0	4.0	O6	1.0	.1
E4	27	1.00	27	.4	2.0	O3	1.0	.1
E3	14	1.00	14	.6	4.0	O3	1.0	.1
Hygenists	4	.20	.8	.4	1.0	O3	1.0	.1
Clerks	9	.20	1.8	.4	2.0	E8	1.0	.1
Assistants	45	.20	9	1.0	3.0	O3	1.0	.20
Nursing Service								
ANC O3	8	.50	4	.6	2.0	O5	1.0	.1
E4	9	1.00	9	.6	2.0	E8	1.0	.1
E3	1	1.00	1	.4	2.0	E8	1.0	.1
Clerks	2	.10	.2	.4	3.0	E8	1.0	.1
CMS								
ANC O3	1	.50	.5	.6	4.0	O5	1.0	.1
E4	10	1.00	10	.6	3.0	E8	1.0	.1
E3	3	1.00	3	.6	6.0	E8	1.0	.1
Clerks	3	.20	1.5	.4	3.0	E8	1.0	.1
Pharmacy								
MSC	1	.50	.5	.6	3.0	O5	1.0	.1
Pharmacists	2	.05	.1	.4	2.0	O3	1.0	.1
E4	13	1.00	13	.6	3.0	E8	1.0	.1
E3	7	1.00	7	.6	3.0	E8	1.0	.1
Clerk	1	.20	.2	.4	3.0	E8	1.0	.1

TABLE VI-7 (Cont'd.)

O.R.	Total No.	Turn-over Factor %	Yearly No. "Students"	t_1 Weeks	t_2 Weeks	Instr-uction	S/I	Instruction Time Factor
ANC O3	7	.50	3.5	.6	2.0	O5	1.0	.125
ANC O1 & O2	4	2.00	3.0	.6	4.0	O4	1.0	.125
Doctors	11.4	.50	5.7	1.0	10.0	O6	1.0	.125
Civ. N	1	.20	.2	.6	2.0	O4	1.0	.125
Aides	2	.20	.4	.6	8.0	O4	1.0	.125
E4	15	1.00	15	.4	8.0	O4	1.0	.125
E3	2	1.00	2	.6	8.0	O4	1.0	.125
Administration								
MSC O3	17	1.00	17	.6	2.0	O5	1.0	.1
MSC O2	4	1.00	4	1.0	6.0	O4	1.0	.1
E4	74	1.00	74	.4	2.0	E9	1.0	.1
E3	13	1.00	13	.4	3.0	E9	1.0	.1
Clerks	65	.20	13	.4	2.0	E9	1.0	.1
GS 9	9	.05	.45	.4	3.0	O4	1.0	.1
5-8	18	.20	3.6	.4	3.0	O4	1.0	.1
Gor.	3	.30	.9	.2	1.0	E9	1.0	.1

TABLE VI-8

WALSON ARMY HOSPITAL FORMAL TRAINING

FULL TIME PERSONNEL

CLASSIFICATION	SALARY
05 Or Class Instructor	$17,689
04 Education Coordinator	14,258
04 Orientation	14,258
EM-4	4,597
EM-5	5,634
EM-3	3,529
TOTAL	$59,965

WARD MANAGEMENT CORPSMEN

CLASSIFICATION	NUMBER		SALARY		TOTAL SALARIES PER CLASS
E8	1	X	$10,107	=	$ 10,107
E7	29	X	8,865	=	257,085
E6	37	X	7,594	=	280,978
E5	61	X	5,634	=	343,674
E4	61	X	4,597	=	280,417
E3	54	X	3,529	=	190,566
E2	46	X	3,043	=	139,978
		TOTAL		=	$1,270,805

Cost of Ward Management Personnel Training

$$\$1,270,805 \times \frac{4}{40} = \$127,081$$

TABLE VI -9

OJT COSTS WORKSHEET

Activity: Clinical Laboratories

Type of Student: Permanent Party Techniciars

OJT Cost per man turned over = C_T = $468.00

Total OJT Cost for these personnel = Cojt = $4680.00

Turnover Rate for these personnel = N = 10

t_1 = time at which 90% of man's effort is in training.

t_2 = time at which 10% of man's effort is in training; that is, his OJT is nearly complete.

STUDENT PROFILE:

S = No. of Students	Pay Grade	Ps = Annual Pay	t_1	t_2
1.5	E-4	5,166	0.4	7.0

TEACHER PROFILE:

t = No. of Instructors	Pay Grade	Pt = Annual Pay	f = fraction of time teaching
8	E-6	7,911	0.05

COMMENTS: OJT Period = 30-40 days

TABLE VI - 10

OJT COSTS WORKSHEET

Activity: Clinical Laboratories

Type of Student: Civilian Technician

OJT Cost per man turned over = C_T = 180

Total OJT Cost for these personnel = Cojt = 720

Turnover Rate for these personnel = N = 4

t_1 = time at which 90% of man's effort is in training.

t_2 = time at which 10% of man's effort is in training; that is, his OJT is nearly complete.

STUDENT PROFILE:

S = No. of Students	Pay Grade	Ps = Annual Pay	t_1	t_2
1	656	7,092	4	2

TEACHER PROFILE:

t = No. of Instructors	Pay Grade	Pt = Annual Pay	f = fraction of time teaching
1	659	10,413	0.05

COMMENTS:

TABLE VI - 11

OJT COSTS WORKSHEET

Activity: Clinical Laboratories

Type of Student: Phase II Student Lab Technician

OJT Cost per man turned over = C_T = $1316.00

Total OJT Cost for these personnel = Cojt = $49,995.00

Turnover Rate for these personnel = N = 38

t_1 = time at which 90% of man's effort is in training.

t_2 = time at which 10% of man's effort is in training; that is, his OJT is nearly complete.

STUDENT PROFILE:

S = No. of Students	Pay Grade	Ps = Annual Pay	t_1	t_2
29	E-3	3,593	1	36

TEACHER PROFILE:

t = No. of Instructors	Pay Grade	Pt = Annual Pay	f = fraction of time teaching
8	E-6	7,911	0.25

COMMENTS: A 36 week course

TABLE VI - 12

OJT COSTS WORKSHEET

Activity: All Dental Clinics

Type of Student: Dental Technicians and Dental Lab Technicians

OJT Cost per man turned over = C_T = $703.00

Total OJT Cost for these personnel = Cojt = $38,675.00

Turnover Rate for these personnel = N = 55

t_1 = time at which 90% of man's effort is in training.

t_2 = time at which 10% of man's effort is in training; that is, his OJT is nearly complete.

STUDENT PROFILE:

S = No. of Students	Pay Grade	Ps = Annual Pay	t_1	t_2
6	E-3	3,593	1.0	20.0

TEACHER PROFILE:

t = No. of Instructors	Pay Grade	Pt = Annual Pay	f = fraction of time teaching
1	E-8	9,711	0.10
1	O-3	12,840	0.05

COMMENTS: For all 5 Dental Clinics and 4 Dental Labs in Andrews' BLHCS

TABLE VI - 13

OJT COSTS WORKSHEET

Activity: Dental

Type of Student: Dental Technician

OJT Cost per man turned over = C_T = 202

Total OJT Cost for these personnel = Cojt = 404

Turnover Rate for these personnel = N = 2

t_1 = time at which 90% of man's effort is in training.

t_2 = time at which 10% of man's effort is in training; that is, his OJT is nearly complete.

STUDENT PROFILE:

S = No. of Students	Pay Grade	Ps = Annual Pay	t_1	t_2
1	654	6,041	4	3

TEACHER PROFILE:

t = No. of Instructors	Pay Grade	Pt = Annual Pay	f = fraction of time teaching
1	E-7	8,911	0.05

COMMENTS:

TABLE VI - 14

OJT COSTS WORKSHEET

Activity: All Dispensaries Except Pentagon and Bolling

Type of Student: Aeromed Technician Preventive Medicine Technician

OJT Cost per man turned over = C_T = $100.61

Total OJT Cost for these personnel = Cojt = $603.66

Turnover Rate for these personnel = N = 6

t_1 = time at which 90% of man's effort is in training.

t_2 = time at which 10% of man's effort is in training; that is, his OJT is nearly complete.

STUDENT PROFILE:

S = No. of Students	Pay Grade	Ps = Annual Pay	t_1	t_2
.50	E-5	6,877	0.4	1.0
2.0	E-4	5,166	0.4	1.0
3.5	E-3	3,593	0.4	1.0

TEACHER PROFILE:

t = No. of Instructors	Pay Grade	Pt = Annual Pay	f = fraction of time teaching
.32	E-8	10,000	0.10
.50	E-7	8,911	0.10
.18	E-6	7,911	0.10

COMMENTS: Less than a week OJT in each case of 34 personnel 6 turnovers/yr.

TABLE VI - 15

OJT COSTS WORKSHEET

Activity: All Dispensaries Except Pentagon and Bolling

Type of Student: Administrative Technician

OJT Cost per man turned over = C_T = 153

Total OJT Cost for these personnel = Cojt = 153

Turnover Rate for these personnel = N = 1

t_1 = time at which 90% of man's effort is in training.

t_2 = time at which 10% of man's effort is in training; that is, his OJT is nearly complete.

STUDENT PROFILE:

S = No. of Students	Pay Grade	Ps = Annual Pay	t_1	t_2
1	654	6,041	.4	2

TEACHER PROFILE:

t = No. of Instructors	Pay Grade	Pt = Annual Pay	f = fraction of time teaching
1	E-7	8,911	0.05

COMMENTS:

TABLE VI - 16

OJT COSTS WORKSHEET

Activity: Medical Records

Type of Student: Medical Administrative Technicians

OJT Cost per man turned over = C_T = $155.28

Total OJT Cost for these personnel = Cojt = $676.40

Turnover Rate for these personnel = N = 5

t_1 = time at which 90% of man's effort is in training.

t_2 = time at which 10% of man's effort is in training; that is, his OJT is nearly complete.

STUDENT PROFILE:

S = No. of Students	Pay Grade	Ps = Annual Pay	t_1	t_2
2	E-2	2,891	0.4	4.0
3	E-3	3,593		

TEACHER PROFILE:

t = No. of Instructors	Pay Grade	Pt = Annual Pay	f = fraction of time teaching
1	E-5	6,877	0.10

COMMENTS: Both central files and clinical records library (outpatient and inpatient)

TABLE VI - 17

OJT COSTS WORKSHEET

Activity: Outpatient Departments

Type of Student: Civilian Technician

OJT Cost per man turned over = C_T = 256

Total OJT Cost for these personnel = Cojt = 2815

Turnover Rate for these personnel = N = 11

t_1 = time at which 90% of man's effort is in training.

t_2 = time at which 10% of man's effort is in training; that is, his OJT is nearly complete.

STUDENT PROFILE:

S = No. of Students	Pay Grade	Ps = Annual Pay	t_1	t_2
1	654	6,082	.4	4

TEACHER PROFILE:

t = No. of Instructors	Pay Grade	Pt = Annual Pay	f = fraction of time teaching
1	E-7	8,911	0.05

COMMENTS:

TABLE VI - 18

OJT COSTS WORKSHEET

Activity: EENT

Type of Student: Ophtholmology Technician and Otolaryngology Technician

OJT Cost per man turned over = C_T = 168.52 + 168.52 = 337.04

Total OJT Cost for these personnel = Cojt = 168.52 + 168.52 = 337.04

Turnover Rate for these personnel = N = 1 + 1 = 2

t_1 = time at which 90% of man's effort is in training.

t_2 = time at which 10% of man's effort is in training; that is, his OJT is nearly complete.

STUDENT PROFILE:

S = No. of Students	Pay Grade	Ps = Annual Pay	t_1	t_2
2	E-5	6,877	0.4	2.0
2	E-6	7,911		
1	E-4	5,166		

TEACHER PROFILE:

t = No. of Instructors	Pay Grade	Pt = Annual Pay	f = fraction of time teaching
1	E-7	8,911	0.10

COMMENTS:

TABLE VI - 19

OJT COSTS WORKSHEET

Activity: Outpatient Cardiopulmonary Clinic

Type of Student: Permanent party lab technicians

OJT Cost per man turned over = C_T = $333.00

Total OJT Cost for these personnel = Cojt = $1332.00

Turnover Rate for these personnel = N = 4

t_1 = time at which 90% of man's effort is in training.

t_2 = time at which 10% of man's effort is in training; that is, his OJT is nearly complete.

STUDENT PROFILE:

S = No. of Students	Pay Grade	Ps = Annual Pay	t_1	t_2
1	E-4	5,166	0.4	6.0

TEACHER PROFILE:

t = No. of Instructors	Pay Grade	Pt = Annual Pay	f = fraction of time teaching
1	E-6	7,911	0.10

COMMENTS:

TABLE VI - 20

OJT COSTS WORKSHEET

Activity: Outpatient, cardiopulmonary clinic

Type of Student: Phase II lab students

OJT Cost per man turned over = C_T = $1281.47

Total OJT Cost for these personnel = Cojt = $6407.35

Turnover Rate for these personnel = N = 5

t_1 = time at which 90% of man's effort is in training.

t_2 = time at which 10% of man's effort is in training; that is, his OJT is nearly complete.

STUDENT PROFILE:

S = No. of Students	Pay Grade	Ps = Annual Pay	t_1	t_2
5	E2	$2,891	1	48

TEACHER PROFILE:

t = No. of Instructors	Pay Grade	Pt = Annual Pay	f = fraction of time teaching
1	E7	$8,911	.10
1	E6	7,911	.10

COMMENTS: First month in class 5 days/week; 10 months OJT; 1 month experience till shipped out.

TABLE VI - 21

OJT COSTS WORKSHEET

Activity: Outpatient clinic, Physical Therapy

Type of Student: Physical therapy technician

OJT Cost per man turned over = C_T = $880.53

Total OJT Cost for these personnel = Cojt = $880.53

Turnover Rate for these personnel = N = 1

t_1 = time at which 90% of man's effort is in training.

t_2 = time at which 10% of man's effort is in training; that is, his OJT is nearly complete.

STUDENT PROFILE:

S = No. of Students	Pay Grade	Ps = Annual Pay	t_1	t_2
1	E3	$3,593	.8	16
1	E4	5,166		
1	E5	6,877		
1	E6	7,911		

TEACHER PROFILE:

t = No. of Instructors	Pay Grade	Pt = Annual Pay	f = fraction of time teaching
1	E7	$8,911	.10
1	O3	$12,840	.05

COMMENTS:

TABLE VI - 22

OJT COSTS WORKSHEET

Activity: Flight Medicine Clinic -- OPD

Type of Student: Flight medicine technician

OJT Cost per man turned over = C_T = $1213.45

Total OJT Cost for these personnel = Cojt = $9707.60

Turnover Rate for these personnel = N = 8

t_1 = time at which 90% of man's effort is in training.

t_2 = time at which 10% of man's effort is in training; that is, his OJT is nearly complete.

