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(6) EFFECT OF THE ARMY ORAL HEALTH MAINTENANCE PROGRAM ON THE DENTAL HEALTH STATUS OF ARMY PERSONNEL

[redacted] (AOHMP EVALUATION)

EXECUTIVE SUMMARY.

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

The Army Oral Health Maintenance Program is a Department Of Army approved dental program which serves as the primary patient input device for the Army dental care system. This study was designed to determine how effectively the program is working. The study findings indicate that the AOHMP is an effective mechanism for improving the oral health status of program participants. Combat MOS soldiers were shown to have greater care needs than other MOS soldiers and that they receive less care. Rank was not an important variable in the amount of

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care received but it was an important determinant for amount of care needed. It was recommended that the program be continued and that long term non-participants and combat MOS soldiers be identified and introduced into the program.

SUMMARY

The purpose of this study was to evaluate the Army Oral Health Maintenance Program as the basis for improving the oral health status of Army personnel and as the principal patient input program for the Army dental care system. Although the program has been fully operational since October 1974, an evaluation of the program effectiveness has not been performed. The study was conducted in two parts and three reports addressing specific portions of the program and the current Army care needs have been prepared. The first report addressed the change in oral health status of soldiers four months after receiving an AOHMP examination. The data was analyzed by combat versus combat/support/combat service support and by rank group. More than 5000 soldiers were initially surveyed and approximately 40 percent of their records were reviewed four months later to determine the amount of care received and to document changes in oral health status as represented by changes in dental classification. These findings were reported as Part I in HCSD Report #79-004-A. The second part of the study consisted of a retrospective record audit of randomly selected records to evaluate the program since 1976. These findings were reported as Part II in HCSD Report #79-004-B. A third report, Part III (HCSD Report #79-004-C) is an Army care needs update based on the initial sample of almost 6000 personnel. This Executive Summary addressed the major objectives of the study and the overall effectiveness of the program. In general, the program has been shown to be an effective approach to improving the oral health status of participants. It has been shown that there are long standing non-participants who must be introduced into the AOHMP for maximum maintenance type care effectiveness. Combat soldiers need more care and receive less than non-combat MOS personnel. Rank does not appear to be an important variable in determining the amount of care received but is very important as a factor for predicting care needs. Recurrent care needs for persons completing a care sequence and undergoing an examination one year later have been identified by type of care received. All three objectives of this study have been fully met. They are summarized in this report and discussed in detail in Report #HCSD 79-004-A and Report #79-004-B. In addition, HCSD Report #79-004-C meets the requirements of a recommendation of a previous HCSD report (#76-009-R) that a care needs update should be done in three years.

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1. INTRODUCTION.

a. Purpose. The purpose of this study was to evaluate the Army Oral Health Maintenance Program (AOHMP) as the basis for improving the oral health status of Army personnel and as the principal patient input program for the Army dental care system.

b. Background. The AOHMP is the primary vehicle for introducing military personnel into the Army's dental care system. Participation in this program is for the purpose of preventing dental disease and providing routine care on a regular recurring basis. The program is an attempt to produce dentally fit soldiers who can perform their duties with the minimum loss of time due to receiving dental care. Phase I of the program (designed to include only active duty personnel 25 years of age and younger) was initiated as a result of a letter from the Chief of the US Army Dental Corps to all Dental Corps Officers in 1968.[1] In 1971, Phase II of the AOHMP was initiated for active duty personnel over age 25.[2] In 1974, Phase II of the program was extended to include all active duty Army personnel and Phase I was essentially eliminated.[3] At this time guidance for implementation of the program was forwarded to all dental activities within the Army. In February 1975, US Army Health Services Command issued information concerning the purposes, objectives, policy, required coordination, implementation modes, and other suggestions for operation of the program at the local level.[4] Although the AOHMP has been fully operational for approximately three years, no evaluation of this program has been conducted, except for determining the percentage of eligible personnel who receive annual dental examinations. Information provided by each dental activity (DENTAC) to HSC on a quarterly basis indicates that there was significant variation among the DENTACs as to the percentage of soldiers who received these examinations. Personal communication with Directors of Dental Services (DDS) within CONUS further indicated significant and numerous variations in the methods of operating the program at the various installations. Exemplifying this was information revealing that at certain installations the soldiers received their annual dental examinations in one centrally located, specially equipped dental facility. At other installations the examinations were rendered in all dental clinics on post, and on at least one post the dental officers visited the various supported units and rendered the examinations using portable equipment. The requirement of AR 5-5 concerning the conduct of a literature review prior to initiation of a study has been met. In addition to other literature sources the following document/sources have been utilized: Defense Documentation Center for Scientific and Technical Information (DDC); Defense Logistic Studies Information Exchange (DLSIE); and the Army Study Program (TASP). The dental care requirements of incoming Army recruits have been documented in separate studies by Hobson[5] and by Cassidy, et al.[6] Parker[7] recently reported the dental care requirements of all segments of the active duty Army population both in terms of actual care needs and in treatment time requirements. However, no concrete data exists in the literature concerning the effects of the Army Oral Health Maintenance Program (or any previously used Army dental care delivery systems) on the dental health

status of soldiers either individually or collectively. Active duty Army personnel have voluntarily served as subjects in innumerable studies in which possible improvements in dental health have been evaluated. However, these studies have all been controlled clinical trials designed to evaluate the effects of some specific agent, device or procedure toward improved dental health of the individual rather than management studies designed to evaluate the effects of dental care delivery systems on the dental health of the total population. Likewise, little concrete data is available concerning the effects on the oral health of the served population of large all-inclusive civilian health care delivery systems similar to the AOHMP.

A determination as to what, if any, improvement in the dental health within the Army, results from this program, is currently needed. Such an evaluation would allow dental planners and managers at all levels to determine if modifications are needed in the program and/or to determine if alternate methods of delivering dental care within the Army should be considered. This study was requested by the Directorate of Dental Sciences, United States Army Health Services Command (HSC) in February 1977 and placed on the HSC approved Study Program for FY 78.

2. OBJECTIVES.

a. Original Objectives. The original objectives of this study were:

(1) To determine, by career management field (combat arms vs combat support and combat service support) and by rank, the percentages of Army personnel who receive needed dental care and whose dental classifications change as a result of the AOHMP examination.

(2) To determine, by career management field (combat arms vs combat support and combat service support) and by rank, the percentages of originally needed dental appointments and dental care requirements which have been satisfied or are being satisfied four months following the soldiers' annual AOHMP examination.

(3) To determine if improvements in oral health, as indicated by filled to decayed, missing and filled surface (F/DMF) rates, and the percentage of Army personnel who receive needed dental care as a result of the AOHMP dental examinations are related to the method by which these dental examinations are conducted. (There are at least three methods of conducting these examinations: In one centrally located dental facility; in every dental clinic on post; and in the troop areas in a non-dental facility.

(4) To determine possible reasons for variations in the degree of participation in the AOHMP at various Army installations.

(5) To determine what differences, if any, exist in the oral health of soldiers stationed at installations with varying degrees of

participation in the AOHMP examinations. The filled to decay, missing and filled (F/DMF) and the decayed to decayed, missing, and filled (D/DMF) dental caries indices will be used as criteria for oral health.

(6) To determine, by means of a retrospective inspection of Army members' dental records, to what extent the AOHMP has resulted in increased quantity of dental care being provided to soldiers.

b. Revision of Objectives. During the conduct of the study (July 1978) it became apparent a revision of the original criteria was necessary in order to produce a purposeful study. The project officers evaluated the original objectives and determined if they could be supported under current conditions using the following rationale:

(1) To determine by career management field (combat arms vs combat support and combat services support) and by rank, the percentage of Army personnel who receive needed dental care and whose dental classifications change as a result of the AOHMP examination.

Status Evaluation: Data had been gathered from six installations and analyzed. Additional data was being gathered at three other installations. Preliminary results were available. It was anticipated that this objective would be fully met in the final report.

(2) To determine, by career management field (combat arms vs combat support and combat service support) and by rank, the percentage of originally needed dental appointments and dental care requirements which have been satisfied or are being satisfied four months following the soldier's annual AOHMP examination.

Status Evaluation: Data had been gathered from six installations. Additional data was being gathered at three other installations. Preliminary results from the first group of posts studied was available. It was anticipated that this objective would be fully met in the final report.

(3) To determine if improvements in oral health, as indicated by filled to decayed, missing and filled surface (F/DMF) rates, and the percentage of Army personnel who receive needed dental care as a result of the AOHMP dental examinations are related to the method by which these dental examinations are conducted.

Status Evaluation: AOHMP examinations were conducted in one of three ways, depending upon the installation. They were done in one central facility, or in each of the dental clinics on post, or in the troop areas in a non-dental facility.

