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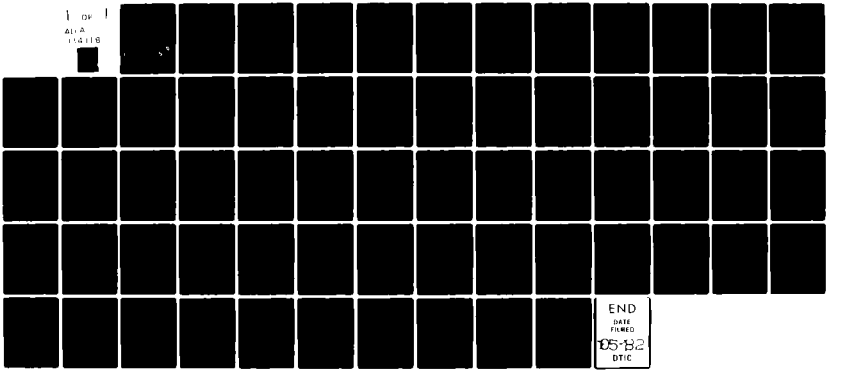

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DENTAL STUDIES OFFICE REPORT #82-002

USE OF MULTIPLE OPERATORIES IN DENTAL CARE DELIVERY

by

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Final Report

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Prepared for: Assistant Surgeon General for Dental Services
Department of the Army

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One hundred forty-seven (147) active dental clinics of the US Army Dental Care System were surveyed using a mail-in questionnaire on practices associated with the use of multiple dental treatment rooms (DTRs). This data and information on the productivity of the 38 Dental Activities (DENTACs), which supervise these clinics, were used to describe the extent of multiple DTR use and its relationship to productivity.

Of 2546 DTRs included in the survey, 1306 (51%) were used in a multiple DTR mode of practice. Five hundred fifty-nine (559) of the 1082 surveyed dentists

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(52%) used multiple DTR mode of practice while the average DENTAC has 62% of its dentists using the multiple mode. There are 63 dental clinics where the ratio of DTRs to dentists suggests the potential for increased use of multiple DTR mode.

Productivity was significantly less in DENTACs where less than a third of the dentists were utilizing multiple DTR mode of practice. There appears to be a trend toward increased productivity with an increase in multiple DTR use by dentists. The measures of productivity in which significant differences were observed were unweighted dental procedures per dentist and Composite Time Value weighted dental procedures per dentist. It is recommended that managers of the Army Dental Care System encourage use of available operatories in a multiple mode as a means of improving productivity.

SUMMARY

One hundred forty-seven (147) active dental clinics of the US Army Dental Care System were surveyed using a mail-in questionnaire on practices associated with the use of multiple dental treatment rooms (DTRs). This data and information on the productivity of the 38 Dental Activities (DENTACs), which supervise these clinics, were used to describe the extent of multiple DTR use and its relationship to productivity.

Of 2546 DTRs included in the survey, 1306 (51%) were used in a multiple DTR mode of practice. Five hundred fifty-nine (559) of the 1082 surveyed dentists (52%) used multiple DTR mode of practice while the average DENTAC has 62% of its dentists using the multiple mode. There are 63 dental clinics where the ratio of DTRs to dentists suggests the potential for increased use of multiple DTR mode.

Productivity was significantly less in DENTACs where less than a third of the dentists were utilizing multiple DTR mode of practice. There appears to be a trend toward increased productivity with an increase in multiple DTR use by dentists. The measures of productivity in which significant differences were observed were unweighted dental procedures per dentist and Composite Time Value weighted dental procedures per dentist. It is recommended that managers of the Army Dental Care System encourage use of available operatories in a multiple mode as a means of improving productivity.

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1. INTRODUCTION.

a. Purpose. Construction and staffing of US Army dental clinics in recent years have been based on the concept that each dentist can be more efficient if he has more than one operatory* available for his use and if he utilizes auxiliaries, e.g. dental hygienists and expanded duty therapists, to assist him and extend his services.

Policy and planning officers of the Office of The Assistant Surgeon General for Dental Services have a need to evaluate the extent to which the multiple dental treatment room (DTR)* mode of practice is utilized and what impact this has on productivity.

b. Background. Previous civilian and military studies have established the effectiveness and efficiency of augmenting dentists with dental assistants, expanded duty dental auxiliaries, and additional dental treatment rooms.[1-13,16-21] Based on this evidence and Department of Defense guidance for planning dental facilities, the US Army has constructed new dental clinics which provide multiple DTRs for use by dentists and oral health care delivery teams.

Design of US Army dental clinics presently in use are of three basic types: World War II, Individual Operatory, or Modular. World War II vintage clinics are still in use. They are usually in buildings designed for another use, e.g. barracks, and converted to dental clinics. Although World War II Clinics were constructed with the single operatory mode of practice in mind, many are conducive to multiple operatory use because of an open-bay arrangement. Clinics designed with individual operatories were commonly constructed from the 1950s to the mid 1970s. Starting about 1975, construction of new dental clinics was of modular type. A module is defined as a modified room containing six operatories partially separated by dividers, plus two individual treatment rooms. This arrangement is designed for multiple DTR and multiple auxiliary utilization.

The Department of Defense criteria for construction of dental facilities specify 1.5 DTRs per general duty dentist, 2.0 DTRs per specialist, 1.0 DTR per oral hygienst, 1.0 DTR per dental officer in training, and 0.5 DTR per expanded duty therapist.** When the number of dentists required is calculated to be five dentists or less, two DTRs per dentist will be used. Clinics requiring six dentists will program a minimum of 10 DTRs.[14]

Parker[15] reported a pilot study on the productivity of different facility designs. Productivity was measured in terms of the number of dental treatment procedures done, number of hours of dental chair occupancy, and number of patients seen per day. He concluded that the modular clinic design was the most productive. The report, however, commented that the findings were limited by the small sample size and recommended that a different study design be used to verify the trends indicated in the pilot study.

* In this paper the terms "operatory" and "dental treatment rooms (DTRs)" are used interchangeably.

** Expanded duty therapists or expanded duty dental assistants are referred to as dental therapy assistants (DTAs) in the US Army.

Although it is assumed that the operatories are available for multiple use in all three types of dental clinic design, it is not known to what extent they are being used in that mode of practice within the Army Dental Care system.

2. OBJECTIVES.

a. To determine the extent to which providers within the Army Dental Care System use the multiple dental treatment room (DTR) mode of practice.

b. To examine the relationship between the extent of multiple DTR use and productivity among Dental Activities (DENTACs).