STUDENT PROFILE:

S = No. of Students	Pay Grade	Ps = Annual Pay	t_1	t_2
1.6	E5	$6,877	1	24
6.4	E4	5,166	1	24

TEACHER PROFILE:

t = No. of Instructors	Pay Grade	Pt = Annual Pay	f = fraction of time teaching
1	E7	$8,911	.10

COMMENTS: of 13 personnel, assume 8 turnovers/year

TABLE VI - 23

FORMAL TRAINING -- PHYSICIANS

Training Outside System Personnel Involved	Time	Cost
07	2 weeks	$ 970
06	12 weeks	5,372
05	21.5 weeks	8,064
04	35.0 weeks	11,039
03	43.0 weeks	10,617
02	4 weeks	747
Training In System	3 hours/ month/physician	22,610
	Total Cost	$59,419

TABLE VI - 24

FORMAL TRAINING -- CLINICS

Training Outside System Personnel Involved	Time	Cost
E-5	63 weeks	$ 8,331
Training In System 30% of Physician		$35,649
	Total Cost	$43,980

TABLE VI - 25

OJT COSTS WORKSHEET

Activity: Registrar

Type of Student: Civilian technicians

OJT Cost per man turned over = C_T = $202

Total OJT Cost for these personnel = Cojt = $2020

Turnover Rate for these personnel = N = 10

t_1 = time at which 90% of man's effort is in training.

t_2 = time at which 10% of man's effort is in training; that is, his OJT is nearly complete.

STUDENT PROFILE:

S = No. of Students	Pay Grade	Ps = Annual Pay	t_1	t_2
1	GS4	$6082	.4	3

TEACHER PROFILE:

t = No. of Instructors	Pay Grade	Pt = Annual Pay	f = fraction of time teaching
1	GS7	$8086	.05

COMMENTS:

TABLE VI - 26

OJT COSTS WORKSHEET

Activity: All Registrar functions except Medical Records

Type of Student: Med. Admin. technicians

OJT Cost per man turned over = C_T = $1108.36

Total OJT Cost for these personnel = Cojt = $27,709

Turnover Rate for these personnel = N = 25

t_1 = time at which 90% of man's effort is in training.

t_2 = time at which 10% of man's effort is in training; that is, his OJT is nearly complete.

STUDENT PROFILE:

S = No. of Students	Pay Grade	Ps = Annual Pay	t_1	t_2
2	E2	$2891	1.0	24.0
4	E3	$3593		
6	E4	$5166		

TEACHER PROFILE:

t = No. of Instructors	Pay Grade	Pt = Annual Pay	f = fraction of time teaching
4	E6	$7911	0.33

COMMENTS: All registrar functions except central files and clinical records library

TABLE VI - 27

OJT COSTS WORKSHEET

Activity: Ward Management -- all wards

Type of Student: Nurse, military

OJT Cost per man turned over = C_T = $463

Total OJT Cost for these personnel = Cojt = $11,115

Turnover Rate for these personnel = N = 24

t_1 = time at which 90% of man's effort is in training.

t_2 = time at which 10% of man's effort is in training; that is, his OJT is nearly complete.

STUDENT PROFILE:

S = No. of Students	Pay Grade	Ps = Annual Pay	t_1	t_2
1	O2	$9721	.4	4

TEACHER PROFILE:

t = No. of Instructors	Pay Grade	Pt = Annual Pay	f = fraction of time teaching
1	O3	$12,840	0.10
1	O4	$16,404	0.05

COMMENTS:

TABLE VI - 28

OJT COSTS WORKSHEET

Activity: Ward Management -- all wards

Type of Student: Nurse, civilian

OJT Cost per man turned over = C_T = $241

Total OJT Cost for these personnel = Cojt = $1687

Turnover Rate for these personnel = N = 7

t_1 = time at which 90% of man's effort is in training.

t_2 = time at which 10% of man's effort is in training; that is, his OJT is nearly complete.

STUDENT PROFILE:

S = No. of Students	Pay Grade	Ps = Annual Pay	t_1	t_2
1	GS6	$8086	.4	2

TEACHER PROFILE:

t = No. of Instructors	Pay Grade	Pt = Annual Pay	f = fraction of time teaching
1	O3	$12,840	.1
1	O4	$16,404	.05

COMMENTS:

TABLE VI - 29

OJT COSTS WORKSHEET

Activity: Ward Management - all wards

Type of Student: Civilian technicians

OJT Cost per man turned over = C_T = $169

Total OJT Cost for these personnel = Cojt = $2712

Turnover Rate for these personnel = N = 16

t_1 = time at which 90% of man's effort is in training.

t_2 = time at which 10% of man's effort is in training; that is, his OJT is nearly complete.

STUDENT PROFILE:

S = No. of Students	Pay Grade	Ps = Annual Pay	t_1	t_2
1	GS4	$6082	.4	2

TEACHER PROFILE:

t = No. of Instructors	Pay Grade	Pt = Annual Pay	f = fraction of time teaching
1	O3	$12,840	.05
1	E7	$ 8,911	.05

COMMENTS:

TABLE VI - 30

OJT COSTS WORKSHEET

Activity: Ward Management -- OR, Surgery

Type of Student: Medical service technician

OJT Cost per man turned over = C_T = $515.00

Total OJT Cost for these personnel = Cojt = $4632.00

Turnover Rate for these personnel = N = 9

t_1 = time at which 90% of man's effort is in training.

t_2 = time at which 10% of man's effort is in training; that is, his OJT is nearly complete.

STUDENT PROFILE:

S = No. of Students	Pay Grade	Ps = Annual Pay	t_1	t_2
2.25	E3	$3,593	0.6	12

TEACHER PROFILE:

t = No. of Instructors	Pay Grade	Pt = Annual Pay	f = fraction of time teaching
1	O4	$16,404	.10
1	E7	$8,911	.10

COMMENTS: OJT period 3 months

TABLE VI - 31

OJT COSTS WORKSHEET

Activity: Ward Management - all wards

Type of Student: Med. service technician and Psychiatric ward technician

OJT Cost per man turned over = C_T = $210.00

Total OJT Cost for these personnel = Cojt = $14,910.00

Turnover Rate for these personnel = N = 71

t_1 = time at which 90% of man's effort is in training.

t_2 = time at which 10% of man's effort is in training; that is, his OJT is nearly complete.

STUDENT PROFILE:

S = No. of Students	Pay Grade	Ps = Annual Pay	t_1	t_2
7	E3	$3,593	0.4	6

TEACHER PROFILE:

t = No. of Instructors	Pay Grade	Pt = Annual Pay	f = fraction of time teaching
1	O3	$12,840	.05
1	E7	$ 8,911	.05

COMMENTS: Typical of each of 10 wards

APPENDIX VII

FUNCTIONAL COST SUMMARY SHEETS

WALSON ARMY HOSPITAL
MALCOLM GROW HOSPITAL
BEAUFORT NAVAL HOSPITAL

Walson Army Hospital
Appendix VII

COST CATEGORIES / FUNCTIONS	WARD MANAGEMENT	OUTPATIENT DEPT.	CLINICAL LABS	DENTAL	DIETARY	MEDICAL RECORDS	PHARMACY	RADIOLOGY	REGISTRAR	DISPENSARIES		TOTAL
PERSONNEL												
Total	3,105,734	1,469,824	582,031	1,558,970	1,223,950	137,838	127,316	257,662	274,184	337,848	9,075,357	
Non-Function Costs	237,829	36,101	20,589	83,334	170,263	9,035	3,107	5,892	5,634	11,787	583,871	
Function Costs	2,867,905	1,433,723	561,442	1,475,636	1,053,687	128,803	123,909	251,770	268,550	326,061		8,491,486
SUPPLIES												
Med. & Non-Med.	289,759	224,026	128,691	132,826	585,863	1,624	554,698	95,250	3,108	57,897		2,073,725
MAINTENANCE												
Total	92,250	28,315	2,622	17,111	16,066	310	1,116	24,393	240	9,500		192,223
Medical	10,213	11,373	18	14,504	0	0	0	24,021	0	6,107	66,236	
Other	82,037	16,942	2,604	2,607	16,066	310	1,116	372	240	3,693	125,437	
HOUSEKEEPING												
Total	127,747	55,816	16,809	14,223	164,127	1,049	5,000	13,792	4,095	5,634	408,292	408,292
Janitorial	127,747	55,816	16,809	14,223	0	1,049	5,000	13,792	4,095	0	238,531	
Staff	0	0	0	0	164,127	0	0	0	0	5,634	169,761	
TRAINING												
Total	297,794	36,101	29,589	83,334	6,136	9,035	3,407	5,892	5,634	6,153		474,075
Formal	127,081	0	0	42,697	0	0	0	0	0	0	169,778	
OJT	110,748	36,101	20,589	40,637	6,136	9,035	3,407	5,892	5,634	6,153	244,332	
Training Dept.	59,965	0	0	0	0	0	0	0	0	0	59,965	
TOTAL OPERATING COST	3,675,455	1,777,981	730,156	1,723,130	1,826,653	140,821	688,130	391,077	281,627	395,892		11,639,801
EQUIPMENT COST	595,012	246,585	150,864	393,874	250,689	10,323	26,965	329,925	62,736			
Purchase Price over $200												

TABLE VII-1 Functional Costs for Walson Army Hospital

Malcolm Grow Hospital
Appendix VII

COST CATEGORIES / FUNCTIONS	WARD MANAGEMENT	OUTPATIENT DEPT.	CLINICAL LABS.	DENTAL	DIETARY	MEDICAL RECORDS	PHARMACY	RADIOLOGY	REGISTRAR	DISPENSARIES		TOTAL
PERSONNEL												
Total	2,698,128	2,104,041	683,718	1,273,564	554,842	46,260	111,068	293,347	270,012	751,214	8,786,194	
Non-Function Costs	126,083	77,430	72,093	86,180	9,256	1,151	6,010	18,419	30,178	6,613	433,413	
Function Costs	2,572,045	2,026,611	611,625	1,187,384	545,586	45,109	105,058	274,928	239,834	744,601		8,352,781
SUPPLIES												
Med. & Non-Med.	247,455	168,807	116,514	77,037	307,383	6,247	517,802	108,772	3,183	79,047		1,632,247
MAINTENANCE												
Total	69,359	33,331	10,506	10,359	36,407	232	3,468	30,877	768	3,145		198,452
Medical	5,711	11,741	6,990	6,238	-	-	56	12,544	-	2,919	46,202	
Other	63,645	21,590	3,516	4,121	36,407	232	3,412	18,333	768	226	152,250	
HOUSEKEEPING												
Total	148,748	57,037	21,680	17,766	3,425	2,373	4,658	10,861	5,543	10,461		285,552
Janitorial	114,877	45,065	13,714	11,381	1,302	1,898	2,325	10,502	5,09[illegible]	5,591	211,749	
Staff	33,871	11,972	10,966	6,385	2,123	475	2,333	359	449	4,870	73,803	
TRAINING												
Total	117,039	66,987	62,205	83,933	7,336	977	3,978	18,963	30,682	2,796		394,896
Formal	57,156	43,980	5,422	40,716	1,611	-	-	4,396	-	987	154,268	
OJT	35,056	21,478	55,705	39,079	5,522	676	3,677	13,661	29,729	756	205,342	
Training Dept.	24,827	1,529	1,078	4,138	203	301	301	903	953	1,053	35,286	
TOTAL OPERATING COST	3,154,646	2,352,773	825,530	1,376,479	900,137	54,938	631,964	444,401	280,010	840,050		10,863,928
EQUIPMENT COST	140,835	306,593	300,948	196,210	86,275	29,879	10,841	454,968	37,982	154,669		
Purchase Price Over $200												

TABLE VII-2 Functional Costs for Malcolm Grow Hospital - Andrews AF Base

Beaufort Naval Hospital
Appendix VII

COST CATEGORIES / FUNCTIONS	WARD MANAGEMENT	OUTPATIENT DEPT.	CLINICAL LABS.	DENTAL	DIETARY	MEDICAL RECORDS	PHARMACY	RADIOLOGY	REGISTRAR	DISPENSARIES		TOTAL
PERSONNEL												
Total	718,266	379,533	124,725	1,070,763	285,605	34,934	43,473	43,326	60,469	993,108	3,754,202	
Non-Function Costs	45,154	12,625	26,067	33,584	14,101	75	1,089	6,794	1,033	47,632	188,154	
Function Costs	673,112	366,908	98,658	1,037,179	271,504	34,859	42,384	36,532	59,436	945,476		3,566,048
SUPPLIES												
Med. & Non-Med.	53,926	21,759	20,866	96,606	134,167	-	115,356	20,774	1,207	238,218		705,879
MAINTENANCE												
Total	31,691	24,969	1,105	19,864	29,623	850	1,952	9,124	1,932	21,146		142,259
Medical	2,071	498	210	9,033	-	-	20	3,972	-	1,368	17,172	
Other	29,623	24,471	895	10,831	29,623	850	1,932	5,152	1,932	19,778	125,087	
HOUSEKEEPING												
Total	16,972	7,866	4,977	8,516	13,385	580	566	4,202	696	16,356		74,116
Janitorial	2,450	4,116	-	-	-	580	566	1,130	696	-	9,538	
Staff	14,522	3,750	4,977	8,516	13,385	-	-	3,072	-	16,356	64,578	
TRAINING												
Total	33,732	10,348	22,252	25,223	1,181	152	1,244	4,032	1,653	40,220		140,037
Formal	10,622	6,257	855	2,255	67	-	595	365	94	12,784	53,894	
OJT	20,010	2,618	20,235	22,813	649	75	494	3,357	939	18,492	89,682	
Training Dept.	3,100	1,473	1,162	155	465	77	155	310	620	8,944	16,461	
TOTAL OPERATING COST	809,436	431,850	147,858	1,187,388	449,860	36,441	164,502	74,664	64,924	1,261,416		4,628,339
EQUIPMENT COST	102,250	108,507	78,620	270,191	68,735	-	3,497	93,453	3,801	145,588		
Purchase Price over $200												