(a) There were several physical and philosophic problems in attempting to meet this objective. First, the third alternate method (troop areas in a non-dental facility) was not available for study. This was to be Fort Polk, the only post using this approach, which was actively involved in preparation for participation in the Reforger

Exercise. The unavailability of personnel for examination did not permit use of this site.

(b) Second, several of the study sites conducted AOHMP exams in a central facility. However, three other sites had only one dental clinic on post (Redstone Arsenal, Stewart, and Hunter AAF). It was considered incorrect to lump these together, since several were de facto central facilities whose sole or major purpose was not to conduct exams. On the other hand, these facilities did not fit into the other category either.

(c) Third, only one installation (Fort Jackson) conducts AOHMP exams in each of its dental clinics. It was considered unacceptable strategy to use only one study site as representative of a particular examination methodology. It was also not acceptable to compare this one site to a number of other sites whose mission, size, and professional staffs were not approximately comparable. Preliminary findings indicated that the mission of the units supported by a DENTAC was an important factor influencing broken AOHMP appointments. This factor was not known when the study was planned.

(d) Fourth, experience on-site made it clear that to obtain a sufficient amount of data to develop a meaningful F/DMF index would be extremely difficult. The percentages of personnel who meet their first appointments for an AOHMP exam was quite low (50% at one post). Failure rates for routine dental appointments were high. To ask commanders to release personnel for an additional exam to meet the requirements of this study would be difficult and the failure rate would be high. At planning time there were two dental officers at HCSD who were trained in DMF procedures. One officer was reassigned. The physical arrangements for conducting the exams changed at some of the sites between planning dates and the data collection period.

(e) Finally, to conclusively relate improvements in oral health to the physical location or environment in which the AOHMP exams are conducted would be very difficult, if not impossible, under even the most favorable study conditions. This was true especially since the DMF index considers only limited assessment of total oral health.

(4) To determine possible reasons for variations in the degree of participation in the AOHMP at various Army installations.

Status Evaluation: The investigators determined that there was no acceptable way to make such determinations which would be statistically or logically valid. Among the factors to be examined were: (1) the role of the DDS in the local AOHMP; (2) the role of AOHMP liaison officers in the units supported by the local DENTAC; (3) the methods and extent of briefing unit commanders concerning the AOHMP. All of these factors could be possible reasons for good, mediocre, or poor participation rates, and they have already been identified as such. Rather than put

them forward as determinant factors in participation rates, the study report would discuss them merely as a matter of general interest. Differences as well as commonalities were to be noted, but no attempt was made to link them to individual or overall participation rates in the AOHMP. The range of the participation rates for dental activities has been reduced as the program matures. Since the study was planned the inter-installation range has been reduced significantly and the gross differences between programs have been narrowed as a result of operational experience and HSC program guidance.

(5) To determine what differences, if any, exist in the oral health of soldiers stationed at installations with varying degrees of participation in the AOHMP examinations.

Status Evaluation: The criteria to be used to make these determinations were to be the F/DMF dental indices. As noted earlier it was determined that such data would be very difficult to obtain in sufficient quantity to be statistically representative of the population under study. More importantly, because of the high mobility of the study population (after only four months an average of 32% of the dental records of participants in the study were no longer available) it would be impossible to relate the oral health status of soldiers at a particular installation to the degree of participation in the AOHMP at that installation. The physical restraints affecting use of the DMF index which were noted in para c also apply to this objective.

(6) To determine, by means of a retrospective inspection of Army members' dental records, to what extent the AOHMP has resulted in increased quantity of dental care being provided to soldiers.

Status Evaluation: This objective would be more accurately stated as follows: "To determine . . . to what extent the AOHMP has affected the quantity of dental care being provided to soldiers." It cannot be assumed that any program would cause change only in one direction. The methodology proposed to meet this objective was to record the number of dental appointments received by those soldiers 25 years of age or under in three different eras of the AOHMP: (1) fully operational (74-78); (2) partially operational (68-72), and the pre-AOHMP era (62-66). The number of appointments received were to be recorded for each participant (record reviewed) for the years 1978 and the preceding 19 years, or for those participants with less than 20 years service, for the length of time they were on active duty. This would be a most difficult and time-consuming task with very little benefit derived.

Again, any link between the number of dental appointments received and the era in which they were received (74-78; 68-72, etc.) would be merely circumstantial. There is no way to statistically connect them without employing strict controls that would make such investigation impractical. Under present AOHMP guidelines, any person who has had any kind of dental treatment within six months of his/her birth month

anniversary is considered to be a participant in the program. Therefore, the announced participation rates include all persons who have been in the dental care "system" during that period. Many of these people have sought care on their own initiative and not as a result of the AOHMP examination. To link the care they received to the existence or non-existence or partial existence of the AOHMP would be futile.

On the other hand, it would be equally futile to attempt to study only the records of those persons who had received an AOHMP exam. This would severely bias the results.

This objective was modified to determine, by means of a retrospective inspection of Army members' dental records, the percentage of exams received by those persons who should have received an exam since Phase II began (Feb 75). Further information was sought to determine if the members receiving examinations were receiving dental care subsequent to the exam, and if so, what kind(s) of care. If for some reason the service member either did not get into the system as a result of the exam or fell out of the system at some time after care had been initiated, an attempt was made to determine the reasons for such non-participation.

(7) Objectives three through five could not be met as originally stated. The new investigators believed that deletion of these objectives from the study would not diminish the impact or the significance of the results. It was determined that objectives one and two could be fully met. It is expected that results from the analysis of this data would fully meet the requirements and the purpose of this study. Objective six, as modified, would give good evidence as to whether or not the AOHMP was having a positive impact on the military members' entry into the Army dental care system. The investigators evaluation of the original criteria led them to draw the following conclusions:

(a) Conduct of this study, as modified, would still provide valuable and timely information to dental managers at HSC and OTSG.

(b) It was feasible and practical for the study to be conducted as modified.

(8) A memorandum concerning the changes in the recommendations was prepared and presented to the HSC study monitor with the following recommendations for the continuance of the study:

(a) Recommend that objectives three through five be deleted from the study.

(b) Recommend that objective six be modified to determine the actual participation rate in the AOHMP, the percentage of those participants who actually enter the dental care system subsequent to the exam, and what kinds of care were received. One further purpose of this

modified objective was to determine the reasons for non-participation after receiving an examination. In other words, why aren't these services members receiving necessary care?

(9) The HSC study monitor concurred with revision of the criteria and the recommendations regarding the proposed changes were submitted to the Study Advisory Committee, HSC and approved on 12 October 1978. The memorandum to the HSC study monitor and the approval by the HSC, SAC, are at Appendix A.

c. Revised Objectives. The revised objectives for this study were:

(1) To determine by career management field (combat arms versus combat support and combat service support) and by rank the percentages of Army personnel who received needed dental care and whose dental classifications improved as a result of the AOHMP examination.

(2) To determine by career management field (combat arms versus combat support and combat service support) and by rank, the percentages of originally needed dental appointments and dental care requirements which have been satisfied four months following the soldiers' annual AOHMP examination.

(3) To determine by retrospective audit of dental records the percentage of those participants who actually enter the dental care system subsequent to examination and what kinds of care they received.

3. METHODOLOGY.

a. Overview. The data were obtained by means of a prospective clinical survey and a retrospective records audit conducted at dental services at ten DENTACs in CONUS, including dental services at two Army medical centers. The prospective clinical surveys were conducted for a period of one month at each study site, and included all persons who presented for their annual exam during that period. At the time of their annual dental examination an individual treatment plan was developed for each patient by the examining dentist, using the identified treatment needs as the basis for completing the study (at Appendix B). Four months after the initial data collection period (initial examination), the investigators visited the study sites to examine the dental records of those persons examined four months previously. Due to transfers, separations, and other causes all of the records were not available. Data was gathered from all available records and analyzed at HCSD. Determinations were made of the dental care requirements and the amount of dental care received by US Army active duty populations according to rank group, basic career management field (combat or combat support), and by the installation to which assigned. Types of dental care required and received were obtained in numbers of treatments (teeth), percent of the sample requiring the specific types of care, and the number of appointments required to deliver (receive) that care.

b. Sample.

(1) The sample population consisted entirely of active duty Army personnel stationed within CONUS. Ten DENTACs including MEDCENs, were involved in data collection in order to obtain a representative cross section of the population. Factors such as installation size, mission, and types of soldiers assigned were considered in the selection. Six rank groups were identified as primary subpopulations for comparison and data analysis. They were defined as follows:

Group 1 - E1 - E4
Group 2 - E5 - E6
Group 3 - E7 - E9
Group 4 - W1 - W4
Group 5 - O1 - O3
Group 6 - O4 - O6

Subjects were also divided into two major categories regardless of rank. They were identified either as combat soldiers Type 1, or as combat support/combat service support Type 2.