3. METHODOLOGY.

a. Overview. All operational dental clinics within US Army Health Services Command (HSC) were surveyed using questionnaires distributed through installation DENTAC commanders and returned by mail. Dental clinic chiefs' responses on the questionnaire were used to summarize the distribution of the multiple DTR mode of practice and categorize DENTACs according to the ranges of percent of utilization of the multiple DTR mode. Dental procedures completed during the month of the survey (June 1981) were reported on the Monthly Dental Procedures Report (HSC Form 037), and staffing information was reported on Dental Supplemental Report (HSC Form 113). Indicators of productivity for the study included unweighted dental procedures per dentist (and per provider unit*), weighted dental procedures per dentist/provider unit, patients treated per dentist/provider unit, and dollar value produced per dentist/provider unit. See Appendix A for a discussion of these productivity indicators.

Utilization of multiple DTR mode of practice was described, and the productivity indicators were analyzed to see if differences existed among percent ranges of multiple DTR utilization.

b. Procedures.

(1) Literature Review. A literature search was conducted utilizing automated bibliographical retrieval systems (i.e., Defense Technical Information Center, Defense Logistics Studies Information Exchange, and MEDLARS II). In addition, the Army Study Program was reviewed manually. These searches were conducted with the assistance of management analysts of Health Care Studies Division (HCSD), Directorate of Combat Developments and Health Care Studies (DCDHCS), Academy of Health Sciences, US Army (AHSUSA) and librarians at Stimson Library, AHSUSA. Stimson Library and the Health Sciences Library at the University of Texas at San Antonio were used to secure and review articles.

(2) Data Collection.

(a) From the Directorate of Dental Services (DDS), HSC, Dental Facilities and Equipment Summary (HSC From 193), a list of active dental clinics was constructed. Not included on that list were clinics identified on the

* A provider unit is based on all dentists plus half the DTAs as the denominator in the ratio of procedures to providers of care. This indicator is sometimes used by Army Dental Care System resource managers.

summary as inactive or under construction. Questionnaires were mailed to DENTAC commanders with letters of instruction from DDS, HSC and the primary investigator (See Appendix B). DENTAC commanders distributed the questionnaires to dental clinic chiefs who completed them and returned them by mail to the Dental Studies Office (DSO), Directorate of Combat Developments and Health Care Studies (DCDHCS), Academy of Health Sciences, US Army (AHSUSA). After the questionnaires were returned, clinics described as Oral Health Centers which did not provide treatment beyond diagnostic procedures were excluded from the survey.

(b) Personnel from DSO and HCSD, DCDHCS, AHSUSA, extracted procedure and staffing data from computer-generated summaries of DENTAC operations. These summaries are produced routinely by Health Care Systems Support Activity (HCSSA), HSC from HSC Form 037 and HSC Form 113, which are submitted to DDS, HSC by DENTACs monthly. The data were keypunched onto data processing cards by HCSD analyst personnel.

(3) Analysis of Data.

(a) Data handling procedures were accomplished by DSO/HCSD personnel prior to transfer of data to punched cards by the Production Division, HCSSA, HSC, located in Bldg 2000, Fort Sam Houston, Texas 78234. Programming support and statistical consultation were obtained from HCSD personnel. The preprogrammed Statistical Package for the Social Sciences (SPSS) was used for all analysis procedures. The Operations Analysis Office (OAO), DCDHCS, AHS, furnished support using its on-line terminal connected to the Training and Doctrine Command's computer system at Fort Leavenworth, Kansas.

(b) SPSS procedures were used to tabulate and calculate descriptive statistics on the number and percent of dentists using multiple DTR mode of practice for each dental clinic and for each DENTAC. The same information was generated for the number of DTRs being used in a multiple mode. Totals and mean percentages for all clinics and DENTACs included in the survey were calculated.

(c) SPSS-generated Scattergrams and Pearson product-moment correlations were used to examine the data for correlations between each of the eight measures of productivity and each of the two measures of multiple DTR utilization. The eight measures of productivity were: unweighted dental procedures per dentist and per provider unit; Composite Time Value (CTV) weighted procedures per dentist and per provider unit; dollar value produced per dentist and per provider unit; and patients treated per dentist and per provider unit. (See Appendix A for description of measures of productivity.) The measures of multiple DTR utilization were percent of dentists using the multiple DTR mode of practice and percent of DTRs being used in multiple mode.

(d) In order to submit the observed associations between multiple DTR mode utilization and productivity to closer scrutiny, DENTACs were grouped into lower, middle, and upper thirds of multiple DTR mode utilization (for both percent of dentists using multiple DTR and percent of DTRs being used in a mulitple mode). (See Table 9 and Table 10.) These groups were then submitted to an analysis of variance using SPSS ONEWAY procedure for each of the measures of productivity. Where significant differences between the groups were detected using the analysis of variance, Duncan's multiple range test was used

to determine which groups of DENTAC differed in productivity and how they differed (i.e., Did the groups of DENTACs in the high multiple DTR use have significantly higher productivity than lower groups?).

4. FINDINGS.

a. Sample. For the month of the survey, HSC had 38 DENTACs with 188 dental clinics (active, inactive, and under construction). Forty-one clinics were not included in the survey because they were inactive, under construction, or did not regularly render dental treatment beyond diagnostic or preventive services. Thus, the survey included 147 dental clinics, with 2546 DTRs. Clinics at all DENTACs responded to the questionnaire; however, three dental clinics at three of the DENTACs did not respond. These three dental clinics had 59 DTRs. Therefore, the survey had a 97.9 percent response rate from dental clinics representing 97.7 percent of the DTRs.

b. Extent of multiple DTR utilizations. Displays of DTRs being used in a multiple mode can be seen in Table 5 and Table 6. Of the 2546 DTRs included in the survey, 1306 (51 percent) were used in a multiple mode.

The distributions of dentists using the multiple DTR mode are shown in Table 1 to Table 4. Of 1082 dentists included in the survey, 559 (52 percent) used the multiple DTR mode of practice, while the average DENTAC has 62 percent of its dentists using the multiple DTR mode. Table 4 displays both the percent of dentists for the average DENTAC and the mean percent for all DENTACs.

By examining the "Use Unaccounted For" column and the "Dentists Not in Multiple Mode" column of Table 7, dental clinics can be identified where additional DTRs are apparently available for multiple operatory use. There are 44 clinics where no DTRs are unaccounted for and 29 clinics where all of the dentists are already in a multiple DTR mode. The remaining 63 clinics have DTRs available for additional use and dentists not presently functioning in a multiple mode. The 63 clinics may be further reduced, however, by DTR arrangements which make multiple use impractical. Table 8 provides a comparison of chairs available to dentists not already in multiple mode for DENTACs.

c. Multiple DTR use and productivity.