TABLE VII-3 Functional Costs for Beaufort Naval Hospital

APPENDIX VIII

SUPPLY EXPENSES

MALCOLM GROW HOSPITAL

TABLE VIII-1

MEDICAL SUPPLY COSTS

Code	Cost Center	Medical Expense Report	Report of Medical and Non Medical Supply Expense	Difference	%
5120	Ward Management	169,973	169,477	+ 496	+ 0.3
5130	Clinics/Dispensaries	115,515	117,740	-2225	- 1.9
5140	Central Sterile Supply	141,300	140,964	+ 336	+ 0.2
5150	Pharmacy	578,452	578,650	- 198	- 0.03
5160	Radiology	106,571	105,852	+ 917	+ 0.9
5170	Clinical Laboratory	87,202	87,582	- 380	- 0.4
5180	Registrar/Medical Records	1,192	1,247	- 55	- 4.4
5210	Food Service	541	541	--	--
5200	Linen Service	15,325	15,782	- 457	- 2.8
5230	Housekeeping	449	448	+ 1	+ 0.2
5240	Common Support	49,973	49,786	+ 187	+ 0.4
5250	Operation of Utilities	--	--	--	--
5290	Training	138	138	--	--
5310	Dental Service	56,845	57,379	- 534	- 0.9
5320	Base Dental Labs	13,251	13,258	- 7	- 0.05
5330	Area Dental Lab	17,054	17,534	- 480	- 0.2
5400	Other Medical Facilities	28,522	28,208	+ 314	+ 1.0
5410	Aeromedical Evacuation	22,399	27,800	-5401	-19.2
5430	Physiological Training	1,640	1,640	--	--
TOTALS		1,408,236	1,414,026	-5763	- 0.4

TABLE VIII-2

NON MEDICAL SUPPLY COSTS

Code	Cost Center	Medical Expense Report	Report of Medical and Non Medical Supply Expense	Difference	%
5120	Ward Management	6,602	8,633	-2031	- 23.6
5130	Clinics/Dispensaries	6,702	9,155	-2453	- 26.8
5140	Central Sterile Supply	92	107	- 15	- 14.0
5150	Pharmacy	449	600	- 151	- 25.2
5160	Radiology	653	762	- 109	- 14.3
5170	Clinical Laboratory	937	1,240	- 305	- 24.6
5180	Registrar/Medical Records	3,213	8,189	-4976	- 60.9
5210	Food Service	299,633	306,728	-7095	- 2.3
5220	Linen Service	640	1,704	-1064	- 62.5
5230	Housekeeping	13,001	18,810	-5809	- 31.3
5240	Common Support	67,780	46,106	+21674	+ 47.2
5250	Operation of Utilities	64,118	64,118	--	--
5290	Training	511	986	- 475	- 48.2
5310	Dental Service	3,693	4,499	- 806	- 18.1
5320	Base Dental Labs	69	70	- 1	- 1.4
5330	Area Dental Lab	1,395	1,666	- 271	- 16.3
5400	Other Medical Facilities	5,840	7,186	-1346	- 18.7
5410	Aeromedical Evacuation	6,609	10,349	-3740	- 36.0
5430	Physiological Training	2,497	2,983	- 486	- 16.3
TOTALS		484,434	493,891	-9457	1.9

APPENDIX IX

PERSONNEL COSTS

MALCOLM GROW HOSPITAL

APPENDIX IX

ANDREWS AIR FORCE BASE

PERSONNEL COSTS

Fiscal Year 1969

Following is a list of personnel employed in the Andrews BLHC System.

For each activity, the first figure shown is the staffing as of November 30, 1969, as reported on computer runs used for development of personnel cost in the Medical Expense Report HAF-C169.

The last figure is the actual staffing as found by Westinghouse during interviews in each activity during September - November, 1969.

The bottom four rows on each page are the personnel totals for each activity. The middle figure indicates the staffing of the BLHC system reported in the Base Medical Service Staffing Report dated September 30, 1969.

Because of turnover in personnel and promotions during the time span of the study, the respective reports are not identical.

The slight difference in grand totals of the entire system can also be explained by differences in accountability. Westinghouse found less military personnel available than reported because some people were still carried on the rolls after departure. The level of civilian staffing is slightly higher than reported because Westinghouse included civilian physicans and hardcore trainees not reported on the staffing reports.

TABLE IX-1

PERSONNEL STAFFING

Pay Grade	Pharmacy	Medical Service	Internal Medicine Clinic	Internal Medicine Subspecialty Clinic	Neurology Clinic
O7					
O6		0/1			
O5	1/1	1/0			
O4				1/1	
O3					
O2					
O1	1/1				
E9	1/1				
E8					
E7	2/4	1/1		3/3	
E6	2/0		1/1	6/6	1/2
E5	4/4			5/3	
E4				1/5	1/0
E3	6/6			1/2	
E2	1/0			1/0	
E1					
		GS6-1/1	GS4-0/1	GS7-0/1	GS5-1/1
		GS4-1/1	GS3-1/0	GS5-1/0	GS4-1/1
				GS4-3/3	
Officers	2/3/2	1/0/1	0/0/0	1/1/1	0/0/0
Airmen	17/15/16	1/1/1	1/2/1	17/17/19	2/2/2
Civilians	0/0/0	2/1/2	1/1/1	4/4/4	2/1/2
TOTAL	19/18/18	4/2/4	2/3/2	22/22/24	4/3/4

TABLE IX-2

PERSONNEL STAFFING

Pay Grade	Command	Admin. Office	Medical Material	Medical Food Service	Medical Squadron Section
O7	1/1				
O6	2/2				
O5	1/0		1/1	1/1	
O4	1/1				
O3					
O2			1/2	1/1	1/1
O1		2/2	1/0	1/3	
E9		1/1		1/1	1/1
E8					
E7	1/1	1/1	3/1	3/2	
E6		1/1	3/3	3/4	
E5		1/1	4/5	9/7	1/1
E4		1/1	1/4	2/3	
E3		4/4	4/0	1/1	1/1
E2			2/0	1/0	2/2
E1					
	GS9-1/1 GS8-1/1 GS5-1/1	GS7-1/1	GS7-0/1 GS6-1/2 GS5-1/0 WB6-2/0 WB2-0/1	GS4-1/1 WB8-7/11 WB6-1/1 WB5-6/6 WB4-16/13 WB3-12/14 F2-1/1 F1-1/1 L4-0/1 L2-0/6	
Officers	5/4/4	2/1/2	3/3/3	5/5/5	1/1/1
Airmen	1/1/1	9/9/9	17/18/13	20/20/18	5/6/5
Civilians	3/3/3	1/1/1	4/7/4	53/55/56	0/0/0
TOTAL	9/8/8	12/11/12	24/28/20	76/80/79	6/7/6

TABLE IX-3

PERSONNEL STAFFING

Pay Grade	Registrar	Medical Business Office	Hospital Services	Physicians	Radiology
O7					
O6			1/1	3/3	0/1
O5				12/13	3/2
O4				36/34	3/4
O3	1/0	2/2		28/29	2/2
O2					
O1	1/2				
E9			1/1		
E8	1/1	1/1			0/1
E7	0/1	1/1			3/2
E6	4/4				4/2
E5	2/2				4/4
E4	4/6	1/1			6/3
E3	3/4	1/1	2/2		7/8
E2					
E1					
	GS13-1/1	GS9-1/1	GS9-1/1	GS15-1/3	GS7-0/1
	GS6-1/1	GS7-1/1	GS6-1/1	GS14-1/2	GS6-1/1
	GS5-2/1	GS5-0/1		GS12-2/4	GS5-1/1
	GS4-5/6	GS4-1/1			GS4-1/3
					WB5-0/1
Officers	2/2/2	2/2/2	1/1/1	79/78/79	8/8/9
Airmen	14/16/18	4/3/4	3/3/3	0/0/0	24/21/20
Civilians	9/8/9	3/4/3	2/2/2	4/3/9	3/7/7
TOTAL	25/26/29	9/9/9	6/6/6	83/81/88	35/36/36

TABLE IX-4

PERSONNEL STAFFING

Pay Grade	Histopathology	Clinical Laboratory	Nursing Service	Medical & Surgical Nursing Units	OB Nursing Unit
O7					
O6	1/1		1/1		
O5	0/1	2/2	2/2	1/2	1/1
O4	2/0	3/3	1/1	7/4	1/2
O3	1/2			17/19	0/1
O2				25/22	2/1
O1				11/7	2/2
E9					
E8	1/1	1/1		0/1	
E7		3/3	1/1	3/4	
E6	1/1	3/3		2/0	
E5	1/1	8/9		12/12	0/1
E4		8/8		21/18	1/2
E3	1/1	3/2		32/30	3/3
E2		2/2		10/11	2/2
E1				1/0	
	GS9-1/0 GS8-1/1 GS7-2/0 GS6-0/1 GS5-5/5	GS11-1/1 GS9-6/4 GS7-2/0 GS6-0/1 GS5-0/1 GS4-2/1 GS2-0/1	GS11-1/1	GS8-1/1 GS7-9/8 GS6-2/6 GS4-8/17 GS3-10/6	GS9-0/5 GS8-10/4 GS7-6/8 GS4-12/11 GS3-5/1
Officers	4/5/4	5/4/5	4/4/4	61/63/54	6/7/7
Airmen	4/6/4	28/24/28	1/1/1	81/85/74	6/7/8
Civilians	9/6/7	11/8/9	1/1/1	30/28/38	33/32/29
TOTAL	17/17/15	44/36/42	6/6/6	172/176/166	45/46/44

TABLE IX-5

PERSONNEL STAFFING

Pay Grade	Mental Health Clinic	General Therapy Clinic	Emergency Service	Optometry Clinic	Physical Exam Clinic
O7					
O6					
O5	1/1				
O4	1/1		1/3		
O3	1/1	1/0	2/2	5/5	
O2					
O1					
E9					
E8	1/0				
E7	1/1	2/2	1/1		
E6	1/0	4/4	3/2	0/1	1/1
E5	0/3	3/3	7/7		1/1
E4	4/0	3/3	10/14	0/1	1/1
E3	2/0	1/1	3/4		1/1
E2					
E1					
	GS13-0/2 GS5-1/1 GS4-3/3	GS7-1/1 GS4-2/2 GS2-0/1	WB7-1/0 WB5-2/3 WB4-1/0	GS4-2/2	GS4-0/1 GS3-1/0
Officers	3/5/3	1/1/0	3/4/5	5/5/5	0/0/0
Airmen	9/10/4	13/13/13	30/29/28	0/1/2	4/4/4
Civilians	4/6/6	3/3/4	4/3/3	2/2/2	1/1/1
TOTAL	16/21/13	17/17/17	37/37/36	7/8/9	5/5/5

TABLE IX-6

PERSONNEL STAFFING

Pay Grade	Surgical Service	Physical Therapy	General Therapy Service	Urology Clinic	Surgical Clinic
O7					
O6					
O5		1/1			
O4					
O3		2/2			
O2		1/1			
O1					
E9					
E8	1/1				
E7		0/1	0/1		
E6		1/1		1/1	
E5		0/1		1/1	1/1
E4		0/1		2/2	
E3		2/1			1/0
E2					
E1					
	GS6-1/1	GS4-1/1	GS4-1/1	GS4-0/1 GS3-1/0	GS4-1/1 GS3-1/0
Officers	0/0/0	4/4/4	0/0/0	0/0/0	0/0/0
Airmen	0/1/1	3/4/5	0/1/1	4/3/4	2/1/1
Civilians	1/1/1	1/1/1	1/1/1	1/1/1	2/1/1
TOTAL	1/2/2	8/9/10	1/2/2	5/4/5	4/2/2

TABLE IX-7

PERSONNEL STAFFING

Pay Grade	Opthalmology Clinic	Othoryngology Clinic	Orthopedic Clinic	OB-GYN Clinic	Surgical Suite
O7					
O6					
O5					2/2
O4					4/3
O3			1/1	1/1	9/5
O2					5/4
O1					
E9					
E8					
E7				1/1	3/4
E6	3/1	1/1	2/2		4/3
E5	0/1	1/1	1/1		5/4
E4	1/0	0/1	1/1		
E3				3/3	9/7
E2				1/2	
E1					0/2
			GS5-1/1 GS4-1/1	GS7-0/1 GS6-1/0 GS5-1/1 GS4-3/2 GS3-0/1	Vol.-0/2
Officers	0/0/0	0/0/0	1/1/1	1/1/1	20/20/14
Airmen	4/5/2	2/2/3	4/4/4	5/6/6	21/20/20
Civilians	0/0/0	0/0/0	2/2/2	5/5/5	0/0/2
TOTAL	4/5/2	2/2/3	7/7/7	11/12/12	41/40/36

TABLE IX-8

PERSONNEL STAFFING

Pay Grade	Central Sterile Supply	Flight Medicine	Military Public Health and Occupational Medicine	Physiological Training	Veterinary Service
O7					
O6		3/3			1/1
O5					
O4		2/1		2/2	1/1
O3	0/1	5/3	1/1	1/1	
O2					
O1					
E9		1/1	1/1		
E8		1/1			
E7	1/1	2/2	1/2	1/1	1/1
E6		4/1	1/1	1/1	2/2
E5	1/1	6/7	1/1	3/0	2/3
E4	2/2	4/10	0/2	2/0	1/1
E3	2/2	6/1	2/0	11/18	2/2
E2	0/1			1/0	
E1					
		GS6-1/2 GS5-2/2 GS4-2/2 GS3-2/2	GS13-1/1 GS7-1/1 GS4-1/1 GS3-1/1	GS4-1/1	
Officers	0/0/1	10/9/7	1/1/1	3/3/3	2/1/2
Airmen	6/6/7	24/25/23	6/5/7	19/19/20	8/10/9
Civilians	0/0/0	7/8/8	4/4/4	1/1/1	0/0/0
TOTAL	6/6/8	41/42/38	11/10/12	23/23/24	10/11/11

TABLE IX-9

PERSONNEL STAFFING

Pay Grade	Dental Clinics	Base Dental Laboratories	Area Dental Laboratories	Professional and technical Training	Casualty Staging (Management)
O7					
O6	6/5		0/1		
O5	4/4				
O4	19/12			1/1	
O3	23/23				1/1
O2					
O1					
E9			1/1		
E8	1/1				0/1
E7	3/2	2/2		1/1	1/0
E6	3/5	5/3	5/5		3/3
E5	11/15	4/8	10/8	4/2	5/3
E4	8/5	1/1	9/10		1/1
E3	27/28	1/2	10/9		
E2	6/7				
E1					
	GS6-0/1 GS5-2/1 GS4-7/5 GS3-1/0 Warrant 4/1/1	GS8-1/1		GS11-1/1 GS9-1/1 GS7-1/0	
Officers	43/40/45	0/0/0	0/0/1	1/1/1	1/1/1
Airmen	59/64/63	13/17/16	35/35/33	5/5/3	10/0/9
Civilians	10/8/7	1/1/1	0/0/0	3/3/2	0/0/0
TOTAL	112/112/115	14/18/17	35/35/34	9/9/6	11/1/10