(2) The Army Oral Health Maintenance Program (AOHMP) was the mechanism used to select subjects for the survey. Initial data collection (care requirements) at the time of the annual examination minimized inconvenience for both the examiners and subjects, eliminated the need for additional dental resources, and did not disrupt the normal scheduling for dental care. Since the retrospective data was collected by the HCSD investigators there was no disruption of care during this phase of the study effort.

c. Data Collection Procedures.

(1) Initial Examination. The basic guidance provided each examining officer consisted of the following instructions: "Your examination findings should result in the formulation of a treatment plan that you feel will restore the patient to reasonably optimal oral health." A copy of the data collection instrument and instructions are at Appendices A and B. The data collection form contained 25 dental care related entries and personal and administrative data.

Examiners indicated the numbers of restorations, extractions, teeth needing endodontic therapy, units of crown and bridge, complete dentures, partial dentures, prophylaxis/scalings, quadrants of subgingival curretage, and quadrants of gingivectomy needed. The examiner also estimated the number of dental appointments which would be needed to accomplish those requirements. Each patient was classified according to the urgency of care required. The classification system criteria are as follows:

Code	Explanation
Class I	Requires no care
Class II	Requires non-priority routine care
Class III	Requires early care to preclude loss of teeth or prevent pain
Class IV	Requires prosthetic care to restore normal dental function

(2) Follow-up Evaluation. Four months after the initial dental examination, the HCSD investigators visited each of the study sites. The purpose of these visits was to examine the dental records of those persons who had undergone an annual dental examination four months previously and to record the dental care received during the interim period. Also recorded at this time was information relating to the patients' attendance record at scheduled dental appointments. (See Appendix B for a copy of the data collection form.)

d. Retrospective Records Audit. At the time the follow-up evaluation was being conducted at each installation the investigators sampled every fiftieth record on file. If the record indicated that the person had been on active duty on or before 1 January 1975 it was included in the audit sample. If this criterion was not met the next record was scanned until a legitimate record was found. The process was continued until the files were exhausted. The data collection form for this part of the study is at Appendix C.

e. Data Handling. Data collection forms were reviewed for completeness and correctness at HCSD prior to keypunching. Questionable data forms were evaluated by the project officers who made final disposition of them. Incomplete or inaccurate data collection forms did not present a significant problem. The reviewed data source was transferred to punched cards by the Production Division, Health Care Systems Support Activity, HSC.

f. Data Analysis. The Operations Analysis Office, DCDHCS, AHS, furnished computer support using their on-line terminal of a Control Data Corporation (CDC) 6500 computer located at Fort Leavenworth, KS. The preprogrammed Statistical Package for the Social Sciences was used for the statistical analysis. Programming support was obtained from within HCSD.

4. FINDINGS AND DISCUSSION.

a. Sample Characteristics.

(1) Part I (Report No 1) of the study was based on an analysis of 2,650 cases. Each case represented the outcome of a four month exposure to the Army dental care delivery system after being identified as needing care during their annual AOHMP examination. The rank distribution of the sample closely paralleled that of the total Army and an almost equal combat/non-combat ratio was found.

(2) Part II (Report No. II) used a sample size of 1,981 cases. Each case was obtained by a record audit of individuals who had been on active duty since 1 January 1975. 1:50 record selection ratio for each installation visited was used to randomize the sample. The sample years of service distribution closely follows the US Army Objective Force Years of Service Profile.

(3) Part III (Report III) consisted of a care needs profile of the entire sample of AOHMP examination study participants and consists of 5,739 cases. The rank group distribution follows the total Army rank distribution very closely.

b. First Objective. The first objective of the study has been fully met in Report No. 1 (HCSD Report #79-004-A). Table 1 demonstrates the increases in the percent of persons improving to a Class I category and the decreases in the percent of persons in the other dental classifications. The percent differences shown in parentheses indicate the degree of change for each dental classification by MOS type. Analysis of variance was performed to determine if there was a significant difference between the changes that occurred between types. The results indicated that these changes are highly significantly different ($p = .0000$, $F = 21.9563$ - $DF = 2644$). Therefore, non-combat type soldiers had a more favorable change in improved dental classification than did combat MOS soldiers. Tables 2 and 3 address the changes in dental classification and thus oral health status that occurred among rank groups. Since rank also reflects age these two tables also indirectly compare age by military status (enlisted versus officer). The data illustrates that there are sizeable differences in the dental classification shifts that occur within the rank groups. The range in the positive shifts to Class I varies from 16.6 percent for the E1-E4 group to 55.8 percent for the 05-06 group. This difference in improvement in the oral health indicator is partially affected by the differences that existed in the baseline Class II and III distributions. That is, the 05-06 group had a substantial higher percent of persons in Class II than did the E1-E4 group. Among the enlisted groups (Table 2) it may be seen that the more favorable Class I shifts occur in the E5-E6 and E7-E9 groups. The age groups with the greatest percentages in Class III at the time of examination (Table 2) are the E1-E4 and the E5-E6 groups (approximately 56 percent) thus requiring a greater shift than for the 01-03 and 04-06 groups ehich had better than 70 percent of the sample in Class II initially (Table 3). However, in general there was a positive shift in dental classification indicating a favorable change in oral health status during the four month interval between initial examination and follow-up record evaluation. This indicator of program effectiveness demonstrates that the AOHMP was effective in improving the oral health status of program participants.

c. Second Objective. The second objective of the study has been fully met and was also described in detail in Report No. 1 (HCSD Report #79-004-A). Tables 4-8 of this report summarize the second objective findings. Table 4 addresses the changes between combat and non-combat MOS soldiers for the mean number of dental appointments needed and

received. The table indicates that although there was no significant difference between the means for dental appointments needed; there were significant differences between the number actually received. The statistical significance must be weighed against the practical significance of such a narrow range (.23) of difference and such a large sample (2651). However, when this difference is converted to percent it reflects a 7 percent difference in appointments between the groups. Table 5 contains needed and received dental appointment comparisons by rank group and shows that statistically significant differences exist among both categories being compared. The range for dental appointments received means is relatively small (1.50 to 2.67). The differences between groups for percent of appointments received (37.95 for E1-E4 to 64.3% for 04-06) are related to the wide differences that existed in appointments needed (5.46 for E1-E4 to 3.11 for 04-06). At the initial examination these percent differences do not reflect the absolute amount of dental care received by each rank group. Table 6 displays the care requirements accomplishment rate for each care variable for combat and combat support/combat service support MOS groups. The combat MOS group received a lesser proportion of their care requirements in every category except complete dentures. The care accomplishment rates by rank status are shown for Tables 7 and 8. In general, the differences in the care needs between rank groups are greater than the difference in the amount of care received. Thus the percent of care received suggests differences in care received between groups. This difference is relative rather than absolute and does not constitute any indication that rank directly influences the amount of care received. Another indicator used to evaluate the second objective was a dental treatment time comparison. The average hours of treatment required and hours of treatment received permit a less complex comparison than can be accomplished when specific types of care are compared. Table 9 shows the percent completion of hours of required based on the four month evaluation period. These findings indicate that non-combat MOS soldiers had approximately five percent more of their hourly care requirements met during this evaluation. Based on the significant difference shown between means for hours of care received and the lack of a significant difference between care needs this five percent can be concluded to be a real difference in terms of absolute care received. Table 10 addresses this same area for rank groups. Again, the differences in percent of care received are affected more by the difference in care needs than by actual differences in hours of care required. Conclusions, recommendations and summary from Part I of the study which address the objectives 1 and 2 may be found at Appendix D.

d. Third Objective. The third objective is addressed completely in Report No. 2 (HCSD Report #79-004-B). The participation rates shown in Table 11 show improvement over the three years period, and compare favorably to participation rates [8,9] reported for civilian prepaid care programs. Over a three year period, more than 80 percent of those examined and found to be in need of care received some care beyond the

examination phase (See Table 12). The types of care received and the proportion of the population receiving each type can be seen at Table 13. Oral hygiene is the type of care received most frequently, followed by restorative services and oral surgery. This pattern coincides with the need pattern described in earlier reports of this study. The conclusions and recommendations and summary for this part of the study may be found at Appendix E.

e. Care Needs Update. The material presented in Part III (HCSD Report #79-004-C) does not address the objectives of this study. The report was prepared to represent an update of dental care needs based on the sample examined at the beginning of Part I of this study. This report fulfills Recommendation 7b of HCSD Report #76-009R, April 1976. The general findings indicate that the need for restorations, extractions, and preventive services closely parallels the 1976 study findings. However, the endodontics, crown and bridge, removable prosthodontics, and periodontal care needs were less than those reported in the previous study. Significant differences in specific care needs were shown to exist between rank groups and between combat and non-combat type soldiers. Conclusions and recommendations and summary reported for this part of the study may be found at Appendix F.

f. Overall Evaluation. The objectives of this study have been met and the overall program evaluation indicates that the AOHMP is an effective means of improving the oral health status of soldiers. Since the mobility of eligible active duty personnel in the dental care system cannot be controlled to permit evaluation of alternative Programs, the effectiveness of the current program was examined only from a positive-negative standpoint.