(1) Scattergrams and Pearson product-moment correlations demonstrated significant* positive correlations between the percent of dentists using multiple DTR mode and three of the measures of productivity: CTV-weighted procedures per dentist ($r = .3685$, $p = .011$); unweighted procedures per dentist ($r = .3306$, $p = .021$); and dollar value produced per dentist ($r = .3220$, $p = .024$). Correlations for patients per dentist and all of the measures of production per unit provider were statistically not significant. (See Table 11)

(2) An analysis of variance of the measures of productivity among the DENTACs in the three ranges of "percent of chairs used in multiple mode" demonstrated no significant differences among the range groups of all measures of productivity. (See Table 12)

* $p < .05$ was accepted as significant.

(3) An analysis of variance of measures of productivity among the DENTACs in the three ranges of "percent of dentists using multiple mode" demonstrated significant differences for two of the eight measures of productivity: unweighted procedures per dentist and CTV weighted procedures per dentist. There were no significant differences observed among the three groups for the other six measures of productivity. (See Table 13)

(4) Duncan's multiple range test of differences among the three groups of "percent dentists using multiple DTR mode of practice" for unweighted procedures per dentist demonstrated that although no difference exists between the lower and middle ranges, there is a difference between these two ranges and the upper range. (See Table 14)

(5) Duncan's multiple range test of differences among the three groups of "percent dentists using multiple DTR mode of practice" for CTV-weighted procedures per dentist demonstrated that there was no difference between the lower and middle range and no difference between the middle and upper range, but there was a difference between the lower and upper range group. (See Table 14)

5. DISCUSSION.

a. The design of the survey and the high response rate (98 percent) make the results of this study representative of dental practices in Health Services Command.

b. Table 1 to Table 6 demonstrate that 48 percent of the dentists are not using the multiple DTR mode and that 49 percent of the DTRs are not being used in a multiple mode. This suggests that there is a potential for increasing the multiple DTR mode of dental delivery. Examination of Table 7 and Table 8 helps to identify locations where this is practical, given the present distribution of resources. There may be opportunities to increase this mode also by the redistribution of dentists or by the modification of facilities.

c. Statistical procedures used in the analysis demonstrated that there was a positive association between productivity and utilization of multiple DTR use by dentists. (See Table 11 and Table 12) The analysis, in fact, showed that there is a statistically significant increase in the mean productivity of DENTACs in the upper range (67 percent - 100 percent) over the lower groups when unweighted or CTV-weighted procedures per dentist was the measure used. (See Table 14)

d. The expanded duty and team concepts of practice are closely tied to the concept of multiple operatory use. It should be pointed out that no attempt was made in this study to separate out the effect of different staffing or physical configurations. Two earlier studies have addressed these issues[15,16] and have supported use of DTAs, dental assistants, and the modular design of Army dental clinics.

e. Since HSC dental clinics were the object of this assessment, the results are directly applicable to HSC. Seventh Medical Command and US Army Medical Command - Korea dental activities were not assessed for the number and distribution of DTRs available and being used in multiple mode; however, the principle of increasing multiple DTR use to increase productivity is applicable throughout the Army Dental Care System.

6. CONCLUSIONS.

a. There is an adequate number of DTRs in HSC to increase multiple DTR utilization.

b. Increased use of multiple DTR mode of dental delivery increases productivity of DENTACs and is desirable.

7. RECOMMENDATIONS.

a. The results of this study should be made available to Directorate of Dental Services, HSC, the Assistant Chief Surgeon (Dental), Seventh Medical Command, and the Dental Requirements Officer, US Army Health Facility Planning Agency for their use in planning dental facilities and services.

b. It is recommended that Major Commands utilize staff assistance visits to dental activities to assess potential for increased use of multiple DTR utilization and advise on methods to accomplish this.

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TABLES

TABLE 1

DISTRIBUTION OF DENTISTS USING MULTIPLE DENTAL TREATMENT ROOM (DTR) MODE OF PRACTICE BY DENTAL CLINIC, US ARMY HEALTH SERVICES COMMAND, JUNE 1981

Clinic Code	Dentists Using Mode of			Total Dentists in Multiple DTR Mode	Dentists Not Using Multiple DTR Mode	Total Dentists Assigned
	2 DTR	3 DTR	4 or More DTR			
101.	5.	0.	0.	5.	7.	12.
102.	1.	0.	0.	1.	4.	5.
103.	0.	0.	0.	0.	3.	3.
201.	8.	0.	0.	8.	2.	10.
202.	0.	0.	1.	1.	0.	1.
203.	2.	0.	0.	2.	0.	2.
301.	2.	4.	5.	11.	12.	23.
302.	0.	3.	0.	3.	1.	4.
303.	1.	1.	0.	2.	1.	3.
304.	5.	0.	0.	5.	0.	5.
305.	5.	2.	1.	8.	0.	8.
306.	0.	1.	1.	2.	0.	2.
401.	1.	0.	0.	1.	16.	17.
402.	8.	0.	0.	8.	9.	17.
403.	2.	0.	0.	2.	0.	2.
404.	2.	2.	0.	4.	9.	13.
405.	4.	0.	0.	4.	0.	4.
501.	1.	0.	0.	1.	6.	7.
502.	15.	4.	2.	21.	7.	28.
503.	6.	0.	0.	6.	8.	14.
504.	10.	0.	0.	10.	0.	10.
505.	5.	0.	3.	8.	4.	12.
506.	0.	0.	0.	0.	3.	3.
601.	11.	0.	0.	11.	3.	14.
602.	2.	1.	0.	3.	0.	3.
604.	9.	0.	0.	9.	5.	14.
605.	6.	0.	4.	10.	3.	13.
701.	6.	1.	0.	7.	5.	12.
702.	5.	4.	0.	9.	3.	12.
703.	1.	1.	0.	2.	0.	2.
801.	0.	5.	0.	5.	0.	5.
802.	2.	0.	0.	2.	0.	2.
803.	1.	0.	0.	1.	0.	1.
805.	1.	0.	0.	1.	0.	1.
901.	5.	0.	0.	5.	3.	8.
903.	3.	0.	0.	3.	0.	3.
1001.	4.	0.	0.	4.	0.	4.
1002.	5.	0.	0.	5.	4.	9.
1003.	3.	0.	0.	3.	0.	3.
1101.	3.	0.	0.	3.	0.	3.
1102.	2.	0.	0.	2.	0.	2.
1103.	0.	0.	0.	0.	2.	2.
1201.	5.	0.	0.	5.	22.	27.
1202.	5.	1.	0.	6.	1.	7.
1203.	2.	0.	0.	2.	3.	5.
1204.	3.	0.	0.	3.	0.	3.
1205.	4.	0.	0.	4.	2.	6.
1301.	4.	2.	0.	6.	12.	13.
1302.	0.	0.	0.	0.	11.	11.
1303.	0.	0.	0.	0.	2.	2.