TABLE IX-10

PERSONNEL STAFFING

Pay Grade	Casualty Staging (Operations)	Dermatology Clinic	Outpatient Records	Clinical Records	Immunization
O7					
O6					
O5	2/1				
O4	3/2				
O3	6/6				
O2	2/2				
O1	1/1				
E9					
E8	1/0				
E7	2/1		1/0	1/1	
E6	2/1			1/1	
E5	30/32	1/1	1/1		
E4	22/21	2/2	3/0		1/1
E3	4/3		6/6		
E2	4/3		1/1		
E1					
		GS7-1/1 GS4-1/1	GS4-2/0	GS9-1/1 GS3-1/0	
Officers	14/12/12	0/0/0	0/0/0	0/0/0	0/0/0
Airmen	65/67/61	3/3/3	12/12/8	2/2/2	1/1/1
Civilians	0/0/6	2/2/2	2/1/0	2/1/1	0/0/0
TOTAL	79/79/73	5/5/5	14/13/8	4/3/3	1/1/1

TABLE IX-11

PERSONNEL STAFFING

Pay Grade	Podiatric Clinic	Linen Control	Plant Management	Housekeeping	Steno Pool
O7					
O6					
O5			0/1		
O4					
O3					
O2					
O1				0/1	
E9					
E8					
E7					
E6					
E5					
E4	1/1				
E3	1/1	0/1			
E2					
E1					
	GS8-1/0 GS7-0/2 GS4-2/3	F3-1/0 WB6-1/1 WB5-2/2 WB4-4/3 WF5-0/1 Trainee 0/1	GS4-1/1	FO3-0/2 FO2-1/0 LO2-2/4 WB2-38/32 WB1-8/7 GS4-0/1	GS6-1/1 GS5-1/7 GS4-7/0
Officers	0/0/0	0/0/0	0/1/1	0/0/1	0/0/0
Airmen	2/1/2	0/0/1	0/0/0	0/0/0	0/0/0
Civilians	3/5/5	8/8/8	1/1/1	49/45/46	9/8/8
TOTAL	5/6/7	8/8/9	1/2/2	49/45/47	9/8/8

TABLE IX-12

PERSONNEL STAFFING

Pay Grade	Central Appointments	Grand Totals
O7		
O6		
O5		
O4		
O3		
O2		
O1		
E9		
E8		
E7		
E6		
E5		
E4		
E3		
E2		
E1		
	GS8-1/1 GS4-5/5	
Officers	0/0/0	307/300/295
Airmen	0/0/0	630/637/615
Civilians	6/6/6	310/301/317
TOTAL	6/6/6	1247/1238/1227

TABLE IX-13

PERSONNEL STAFFING

PAY GRADE	CENTRAL APPOINTMENTS	GRAND TOTALS
07		
06		
05		
04		
03		
02		
01		
E9		
E8		
E7		
E6		
E5		
E4		
E3		
E2		
E1		
	GS8-1/1 GS4-5/5	
Officers	0/0/0	307/300/295
Airmen	0/0/0	630/657/615
Civilians	6/6/6	310/301/317
TOTAL	6/6/6	1247/1238/1227

TABLE IX-14
PERSONNEL COSTS -- DISPENSARIES

DISPENSARY & PHARMACY - BOLLING AFB

NUMBER	%	TYPE	PAY GRADE	ANNUAL PAY RATE (Except as Noted*)	EXTENDED COST
1	100	Flight Surgeon	O-4	16,404	16,404
2	"	"	O-3	12,840	25,680
1	"	Lab Tech.	E-6	7,911	7,911
1	"	NCOIC	E-7	8,911	8,911
1	"	NCOIC Prof. Svcs.	E-7	8,911	8,911
1	"	X-Ray Tech.	E-6	7,911	7,911
1	"	Pharmacy Tech.	E-7	8,911	8,911
2	"	Corpsmen	E-6	7,911	15,822
2	"	"	E-5	6,877	13,754
4	"	"	E-4	5,166	20,664
2	"	"	E-3	3,593	7,186
2	"	Receptionist	GS-4	5,658 x 1.075	12,164
1	"	Nurse	GS-7	7,447 x 1.0858	8,086
1	"	Clerk-typist	GS-4	5,658 x 1.075	6,082
1	"	Optometrist	O-4	16,404	16,404
1	"	"	O-3	12,840	12,840
1	"	Public Health Svc. Tech.	E-7	8,911	8,911
1	"	Janitor	WB-2	*2.52/hr x 1.07	5,609
				TOTAL	212,161

DISPENSARIES - PENTAGON

2	100	Flight Surgeon	O-6	23,288	46,576
1	"	"	O-4	16,404	16,404
1	"	"	O-3	12,840	12,840
1	"	NCOIC	E-8	10,000	10,000
1	"	Corpsman	E-6	7,911	7,911
1	"	"	E-5	6,877	6,877
1	"	"	E-4	5,166	5,166
1	"	"	E-3	3,593	3,593
1	"	X-Ray Tech.	E-5	6,877	6,877
1	"	Pharmacy Tech.	E-5	6,877	6,877
1	"	Lab Tech.	E-4	5,166	5,166
1	"	OIC's Secretary	GS-6	6,532 x 1.0758	7,092
1	"	Receptionist	GS-5	6,498 x 1.075	6,985
1	"	Clerk Typist	GS-5	6,498 x 1.075	6,985
				TOTAL	149,349

TABLE IX-15

MEDICAL RECORDS PERSONNEL COST

CLINICAL (INPATIENT) RECORDS LIBRARY

NUMBER	%	TYPE	PAY GRADE	PAY RATE	EXTENDED COST
1	100	NCOIC-CRL	E-5	6,877	6,877
1	100	CLERK-CRL	E-4	5,166	5,166
			TOTAL		12,043

CENTRAL FILES (OUTPATIENT RECORDS)

NUMBER	%	TYPE	PAY GRADE	PAY RATE	EXTENDED COST
1	100	NCOIC, Central Files	E-5	6,877	6,877
6	100	CLERK, Central Files	E-3	3,593	21,558
2	100	CLERK, Central Files	E-2	2,891	5,782
			TOTAL		34,217

TABLE IX-16

PHARMACY PERSONNEL COST

Number	%	Type	Pay Grade	Annual Pay Grade	Extended Cost
1	100	Chief of Svc.	O-5	19,508	19,508
1	100	Asst. of Svc.	O-2	9,721	9,721
1	100	Supt. Pharm. Svc.	E-9	11,344	11,344
1	100	NCOIC Pharm.	E-7	8,911	8,911
2	100	Pharm. Tech.	E-7	8,911	17,822
1	100	Pharm. Tech.	E-5	6,877	6,877
2	100	Pharm. Tech.	E-5	6,877	13,754
1	100	Pharm. Tech.	E-4	5,166	5,166
1	100	Pharm. Tech.	E-2	2,891	2,891
5	100	A. P. R. Pharm.. Spec.	E-3	3,593	17,965
					111,068

Note: 1 to 2 ambulatory patients from wards 4A and 4B assist in pill-counting, etc., 35 to 40 hrs./wk. each.

TABLE IX-17

REGISTRAR PERSONNEL COST

NUMBER		TYPE	PAY GRADE	ANNUAL PAY RATE	EXTENDED COST
Registrar's Office					
1	100	Assistant Registrar	O-1	7,960	7,960
1	100	NCOIC Registrar	E-8	10,000	10,000
1	100	Chief Clerk	E-6	7,911	7,911
1	100	Clerk	E-3	3,593	3,593
1	100	NCOIC - Medical Record Release	E-6	7,911	7,911
2	100	Clerk - Medical Record Release	E-3	3,593	7,186
1	100	NCOIC Patient Control	E-4	5,166	5,166
1	100	NCOIC - Biomedical and Chart Work-up	E-6	7,911	7,911
1	100	Clerk - Biomedical and Chart Work-Up	E-4	5,166	5,166
1	100	NCOIC - Medical Boards	E-7	8,911	8,911
1	100	Clerk - Medical Boards	E-5	6,877	6,877
1	100	Chief Registrar			18,231
1	100	Secretary To Registrar			7,092
1	100	Air Evac. Clerk			6,985
1	100	Statistician			6,082
1	100	Typist			6,082
1	100	Information Desk Clerk			6,082
3	100	Medical Board Clerk-Typist			18,246
				TOTAL	147,412
Steno Pool					
1	100	Chef Steno			7,092
7	100	Steno			48,897
				TOTAL	55,989
Admissions and Dispositions					
1	100	NCOIC A&D	E-6	7,911	7,911
3	100	A&D Clerk	E-4	5,166	15,498
1	100	A&D Clerk	E-3	3,593	3,593
				TOTAL	27,003
Aero Medical Evacuation Operations					
1	100	Physician	O-3	12,840	12,840
1	100	Chief Nurse	O-5	19,508	19,508
2	100	General Nurse	O-4	16,404	32,808
5	100	General Nurse	O-3	12,840	64,200
1	100	General Nurse	O-1	7,960	7,960
1	100	N/P Nurse	O-3	12,840	12,840
2	100	N/P Nurse	O-2	9,721	19,442
11	100	Vehicle Operators	E-5	6,877	75,647
1	100	Vehicle Operators	E-4	5,166	5,166
1	100	Supervisor, Operations	E-7	8,911	8,911
1	100	Supervisor, Nursing Service	E-6	7,911	7,911
1	100	Supply Specialist	E-5	6,877	6,877
16	100	Medical Technician	E-5	6,877	110,032
16	100	Medical Technician	E-4	5,166	82,656
3	100	Medical Technician	E-3	3,593	10,779
3	100	Medical Technician	E-2	2,891	8,673
4	100	N/P Technician	E-5	6,877	27,508
4	100	N/P Technician	E-4	5,166	20,664
				TOTAL	534,422

TABLE IX-18

PERSONNEL COSTS

WARD MANAGEMENT

MEDICAL WARDS (5A - 5B)

NUMBER	%	TYPE	PAY GRADE	ANNUAL PAY RATE	EXTENDED COST
1	5	Chairman, Dept. Med.	O-6	23,288	1,164
1	15	Allergist	O-5	19,508	2,926
1	20	Allergist	O-4	16,404	3,281
2	10	Dermatologists	O-5	19,508	3,902
1	15	Internist	O-5	19,508	2,926
1	15	Internist	O-3	12,840	1,926
1	20	Pulmonary Specialist	O-5	19,508	3,901
2	20	Hematologist	O-4	16,404	6,562
1	50	Charge Nurse	O-4	16,404	8,202
2	50	Nurse	O-3	12,840	12,840
3	50	Nurse	O-2	9,721	14,581
1	50	Nurse	O-1	7,960	3,980
2	50	Nurse	GS-7	7,447 x 1.0858	8,086
2	50	Ward Secretary	GS-4	5,658 x 1.075	6,082
3	50	Corpsmen	E-5	6,877	10,315
7	50	Corpsmen	E-4	5,166	18,081
2	50	Corpsmen	E-3	3,593	3,593
1	25	Cardiologist	O-5	19,508	4,877
3	25	Cardiologist	O-4	16,404	12,303
1	25	Cardiologist	O-3	12,840	3,210
1	20	Chest Disease Specialist	O-3	12,840	2,568
1	20	Endocrinologist	O-4	16,404	3,281
1	20	Endocrinologist	O-3	12,840	2,568
2	20	Gastroenterologist	O-4	16,404	6,561
1	10	Geneticist	O-3	12,840	1,284
1	20	Renologist	O-5	19,508	3,902
1	20	Rheumatologist	O-3	12,840	1,284
1	10	Neurologist	O-4	16,404	1,640
1	20	Neurologist	O-4	16,404	3,280
1	20	Neurologist	O-3	12,840	2,568
		Total			161,674

SURGICAL 2A

NUMBER	%	TYPE	GRADE	ANNUAL PAY RATE	EXTENDED COST
1	2.5	Department Chairman	O-5	19,508	488
3	10	General Surgeons	O-4	16,404	4,921
1	7.5	Thor. Surg.	O-5	19,508	1,463
1	10	Thor. Surg.	O-4	16,404	1,640
1	10	Chief of Anesth.	O-5	19,508	1,951
1	20	Anesth.	O-4	16,404	3,281
1	20	Anesth.	O-3	12,840	2,568
2	7.5	Opthalmologist	O-4	16,404	2,460
1	100	Charge Nurse	O-4	16,404	16,404
3	100	Nurse	O-3	12,840	38,520
4	100	Nurse	O-2	9,721	38,884
2	100	Nurse	O-1	7,960	15,920
2	100	Nurse	GS-7	7,447 x1.0858	16,171
2	100	Nurse	GS-4	5,658 x1.075	12,161
1	100	Ward Clerk	GS-3	4,907 x1.075	5,275
1	100	Wardmaster	E-7	8,911	8,911
3	100	Corpsman	E-4	5,166	15,498
1	100	Corpsman	E-2	2,891	2,891
1	100	Corpsman	E-3	3,593	3,593
1	5	Otolaryng.	O-5	19,508	975
2	5	Otolaryng.	O-4	16,404	1,640
1	5	Urologist	O-5	19,508	975
2	5	Urologist	O-4	16,404	1,640
		Total			198,230

SURGICAL 2B

NUMBER	%	TYPE	PAY GRADE	ANNUAL PAY RATE	EXTENDED COST
1	2.5	Department Chairman	O-5	19,508	488
3	10	General Surgeons	O-4	16,404	4,921
1	7.5	Thor. Surg.	O-5	19,508	1,463
1	10	Thor. Surg.	O-4	16,404	1,640
1	10	Chief of Anesth.	O-5	19,508	1,951
1	20	Anesth.	O-4	16,404	3,281
1	20	Anesth.	O-3	12,840	2,568
1	7.5	Opthalmol.	O-4	16,404	1,230
1	100	Charge Nurse	O-4	16,404	16,404
1	100	Nurse	O-3	12,840	12,840
3	100	Nurse	O-2	9,721	29,163
1	100	Nurse	O-1	7,960	7,960
1	100	Nurse	GS-7	7,447 x1.0858	8,085
1	100	Ward Clerk	GS-4	5,658 x1.075	6,082
1	100	Wardmaster	E-7	8,911	8,911
2	100	Corpsmen	E-5	6,877	13,754
4	100	Corpsmen	E-3	3,593	14,372
2	100	Corpsmen	E-2	2,891	5,782
1	5	Otolaryng.	O-5	19,508	975
2	5	Otolaryng.	O-4	16,404	1,640
1	5	Urologist	O-5	19,508	975
2	5	Urologist	O-4	16,404	1,640
		Total			146,125

CARDIAC MONITORING (DEDUCTED FROM CARDIOPULMONARY LAB)

NUMBER	%	TYPE	PAY GRADE	ANNUAL PAY RATE	EXTENDED COST
2	100	Technician*	E-6	7,911	15,882
1	100	Technician*	E-5	6,877	6,877
2	100	Technician*	E-4	5,166	10,332
		Total			33,031

*Note:

These technicians work in the cardiopulmonary lab. However, their service is constant and vital to ward management, and their costs are charged, therefore, to ward management. Associated physician time has been charged to either cardiology clinic or medical wards 5A and 5B.