5. CONCLUSIONS.

It is concluded that:

a. Combat support/combat service support MOS personnel had a more favorable improvement in dental classification than the combat type soldiers.

b. Changes toward improved health status were less pronounced in lower rank groups.

c. The overall shift in dental classifications indicates that the AOHMP was effective as a mechanism for improving the oral health status of program participants.

d. Combat MOS soldiers received significantly less care during the four month evaluation period than did combat support/combat service support soldiers.

e. Differences in the percent of care needs received between rank groups were related to differences in care needs rather than absolute differences in care received.

f. Participation rates improved annually during the three years the program has been operating intensively.

g. More than 80 percent of those participants, who were examined as a result of the AOHMP and needed care, received some dental treatment.

6. RECOMMENDATIONS.

It is recommended that:

a. The program be continued until future studies concerning the optimal frequency of dental examinations are completed.

b. Unit training schedules be considered by DENTACs in scheduling dental appointments.

c. AOHMP be continued as an effective mechanism for improving the oral health status of soldiers.

d. Efforts continue to improve participation by recalcitrant evaders of the AOHMP.

e. A study be considered to determine the factors that are responsible for combat MOS soldiers receiving less care than combat support/ combat service support personnel.

f. Future AOHMP evaluations be conducted to determine program effectiveness.

7. REFERENCES

1. HQDA Memorandum for: All Dental Corps Officers, subject: Oral Health Maintenance Program, 6 December 1978.

2. HQDA Letter, subject: Phase II - Army Oral Health Maintenance Program, 20 January 1979.

3. HQDA Letter, subject: Army Oral Health Maintenance Program, 4 October 1974.

4. Phase II - Army Oral Health Maintenance Program Dental Bulletin No. 2, US Army Health Services Command, 18 February 1975.

5. Hobson, R.W. "Dental Examinations of 8,139 Army Recruits, Preliminary Report." Armed Forces Medical Journal, 7:648, May 1956.

6. Cassidy, J.E.; Parker, W.A.; and Hutchins, D.W. "Dental Care Requirements of Male Army Recruits." Military Medicine, 138:27, January 1973.

7. Parker, W.A. "Dental Care Requirements of Active Duty Army Personnel." HCSD Report 76-009R, United States Army Health Services Command, April 1976.

Table 1

PERCENT DISTRIBUTION OF DENTAL CLASSIFICATIONS AT TIME OF EXAMINATION AND FOUR MONTHS AFTER EXAMINATION BY COMBAT AND COMBAT SUPPORT/ COMBAT SERVICE SUPPORT MILITARY OCCUPATIONAL SPECIALTIES

Dental Classification	Percent Distribution					
	Combat MOS			Non-Combat MOS		
	At Time of Examination	Four Months After Examination	% Diff. ( )	At Time of Examination	Four Months After Examination	% Diff. ( )
I	.7%*	20.4%	(+20.4%)	1.0%*	25.8%	(+25.8%)
II	43.4%	34.8%	(- 8.2%)	50.0%	38.7%	(-12.3%)
III	53.8%	43.8%	(-10.0%)	48.0%	34.0%	(-14.0%)
IV	2.1%	1.4%	(- 0.7%)	1.9%	1.5%	(- 0.4%)

*Data Processing Error -- Persons in Class I at the time were not included in the study since their dental status could not improve.

Table 2

PERCENT DISTRIBUTION OF DENTAL CLASSIFICATIONS AT TIME OF EXAMINATION AND FOUR MONTHS AFTER EXAMINATION BY ENLISTED RANK GROUPS

Dental Classification	Enlisted Rank Group Percent Distribution								
	E1-E4			E5-E6			E7-E9		
	At Time of Examination	Four Months After Examination	% Diff. ( )	At Time of Examination	Four Months After Examination	% Diff. ( )	At Time of Examination	Four Months After Examination	% Diff. ( )
I	0.2*	16.6	(+16.6)	0.9*	25.9	(+25.9)	0.6	28.1	(+28.1)
II	42.5	37.8	(- 4.7)	39.4	29.5	(-9.9)	56.3	41.9	(-14.4)
III	55.9	44.9	(-11.0)	56.8	42.0	(-14.8)	38.6	26.5	(-12.1)
IV	1.5	0.7	(- 0.8)	2.9	2.7	(- 0.2)	4.5	3.5	(- 1.0)

*Processing Error -- Persons in Class I were not included in this phase of the study effort.

Table 3

PERCENT DISTRIBUTION OF DENTAL CLASSIFICATION AT TIME OF EXAMINATION AND FOUR MONTHS AFTER EXAMINATION BY OFFICER RANK GROUP

Dental Classification	W1-W2			01-03			04-06		
	At time of Examination	Four months after Examination	% Diff ( )	At time of Examination	Four months after Examination	% Diff ( )	At time of Examination	Four months after Examination	% Diff ( )
I	0.	35.8%	(+35.0)	1.1*	42.2	(+42.2)	0.0	55.8	(+55.8)
II	53.2	33.3	(-19.9)	70.1	39.2	(-30.9)	73.1	25.0	(-48.1)
III	46.8	31.3	(15.5)	27.6	17.9	(- 9.7)	26.9	17.3	(- 9.6)
IV	0.0	0.0	(0.0)	1.1	0.6	(- .5)	0.0	1.9	(+ 1.9)

*Processing Error - Persons in Class I were not included in this phase of the study effort.

TABLE 4

PERCENT OF NEEDED DENTAL APPOINTMENTS RECEIVED FOUR MONTHS AFTER EXAMINATION BY MILITARY OCCUPATION SPECIALTY

	Dental Appointments		
	Mean Number Needed *	Mean Number Received **	Percent Received
Combat Arms	5.27	2.10	39.8
Combat Support/ Combat Service Support	4.99	2.33	46.6
Sample Means	5.15	2.20	42.7

Anova Performed
*No significant difference
** Significantly different - $p < .05$ ($F=4.9856/2649$ DF)

TABLE 5

PERCENT OF NEEDED DENTAL APPOINTMENTS RECEIVED FOUR MONTHS AFTER EXAMINATION BY RANK GROUP

	Dental Appointments		
Rank Groups	Mean Number Needed *	Mean Number Received **	Percent Received
E1-E4	5.46	2.07	37.9
E5-E6	5.28	2.39	45.2
E7-E9	5.07	2.69	53.0
W1-W4	3.27	1.50	45.8
O1-O3	3.41	2.10	61.5
O4-O6	3.11	2.00	64.3
Sample Means	5.15	2.20	42.7

Anova Performed
* Significant difference - $p = .0000$ ($F=16.4542/2645$ DF)
** Significant difference - $p = .0005$ ($F=4.4216/2645$ DF)

TABLE 6

PERCENT OF DENTAL CARE REQUIREMENTS RECEIVED FOUR MONTHS AFTER EXAMINATION BY MILITARY OCCUPATIONAL SPECIALTY (MOS) GROUP

Type of Care Requirement	MOS GROUPS: Combat Mean Number Needed	Combat Mean Number Received	Combat % Received	Combat Support/Combat Service Support Mean Number Needed	Combat Support/Combat Service Support Mean Number Received	Combat Support/Combat Service Support % Received
Restorations	4.56	1.36	29.8	3.83	1.47	38.3
Extractions	1.06	.23	21.7	.91	.21	23.0
Endodontics	.08	.023	28.7	.07	.027	38.5
Crown and Bridge	.23	.015	6.5	.36	.028	7.7
Complete Dentures	.01	.0019	19.0	.01	.0009	9.0
Partial Dentures	.09	.004	4.4	.10	.012	12.0
Prophylaxis/Scaling	.96	.58	60.0	.95	.65	68.4
Subgingival Curretage (Quads)	.26	.025	9.6	.22	.035	15.9
Gingivectomy (Quads)	.06	.011	18.3	.09	.021	23.3