Table Continued on Next Page

TABLE 1 (Cont)

DISTRIBUTION OF DENTISTS USING MULTIPLE DENTAL TREATMENT ROOM (DTR) MODE OF PRACTICE BY DENTAL CLINIC, US ARMY HEALTH SERVICES COMMAND, JUNE 1981

Clinic Code	Dentists Using Mode of			Total Dentists in Multiple DTR Mode	Dentists Not Using Multiple DTR Mode	Total Dentists Assigned
	2 DTR	3 DTR	4 or More DTR			
1401.	3.	0.	0.	3.	0.	3.
1402.	2.	1.	0.	9.	2.	11.
1403.	3.	0.	1.	4.	11.	15.
1404.	6.	1.	1.	10.	37.	47.
1405.	0.	1.	0.	1.	5.	6.
1406.	1.	2.	2.	5.	7.	12.
1501.	6.	2.	0.	8.	0.	8.
1503.	1.	0.	0.	1.	3.	4.
1504.	1.	0.	0.	1.	1.	2.
1601.	1.	0.	0.	1.	2.	3.
1701.	7.	2.	0.	9.	1.	10.
1702.	4.	0.	0.	4.	9.	13.
1703.	8.	0.	0.	8.	0.	8.
1704.	2.	0.	0.	2.	0.	2.
1801.	0.	1.	0.	1.	14.	15.
1802.	8.	0.	0.	8.	5.	16.
1803.	9.	0.	1.	10.	7.	17.
1804.	1.	0.	0.	1.	4.	5.
1806.	2.	0.	0.	2.	1.	3.
1809.	4.	0.	0.	4.	1.	5.
1810.	0.	1.	1.	2.	0.	2.
2001.	5.	0.	0.	5.	2.	7.
2002.	0.	1.	0.	1.	0.	1.
2003.	4.	0.	0.	4.	1.	5.
2101.	6.	1.	1.	8.	0.	8.
2102.	2.	0.	0.	2.	0.	2.
2201.	0.	0.	0.	0.	5.	5.
2202.	2.	0.	1.	3.	3.	5.
2203.	5.	0.	1.	6.	1.	7.
2204.	8.	1.	1.	10.	3.	13.
2207.	0.	1.	0.	1.	0.	1.
2208.	0.	1.	0.	1.	0.	1.
2301.	3.	0.	0.	3.	7.	10.
2302.	5.	0.	0.	5.	12.	17.
2303.	6.	1.	0.	7.	4.	11.
2304.	3.	0.	3.	6.	2.	8.
2401.	2.	1.	1.	4.	11.	15.
2403.	1.	0.	0.	1.	2.	3.
2501.	5.	5.	0.	10.	0.	10.
2502.	4.	0.	0.	4.	1.	5.
2503.	2.	0.	0.	2.	0.	2.
2504.	3.	0.	0.	3.	1.	4.
2505.	5.	0.	0.	5.	2.	7.
2506.	1.	0.	0.	1.	0.	1.
2601.	2.	0.	0.	2.	1.	3.
2602.	0.	4.	0.	4.	2.	6.
2701.	2.	0.	1.	3.	1.	4.
2702.	4.	3.	0.	7.	5.	12.
2703.	0.	2.	0.	2.	0.	2.
2704.	6.	1.	1.	8.	1.	9.

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TABLE 1 (Cont)

DISTRIBUTION OF DENTISTS USING MULTIPLE DENTAL TREATMENT ROOM (DTR) MODE OF PRACTICE BY DENTAL CLINIC, US ARMY HEALTH SERVICES COMMAND, JUNE 1981

Clinic Code	Dentists Using Mode of			Total Dentists in Multiple DTR Mode	Dentists Not Using Multiple DTR Mode	Total Dentists Assigned
	2 DTR	3 DTR	4 or More DTRs			
2705.	4.	0.	0.	4.	0.	4.
2705.	0.	0.	0.	0.	2.	2.
2801.	2.	1.	0.	3.	12.	15.
2802.	3.	2.	0.	5.	7.	12.
2803.	2.	0.	0.	2.	0.	2.
2804.	0.	3.	0.	3.	1.	4.
2901.	0.	0.	0.	0.	19.	19.
2902.	1.	0.	0.	1.	0.	1.
2903.	0.	0.	0.	0.	1.	1.
3001.	2.	0.	0.	2.	0.	2.
3002.	7.	0.	0.	7.	0.	7.
3101.	0.	0.	0.	0.	3.	3.
3102.	2.	0.	0.	2.	6.	8.
3103.	2.	5.	0.	7.	1.	8.
3104.	0.	2.	0.	2.	6.	8.
3105.	0.	2.	0.	2.	2.	4.
3106.	0.	0.	0.	0.	3.	3.
3201.	6.	0.	0.	6.	1.	7.
3202.	1.	1.	0.	2.	0.	2.
3203.	2.	0.	0.	2.	0.	2.
3205.	1.	0.	0.	1.	0.	1.
3301.	4.	0.	0.	4.	8.	12.
3302.	0.	0.	0.	0.	7.	7.
3303.	0.	0.	0.	0.	6.	6.
3401.	4.	0.	0.	4.	1.	5.
3501.	5.	5.	1.	11.	3.	14.
3502.	0.	2.	1.	3.	6.	9.
3504.	2.	2.	0.	4.	3.	7.
3701.	5.	1.	1.	7.	6.	13.
3702.	4.	1.	0.	5.	7.	12.
3703.	6.	0.	0.	6.	0.	6.
3801.	4.	2.	0.	6.	21.	27.
3802.	0.	0.	0.	0.	3.	3.
3803.	0.	0.	0.	0.	6.	6.
3804.	0.	0.	0.	0.	10.	10.
3805.	0.	0.	0.	0.	2.	2.
3901.	9.	0.	0.	9.	1.	10.
3903.	1.	0.	0.	1.	0.	1.
3904.	1.	0.	0.	1.	0.	1.
4101.	1.	1.	0.	2.	10.	12.
4102.	5.	0.	0.	5.	0.	5.
4103.	0.	0.	0.	0.	5.	5.
4104.	3.	0.	0.	3.	1.	4.
4105.	1.	0.	0.	1.	0.	1.
Total	428	95	36	559	523	1082

TABLE 2

PERCENT DISTRIBUTION OF DENTISTS USING MULTIPLE DENTAL TREATMENT ROOM (DTR) MODE OF PRACTICE BY DENTAL CLINIC, US ARMY HEALTH SERVICES COMMAND, JUNE 1981