FEMALE MEDICINE

NUMBER	%	TYPE	PAY GRADE	ANNUAL PAY RATE	EXTENDED COST
		*Physicians			
1	100	Charge Nurse	O-3	12,840	12,840
2	100	Asst. C. Nurse	O-3	12,840	25,680
1	100	Nurse	O-2	9,721	9,721
4	100	Nurse	GS-6	6,532 x1.0858	28,370
1	100	Wardmaster	E-5	6,877	6,877
1	100	Corpsman	E-3	3,593	3,593
3	100	Corpsman	E-2	2,891	8,673
2	100	Nursing Assistant	GS-4	5,658 x1.075	12,165
1	100	Nursing Assistant	GS-3	4,907 x1.075	5,275
1	40	Part-time Nurse	GS-6	6,532 x1.0858	2,836
		Total			116,030

*This is a mixed Med-Surg ward, used by all services for female patients. Therefore, physician personnel costs have been charged to primary wards of each service.

INHALATION THERAPY

NUMBER	%	TYPE	PAY GRADE	ANNUAL PAY RATE	EXTENDED COST
1	100	Inhalation Therapist Tech.	E-6	7,911	7,911
1	100	Inhalation Therapist Tech.	E-4	5,166	5,166
2	100	Inhalation Therapist Tech.	E-3	3,593	7,186
2	100	Inhalation Terrapist Students	E-2	2,891	5,782
				Total	26,045

Notes:
NCOIC cardiopulmonary lab has charge of these technicians. He is charged to cardiology clinic.

EMERGENCY ROOM

1	100	Chief of Services	GS-15	24,383 x 1.0858	26,486
1	100	General Medical Officer	O-3	12,840	12,840
3	33	Civilian Medical Officer	GS-13	16,809 x 1.0858	18,068
1	50	Consulting Physician	GS-15	24,393 x 1.0858	13,243
3	100	Nurse	O-4	16,404	49,212
2	100	Nurse	O-3	12,840	25,680
1	100	NCOIC Clinic	E-7	8,911	8,911
1	100	Assistant NCOIC	E-6	7,911	7,911
1	100	Corpsman	E-6	7,911	7,911
5	100	Corpsmen	E-5	6,877	34,385
13	100	Corpsmen	E-4	5,166	67,158
4	100	Corpsmen	E-3	3,593	14,372
				Total	286,177

Notes:
9 on call physicians, one from each major specialty, average 2 hours per service per week in consultations to ER, average rank is O-4. These have been charged to their respective department's outpatient clinics.
3 Red Cross volunteers each contribute 16 hrs./wk. duty.
5 Candy Striper volunteers (summer only) each contribute 8 hrs./wk. duty.

3A PEDIATRICS

NUMBER	%	TYPE	PAY GRADE	ANNUAL PAY RATE	EXTENDED COST
1	10	Chief of Svc.	O-6	23,288	2,329
1	100	Ward Pediatrician*	O-4	16,404	16,404
2	20	Clinic Pediatricians	O-4	16,404	6,562
3	20	"	O-3	12,840	7,704
1	100	Chief Nurse	O-5	19,508	19,508
6	"	Nurse	O-3	12,840	77,040
1	"	Wardmaster	E-5	6,877	6,877
1	"	Corpsman	E-3	3,593	3,593
4	"	"	E-2	2,891	11,565
7	"	Nursing Asst.	GS-4	5,658 x 1.075	42,576
1	"	Ward Clerk	GS-4	5,658 x 1.075	6,082
				TOTAL	200,240

* The pediatrician has no duties outside this ward.
NOTE: 1. Red Cross Volunteer, 16 hrs/week.

3D NURSERY

		Physicians*			
1	100	Charge Nurse	O-4	16,404	16,404
1	"	Nurse	O-3	12,840	12,840
1	"	Nurse	GS-8	8,470 x 1.0850	9,197
1	"	Nurse	GS-7	7,447 x 1.0858	8,086
1	"	Nurse	GS-6	6,532 x 1.0858	7,092
1	"	Nurse	GS-4	5,658 x 1.075	6,082
2	"	Nursing Asst.	GS-4	5,658 x 1.075	12,164
1	"	Wardmaster	E-5	6,877	6,877
1	"	Corpsman	E-4	5,166	5,166
2	"	"	E-3	3,593	7,186
2	"	"	E-2	2,891	5,782
				TOTAL	96,876

* Physicians consult from all services, but primarily from OB/GYN. All physician time has been charged to the services involved.

Malcolm Grow Hospital
Appendix IX

3D LABOR & DELIVERY

NUMBER	%	TYPE	PAY GRADE	ANNUAL PAY RATE	EXTENDED COST
1	10	Chief OB/GYN	O-6	23,288	2,329
5	20	OB Physicians	O-4	16,404	16,404
1	20	"	O-3	12,840	2,568
1	50	Civ. OB. Physician*	GS-13	16,809 x 1.0858	9,126
1	100	Charge Nurse	O-4	16,404	16,404
1	"	Nurse	O-2	9,721	9,721
5	"	"	GS-9	9,590 x 1.0858	52,064
3	"	Nursing Asst.	GS-3	490 x 1.075	15,825
1	"	Corpsman	E-3	3,593	3,593
2	50	Nurse Anesthetist	O-4	16,404	16,404
2	50	"	O-3	12,840	12,840
				TOTAL	157,278

* In addition to the seven military physicians, one civilian physician is "on call" status two nights a week & weekends.

3B OB/GYN

1	5	Chief of Svc.	O-6	23,288	1,164
5	10	OB/GYN Physicians	O-4	16,404	8,202
1	10	"	O-3	12,840	1,284
1	100	Charge Nurse	O-4	16,404	16,404
2	"	Nurse	O-1	7,960	15,920
6	"	"	GS-7	7,447 x 1.0858	48,515 +10
6	"	Nursing Asst.	GS-4	5,658 x 1.075	36,494
1	"	Wardmaster	E-4	5,166	5,166 -10
1	"	Ward Clerk	GS-3	4,907 x 1.075	5,275
1	40	Part-time Nurse	GS-7	7,447 x 1.0858	3,234
1	60	"	GS-7	7,447 x 1.0858	4,852
				TOTAL	146,510

VIP-MED.-SURG.

		*Physicians			
1	100	Charge Nurse	O-4	16,404	16,404
1	"	Asst. C. Nurse	O-3	12,840	12,840
3	"	Nurse	O-2	9,721	29,163
1	"	"	O-1	7,960	7,960
1	"	Wardmaster	E-7	8,911	8,911
1	"	Corpsman	E-5	6,877	6,877
2	"	"	E-4	5,166	10,332
2	"	"	E-3	3,593	7,186
				TOTAL	99,673

* This is a mixed Med-Surg Ward, used by all Heads of Services for Special (VIP) patients and general officers. Therefore, physician personnel costs have been charged to primary wards of each service.

NOTE: All ward personnel draw significant outpatient care duties for VIPs.

Malcolm Grow Hospital
Appendix IX

SURGICAL SUITE

NUMBER	%	TYPE	PAY GRADE	ANNUAL PAY RATE	EXTENDED COST
1	100	O.R. Nurse	O-4	16,404	16,404
4	100	"	O-3	12,840	51,360
3	100	"	O-2	9,721	29,163
1	40	Anesthesiologist	O-5	19,508	7,803
1	60	"	O-4	16,404	9,842
1	60	"	O-3	12,840	7,704
1	100	Nurse Anesthetist	O-5	19,508	19,508
2	50	"	O-4	16,404	16,404
2	50	"	O-3	12,840	12,840
1	100	"	O-2	9,721	9,721
3	"	O.R. Technician	E-7	8,911	26,733
4	"	"	E-6	7,911	31,644
4	"	"	E-5	6,877	27,508
7	"	O.R. Apprentice	E-3	3,593	25,151
2	"	"	E-2	2,891	5,782
				SUB-TOTAL	297,567

NOTE: 2 Red Cross Volunteer Workers, Each 12 hrs/wk work at Nursing Station.

SURGICAL SUITE - (Cont'd)

1	5	Chairman, Dept. Surg.	O-5	19,508	975
3	20	Genl. Surgeons	O-4	16,404	9,842
1	15	Thor. Surg.	O-5	19,508	2,926
1	20	"	O-4	16,404	3,281
2	15	Ophthalmol	O-4	16,404	4,921
1	30	Otolaryng.	O-5	19,508	5,852
2	30	"	O-4	16,404	9,842
1	30	Urologist	O-5	19,508	5,852
2	30	"	O-4	16,404	9,842
1	10	Orthopedist	O-5	19,508	1,951
3	20	"	O-4	16,404	9,842
1	20	"	O-3	12,840	2,568
1	5	Chief OB/GYN	O-6	23,288	1,164
5	10	GYN	O-4	16,404	8,202
1	10	GYN	O-3	12,840	1,284
1	20	Ophthalmology Tech.	E-6	7,911	1,582
1	20	"	E-5	6,877	1,375
1	20	Otolaryngology Tech.	E-6	7,911	1,582
1	20	"	E-5	6,877	1,375
1	20	"	E-4	5,166	1,033
1	10	Orthopedist	GS-13	16,809 x 1.0858	1,825
				SUB TOTAL	87,116
				GRAND TOTAL	384,683

Malcolm Grow Hospital
Appendix IX

4B PSYCHIATRIC WARD

NUMBER	%	TYPE	PAY GRADE	ANNUAL PAY RATE	EXTENDED COST
1	10	Chief of Service	O-4	16,404	1,640
3	50	Physicians	O-3	12,840	19,260
1	50	Clinical Psychologist	O-5	19,508	9,754
1	50	Nurse	O-5	19,508	9,754
1	50	"	O-4	16,404	8,202
1	50	"	O-3	12,840	6,420
5	50	"	O-2	9,721	24,302
1	50	Wardmaster	E-8	10,000	5,000
1	50	NCOIC	E-7	8,911	4,456
5	50	Corpsman	E-5	6,877	17,192
3	50	"	E-4	5,166	7,749
17	50	"	E-3	3,593	30,541
1	50	Civilian Technician	GS-4	5,658 x 1.075	3,041
1	50	Civilian Nurse	GS-8	8,470 x 1.0858	4,598
1	50	Ward Clerk	GS-3	4,907 x 1.075	2,638
1	10	Secretary	GS-6	6,532 x 1.0858	709
2	20	Typists	GS-4	5,658 x 1.075	2,433
1	20	Receptionist	GS-3	4,907 x 1.075	1,055
1	25	Social Worker	O-4	16,404	4,101
				TOTAL	162,845

NOTE: Physicians listed here work full-time with inpatients on the ward. A separate staff is maintained for the outpatient clinics.

4A PSYCHIATRIC WARD

1	10	Chief of Service	O-4	16,404	1,640
3	50	Physicians	O-3	12,840	19,260
1	50	Clinical Psychologist	O-5	19,508	9,754
1	50	Nurse	O-5	19,508	9,754
1	50	"	O-4	16,404	8,202
1	50	"	O-3	12,840	6,420
5	50	"	O-2	9,721	24,302
1	50	Wardmaster	E-8	10,000	5,000
1	50	NCOIC	E-7	8,911	4,456
5	50	Corpsman	E-5	6,877	17,192
3	50	"	E-4	5,166	7,749
17	50	"	E-3	3,593	30,541
1	50	Civilian Technician	GS-4	5,658 x 1.075	3,041
1	50	Civilian Nurse	GS-8	8,470 x 1.0858	4,598
1	50	Ward Clerk	GS-3	4,907 x 1.075	2,638
1	10	Secretary	GS-6	6,532 x 1.0858	709
2	20	Typists	GS-4	5,658 x 1.075	2,433
1	20	Receptionist	GS-3	4,907 x 1.075	1,055
1	25	Social Worker	O-4	16,404	
				TOTAL	162,845

NOTE: Physicians listed here work full-time with inpatients on the ward. A separate staff is maintained for the outpatient clinics.