Table 7

PERCENT OF DENTAL CARE REQUIREMENTS RECEIVED FOUR MONTHS AFTER EXAMINATION BY ENLISTED RANK GROUP

Type of Care Requirement	Enlisted Rank Groups								
	E1-E4			E5-E6			E7-E9		
	Mean Number Needed	Mean Number Received	% Received	Mean Number Needed	Mean Number Received	% Received	Mean Number Needed	Mean Number Received	% Received
Restorations	4.85	1.44	(29.6)	4.25	1.61	(37.88)	3.18	1.22	(38.3)
Extractions	1.26	.25	(19.8)	.76	.24	(31.5)	.45	.17	(37.78)
Endodontics	.08	.02	(25.0)	.10	.03	(30.0)	.05	.03	(60.0)
Crown and Bridge	.23	.009	(3.9)	.41	.016	(3.9)	.32	.058	(18.1)
Complete Dentures	.001	0	(0.0)	.020	.005	(25.0)	.054	.003	(5.5)
Partial Dentures	.07	.003	(4.29)	.14	.016	(11.4)	.22	.019	(8.6)
Prophylaxis/Scaling	.96	.57	(59.3)	.95	.64	(67.3)	.96	.72	(75.0)
Subgingival Curretage (Quads)	.20	.02	(10.0)	.27	.04	(14.8)	.52	.06	(11.5)
Gingivectomy (Quads)	.04	.009	(22.5)	.09	.009	(10.0)	.23	.054	(23.4)

Table 8

PERCENT OF DENTAL CARE REQUIREMENTS RECEIVED FOUR MONTHS AFTER EXAMINATION BY OFFICER RANK GROUP

Type of Care Requirement	Officer Rank Groups: W1-C4 Mean Number Needed	W1-C4 Mean Number Received	W1-C4 % Received	O1-O3 Mean Number Needed	O1-O3 Mean Number Received	O1-O3 % Received	O4-O6 Mean Number Needed	O4-O6 Mean Number Received	O4-O6 % Received
Restorations	2.33	.65	(27.9)	2.63	1.24	(51.0)	1.60	.75	(46.8)
Extractions	.27	.06	(22.2)	.83	.15	(18.0)	.19	.04	(21.0)
Endodontics	.10	.04	(40.0)	.03	.02	(66.6)	.02	.02	(100.0)
Crown and Bridge	.15	0	(0.0)	.25	.063	(25.2)	.50	.019	(3.8)
Complete Dentures	.021	0	(0.0)	0	0	0	0	0	(0)
Partial Dentures	.63	0	(0.0)	.23	0	(0.0)	0	0	(0)
Prophylaxis/Scaling	.94	.54	(57.4)	.94	.70	(74.4)	.94	.73	(77.6)
Subgingival Curretage (Quads)	.21	0	(0.0)	.07	.02	(28.5)	.27	.19	(70.3)
Gingivectomy (Quads)	.06	0	(0.0)	.03	.006	(20.0)	.10	.077	(77)

TABLE 9

PERCENT OF HOURS OF CARE RECEIVED FOUR MONTHS AFTER EXAMINATION BY MOS GROUP

	Mean Hours of Care Needed *	Mean Hours of Care Received **	Percent of Care Received
Combat	5.0356	1.4174	28.15
Non-Combat	4.8402	1.6052	33.16
Total Sample	4.9547	1.4952	30.18

N=2,651 cases
* Anova performed - No significant difference at .05 level
** Anova Performed - p .05 (F=4.3982/2649 DF)

TABLE 10

PERCENT OF HOURS OF CARE RECEIVED FOUR MONTHS AFTER EXAMINATION BY RANK GROUP

	Mean Hours of Care Needed *	Mean Hours of Care Received **	Percent of Care Received
E1-E4	5.0635	1.4259	28.16
E5-E6	5.3969	1.6675	30.9C
E7-E9	5.2670	1.6803	31.90
W1-W4	3.2902	.8358	25.40
01-03	3.0603	1.4495	47.36
04-06	3.2054	1.4171	44.21
Total Sample	4.9572	1.4971	30.20

N=2,651
* Anova Performed p = .0001 (F=10.2510/2645 DF)
** Anova Performed p =

TABLE 11

Yearly Comparison of the Need for Dental Care Among Personnel who Received ACHDP Examinations

Year	Number Eligible	Received Examinations		Needed Care	
		Number	Percent	Number	Percent
1976	1981	700	35.3	634	90.6
1977	1981	920	46.4	858	93.2
1978	1244 *	685	55.1	647	94.5

* Reduced sample size resulted from some 1976-77 participants not being eligible for this 1978 examination at the time the survey was conducted.

TABLE 12

YEARLY COMPARISON OF DENTAL CARE RECEIVED
BY PARTICIPANTS IN THE ANNUAL AOHMP EXAMINATION

Year	Number with Care Needs	Received Care No. Percent
1976	634	554 (87.2)
1977	858	705 (81.9)
1978	647	531 (82.1)

TABLE 13

DISTRIBUTION OF DENTAL CARE RECEIVED
BY TYPE OF CARE*

YEAR	RECEIVED CARE	TYPE OF CARE									
		ORAL HYGIENE		RESTORATIVE		ORAL SURGERY		PERIODONTICS		PROSTHODONTICS		ENDODONTICS	
		NO.	PERCENT	NO.	PERCENT	NO.	PERCENT	NO.	PERCENT	NO.	PERCENT	NO.	PERCENT
1976	554	441	(79.5)	309	(55.7)	101	(18.2)	33	(5.9)	74	(13.3)	45	(8.1)
1977	705	565	(80.0)	387	(54.7)	93	(13.2)	48	(6.8)	106	(15.1)	45	(6.4)
1978	531	446	(83.8)	254	(47.7)	56	(10.5)	28	(5.3)	54	(10.2)	30	(5.6)

*Percentages ( ) are based on the number who actually received some care subsequent to being diagnosed as needing care.

APPENDIX A

HSDS (16 Aug 78)
SUBJECT: Changes in study titled: "Effect of the Army Oral Health Maintenance Program (AOHMP) on the Dental Health Status of Military Personnel"

TO Study Coordinator FROM DDS DATE 18 Aug 78 CMT 2
ATTN: COL Parker BG Cheatham/cr/5528

Concur in the recommendation regarding the proposed changes in the study titled: "Effect of the Army Oral Health Maintenance Program (AOHMP) on the Dental Health Status of Military Personnel." The remaining objectives will adequately satisfy the needs of the Commander, HSC in keeping the AOHMP viable and making necessary modifications.

Joe L. Cheatham

JOE L. CHEATHAM, D.D.S.
Brigadier General, DC
Deputy Commander for
Dental Services

DISPOSITION FORM

For use of this form, see AR 340-15, the proponent agency is TAGCEN.

REFERENCE OR OFFICE SYMBOL	SUBJECT
HSA-CHC	Changes in study titled: "Effect of the Army Oral Health Maintenance Program (AOHMP) on the Dental Health Status of Military Personnel"

TO	FROM	DATE	CMT 1
BG Cheatham HSC Study Monitor	Study Coordinator	16 Aug 78 COL Parker/pmg/3116	

1. Problem: The Study Proposal, as approved, contained six specific objectives/study questions to be answered. The proposal divided the study into three parts for the purposes of answering these questions and meeting the objectives. The transfer of the primary project officer from HCSD and unexpected difficulties which have become apparent during the data collection phases of the study to date have made it clear to the present investigators that some of the original objectives could not be met or supported. The original objectives are listed below and their status is explained.

2. Original objectives of the study:

a. To determine by career management field (combat arms vs. combat support and combat services support) and by rank, the percentage of Army personnel who receive needed dental care and whose dental classifications change as a result of the AOHMP examination.

Status: Data has been gathered from six installations and analyzed. Additional data is being gathered at three other installations. Preliminary results are available. It is expected that this objective will be fully met in the final report.

b. To determine, by career management field (combat arms vs. combat support and combat service support) and by rank, the percentage of originally needed dental appointments and dental care requirements which have been satisfied or are being satisfied four months following the soldier's annual AOHMP examination.

Status: Data has been gathered from six installations. Additional data is now being gathered at three other installations. Preliminary results from the first group of posts studied is available at the present time. It is expected that this objective will be fully met in the final report.

c. To determine if improvements in oral health, as indicated by filled to decayed, missing and filled surface (F/DMF) rates, and the percentage of Army personnel who receive needed dental care as a result of the AOHMP dental examinations are related to the method by which these dental examinations are conducted.

Status: OHMP examinations are conducted in one of three ways, depending upon the installation. They are done (1) in one central facility, or (2) in each of the dental clinics on post, or (3) in the troop areas in a non-dental facility.