Clinic Code	Percent of Dentists				
	Using 2 DTR	Using 3 DTR	Using 4 or More DTR	Using Multiple DTR Mode (Total)	Not Using Multiple DTR Mode
101.	42.	0.	0.	42.	58.
102.	20.	0.	0.	20.	80.
103.	0.	0.	0.	0.	100.
201.	80.	0.	0.	80.	20.
202.	0.	0.	100.	100.	0.
203.	100.	0.	0.	100.	0.
301.	9.	17.	22.	48.	52.
302.	0.	75.	0.	75.	25.
303.	33.	33.	0.	67.	33.
304.	100.	0.	0.	100.	0.
305.	63.	25.	13.	100.	0.
306.	0.	50.	50.	100.	0.
401.	6.	0.	0.	6.	94.
402.	47.	0.	0.	47.	53.
403.	100.	0.	0.	100.	0.
404.	15.	15.	0.	31.	69.
405.	100.	0.	0.	100.	0.
501.	14.	0.	0.	14.	86.
502.	54.	14.	7.	75.	25.
503.	43.	0.	0.	43.	57.
504.	100.	0.	0.	100.	0.
505.	42.	0.	25.	67.	33.
506.	0.	0.	0.	0.	100.
601.	75.	0.	0.	79.	21.
602.	67.	33.	0.	100.	0.
604.	64.	0.	0.	64.	35.
605.	46.	0.	31.	77.	23.
701.	50.	8.	0.	58.	42.
702.	42.	33.	0.	75.	25.
703.	50.	50.	0.	100.	0.
801.	0.	100.	0.	100.	0.
802.	100.	0.	0.	100.	0.
803.	100.	0.	0.	100.	0.
805.	100.	0.	0.	100.	0.
901.	63.	0.	0.	63.	38.
903.	100.	0.	0.	100.	0.
1001.	100.	0.	0.	100.	0.
1002.	56.	0.	0.	56.	44.
1003.	100.	0.	0.	100.	0.
1101.	100.	0.	0.	100.	0.
1102.	100.	0.	0.	100.	0.
1103.	0.	0.	0.	0.	100.
1201.	19.	0.	0.	19.	81.
1202.	71.	14.	0.	86.	14.
1203.	40.	0.	0.	40.	60.
1204.	100.	0.	0.	100.	0.
1205.	67.	0.	0.	67.	33.
1301.	22.	11.	0.	33.	67.
1302.	0.	0.	0.	0.	100.
1303.	0.	0.	0.	0.	100.

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TABLE 2 (CONT)

PERCENT DISTRIBUTION OF DENTISTS USING MULTIPLE DENTAL TREATMENT ROOM (DTR) MODE OF PRACTICE BY DENTAL CLINIC, US ARMY HEALTH SERVICES COMMAND, JUNE 1981

Clinic Code	Percent of Dentists				
	Using 2 DTR	Using 3 DTR	Using 4 or More DTR	Using Multiple DTR Mode (Total)	Not Using Multiple DTR Mode
1401.	100.	0.	0.	100.	0.
1402.	73.	9.	0.	82.	18.
1403.	20.	0.	7.	27.	73.
1404.	17.	2.	2.	21.	79.
1405.	0.	17.	0.	17.	83.
1406.	8.	17.	17.	42.	58.
1501.	75.	25.	0.	100.	0.
1503.	25.	0.	0.	25.	75.
1504.	50.	0.	0.	50.	50.
1601.	33.	0.	0.	33.	67.
1701.	70.	20.	0.	90.	10.
1702.	31.	0.	0.	31.	69.
1703.	100.	0.	0.	100.	0.
1704.	100.	0.	0.	100.	0.
1801.	0.	7.	0.	7.	93.
1802.	50.	0.	0.	50.	50.
1803.	53.	0.	6.	59.	41.
1804.	20.	0.	0.	20.	80.
1806.	67.	0.	0.	67.	33.
1809.	80.	0.	0.	80.	20.
1810.	0.	50.	50.	100.	0.
2001.	71.	0.	0.	71.	29.
2002.	0.	100.	0.	100.	0.
2003.	80.	0.	0.	80.	20.
2101.	75.	13.	13.	100.	0.
2102.	100.	0.	0.	100.	0.
2201.	0.	0.	0.	0.	100.
2202.	33.	0.	17.	50.	50.
2203.	71.	0.	14.	86.	14.
2204.	62.	8.	8.	77.	23.
2207.	0.	100.	0.	100.	0.
2208.	0.	100.	0.	100.	0.
2301.	30.	0.	0.	30.	70.
2302.	29.	0.	0.	29.	71.
2303.	55.	9.	0.	64.	36.
2304.	38.	0.	38.	75.	25.
2401.	13.	7.	7.	27.	73.
2403.	33.	0.	0.	33.	67.
2501.	50.	50.	0.	100.	0.
2502.	80.	0.	0.	80.	20.
2503.	100.	0.	0.	100.	0.
2504.	75.	0.	0.	75.	25.
2505.	71.	0.	0.	71.	29.
2506.	100.	0.	0.	100.	0.
2601.	67.	0.	0.	67.	33.
2602.	0.	67.	0.	67.	33.
2701.	50.	0.	25.	75.	25.
2702.	33.	25.	0.	58.	42.
2703.	0.	100.	0.	100.	0.
2704.	67.	11.	11.	89.	11.

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TABLE 2 (CONT)

PERCENT DISTRIBUTION OF DENTISTS USING MULTIPLE DENTAL TREATMENT ROOM (DTR) MODE OF PRACTICE BY DENTAL CLINIC, US ARMY HEALTH SERVICES COMMAND, JUNE 1981

Clinic Code	Percent of Dentists				
	Using 2 DTR	Using 3 DTR	Using 4 or More DTR	Using Multiple DTR Mode (Total)	Not Using Multiple DTR Mode
2705.	100.	0.	0.	100.	0.
2706.	0.	0.	0.	0.	100.
2801.	13.	7.	0.	20.	80.
2802.	25.	17.	0.	42.	58.
2803.	100.	0.	0.	100.	0.
2804.	0.	75.	0.	75.	25.
2901.	0.	0.	0.	0.	100.
2902.	100.	0.	0.	100.	0.
2903.	0.	0.	0.	0.	100.
3001.	100.	0.	0.	100.	0.
3002.	100.	0.	0.	100.	0.
3101.	0.	0.	0.	0.	100.
3102.	25.	0.	0.	25.	75.
3103.	25.	63.	0.	88.	13.
3104.	0.	25.	0.	25.	75.
3105.	0.	50.	0.	50.	50.
3106.	0.	0.	0.	0.	100.
3201.	86.	0.	0.	86.	14.
3202.	50.	50.	0.	100.	0.
3203.	100.	0.	0.	100.	0.
3205.	100.	0.	0.	100.	0.
3301.	33.	0.	0.	33.	67.
3302.	0.	0.	0.	0.	100.
3303.	0.	0.	0.	0.	100.
3401.	80.	0.	0.	80.	20.
3501.	36.	36.	7.	79.	21.
3502.	0.	22.	11.	33.	67.
3504.	29.	29.	0.	57.	43.
3701.	38.	8.	8.	54.	46.
3702.	33.	8.	0.	42.	58.
3703.	100.	0.	0.	100.	0.
3801.	15.	7.	0.	22.	78.
3802.	0.	0.	0.	0.	100.
3803.	0.	0.	0.	0.	100.
3804.	0.	0.	0.	0.	100.
3805.	0.	0.	0.	0.	100.
3901.	90.	0.	0.	90.	10.
3903.	100.	0.	0.	100.	0.
3904.	100.	0.	0.	100.	0.
4101.	8.	8.	0.	17.	83.
4102.	100.	0.	0.	100.	0.
4103.	0.	0.	0.	0.	100.
4104.	75.	0.	0.	75.	25.
4105.	100.	0.	0.	100.	0.
Mean	40%	9%	3%	52%	48%