PERSONNEL COSTS

PHYSICAL EXAM CLINIC

NUMBER	%	TYPE	PAY GRADE	ANNUAL PAY RATE (Except as Noted*)	EXTENDED COST
1	100	Physician	O-3	12,840	12,840
1	"	NCOIC	E-6	7,911	7,911
1	"	Technician	E-5	6,877	6,877
1	"	"	E-4	5,166	5,166
1	"	"	E-3	3,593	3,593
1	"	Secretary	GS-4	5,658 x 1.075	6,082
				TOTAL	42,469
		PRESIDENT'S MEDICS			
1	100	Flight Medical Officer Physician	O-3	12,840	12,840
1	"	Flight Med. Tech.	E-7	8,911	8,911
1	"	"	E-5	6,877	6,877
1	"	"	E-4	5,166	5,166
				TOTAL	33,794
		MILITARY PUBLIC HEALTH			
1	100	Bioenvironmental Engr.	O-3	12,840	12,840
2	"	Prev. Med. Tech.	E-7	8,911	17,822
1	"	NCOIC	E-9	11,344	11,344
2	"	Prev. Med. Tech.	E-4	5,166	10,332
1	"	Clerk	GS-4	5,658 x 1.075	6,082
				TOTAL	58,420
		OCCUPATIONAL MEDICINE			
1	100	Physician	GS-13	16,809 x 1.0858	18,251
1	"	Nurse	GS-7	7,447 x 1.0858	8,086
1	"	NCOIC	E-6	7,911	7,911
1	"	Technician	E-4	5,166	5,166
1	"	Secretary	GS-4	5,658 x 1.075	6,082
1	12.5	Dentist	O-4	16,404	2,050
				TOTAL	47,546

PSYCHIATRIC SERVICE

NUMBER	%	TYPE	PAY GRADE	ANNUAL PAY RATE	EXTENDED COST
1	50	Chairman, Dept. Psych.	O-4	16,404	8,202
1	50	Secretary	GS-6	6,532 x 1.0858	3,546
				TOTAL	11,748

JB ORTHOPEDICS

NUMBER	%	TYPE	PAY GRADE	ANNUAL PAY RATE	EXTENDED COST
1	10	Orthopedist	O-5	19,508	1,951
3	20	Orthopedist	O-4	16,104	9,842
1	20	Orthopedist	O-3	12,840	2,568
1	10	Orthopedist	GS-13	16,809 x1.0858	1,825
1	100	Charge Nurse	O-4	16,404	16,404
1	100	Asst. Charge Nurse	O-3	12,840	12,840
3	100	Nurse	O-2	9,721	29,163
1	100	Nurse	O-1	7,960	7,960
2	100	Nurse	GS-7	7,447 x1.0858	16,172
2	100	Corpsman	E-5	6,877	13,754
4	100	Corpsman	E-3	3,593	14,372
1	100	Corpsman	E-2	2,891	2,891
1	100	Nursing Asst.	GS-4	5,658 x1.075	6,082
1	100	Ward Clerk	GS-3	4,907 x1.075	5,275
		Total			141,099

Note: 1 Red Cross Volunteer 8 hrs/wk
2 to 4 Jangos, Candystripers (Summer only) 10 hrs/wk

AEROSPACE (FLIGHT) MEDICINE

	NUMBER	%	TYPE	PAY GRADE	ANNUAL PAY RATE	EXTENDED COST
Consultants	1	50	Deputy Hospital Commander	O-6	23,288	11,644
	1	50	Chief Hospital Services	O-6	23,288	11,644
	1	25	Chairman Dept. Surgery	O-5	19,508	4,877
	1	20	Thoracic Surgery	O-5	19,508	3,902
	1	25	Chief Anesthetics	O-5	19,508	4,877
	2	50	Ophthalmologist	O-4	16,404	16,404
	1	50	Orthopedist	O-5	19,508	9,754
	1	25	Chairman Dept. Medicine	O-6	23,288	5,822
	1	20	Allergist	O-5	19,508	3,902
	2	50	Dermatologist	O-5	19,508	19,508
	1	25	Internist	O-5	19,508	4,877
	1	25	Internist	O-3	12,840	3,210
	1	50	Neurologist	O-4	16,404	8,202
	1	50	Chief Pediatrician	O-6	23,288	11,644
	1	50	Chief of Histopathology	O-6	23,288	11,644
	1	50	Pathologist	O-5	19,508	9,754
	1	50	Chief of Radiology	O-5	19,508	9,754
				Consultants - Subtotal		151,419
Staff	1	100	Chairman Aeromed Services	O-6	23,288	23,288
	2	100	Flight Surgeons	O-3	12,840	25,680
	1	100	Supt. Aeromed Services	E-9	11,344	11,344
	1	100	NCOIC Flight Med. Clinic	E-7	8,911	8,911
	1	100	Flight Medical Technician	E-6	7,911	7,911
	2	100	Flight Medical Technician	E-5	6,877	13,754
	8	100	Flight Medical Technician	E-4	5,166	41,328
	1	100	Steno	GS-6	6,532 x 1.0858	7,092
	2	100	Admin. Specialists	GS-4	5,658 x 1.075	12,164
	2	100	Admin. Specialists	GS-3	4,907 x 1.075	10,550
				Staff - Subtotal		162,022
				Grand Total		$313,441

TABLE IX-19

PERSONNEL COSTS

WARD MANAGEMENT

GENERAL MEDICINE CLINIC

NUMBER	%	TYPE	PAY GRADE	ANNUAL PAY RATE	EXTENDED COST
1	15	Chairman Dept. Med.	0-6	23,288	3493
1	45	Internist	0-5	19,508	8779
1	45	Internist	0-3	12,840	5778
1	60	Chest Disease Spec.	0-3	12,840	7704
1	15	Endocrinologist	0-4	16,404	2461
1	15	Endocrinologist	0-3	12,840	1926
2	60	Gastroenterologist	0-4	16,404	19684
1	15	Renologist	0-5	19,508	2926
1	60	Rheumatologist	0-3	12,840	7704
1	100	NCOIC Clinic	E-6	7,911	7911
1	100	Corpsman	E-5	6,877	6877
1	100	L.P.N.	GS-4	5,658 x 1,075	6082
				Total	81326

*Note

2 Red Cross volunteers Nursing Assistants, each contribute 8 hrs./wk.

GENERAL SURGICAL CLINIC

1	10	Dept. Chairman	0-5	19,508	1951
3	60	General Surgeons	0-4	16,404	29526
1	50	Thor. Surg.	0-5	19,508	9754
1	60	Thor. Surg.	0-4	16,404	9842
1	100	L.P.N.	GS-4	5,658 x 1,075	6082
1	100	Corpsman	E-5	6,877	6877
				Total	64,032

Malcolm Grow Hospital
Appendix IX

PSYCHIATRY CLINIC

NUMBER	%	TYPE	PAY GRADE	ANNUAL PAY RATE	EXTENDED COST
1	30	Chief of Services	O-4	16,404	4,921
2	100	Physicians	O-3	12,840	25,680
1	30	Secretary	GS-6	6,532 x 1.0858	2,128
2	60	Typist	GS-4	5,658 x 1.075	7,299
1	100	Psychologist	O-4	16,404	16,404
1	50	Social Worker	O-4	16,404	8,202
1	100	NCOIC Clinic	E-7	8,911	8,911
3	100	Psychiatry Technicians	E-5	6,877	20,631
1	100	Receptionist	GS-4	5,658 x 1.075	6,082
1	20	Part Time Psychiatrist	O-3	12,840	2,568
1	10	Part Time Psychiatrist	O-3	12.840	1,284
1	5	Reserve Psychiatrist	O-5	19,508	975
2	100	Consulting Psychiatrist		2,400	4,800
				Total	109,885

HEMATOLOGY CLINIC

2	60	Hematologists	O-4	16,404	19,685
1	100	Nurse - Clerk	GS-7	7,447 x 1.0858	8,086
				Total	27,771

Note:
1 75% ambulatory patient-volunteer does clinic clerical work.

Malcolm Grow Hospital
Appendix IX

GENERAL THERAPY CLINIC

NUMBER	%	TYPE	PAY GRADE	ANNUAL PAY RATE	EXTENDED COST
1	45	Renalologist General Medical Officer	O-5	19,508	8,779
5	100	Renalologist General Medical Officer	O-4	16,404	82,020
1	100	Renalologist General Medical Officer	GS-12	13,798 x 1.0858	14,982
1	45	Endocrinologist	O-4	16,404	7,382
1	45	Endocrinologist	O-3	12,840	5,778
1	100	Receptionist	GS-4	5,658 x 1.075	6,082
1	100	Nursing Assistant	GS-3	4,907 x 1.075	5,275
1	100	NCOIC	E-7	8,911	8,911
				Total	139,209

PHYSICAL THERAPY

1	100	Chief Therapist	O-5	19,508	19,508
2	100	Nurse - Therapist	O-3	12,840	25,680
1	100	Nurse - Therapist	O-2	9,721	9,721
1	100	NCOIC	E-7	8,911	8,911
1	100	Therapy Technician	E-6	7,911	7,911
1	100	Therapy Technician	E-5	6,877	6,877
1	100	Therapy Technician	E-4	5,166	5,166
1	100	Therapy Technician	E-3	3,593	3,593
1	100	Receptionist	GS-4	5,658 x 1.075	6,082
				Total	93,449

PEDIATRIC CLINIC

NUMBER	%	TYPE	PAY GRADE	ANNUAL PAY RATE	EXTENDED COST
1	10	Chief of Svc.	0-6	23,288	2329
2	80	Pediatrician	0-4	16,404	26246
3	80	Pediatrician	0-3	12,840	30816
1	100	Pediatrician	GS-13	16,809 x 1.0858	18251
2	100	Nurse	GS-7	7,447 x 1.0858	16172
1	100	NCOIC	E-4	5,166	5166
1	100	Corpsman	E-3	3,593	3593
2	100	Receptionist	GS-4	5,658 x 1.075	12165
1	100	Nursing Assistant	GS-4	5,658 x 1.075	6082
5	100	Consulting Pediatricians		2,080 x 1.0858	11292
				Total	132,112

DERMATOLOGY CLINIC

2	30	Dermatologist	O-5	19,508	11705
1	100	Nurse	GS-7	7,447 x 1.0858	8086
1	100	NCOIC	E-5	6,877	6877
2	100	Technician	E-4	5,166	10332
1	100	Receptionist	GS-4	5,658 x 1.075	6082
				Total	43,082

ALLERGY & IMMUNIZATIONS CLINIC

NUMBER	%	TYPE	PAY GRADE	ANNUAL PAY RATE	EXTENDED COST
1	30	Chief of Clinic	O-5	19,508	5852
1	40	Physician	O-4	16,404	6562
1	100	Nurse	O-4	16,404	16404
2	100	NCOIC	E-6	7,911	15822
1	100	Corpsman	E-6	7,911	7911
1	100	Corpsman	E-4	5,166	5166
1	100	Corpsman	E-3	3,593	3593
1	100	Receptionist	GS-4	5,658 x 1.075	6082
				Total	67,392

NEUROLOGY CLINIC

1	30	Chief of Service	O-4	16,404	4921
1	60	Neurologist	O-4	16,404	9842
1	60	Neurologist	O-3	12,840	7701
1	100	NCOIC	E-6	7,911	7911
1	100	Corpsman	E-6	7,911	7911
1	100	Secretary	GS5-1	5,732 x 1.075	6162
1	100	Secretary	GS4-4	5,658 x 1.075	6082
				Total	50533

ORTHOPEDIC CLINIC

NUMBER	%	TYPE	PAY GRADE	ANNUAL PAY RATE	EXTENDED COST
1	30	Chief of Service	O-5	19,508	5852
3	60	Physician	O-4	16,404	29527
1	60	Physician	O-3	12,840	7704
1	80	Physician	GS-13	16,809 x 1.0858	14601
1	100	NCOIC Clinic	E-6	7,911	7911
1	100	Ortho. Clinic Tech.	E-6	7,911	7911
1	100	Ortho. Clinic Tech.	E-5	6,877	6877
1	100	Ortho. ,Clinic Tech.	E-4	5,166	5166
1	100	Med. Steno.	GS-5	6,498 x 1.075	6985
1	100	Recept.-Clerk Typist	GS-4	5,658 x 1.075	6082
				Total	98,616

Note:
1 Red Cross Volunteer giving 6 hrs./wk.

UROLOGY CLINIC

1	60	Chief of Service	O-5	19,508	11704
2	60	Urologist	O-4	16,404	19684
1	100	L. P. N.	GS-4	5,658 x 1.075	6082
1	100	Corpsman	E-6	7,911	7911
1	100	Corpsman	E-5	6,877	6877
2	100	Corpsman	E-4	5,166	10332
				Total	62590

EENT CLINIC

NUMBER	%	TYPE	PAY GRADE	ANNUAL PAY RATE	EXTENDED COST
1	30	Chief Ophthalmologist	O-4	16,404	4,921
1	60	Ophthalmologist	O-4	16,404	9,842
1	60	Chief Otolaryngology	O-5	19,508	11,705
1	30	Otolaryngologist	O-4	16,404	4,921
1	60	Otolaryngologist	O-4	16,404	9,842
1	80	Ophthalmology Technician	E-6	7,911	6,329
1	80	Ophthalmology Technician	E-5	6,877	5,502
1	80	Otolaryngology Technician	E-6	7,911	6,329
1	80	Otolaryngology Technician	E-5	6,877	5,502
1	80	Otolaryngology Technician	E-4	5,166	4,133
3	100	Optometrist	O-5	12,840	38,520
1	100	Optometry Technician	E-5	6,877	6,877
1	100	NCOIC EENT Clinic	E-7	8,911	8,911
1	100	Secretary - Receptionist	GS-4	5,658 x 1.075	6,082
				Total	129,416

Notes:
2 Ambulatory patients from wards 4A and 4B occasionally (about 3 days per month) help in optometry, logging and shipping of prescription glasses.
2 Civilians payed by base BX operate a concession in opticians shop - in the clinic area for filling dependent and retired prescriptions for glasses.

OB/GYN CLINIC

NUMBER	%	TYPE	PAY GRADE	ANNUAL PAY RATE	EXTENDED COST
1	30	Chief of Services	O-6	23,288	6,986
5	60	OB/GYN Physician	O-4	16,404	49,212
1	60	OB/GYN Physician	O-3	12,840	7,704
1	50	Civilian Physician	GS-13	16,809 x 1.0858	9,120
2	100	Nurse	O-3	12,840	25,680
1	100	Nurse	GS-7	7,447 x 1.0858	8,086
1	100	Licensed Vocational Nurse	GS-4	5,658 x 1.075	6,082
1	100	Receptionist	GS-4	5,658 x 1.075	6,082
1	100	Receptionist	GS-3	4,907 x 1.075	5,275
1	100	NCOIC	E-7	8,911	8,911
3	100	Corpsman	E-4	5,166	15,498
2	100	Corpsman	E-3	3,593	7,186
				Total	155,828

CARDIOLOGY CLINIC

NUMBER	%	TYPE	PAY GRADE	ANNUAL PAY RATE	EXTENDED COST
1	50	Cardiologist	O-5	19,508	9,754
3	50	Cardiologist	O-4	16,404	24,606
1	50	Cardiologist	O-3	12,840	6,420
1	100	*NCOIC Cardiopulmonary Lab	E-7	8,911	8,911
2	100	+Cardiopulmonary Lab Tech.	E-7	8,911	17,822
1	100	EKG Technician	GS-4	5,658 x 1.075	6,082
1	100	Receptionist	GS-4	5,658 x 1.075	6,082
5	100	+Cardiopulmonary Lab Students	E-2	2,891	14,455
				Total	94,132

Notes:
*NCOIC has charge also of cardiac monitoring, pulmonary lab, and inhalation therapy.
+These technicians and students rotate duty with those charged under ward management to cardiac monitoring. All these activities are located together: cardiology clinic, pulmonary clinic, cardiopulmonary lab, cardiac monitoring, inhalation therapy.