There were several physical and philosophic problems in attempting to meet this objective. First, the third alternate method (troop areas in a non-dental facility) was not available for study. This was to be Fort Polk. But this post was actively involved in preparation for an participation the Reforger Exercise. The

DA FORM 1 FEB 74 2496 REPLACES DD FORM 96, WHICH IS OBSOLETE. ☆ U.S. G.P.O. 1976-665697/1018

unavailability of personnel for examination did not permit use of this site. It is the only Dental Activity using this approach for AOHMP examinations.

Second, several of the study sites conduct the OHMP exams in a central facility. However, three other sites have only one dental clinic on post (Redstone Arsenal, Stewart, and Hunter AAF). It would not be correct to lump these together, since several are de facto central facilities whose sole or major purpose is not to conduct exams. On the other hand, these facilities don't fit into the other category either.

Third, only one installation (Fort Jackson) conducts OHMP exams in each of its dental clinics. It would not be acceptable strategy to use only one study site as representative of a particular examination methodology. It would also not be acceptable to compare this one site to a number of other sites whose mission, size, and professional staffs are not approximately comparable. Preliminary findings indicate that the mission of the units supported by a DENTAC is an important factor influencing broken AOHMP appointments. This factor was not known when the study was planned.

Fourth, experience on-site made it clear that to obtain a sufficient amount of data to develop a meaningful F/DMF index would be extremely difficult. The percentages of personnel who meet their first appointments for an OHMP exam is quite low (50% at one post). Failure rates for routine dental appointments are high. To ask commanders to release personnel for an additional exam to meet the requirements of this study is difficult and the failure rate would be high. At planning time there were two dental officers at HCSD who were trained in DMF procedures. One officer was reassigned. The physical arrangements for conducting the exams changed at some of the sites between planning dates and the data collection period.

Finally, to conclusively relate improvements in oral health to the physical location or environment in which the OHMP exams are conducted would be very difficult, if not impossible, under even the most favorable study conditions. This is true especially since the DMF index considers only limited assessment of total oral health.

d. To determine possible reasons for variations in the degree of participation in the AOHMP at various Army installations.

Status: The investigators determined that there was no acceptable way to make such determinations which would be statistically or logically valid. Among the factors to be examined were: (1) the role of the DDS in the local AOHMP; (2) the role of AOHMP liaison officers in the units supported by the local DENTAC; (3) the methods and extent of briefing unit commanders concerning the AOHMP. All of these factors could be possible reasons for good, mediocre, or poor participation rates, and they have already been identified as such. Rather than put them forward as determinant factors in participation rates, the study report will discuss them merely as a matter of general interest. Differences as well as commonalities will

be noted, but no attempt will be made to link them to individual or overall participation rates in the AOHMP. The range of the participation rates for dental activities has been reduced as the program matures. Since the study was planned the inter-installation range has been reduced significantly and the gross differences between programs have been narrowed as a result of operational experience and HSC program guidance.

e. To determine what differences, if any, exist in the oral health of soldiers stationed at installations with varying degrees of participation in the AOHMP examinations.

Status: The criteria to be used to make these determinations were to be the F/DMF dental indices. As noted earlier it was determined that such data would be very difficult to obtain in sufficient quantity to be statistically representative of the population under study. More importantly, because of the high mobility of the study population (after only four months an average of 32% of the dental records of participants in the study were no longer available) it would be impossible to relate the oral health status of soldiers at a particular installation to the degree of participation in the AOHMP at that installation. The physical restraints affecting use of the DMF index which were noted in para c also apply to this objective.

f. To determine, by means of a retrospective inspection of Army members' dental records, to what extent the AOHMP has resulted in increased quantity of dental care being provided to soldiers.

Status: This objective would be more accurately stated as follows: "To determine . . . to what extent the AOHMP has affected the quantity of dental care being provided to soldiers." It cannot be assumed that any program would cause change only in one direction. The methodology proposed to meet this objective was to record the number of dental appointments received by those soldiers 25 years of age or under in three different eras of the AOHMP: (1) fully operational (74-78); (2) partially operational (68-72), and the pre-AOHMP era (62-66). The number of appointments received were to be recorded for each participant (record reviewed) for the years 1978 and the preceding 19 years, or for those participants with less than 20 years service, for the length of time they were on active duty. This would be a most difficult and time-consuming task with very little benefit derived.

Again, any link between the number of dental appointments received and the era in which they were received (74-78; 68-72, etc) would be merely circumstantial. There is no way to statistically connect them without employing such strict controls that would make such investigation impractical. Under present AOHMP guidelines, any person who has had any kind of dental treatment within six months of his/her birth month anniversary is considered to be a participant in the program. Therefore, the announced participation rates include all persons who have been in the dental care "system" during that period. Many of these people have sought care on their own initiative and not as a result of the AOHMP examination. To link the care they received to the existence or non-existence or partial existence of the AOHMP would be futile.

HSA-CHC 16 Aug 78
SUBJECT: Changes in study titled: "Effect of the Army Oral Health Maintenance Program (AOHMP) on the Dental Health Status of Military Personnel"

On the other hand, it would be equally futile to attempt to study only the records of those persons who had received a scheduled AOHMP exam. This would severely bias the results.

This objective was modified to determine, by means of a retrospective inspection of Army members' dental records, the percentage of exams received by those persons who should have received an exam since Phase II began (Feb 75). Further information was sought to determine if the members receiving examinations were receiving dental care subsequent to the exam, and if so, what kind(s) of care. If for some reason the service member either did not get into the system as a result of the exam or fell out of the system at some time after care had been initiated, an attempt was made to determine the reasons for such non-participation.

3. Discussion: A listing of the original objectives of the study has been given, along with the progress made to date. For the reasons expressed in para 2, along with a change in the primary project officer, objectives two through six cannot be met as originally stated. The investigators believe that deletion of these objectives from the study will not diminish the impact or the significance of the results. Objectives one and two have been fully researched and significant data has been gathered. It is expected that results from the analysis of this data will fully meet the requirements and the purpose of this study. Objective six, as modified, will give good evidence as to whether or not the AOHMP is having a positive impact on the military members' entry into the Army dental care system.

4. Conclusions:

a. Conduct of this study, as modified, will still provide valuable and timely information to dental managers at HSC and OTSG.

b. It is feasible and practical for the study to be conducted as modified.

5. Recommendations:

a. Recommend that objectives three through five be deleted from the study.

b. Recommend that objective six be modified to determine the actual participation rate in the AOHMP by military members, the percentage of those participants who actually enter the dental care system subsequent to the exam, and what kinds of care were received. One further purpose of this modified objective is to determine the reasons for non-participation after receiving an examination. In other words, why aren't these service members receiving necessary care?

6. Request your concurrence or recommendations regarding these proposed changes prior to their submission to the Study Advisory Committee.

Thomas H. Lamson

THOMAS H. LAMSON
COL, MC
Study Coordinator

MINUTES OF THE HSC STUDY ADVISORY COMMITTEE (SAC) MEETING
FY 78-4

1. The HSC SAC met at 1030 on 12 October 1978 in the HSC Commander's Conference Room. Attendance of members and participants was as follows:

Members Present

MG Marshall E. McCabe, Chairman
COL T. Lawson, Study Coordinator
COL J. Hertzog, DCSPA
COL K. Cass, DCSOPS
COL B. Cabell, DCSLOG
COL J. Funk, DCSPER
COL D. Waller, DCSCOMPT
COL G. Kruger, IG
COL H. Plank, Representing Dir of Dental Service
LTC P. Jennings, Representing Dir of Veterinary Service

Participants

MAJ J. Howell, HCSD
Ms. J. Blankenship, DCSCOMPT

2. The Chairman called the meeting to order. Members or their representatives had previously received background information and material regarding all items on the written agenda.

3. Old business. Consideration of deletion of study titled "Enlisted Retention in the AMEDD (ERA)." This issue was previously considered at the last SAC meeting on 10 July 1978. The SAC recommends that the study be retained in the program because studies conducted by others have not provided essential data. The SAC also recommends that emphasis be given to why the HSC reenlistment rate is low compared to other commands.

4. New business.

a. Quarterly Report. The SAC briefly reviewed the studies in progress as shown in the quarterly report and recommends that the FY 78-3 HSC Health Care Delivery Study Program Progress Report be accepted as written.

b. Final reports. The SAC recommends that the recommendations of the following study reports be approved for implementation (except as noted):

(1) AMOSIST Program Field Evaluation: Physician Savings and Cost Effectiveness.

(2) Dental Care Composite Unit Study: Phase II-Development of a Time Provider Based Dental Procedure Weighting System.