TABLE 3

PERCENT DISTRIBUTION OF DENTISTS USING MULTIPLE DENTAL TREATMENT ROOM (DTR) MODE OF PRACTICE BY DENTAC, US ARMY HEALTH SERVICES COMMAND, JUNE 1981

DENTAC Code	PERCENT OF DENTISTS				
	Using 2 DTR	Using 3 DTR	Using 4 or More DTR	Using Multiple DTRs Mode (Total)	Not Using Multiple DTR Mode
1	20.55	0.00	0.00	20.55	79.44
2	60.00	0.00	33.33	93.33	6.67
3	34.09	33.45	14.04	81.58	18.42
4	53.67	3.08	0.00	56.74	43.26
5	42.06	2.38	5.36	49.80	50.20
6	63.92	8.33	7.69	79.95	20.05
7	47.22	30.55	0.00	77.78	22.22
8	75.00	25.00	0.00	100.00	0.00
9	81.25	0.00	0.00	81.25	18.75
10	85.19	0.00	0.00	85.19	14.81
11	66.67	0.00	0.00	66.67	33.33
12	59.32	2.86	0.00	62.18	37.82
13	7.41	3.70	0.00	11.11	88.89
14	36.35	7.43	4.24	48.01	51.98
15	50.00	8.33	0.00	58.33	41.67
16	33.33	0.00	0.00	33.33	66.67
17	75.19	5.00	0.00	80.19	19.81
18	38.51	8.09	7.98	54.59	45.41
20	50.48	33.33	0.00	83.81	16.19
21	87.50	6.25	6.25	100.00	0.00
22	27.72	34.61	6.44	68.77	31.28
23	37.86	2.27	9.37	49.51	50.49
24	23.33	3.33	3.33	30.00	70.00
25	79.40	8.33	0.00	87.74	12.26
26	33.33	33.33	0.00	66.67	33.33
27	41.67	22.69	6.02	70.37	29.63
28	34.58	24.58	0.00	59.17	40.83
29	33.33	0.00	0.00	33.33	66.67
30	100.00	0.00	0.00	100.00	0.00
31	8.33	22.92	0.00	31.25	68.75
32	83.93	12.50	0.00	96.48	3.57
33	11.11	0.00	0.00	11.11	88.89
34	80.00	0.00	0.00	80.00	20.00
35	21.43	28.84	6.08	56.34	43.65
37	57.27	5.34	2.56	65.17	34.83
38	2.96	1.48	0.00	4.44	95.55
39	96.67	0.00	0.00	96.67	3.33
41	56.67	1.67	0.00	58.33	41.67
% Average DENTAC	47.35	11.25	3.37	61.97	38.03
Mean % for all DENTACs	39.56	8.78	3.33	51.66	48.34

TABLE 4

DISTRIBUTION OF DENTISTS USING MULTIPLE DENTAL TREATMENT ROOM (DTR) MODE OF PRACTICE BY DENTAC, US ARMY HEALTH SERVICES COMMAND, JUNE 1981

DENTAC Code	Dentists Using Mode of			Total Dentists in Multiple DTR Mode	Dentists Not Using Multiple DTR Mode	Total Dentists Assigned
	2 DTR	3 DTR	4 or More DTR			
1	6	0	0	6	14	20
2	10	0	1	11	2	13
3	13	11	7	31	14	45
4	17	2	0	19	34	53
5	37	4	5	46	28	74
6	28	1	4	33	11	44
7	12	6	0	18	8	25
8	4	5	0	9	0	9
9	8	0	0	8	3	11
10	12	0	0	12	4	16
11	5	0	0	5	2	7
12	19	1	0	20	28	48
13	4	2	0	6	25	31
14	23	5	4	32	62	94
15	8	2	0	10	4	14
16	1	0	0	1	2	3
17	21	2	0	23	10	33
18	24	2	2	28	35	63
20	9	1	0	10	3	13
21	8	1	1	10	0	10
22	15	3	3	21	12	33
23	17	1	3	21	25	46
24	3	1	1	5	13	18
25	20	5	0	25	4	29
26	2	4	0	5	3	9
27	16	6	2	24	9	33
28	7	6	0	13	20	33
29	1	0	0	1	20	21
30	9	0	0	9	0	9
31	4	9	0	13	21	34
32	10	1	0	11	1	12
33	4	0	0	4	21	25
34	4	0	0	4	1	5
35	7	9	2	18	12	30
37	15	2	1	18	13	31
38	4	2	0	6	42	48
39	11	0	0	11	1	12
41	10	1	0	11	16	27
Total	428	95	36	559	523	1082

TABLE 5

MULTIPLE DENTAL TREATMENT ROOM (DTR) UTILIZATION BY DENTAL CLINIC, US ARMY HEALTH SERVICES COMMAND, JUNE 1981

Clinic Code	Dental Treatment Rooms			
	In Multiple Mode	Not In Multiple Mode	Total DTRs	% In Multiple Mode
101.	10.	18.	28.	36.
102.	2.	10.	12.	17.
103.	0.	4.	4.	0.
201.	16.	14.	30.	53.
202.	4.	0.	4.	100.
203.	4.	4.	8.	50.
301.	38.	39.	77.	49.
302.	9.	17.	26.	35.
303.	5.	2.	7.	71.
304.	10.	2.	12.	83.
305.	20.	8.	28.	71.
306.	7.	3.	10.	70.
401.	2.	16.	16.	11.
402.	16.	28.	44.	36.
403.	4.	3.	7.	57.
404.	10.	18.	28.	36.
405.	8.	4.	12.	67.
501.	2.	20.	22.	9.
502.	59.	19.	78.	76.
503.	12.	12.	24.	50.
504.	20.	4.	24.	83.
505.	22.	6.	28.	79.
506.	0.	7.	7.	0.
601.	25.	2.	27.	93.
602.	7.	1.	8.	88.
604.	18.	10.	28.	64.
605.	16.	12.	28.	57.
701.	15.	13.	28.	54.
702.	20.	8.	28.	71.
703.	5.	4.	9.	56.
801.	18.	5.	23.	78.
802.	4.	2.	6.	67.
803.	2.	3.	5.	40.
805.	2.	1.	3.	67.
901.	10.	18.	28.	36.
903.	6.	1.	7.	86.
1001.	8.	2.	10.	80.
1002.	10.	12.	22.	45.
1003.	6.	1.	7.	86.
1101.	6.	0.	6.	100.
1102.	4.	3.	7.	57.
1103.	0.	4.	4.	0.
1201.	10.	26.	36.	28.
1202.	13.	10.	23.	57.
1203.	4.	2.	6.	67.
1204.	6.	5.	11.	55.
1205.	8.	8.	16.	50.
1301.	14.	20.	34.	41.
1302.	0.	13.	13.	0.
1303.	0.	4.	4.	0.