PULMONARY CLINIC

1	60	Pulmonary Physician	O-5	19,508	11,705
1	100	Pulmonary Lab Technician	E-6	7,911	7,911
1	100	Pulmonary Lab Technician	E-4	5,166	5,166
1	100	Pulmonary Lab Student	E-2	2,891	2,891
				Total	27,673

Note:
NCOIC cardiopulmonary lab has charge of these technicians. He is charged to the cardiology clinic.

APPENDIX X*

Work Sampling Graphs

*This appendix has been placed on microfilm and two copies were submitted to the DoD project officer on 24 November, 1970.

APPENDIX XI

CMS PRORATED COSTS

WALSON ARMY HOSPITAL

TABLE XI-1

CMS PRORATION

(167806)

Area	Factor	Amount	Area	Factor	Amount
2A	.0145	2585	8B	.0026	463
2B	.0168	2995	9A	.0126	2247
2C	.0314	5599	9B	.0331	5903
OR	.3738	66656	L&D	.0323	5759
3A	.0130	2318	X-Ray	.0022	392
3B		0	Annex	.0000	0
3N	.0565	10075	Pedatric Cl.	.0169	3013
4A	.0045	802	GU	.0515	9184
4B	.0045	802	OB-Gyn.	.0224	3995
5A	.0014	249	Surgical	.0382	6812
5B	.0408	7275	Ortho	.0209	3727
6A	.0305	5438	ER	.1209	21560
6B	.0144	2567	Dermatol.	.0007	124
7A	.0025	445	EENT	.0035	625
7B	.0016	285	OPC	.0171	3050
8A	.0026	463	Dental	.0149	2656

TABLE XI-2

CMS SUPPLIES

Ward	Amount	%	Clinic	Amount	%
2A	227	1.45	Pediatrics	264	1.69
2B	263	1.68	GU	804	5.15
2C	490	3.14	OB-Gyn.	350	2.24
OR	5834	37.38	Surgical	597	3.82
3A	204	1.30	Ortho	327	2.09
3B	-	-	ER	1887	12.09
3N	883	5.65	Dermatol.	11	.07
4A, 4B	141	.90	Dental	234	1.49
			EENT	55	.35
5A	23	.14	OPC	267	1.71
5B	638	4.08			
6A	476	3.05			
6B	226	1.44			
7A	40	.25			
7B	25	.16			
8A	41	.26			
8B	41	.26			
9A	198	1.26			
9B	518	3.31			
L&D	505	3.23			
X-Ray	35	.22			
Annex	1	.00			

TOTAL 15604

TABLE XI-3

CMS EQUIPMENT

Ward	Amount	%	Clinic	Amount	%
2A	5	5.37	Medical	1	1.07
2B	19	20.43	Opthamol.	2	2.15
2C	13	13.97	OPC	1	1.02
OR	-	-			
3A	2	2.15			
3B	4	4.30			
3N	-	-			
4A	-	-			
4B	9	9.67			
5A	-	-			
5B	-	-			
6A	16	17.20			
6B	3	3.22			
7A	1	1.07			
7B	-	-			
8A	-	-			
8B	-	-			
9A	5	5.37			
9B	11	11.82			
Inh. Ther.	1	1.07			

TOTAL 93

TABLE XI-4

CMS TOTAL WORKLOAD

Ward	Amount	%	Clinic	Amount	%
2A	232	1.47	Pediatrics	264	1.68
2B	282	1.79	GU	804	5.12
2C	503	3.20	OB-Gyn.	350	2.22
OR	5834	37.16	Surgical	597	3.80
3A	206	1.31	Ortho	327	2.08
3B	4	.02	ER	1887	12.02
3N	883	5.87	Dermatol.	11	.07
4A			Dental	234	1.49
4B	150	.95	EENT	55	.35
5A	23	.14	OPC	269	1.70
5B	638	4.06	Medical	1	.00
6A	492	3.13	Opthamol.	2	.01
6B	229	1.45			
7A	41	.26			
7B	25	.15			
8A	41	.26			
8B	41	.26			
9A	204	1.29			
9B	529	3.37			
L&D	505	3.21			
X-Ray	35	.22			
Annex	1	.00			
Inh. Ther.	1	.00			

TOTAL 15697

APPENDIX XII*

Materiel Flows

APPENDIX XIII*

Questionnaire Forms Used in Data Collection

*These appendices have been placed on microfilm. Two copies of each appendix were submitted to the DoD Project Office on 24 November, 1970.

APPENDIX XIV

FUNCTIONAL COST DETERMINATION FOR BEAUFORT NAVAL HOSPITAL

I. Personnel

A. Source document: Beaufort Military Name List (computer run), Oct. 1969.

B. Westinghouse supportive data: Interviews and observations August 1969 - November 1969.

II. Housekeeping

A. Source document: Beaufort Civilian Personnel listing (for janitorial service).

B. Westinghouse supportive data:

1. Janitorial service - prorated according to work distribution chart, page 5.
2. Housekeeping by staff - estimated from interview notes.
3. Housekeeping by patients - hours noted, from interview estimates and Westinghouse observation.

III. Training

A. Source document: various training schedules, including the Ward Teaching Plan, Professional Development Classes, Nurse Corps, Orientation Schedule, etc.

B. Westinghouse supportive data:

1. Training department - the training department was assigned one corpsman full time, whose time was prorated to the functional areas according to number of corpsmen per function.
2. Formal training - annual

a. Physician time	
i. Conference attendance	22 hours
ii. Grand rounds	22 hours
iii. Lecture series	6 hours
	50 hours per physician
b. Military nurse time	
i. Lecture series	6 hours
ii. Staff education programs	12 hours
iii. Inservice ed. programs	16 hours
	34 hours per nurse

c. Civilian nurse

i. Staff education	12 hours
ii. Inservice education	16 hours
	28 hours per nurse

d. Corpsman

i. Ward	22 hours per Corpsman
ii. Other	4 hours per Corpsman

3. OJT - See page 105 for sample calculations.

IV. Supplies

A. Source document: FY 1969 "Analysis of Account 310" NHBEAU by cost account code.

B. Westinghouse supportive data:
Expense element codes "TT" (Supplies from Government Sources) and "T7" (Open Purchase Supplies) were accepted as reported in FY69 Account 310. As a check, Westinghouse compared Radiology supply requisitions for three months against the reported expenditures for the same time period, and found them to be in good agreement. No proration was necessary except in the case of Central Sterile Supply, which, instead of being itemized as a separate function, was split into supplies for Ward Management (65%) and the Outpatient Department (35%). These percentages were based on Andrews and Dix data.

V. Maintenance

A. Source document: FY1969 Account 310, cost account code 7150.

B. Westinghouse supportive data:

1. Medical maintenance -- proration of medical repairman's salary according to 10 month sampling of maintenance log. (Sept. 1968 - June 1969). Also assignment of parts cost to functional areas, determined from parts requisitions to Medical repair.

2. Maintenance department - only maintenance for the hospital building itself was considered, using Cost Account Code 7150 (from Account 310, FY69). The total figure reported was separated into Westinghouse functional areas by prorating according to square foot per area.

VI. Equipment

A. Source document: Beaufort Property control listing, 8/14/69 (Computer run).

B. Westinghouse supportive data - Interviews and observations, to modify and update list - August 1969 - November 1969.

OJT CALCULATION: BEAUFORT NAVAL HOSPITAL

The calculation of OJT for Beaufort was based upon interview estimates and observation. The following estimates and assumptions were made:

1). Ward corpsmen turnover is once every 6 months;
2). Military nursing turnover is once a year;
3). Civilian nursing turnover is once every 3 years;
4). Doctor OJT was not measured and assumed negligible;
5). The time spent teaching trainees is not entirely attributable to OJT costs, since some work is being accomplished during the instruction time, (e.g., the nurse fills out a requisition as an example to an OJT).

The total time to train a nurse or corpsman for each function was estimated, and multiplied by the number of nurses (or corpsmen). This number, multiplied by the turnover rate and wage rate, gave the cost of trainee time. A similar calculation for teaching time was added to give the total cost of OJT.

For example, for Ward A-2:

TRAINEE COST (# of trainees x hourly pay x turnover rate x hours of training)	INSTRUCTOR COST (# of instructors x # of students x hours per student x hourly pay rate)
Nurse: 1.7 x $7.58 x 1 x 25 = $322.00	M.D.: 1 x 1.7 x 3 x $7.58 = $38.65
	Nurse: 1 x 1.7 x 12 x $7.58 = $154.60
Corpsman: 1 x $2.40 x 2 x 20 = $96.00	M.D.: 1 x 12 x 2 x $7.58 = $181.92
5 x $1.77 x 2 x 20 = $354.00	Nurse: 1 x 12 x 8 x $7.58 = $727.68
	Corpsman: 1 x 12 x 10 x $2.40 = $288.00
Total trainee cost: $772.00	Total instructor cost: $1390.85

Total cost of OJT, Ward A-2 = $2162.85

TABLE XIV-1

PERSONNEL COSTS

WARD MANAGEMENT

WARD	DESIGNATION	PAY GRADE	FULL TIME EQUIVALENT	COST/YEAR
A-3	Physician	O6	.35	7,811
		O3	.55	7,303
	Nurse	O3	1.60	21,246
	Corpsman	E3	2.00	7,336
		E4	3.00	14,979
	TOTAL			58,675
A-2	Physician	O3	.35	4,648
		O4	.30	4,722
		O5	.60	11,234
		O6	.13	2,901
	Nurse	O4	1.70	26,756
	Corpsman	E3	4.00	14,116
		E3	1.00	3,529
		E4	1.00	4,597
	TOTAL			73,954
A-1	Physician	O5	.05	936
		O4	.03	472
		O3	.10	1,327
	Nurse	O4	.20	3,148
	Corpsman	E3	1.0	3,668
		E3	2.0	7,336
	TOTAL			16,887
B-2	Physician	O5	.33	6,179
		O3	.32	4,249
	Nurse	O4	2.20	34,626
	Enlisted	E3	1.0	3,668
		E3	1.0	3,668
		E4	2.0	9,986
	TOTAL			62,376

TABLE XIV-1 - (Cont'd)

WARD	DESIGNATION	PAY GRADE	FULL TIME EQUIVALENT	COST/YEAR
B-3	Physician	O5	.42	7,863
		O4	.50	7,870
		O3	.39	5,179
	Nurse	O2	1.00	9,845
		O4	.60	9,443
	Corpsman	E3	1.00	3,668
		E3	3.00	10,998
	TOTAL			54,866
OPERATING ROOM	Physician	O6	.20	4,463
		O5	.42	7,864
		O4	.55	8,656
		O3	2.16	28,683
	Nurse	O4	1.00	15,739
		GS4	1.00	5,316
	Corpsman	E3	1.00	3,668
		E4	3.00	14,979
		E5	1.00	6,299
	TOTAL			95,667
ICU	Physician	O6	.05	1,116
		O5	.10	1,872
		O4	.20	3,148
		O3	.20	2,656
	Nurse	O3	1.00	13,279
		O4	1.40	22,035
	Corpsman	E3	1.00	3,668
		E3	2.00	7,336
		E4	2.00	9,986
	TOTAL			65,096
PEDIATRIC WARD	Physician	O4	.35	5,509
		O3	.60	7,967
	Nurse	O3	1.00	13,279
		O4	.20	3,148
		GS7	1.00	7,447
	Aid	GS3	2.00	9,814
	TOTAL			47,164

TABLE XIV-1 - (Cont'd)

WARD	DESIGNATION	PAY GRADE	FULL TIME EQUIVALENT	COST/YEAR
NURSERY	Physician	O4	.10	1,573
		O3	.10	1,328
	Nurse	O4	.10	1,573
	Corpsman	E3	2.00	7,336
	TOTAL			11,810
LABOR & DELIVERY	Physician	O5	.13	2,434
		O4	.38	5,981
	Nurse	GS7	3.00	22,341
	Corpsman	E3	3.00	11,004
	TOTAL			19,419
SOQ	Physician	O5	.22	4,119
		O4	.68	10,702
		O3	.07	930
	Nurse	O2	1.00	9,845
		O4	1.10	17,312
		GS6	1.00	6,532
		GS7	1.00	7,447
	Corpsman	E3	8.00	29,334
		E4	1.00	4,993
	TOTAL			91,214
SDQ	Physician	O5	.25	4,681
		O4	.48	7,555
	Nurse	O4	.90	14,165
		GS5	2.00	12,996
		GS7	2.00	14,894
	Aide	GS3	6.00	29,442
	Corpsman	E3	2.00	7,336
		E4	1.00	4,993
	TOTAL			96,062

TABLE XIV-2

EQUIPMENT COSTS
WARD MANAGEMENT

WARD	COST*	WARD	COST*
A-1	9,309	B2	5,345
A-2		B3	5,552
A-3	3,646	PEDS	2,179
SO-Q	3,531	DELIVERY	3,179
SDQ	9,860	ICU	4,241
Operating Room	44,301	Nursery	11,107

*From NAVBEAU computer list of equipment and observation

TABLE XIV-3

SUPPLIES COSTS*
WARD MANAGEMENT

COST CODE**	DESCRIPTION	SUPPLIES COSTS
4A10	Medical Services	2,012.14
4A20	Surgery and Urology	20,757.62
4A30	Orthopedics	3,349.88
4A40	OB/GYN	5,815.03
4A50	Pediatrics	3,109.16
4A70	EENT	168.48
4A99	SOQ	1,011.81
4A00	Inpatient Medical and Surgical	400.85
4H00***	CSR	
	Total	36,624.97

NAVBEAU. Expense elements "T1" (supplies obtained through Federal Purchasing and "T7" (open purchase) were combined for total costs.

*Derived from FY69 "Analysis of Account 310".

**As defined in NAVMED P-5020.

***CSR costs prorated at 65% of total T1 and T7 cost for 4H00 - Account 310.

TABLE XIV-4

HOUSEKEEPING COSTS*
WARD MANAGEMENT

WARD	CORPSMAN HRS/YR	COSTS	PATIENTS HRS/YR
A1	260	440	5,200
A2	260	440	6,240
A3	260	440	3,120
B2	260	440	520
B3	260	440	10,400
ICU	1,456	2,839	208**
Operating Room	1,430	4,622	none
SOQ***	416	416	none
SDQ***	516	1,140	none
Pediatrics***	208	490	none
Nursery	926	1,639	none
Labor & Delivery***	416	736	none
Total	10,420	14,082	25,688

*Cost of Housekeeping Department not included.
**Patient from Ward B-3 or A-3.
***Housekeeping Department provides services.