(3) Physicians' Assistants Attitude and Performance. The SAC recommends that for implementation the recommendation at paragraph 7c,

page 10 of the final report, be ended after the word "education." This eliminates that portion of the sentence pertaining to baccalaureate degree completion.

c. Review of results of HQDA Review of FY 79/80 Study Program. The Study Coordinator stated the FY 79/80 HSC Draft Study Program was submitted to HQDA on 26 April 1978 for review UP AR 5-5. The results of that review were sent to the HSC Study Coordinator by letter, DACS-DMO, DA Office of the Chief of Staff, 14 July 1978, subject: Results of HQDA Staff Review of FY 79/80 Study Program. Actions required by the letter included coordination between the Study Coordinator and the following: Office of the Army Chief of Staff, Office of the Comptroller of the Army, and Office of the Surgeon General. A summary of the results follows:

(1) The following studies were deleted from the FY 79/80 HSC Study Program:

(a) Supervisor in Central Service.

(b) Observation of Monitoring Devices by Para-Professional Nursing Personnel.

(c) Credentialing Private Practice Physicians.

(d) Evaluation of Civilian Community Medical Specialists Resources as a Determinant for MTF Staffing.

(e) Survey of Detractors of Productivity of Physicians.

(2) Information Feedback Systems Study is to be deferred six months to reevaluate the probability of useful results.

(3) Estimated professional manyears (PMY) have been reduced to 0.5 from 1.0 for study titled Optimum Operating Hours for Ambulatory Clinics.

(4) The SAC recommends that a letter be sent to the commanders scheduled to attend the December 1978 HSC Commanders Conference to request that they submit candidates for the study program at the Commanders' Conference.

d. Changes in study titled "Effect of the Army Oral Health Maintenance Program (AOHMP) on the Dental Health Status of Military Personnel."

(1) The study protocol, as approved, contained the following six objectives.

(a) To determine by career management field (combat arms vs combat support and combat services support) and by rank, the percentage of Army personnel who receive needed dental care and whose dental classifications change as a result of the AOHMP examination.

(b) To determine by career management field (combat arms vs combat support and combat services support) and by rank, the percentage of originally needed dental appointments and dental care requirements which have been satisfied or are being satisfied four months following the soldier's annual AOHMP examination.

(c) To determine if improvements in oral health, as indicated by filled to decayed, missing or filled surface (F/DMF) rates, and the percentage of Army personnel who receive needed dental care as a result of the AOHMP dental examinations are related to the method by which these dental examinations are conducted.

(d) To determine possible reasons for variations in the degree of participation in the AOHMP at various Army installations.

(e) To determine what differences, if any, exist in the oral health of soldiers stationed at installations with varying degrees of participation in the AOHMP examinations.

(f) To determine by means of a retrospective inspection of Army members' dental records, to what extent the AOHMP has resulted in increased quantity of dental care being provided to soldiers.

(2) The Study Coordinator explained that the transfer of the primary project officer and unexpected difficulties during the data collection phases of the study to date have made it clear to present investigators that some of the original objectives could not be met.

(3) The present project officer recommends, the Study Advisor and the SACWOG concur that:

(a) Objectives (c) (d) & (e) be deleted from the study.

(b) Objective (f) be modified to determine the actual participation rate in the AOHMP by military members, the percentage of those participants who actually enter the dental care system subsequent to the exam, and what kinds of care are received. One further purpose of this modified objective is to determine the reasons for non-participation after receiving an examination.

(4) The SAC concurs in the recommendations.

e. Update on study management. The Study Coordinator stated that during the past several months OTSG and HQHSC staffs have been exploring ways to more closely coordinate the Study Program. One result is that it has been determined that it is appropriate for TSG to have a representative to serve as a voting member of the HSC SAC. A written notification has been received that, effective 1 October 1978, Mr. Elliotte J. Williams is the TSG representative.

5. There being no further business, the meeting was adjourned.

THOMAS H. LAMSON
COL, MC
Study Coordinator
Recorder

Approved/~~Disapproved~~.

MARSHALL E. McCABE, M.D.
Major General, MC
Commanding

APPENDIX B

AOHMP STUDY

DENTAL CARE NEEDS AND TREATMENTS DATA

A. Participant Identifier _____ B. SSN _____

C. (1) Post _____ D. Unit _____

(2) Dental Clinic where record filed _____

COLUMN

E. Rank _____ (see code sheet) ☐ 1

F. Basic Branch/Career Management Field/Type of Assignment:

(1) Infantry, Armor, Field Artillery, Air Defense, Engineer, PLUS all individuals currently assigned to Airborne, Ranger or Special Forces Units _____ ☐ 2

(2) All other Personnel _____

G. Length of Assignment to Present Post

(1) Less than 12 Months _____ ☐ 3

(2) 12 Months or More _____

H. Data Collected at Time of AOHMP Examination:

(1) Number of Restorations needed ☐☐ 4,5

(2) Number of Extractions needed ☐☐ 6,7

(3) Number of Teeth needing root canal therapy ☐☐ 8,9

(4) Number of units of crown and bridge needed (to include single crowns and fixed bridges) ☐☐ 10,11

(5) Number of full dentures needed ☐ 12

(6) Number of partial dentures needed ☐ 13

(7) Number of prophys/scalings needed (0 or 1) ☐ 14

(8) Number of quadrants subgingival currettage needed ☐ 15

(9) Number of quadrants gingivectomy/gingivoplasty needed ☐ 16

(10) Number of dental appointments needed in order to accomplish requirements listed in 1-9 ☐☐ 17,18

(11) Patient's Dental Classification _____ ☐ 19

(continued on back)

I. Data Collected Four Months Following AOHMP Examination:

(DO NOT COMPLETE THIS SECTION)

		COLUMN
(1)	Number of Fillings received since examination	20,21
(2)	Number of Extractions received since examination	22,23
(3)	Number of Teeth receiving root canal therapy since exam	24,25
(4)	Number of units of Crown and Bridge recieved (to include single crowns and fixed bridges)	26,27
(5)	Number of Full Dentures received	28
(6)	Number of Partial Dentures recieved	29
(7)	Number of Prophys/Scalings received (0 or 1)	30
(8)	Number of Quadrants subginival currettage received	31
(9)	Number of Quadrants gingivectomy/gingivoplasty received	32
(10)	Number of Dental appointments received since exam	33,34
(11)	Patient's Dental Classification	35
(12)	If patient still needs treatment, is the patient actively receiving care? (Yes=1, No = 2)	36

APPENDIX C

AOHMP STUDY - PART 2

RETROSPECTIVE RECORD AUDIT

ANNUAL DENTAL EXAM - SUBSEQUENT CARE RECEIVED

IDENTIFIER NO. _____ POST _____ CLINIC _____

Year EAD	1 ☐	2 ☐									
Birth Month	3 ☐	4 ☐									
Exams Eligible For	5 ☐										
Exams Received	6 ☐										
1976 Exam	7 ☐										
Care Need Indicated	8 ☐										
Care Received	9 ☐	10 OH ☐	11 R ☐	12 S ☐	13 PE ☐	14 PR ☐	15 E ☐				
Care Completed	16 ☐										
If No, Why?	17 ☐										
1977 Exam	18 ☐										
Care Need Indicated	19 ☐										
Care Received	20 ☐	21 OH ☐	22 R ☐	23 S ☐	24 PE ☐	25 PR ☐	26 E ☐				
Care Completed	27 ☐										
If No, Why?	28 ☐										
1978 Exam	29 ☐										
Care Need Indicated	30 ☐										
Care Received	31 ☐	32 OH ☐	33 R ☐	34 S ☐	35 PE ☐	36 PR ☐	37 E ☐				
Care Completed	38 ☐										
If No, Why?	39 ☐										
Installation	40 ☐										

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APPENDIX B

SUMMARY

This study was requested by the Directorate of Dental Services, United States Army Health Services Command in February 1977. The Health Care Studies Division (HCSD), Academy of Health Sciences (AHS), was tasked to perform the study by the Commander, Health Services Command. The purpose of the study was to evaluate the Army Oral Health Maintenance Program (AOHMP) as the basis for improving the oral health status of Army personnel and as the principal patient input program for the Army dental care system.

The objectives/purpose of this phase of the study were to: (1) determine the dental care needs of soldiers; (2) determine the rate at which the dental care needs of the soldier are being satisfied; and (3) determine how the Army dental care system is responding to the demand, i.e., the satisfaction of the greater need. Data for the survey was collected at ten Army installations. These sites were selected to give a balance of population size and mission. The AOHMP, which required an annual dental examination for all active duty personnel, was the sample selection mechanism.

This portion of the study includes about 2650 personnel. This population represents all of those persons who were examined whose dental record could be located four months post-exam. A treatment plan had been developed for each of these persons at the time of their examination which was designed to restore them to reasonably optimal dental and oral health. At the time that the dental records were audited, some four months post-AOHMP exam, data was collected to show how much of the needed care has been received.