 Table Continued on Next Page

TABLE 5 (Cont)

MULTIPLE DENTAL TREATMENT ROOM (DTR) UTILIZATION BY DENTAL CLINIC, US ARMY HEALTH SERVICES COMMAND, JUNE 1981

Clinic Code	Dental Treatment Rooms			
	In Multiple Mode	Not In Multiple Mode	Total DTRs	% In Multiple Mode
1401.	6.	0.	6.	100.
1402.	19.	9.	28.	68.
1403.	10.	17.	27.	37.
1404.	26.	52.	78.	33.
1405.	3.	15.	18.	17.
1406.	20.	8.	28.	71.
1501.	18.	0.	18.	100.
1503.	2.	6.	8.	25.
1504.	2.	3.	5.	40.
1601.	2.	2.	4.	50.
1701.	22.	6.	28.	79.
1702.	8.	18.	26.	31.
1703.	16.	11.	27.	59.
1704.	4.	1.	5.	80.
1801.	3.	23.	26.	12.
1802.	17.	9.	26.	65.
1803.	25.	3.	28.	89.
1804.	2.	7.	9.	22.
1806.	4.	3.	7.	57.
1809.	8.	3.	11.	73.
1810.	7.	1.	8.	88.
2001.	10.	2.	12.	83.
2002.	3.	0.	3.	100.
2003.	8.	4.	12.	67.
2101.	21.	14.	35.	60.
2102.	4.	3.	7.	57.
2201.	0.	15.	15.	0.
2202.	8.	20.	28.	29.
2203.	14.	14.	28.	50.
2204.	23.	5.	28.	82.
2207.	3.	1.	4.	75.
2206.	3.	0.	3.	100.
2301.	6.	6.	12.	50.
2302.	10.	15.	25.	40.
2303.	15.	13.	28.	54.
2304.	21.	7.	28.	75.
2401.	11.	17.	28.	39.
2403.	2.	4.	6.	33.
2501.	25.	1.	26.	96.
2502.	8.	1.	9.	89.
2503.	4.	3.	7.	57.
2504.	6.	2.	8.	75.
2505.	10.	5.	15.	67.
2506.	2.	5.	7.	29.
2601.	4.	7.	11.	36.
2602.	12.	14.	26.	46.
2701.	10.	8.	18.	56.
2702.	17.	11.	28.	61.
2703.	6.	0.	6.	100.
2704.	19.	7.	26.	73.

Table Continued on Next Page

TABLE 5 (Cont)

MULTIPLE DENTAL TREATMENT ROOM (DTR) UTILIZATION BY DENTAL CLINIC, US ARMY HEALTH SERVICES COMMAND, JUNE 1981

Clinic Code	Dental Treatment Rooms			
	In Multiple Mode	Not In Multiple Mode	Total DTRs	% In Multiple Mode
2705.	8.	6.	14.	57.
2706.	0.	3.	3.	0.
2801.	7.	21.	28.	25.
2802.	12.	16.	28.	43.
2803.	4.	7.	11.	36.
2804.	9.	8.	17.	53.
2901.	0.	31.	31.	0.
2902.	2.	1.	3.	67.
2903.	0.	2.	2.	0.
3001.	4.	1.	5.	80.
3002.	14.	4.	18.	78.
3101.	0.	6.	6.	0.
3102.	4.	18.	22.	18.
3103.	19.	9.	28.	65.
3104.	6.	9.	15.	40.
3105.	6.	8.	14.	43.
3106.	0.	7.	7.	0.
3201.	12.	6.	18.	67.
3202.	5.	4.	9.	56.
3203.	4.	10.	14.	29.
3205.	2.	1.	3.	67.
3301.	8.	14.	22.	36.
3302.	0.	7.	7.	0.
3303.	0.	8.	8.	0.
3401.	8.	2.	10.	80.
3501.	29.	9.	38.	76.
3502.	7.	21.	28.	25.
3504.	10.	6.	16.	56.
3701.	18.	20.	38.	47.
3702.	11.	17.	28.	39.
3703.	12.	2.	14.	86.
3801.	14.	37.	51.	27.
3802.	0.	4.	4.	0.
3803.	0.	14.	14.	0.
3804.	0.	12.	12.	0.
3805.	0.	3.	3.	0.
3901.	18.	4.	22.	82.
3903.	2.	1.	3.	67.
3904.	2.	0.	2.	100.
4101.	5.	17.	22.	23.
4102.	10.	2.	12.	83.
4103.	0.	7.	7.	0.
4104.	6.	2.	8.	75.
4105.	2.	2.	4.	50.
TOTAL	1306	1240	2546	51%

TABLE 6

MULTIPLE DENTAL TREATMENT ROOM (DTR) UTILIZATION BY DENTAC, US ARMY HEALTH SERVICES COMMAND, JUNE 1981

DENTAC Code	DENTAL TREATMENT ROOMS			
	In Multiple Mode	Not In Multiple Mode	Total DTRs	% In Multiple Mode
1	12	32	44	17.46
2	24	18	42	67.78
3	89	71	160	63.36
4	40	69	109	41.40
5	115	68	183	49.44
6	66	25	91	75.38
7	40	25	65	60.19
8	26	11	37	62.90
9	16	19	35	60.71
10	24	15	39	70.39
11	10	7	17	52.38
12	41	51	92	51.10
13	14	37	51	13.73
14	84	101	185	54.39
15	22	9	31	55.00
16	2	2	4	50.00
17	50	36	86	62.15
18	66	49	115	57.97
20	21	6	27	83.33
21	25	17	42	58.57
22	51	55	106	55.95
23	52	41	93	54.64
24	13	21	34	36.31
25	55	17	72	68.74
26	16	21	37	41.26
27	60	35	95	57.75
28	32	52	84	39.29
29	2	34	36	22.22
30	18	5	23	78.89
31	35	57	92	28.15
32	23	21	44	54.37
33	8	29	37	12.12
34	8	2	10	80.00
35	46	38	84	52.29
37	41	39	80	57.46
38	14	70	84	5.49
39	22	5	27	82.83
41	23	30	53	46.21
Total	1306	1240	2546	51.29%