TABLE XIV-5

PERSONNEL COSTS
OUTPATIENT DEPARTMENT

FUNCTION	DESIGNATION	PAY GRADE	FULL TIME EQUIVALENT	COST/YEAR
Urology	Physician	O4	.50	7,870
	Corpsman	E4	1.00	4,993
		E3	1.00	3,668
	Total			16,531
Female Walk-In	Physician	O3	1.50	19,919
	Nurse	Volunteer	.20	—
	Corpsman	E4	1.00	4,993
	Total			24,912

TABLE XIV-5 Contd.

FUNCTION	DESIGNATION	PAY GRADE	FULL TIME EQUIVALENT	COST/YEAR
Female Appointment	Physician	05	.25	4,681
		O4	.75	11,804
	Corpsman	E3	1.00	3,668
	Total			20,153
Pediatrics	Physician	O4	1.55	29,021
		O3	2.30	43,821
	Nurse	O3	1.00	43,821
	Corpsman	E4	1.00	4,993
	Total			77,835
Surgical	Physician	O5	.82	15,353
		O3	.95	12,615
	Corpsman	E4	1.00	4,993
	Total			32,961
Orthopedics	Physician	O6	.40	8,926
		O3	1.40	18,590
	Corpsman	E5	1.00	6,299
		E4	2.00	9,986
		E3	1.00	3,668
	Patient		.40	
	Total			47,469
OB/GYN	Physician	O5	.62	11,608
		O4	1.62	41,236
	Nurse	O4	1.00	41,236
	Corpsman	E3	1.00	3,668
	Red Cross Volunteer		.70	
	Total			56,512

TABLE XIV-5 Contd.

FUNCTION	DESIGNATION	PAY GRADE	FULL TIME EQUIVALENT	COST YEAR
Dermatology	Physician	O6	.62	13,836
	Corpsman	E3	1.00	3,668
	Total			17,504
Male Medical	Physician	O5	.25	4,681
		O4	.31	4,879
	Corpsman	E4	2.00	9,986
	Total			19,546
EENT	Physician	O5	.93	17,412
		O4	.70	11,017
	Corpsman	E5	1.00	6,299
		E4	1.00	4,993
	Total			39,721
Emergency Room	Physicians*			
	Nurses**			
	Corpsman***	E6	1.00	7,751
		E5	1.00	6,299
		E4	1.00	4,993
		E3	2.00	7,336
	Total			26,379

*Duty Watch twice a month - 1600-0730 hours.
**Night and Evening Duty Nurse approximately .5 hours per day.
***Duty Watch - 4 corpsmen 1600-2400, 1 corpsman 2400-0700 - Weekdays
4 corpsmen 0700-1200, 1 corpsman 2400-0700 - Weekdays

TABLE XIV - 6

EQUIPMENT COSTS

OUTPATIENT DEPARTMENT

CLINIC	COST*	CLINIC	COST*
Pediatrics	4,256	Surgery	13,705
Orthopedics	9,301	Urology	15,840
OB/GYN	8,727	EENT	20,291
Dermatology	4,584	Female Appt.	606
Male Medical	1,334	Emergency Room	29,257
		Total	107,901

* From NAVBEAU computer list of equipment and observation.

TABLE XIV - 7

PERSONNEL COSTS*

CLINICAL LABORATORY

PERSONNEL	PAY GRADE	FULL TIME EQUIPMENT	COST/YEAR
Physician	O4	1.00	15,739
MSC	O2	1.00	9,845
Corpsman	E7	5.00	44,720
	E6	5.00	38,755
	E5	1.00	6,299
	E4	7.00	34,951
		Total	150,309

* Includes Blood Donor Center Personnel.

TABLE XIV - 8

EQUIPMENT COSTS

CLINICAL LABORATORY

AREA	COST
Administrative	3,096
Chemistry	11,798
Hematology	13,086
Bacteriology	5,858
Blood Bank	4,523
Histology	30,424
Blood Donor	21,520
Total	90,305

TABLE XIV - 9

PERSONNEL COSTS

BEAUFORT BLHCS - DENTAL

AREA	DESIGNATION	PAY GRADE	FULL TIME EQUIVALENT	COST/YEAR
NHBEAU	Dentist	O5	.95	17,787
Dental Dept.	Corpsman	E6	1.00	7,751
		E3	1.00	3,668
	Total			29,206
Parris Island	Dentist	O3	34.0	438,207
Dental Clinic	Corpsman	E7	1.0	8,944
		E6	4.0	31,004
		E5	5.0	31,495
		E4	5.0	24,965
		E3	50.0	213,400
	Total			748,015
Parris Island	Dentist	O5	1.00	18,723
Dental Annex		O4	1.00	15,739
		O3	3.00	39,837
	Corpsman	E4	1.00	4,993
		E3	5.00	21,340
	Total			100,632

TABLE XIV - 9 (cont'd)

AREA	DESIGNATION	PAY GRADE	FULL TIME EQUIVALENT	COST/YEAR
MCAS	Dentist	O5	1.00	18,723
Dental Clinic		O6	1.00	22,316
		O3	6.00	79,674
	Corpsman	E7	2.00	17,888
		E4	5.00	24,965
		E3	8.00	29,343
	Total			192,910

TABLE XIV - 10

EQUIPMENT AND SUPPLIES COSTS

BEAUFORT BLHCS - DENTAL

AREA	EQUIPMENT COSTS	ANNUAL SUPPLIES COSTS
NHBEAU Dental Department	9,465	606
Parris Island Dental Clinics	208,000	80,000
MCAS Dental Clinic	52,726	16,000

TABLE XIV - 11

HOUSEKEEPING COSTS

BEAUFORT BLHCS - DENTAL

AREA	ESTIMATED STAFF HOUSEKEEPING COSTS
NHBEAU	$276
Parris Island	done by recruits
MCAS	$8,240

TABLE XIV - 12

ANNUAL TRAINING COSTS*

BEAUFORT BLHCS - DENTAL

AREA	OJT COSTS	FORMAL COSTS
NHBEAU	655	341
Parris Island	18,793	Not available
MCAS	3,365	1,914

* Includes both instructor and trainee costs.

TABLE XIV - 13

PERSONNEL COSTS

BEAUFORT HOSPITAL - DIETARY

PERSONNEL	PAY GRADE	FULL TIME EQUIVALENT	COST/YEAR
MSC	O2	1.00	9,845
Corpsman	E7	1.00	8,944
	E5	1.00	6,299
	E4	1.00	4,993
	E3	4.00	14,672
Civilian	WG-	42.00	240,852
		Total	285,605

TABLE XIV - 14

EQUIPMENT AND SUPPLIES COSTS

BEAUFORT HOSPITAL - DIETARY

AREA	COSTS
Equipment Costs	$68,735
Supplies Costs	
Operations	14,333
Provisions	119,834

TABLE XIV-15

PERSONNEL COSTS
MEDICAL RECORDS

PERSONNEL	PAY GRADE	FULL TIME EQUIVALENT	COST/YEAR
Corpsman	E8	.05	516
	E6	.05	388
Civilian	GS4	1.00	5,658
	GS3	4.00	19,962
	GS2	2.00	8,744
	Total		35,268

TABLE XIV-16

PERSONNEL COSTS
PHARMACY DEPARTMENT

PERSONNEL	PAY GRADE	FULL TIME EQUIVALENT	COST/YEAR
Pharmacist	O3	1.00	13,279
	O2	1.00	9,845
Corpsman	E6	1.00	7,751
	E5	2.00	12,598
	Total		43,473

TABLE XIV-17

PERSONNEL COSTS
RADIOLOGY DEPARTMENT

PERSONNEL	PAY GRADE	FULL TIME EQUIVALENT	COST/YEAR
Radiologist	O3	1.00	13,279
Corpsman	E6	1.00	7,751
	E5	1.00	6,299
	E4	1.00	4,993
	E3	3.00	11,004
	Total		43,326

TABLE XIV-18

PERSONNEL COSTS
REGISTRAR

PERSONNEL	PAY GRADE	FULL TIME EQUIVALENT	COST/YEAR
Corpsman	E8	.95	9,801
	E6	1.95	15,114
	E4*	3.00	14,979
	E3**	2.50	9,170
Civilian	GS5	1.00	6,498
	GS3	1.00	4,907
	Total		60,469

*Duty Watch Corpsmen from EDR have admitting responsibilities.
**Mate of Day covers information desk.

TABLE XIV-19

SUPPLIES COSTS
BEAUFORT NAVY HOSPITALS

FUNCTION	COSTS
OPD*	21,759
Clinical Laboratory	20,866
Dental	605
Dietary	
Operations	14,332
Provisions	119,634
Registrar/Patient Affairs	1,206
Radiology	20,774
Pharmacy	118,355
Training	1,136
CSR	26,617
Operating Room Linens	683
Hospital Linens	11,444
Janitorial Services	4,317
Other Medical	31,570
Total	393,498

*Includes 35% of CSR costs.

TABLE XIV-20

PRORATED MAINTENANCE COSTS*
BEAUFORT NAVAL HOSPITAL

FUNCTION	SQUARE FEET	%	MAINTENANCE COSTS
Ward Management	20,649	23	29,623
OPD	17,115	19	24,471
Medical Records	125	1.0	895
Registrar	1,312	1.5	1,932
Radiology	3,994	4.0	5,152
Clinical Labs	712	0.8	895
Dietary	21,001	23	29,623
Dental	1,214	1.3	1,674
Pharmacy	1,214	1.5	1,932
Supply	2,403	2.7	3,477
Other	19,682	23	30,013
	Total		128,792

*Total Maintenance costs are $128,792.

TABLE XIV-21

MEDICAL MAINTENANCE COSTS
BEAUFORT NAVY HOSPITAL

FUNCTION	PARTS COSTS	LABOR COSTS	TOTAL COSTS
Radiology	3,437	535	3,972
Ward Management	797	1,059	1,856
Delivery Room	75	140	215
Operating Room	445	131	636
OPD	287	211	498
Clinical Lab	124	86	210
Medical Maintenance	713	91	812
Pharmacy	20	–	20
NAVBEAU Dental	98	28	126

TABLE XIV-22

PERSONNEL COSTS
BEAUFORT NAVY HOSPITAL
MAINTENANCE DEPARTMENT

PERSONNEL	PAY GRADE	FULL TIME EQUIVALENT	COST/YEAR
MSC	O3	1.00	13,279
Corpsman	E7	1.00	8,944
	E5	1.00	6,299
	E4	1.00	4,993
	E3	1.00	3,668
Civilian	GS-11	1.00	11,563
	GS-5	1.00	6,115
	GS-4	1.00	5,316
	WG-	32.00	222,806
		Total	282,983

TABLE XIV - 23

EQUIPMENT AND SUPPLIES COSTS
BEAUFORT NAVY HOSPITAL - MAINTENANCE

AREA	COSTS
Maintenance Equipment	
Maintenance	32,246
Utilities	2,298
Transportation	8,996
Sanitation	967
Maintenance Supplies	
T1 - Federal Supply	1,430
T7 - Open Purchase	2,499

TABLE XIV-24

PERSONNEL COSTS
PARRIS ISLAND DISPENSARIES

AREA	PERSONNEL	PAY GRADE	FULL TIME EQUIVALENT	COST/YEAR
West End	Physician	O3	3.00	80,007
	Nurse	O3	1.00	13,279
	Corpsman	E7	1.00	8,944
		E5	3.00	18,897
		E4	7.00	34,951
		E3	11.00	40,348
		Total		196,426
Rifle Range	Physician	O3	2.00	72,166
	Corpsman	E6	1.00	7,751
		E4	1.00	4,993
		E3	3.00	11,004
		Total		95,914
East End	Physician	O3	1.00	13,279
	Nurse	O3	1.00	13,279
	Corpsman	E7	1.00	8,944
		E6	2.00	15,502
		E5	4.00	25,196
		E4	5.00	24,965
		E3	9.00	33,012
		Total		134,177
Depot	Physician	O3	1.00	13,279
	Corpsman	E5	1.00	6,299
		E3	1.00	3,668
		Total		23,246
Psychiatry	Psychiatrist	O4	2.00	31,478
		O3	2.00	26,558

TABLE XIV-24 Contd.

AREA	PERSONNEL	PAY GRADE	FULL TIME EQUIVALENT	COST/YEAR
	Civilian	Ph. D.*	1.00	13,279
	Corpsman	E3	2.00	7,336
	Civilian	GS	3.00	16,800
		Total		95,451
Women's	Physician	O3	1.00	13,279
	Corpsman	E7	1.00	8,944
		E3	3.00	11,004
		E4	1.00	4,993
		Total		38,220

*Consultant

TABLE XIV - 25

EQUIPMENT AND SUPPLIES COSTS

PARRIS ISLAND DISPENSARIES

AREA	COSTS
EQUIPMENT	145,588
SUPPLIES*	
Housekeeping	1,170
Forms	3,694
Lab, X-ray, and Pharmacy	47,152

* 1st quarter cost, FY 1969.

TABLE XIV - 26

PERSONNEL COSTS

MCAS MEDICAL DISPENSARY

PERSONNEL	PAY GRADE	FULL TIME EQUIVALENT	COST/YEAR
Physician	O3	8.00	106,232
Corpsman	E7	2.00	17,888
	E6	4.00	31,004
	E5	10.00	62,990
	E4	20.00	99,860
	E3	25.00	91,700
		TOTAL	409,674

TABLE XIV - 27

EQUIPMENT AND SUPPLIES COSTS

MCAS MEDICAL DISPENSARY

AREA	COSTS
EQUIPMENT	45,588
SUPPLIES*	30,149

* Estimates by MCAS Medical AO based on FY 69.

TABLE XIV-28

TRAINING COSTS*

BEAUFORT NAVY HOSPITAL BLHCS

FUNCTION	FORMAL	OJT	TRAINING DEPT.**
Ward Management	10,622	20,010	3,100
OPD	6,257	2,618	1,473
Clinical Lab	855	20,235	1,162
Dental (PI, MCAS & NAVBEAU)	2,255	22,813	155
Dietary	67	649	465
Medical Records	—	75	77
Pharmacy	595	494	155
Radiology	365	3,357	310
Registrar	94	939	620
Dispensaries	12,784	18,492	8,944
Total	33,894	89,682	16,461

*See page for sample calculations.
**Prorated by number of corpsmen per function.