Distributions of the nine treatment categories for both care needed and received are provided for the total sample, and also for the sample by rank group, basic career management field, and physical location (site). Analysis of variance tests were performed to test for significant differences between means. Duncan's Multiple Range tests were also applied to rank and site subgroups to determine where (or if) significant differences occurred among the subgroup categories.

The data showed that the combat MOS soldier has a significantly greater need for dental care than does the non-combat MOS soldier. Also, the lower ranking enlisted soldier generally needs more care than other rank groups. The data also showed that, in general, dental care is delivered indiscriminately rather than to satisfy the greater need. The AOHMP was found to be an effective means to assess the dental health status of active duty personnel and it brings into the dental care system many beneficiaries who might not otherwise be there.

CONCLUSIONS.

a. The Army Oral Health Maintenance Program is an effective vehicle for assessing the dental health status of active duty personnel.

b. The program as presently structured provides a minimal level of deff ctive dental care to a substantial portion of the beneficiaries in need of care.

c. The combat MOS soldier has a significantly greater need for dental care than the non-combat MOS soldier.

d. The lower ranking enlisted personnel have a generally greater need for dental care than higher ranking enlisted personnel or officers.

e. There are differences among the various Army installations in both the need for care and receipt of care by assigned personnel. However, the study revealed no clear patterns in either area at particular sites.

f. Patient longevity within the dental care system is relatively brief subsequent to the annual examination.

RECOMMENDATIONS.

a. The results of this study should be made available to Army dental resource planners and managers.

b. Surveys should continue to be conducted on a periodic basis to obtain epidemiologic data, and to assess the effectiveness of Army dental programs and policies.

c. A study should be conducted to attempt to determine the reason(s) for the short life of the average patient in the Army dental care system.

APPENDIX B

SUMMARY

The purpose of this study was to evaluate the Army Oral Health Maintenance Program as the basis for improving the oral health status of Army personnel and as the principal patient input program for the Army dental care system. Although the program has been fully operational since October 1974, an evaluation of the program effectiveness has not been performed. The program is designed to annually evaluate the dental needs of soldiers during their birth month and arrange for the required preventive and corrective services. This portion of the study involved an audit of randomly selected dental health records at nine installations to determine progress of the program since 1 January 1976. The specific objectives were to determine: (a) the percentage of personnel receiving examinations as a direct result of the AOHMP, (b) the degree to which personnel receiving examinations and needing care were receiving care, (c) the categories of dental care being received, (d) the care sequence completion rate, (e) the reasons why care was not completed. A 1:50 record selection ratio was used and data was extracted from sections 15, 16, and 17 of the SF 603 by the project officers and recorded on a study form. Data was extracted from 1,981 dental records to construct the data base for this portion of the study. The following conclusions were drawn:

a. The participation rates calculated from the study data parallel but are less than the rates reported by HSC for the operating AOHMP. Both sources demonstrated substantial improvement in AOHMP participation from 1976 to 1978.

b. Slightly less than 50 percent of the eligible beneficiaries actually receive an annual examination as a direct result of the AOHMP.

c. A need for care was recorded during the AOHMP examination in more than 90 percent of the records surveyed.

d. Only a small segment of the eligible population receive annual examinations on a routine recurring basis (13 percent).

e. A high proportion (80 percent) of the sample who received an annual AOHMP examination and had care needs identified, actually received some care.

f. More than 60 percent of the beneficiaries surveyed who entered the dental care system via the AOHMP and received care beyond the examination phase, completed the care sequence.

g. Approximately 50 percent of the 1976, 1977 examinees who were found to be in need of dental care completed their care sequences by their next birth month.

CONCLUSIONS.

It may be concluded that:

a. The participation rate calculated from the study data parallel but are less than the rates reported by HSC for the operating AOHMP. Both sources demonstrated substantial improvement in AOHMP participation from 1976 to 1978.

b. Slightly less than 50 percent of the eligible beneficiaries actually receive an annual examination as a direct result of the AOHMP.

c. A need for care was recorded during the AOHMP examination in more than 90 percent of the records surveyed.

d. Only a small segment of the eligible population receive annual examinations on a routine recurring basis (13 percent).

e. A high proportion (80 percent) of the sample who received an annual AOHMP examination and had care needs identified, actually received some care.

f. More than 60 percent of the beneficiaries surveyed who entered the dental care system via the AOHMP and received care beyond the examination phase, completed the care sequence.

g. Approximately 50 percent of the 1976, 1977 examinees who were found to be in need of dental care completed their care sequences by their next birth month.

h. Dental prophylaxis and scaling were the dental treatments most frequently received, followed by restorative services.

i. Annual recurrent care needs were found to exist for a high percentage of the sample (90 percent).

j. Annual recurrent care needs were found to exist in about the same proportion of personnel who had completed care the previous year as for the overall sample. However, the magnitude and severity of the needs could not be compared in this study.

k. The dental record was not an accurate measurement tool for determining why needed care sequences were not initiated or were terminated before completion.

RECOMMENDATIONS.

The following recommendations are submitted:

a. That the findings of this study be made available to dental planners and program managers at HSC and DASG.

b. That a study be conducted to determine if the magnitude and severity of dental needs differ for routine participants of the AOHMP and for recalcitrant violators of the program.

c. That the program be continued as the primary input device for the Army dental care delivery system.

d. That long-standing non-participants in the program be identified and introduced into the program.

APPENDIX F

SUMMARY

This study was requested by the Directorate of Dental Services, United States Army Health Services Command in February 1977. The Health Care Studies Division (HCSD), Academy of Health Sciences (AHS), was tasked to perform the study by the Commander, Health Services Command. The purpose of the study was to evaluate the Army Oral Health Maintenance Program (AOHMP) as the basis for improving the oral health status of Army personnel and as the principal patient input program for the Army dental care system.

The objectives of this portion of the study were to determine: (1) the dental care requirements of active duty Army personnel; and (2) what differences, if any, exist in the oral health of soldiers according to their rank and basic military duties, i.e., combat or combat support MOSs. Treatment time requirements to perform the needed care were also calculated. The dental services of ten Dental Activities (DENTAC) collected data for the survey. Sites were selected to give a balance of population size and mission. The Army Oral Health Maintenance Program, which requires an annual dental examination for all active duty personnel during their birth month anniversary, was the sample selection mechanism.

About 6000 persons were examined. Based upon their needs a treatment plan was developed for each person which would satisfy all of their care needs. The data obtained were reliable at the 95 percent confidence level. Distributions of the nine treatment variables and estimates of the treatment time requirements for each variable are provided for the total sample and also by rank group, basic career management field, and site. Analysis of variance tests were performed to test for significant differences between means and Duncan's Multiple Range testing was also applied to rank and site subgroups to determine where the significant differences occurred between the subgroup categories. Analysis of the data indicated that 97.8 percent of the sample required some form of dental care. The need for restorations and extractions was found to be greatest among the lower ranking enlisted personnel. The most common need, regardless of rank, status, duty, or location was for preventive care which was needed by 92.3 percent of the sample. More than 70 percent of the sample required one or more restorations.

The data obtained will aid planners in the determination of resource requirements based upon need rather than numbers of personnel. It will also aid in the determination of future dental specialty training requirements.

CONCLUSIONS.

a. Dental care needs for active duty Army personnel have been determined, using the annual dental examination requirement as the vehicle for patient input and evaluation.

b. There were significant differences in the need for care among the various rank groups. The two lower enlisted rank groups required more restorations and extractions than other ranks, a finding even more striking because these groups comprise a large proportion of the active duty Army.

c. Combat-type soldiers demonstrated a significantly greater overall care need than did the combat support/combat service support personnel.

d. Evaluation of dental care requirements at the study sites showed that there were specific and significant differences in the care requirements of assigned personnel.

e. An evaluation of the clinical time required to deliver the needed care closely parallels the actual care need. Some variations do occur among ranks, types, and sites because of the population mix and the primary mission or missions of the installations.

f. The need for restorations, extractions, and preventive services closely parallel previous studies conducted with Army populations. However, the endodontics, crown and bridge, removable prosthodontics, and periodontal care needs reported were less compared to past studies.

g. The overall treatment time required has been determined to be 4419 hours per thousand personnel.

h. The overall care requirement does not represent the maximum estimation since it does not contain projections for treating traumatic and/or pain relieving dental emergency conditions, routine examinations, or other non-scheduled dental care which may be required.

RECOMMENDATIONS.

a. The results of this study should be made available to dental resource planners and managers.

b. Surveys of this type to determine care needs should be conducted as an integral part of a periodic evaluation of the Army Oral Health Maintenance Program.

10. DISTRIBUTION LIST:

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