TABLE 7

POTENTIAL FOR INCREASING MULTIPLE DENTAL TREATMENT ROOM (DTR) USE AT CLINICS, US ARMY MULTIPLE OPERATORY STUDY, 1981

Clinic Code	DENTAL TREATMENT ROOMS				Dentists Not in Multiple Mode
	Total	In Multiple Mode	Assumed In Single Mode	Use Unaccounted For	
101.	26.	10.	8.	10.	7.
102.	12.	2.	5.	5.	4.
103.	4.	0.	3.	1.	3.
201.	30.	15.	3.	11.	2.
202.	4.	4.	0.	0.	0.
203.	8.	4.	0.	4.	0.
301.	77.	35.	16.	23.	12.
302.	26.	9.	3.	14.	1.
303.	7.	5.	2.	0.	1.
304.	12.	10.	2.	0.	0.
305.	28.	20.	1.	7.	0.
306.	10.	7.	1.	2.	0.
401.	18.	2.	16.	0.	15.
402.	44.	16.	12.	16.	9.
403.	7.	4.	1.	2.	0.
404.	28.	10.	12.	6.	9.
405.	12.	8.	0.	4.	0.
501.	22.	2.	8.	12.	5.
502.	78.	59.	11.	8.	7.
503.	24.	12.	11.	1.	5.
504.	24.	20.	2.	2.	0.
505.	28.	22.	4.	2.	4.
506.	7.	0.	3.	4.	3.
601.	27.	25.	2.	0.	2.
602.	8.	7.	1.	0.	0.
604.	26.	18.	6.	4.	5.
605.	28.	15.	5.	6.	3.
701.	28.	15.	10.	3.	5.
702.	28.	20.	6.	2.	3.
703.	9.	5.	1.	3.	0.
801.	23.	18.	1.	4.	0.
802.	6.	4.	0.	2.	0.
803.	5.	2.	1.	2.	0.
805.	3.	2.	1.	0.	0.
901.	28.	10.	4.	14.	3.
903.	7.	6.	0.	1.	0.
1001.	10.	8.	1.	1.	0.
1002.	22.	10.	5.	7.	4.
1003.	7.	5.	1.	0.	0.
1101.	6.	6.	0.	0.	0.
1102.	7.	4.	2.	1.	0.
1103.	4.	0.	3.	1.	2.
1201.	36.	10.	22.	4.	22.
1202.	23.	13.	2.	8.	1.
1203.	6.	4.	2.	0.	2.
1204.	11.	5.	5.	0.	0.
1205.	16.	8.	5.	3.	2.
1301.	34.	14.	14.	6.	12.
1302.	13.	0.	13.	0.	11.
1303.	4.	0.	3.	1.	2.

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TABLE 7 (CONT)

POTENTIAL FOR INCREASING MULTIPLE DENTAL TREATMENT ROOM (DTR) USE AT CLINICS, US ARMY MULTIPLE OPERATORY STUDY, 1981

Clinic Code	DENTAL TREATMENT ROOMS				Dentists Not in Multiple Mode
	Total	In Multiple Mode	Assumed in Single Mode	Use Unaccounted For	
1401.	6.	6.	0.	0.	0.
1402.	29.	19.	5.	4.	2.
1403.	27.	10.	14.	3.	11.
1404.	78.	26.	39.	13.	37.
1405.	18.	3.	7.	8.	5.
1406.	28.	20.	8.	0.	7.
1501.	18.	18.	0.	0.	0.
1503.	8.	2.	4.	2.	3.
1504.	5.	2.	2.	1.	1.
1601.	4.	2.	2.	0.	2.
1701.	28.	22.	4.	2.	1.
1702.	26.	8.	10.	8.	9.
1703.	27.	15.	2.	9.	0.
1704.	5.	4.	1.	0.	0.
1801.	26.	3.	16.	7.	14.
1802.	25.	17.	9.	0.	5.
1803.	26.	25.	3.	0.	7.
1804.	9.	2.	5.	2.	4.
1806.	7.	4.	3.	0.	1.
1809.	11.	8.	1.	2.	1.
1810.	8.	7.	0.	1.	0.
2001.	12.	10.	2.	0.	2.
2002.	3.	3.	0.	0.	0.
2003.	12.	8.	4.	0.	1.
2101.	35.	21.	2.	12.	0.
2102.	7.	4.	0.	3.	0.
2201.	15.	0.	6.	9.	5.
2202.	28.	8.	4.	16.	3.
2203.	28.	14.	3.	11.	1.
2204.	28.	23.	5.	0.	3.
2207.	4.	3.	1.	0.	0.
2208.	3.	3.	0.	0.	0.
2301.	12.	6.	6.	0.	7.
2302.	25.	10.	14.	1.	12.
2303.	28.	15.	7.	6.	4.
2304.	28.	21.	3.	4.	2.
2401.	28.	11.	15.	2.	11.
2403.	6.	2.	3.	1.	2.
2501.	26.	25.	1.	0.	0.
2502.	9.	8.	1.	0.	1.
2503.	7.	4.	1.	2.	0.
2504.	8.	5.	2.	0.	1.
2505.	15.	10.	4.	1.	2.
2506.	7.	2.	0.	5.	0.
2601.	11.	4.	2.	5.	1.
2602.	26.	12.	3.	11.	2.
2701.	18.	10.	5.	3.	1.
2702.	28.	17.	5.	6.	5.
2703.	6.	6.	0.	0.	0.
2704.	26.	19.	1.	6.	1.

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TABLE 7 (CONT)

POTENTIAL FOR INCREASING MULTIPLE DENTAL TREATMENT ROOM (DTR) USE AT CLINICS, US ARMY MULTIPLE OPERATORY STUDY, 1981

Clinic Code	DENTAL TREATMENT ROOMS				Dentists Not in Multiple Mode
	Total	In Multiple Mode	Assumed in Single Mode	Use Unaccounted For	
2705.	14.	8.	0.	6.	0.
2706.	3.	0.	2.	1.	2.
2801.	28.	7.	14.	7.	12.
2802.	28.	12.	10.	6.	7.
2803.	11.	4.	0.	7.	0.
2804.	17.	9.	2.	6.	1.
2901.	31.	0.	23.	8.	19.
2902.	3.	2.	1.	0.	0.
2903.	2.	0.	2.	0.	1.
3001.	5.	4.	1.	0.	0.
3002.	18.	14.	2.	2.	0.
3101.	6.	0.	3.	3.	3.
3102.	22.	4.	6.	12.	5.
3103.	28.	19.	5.	4.	1.
3104.	15.	6.	9.	0.	6.
3105.	14.	5.	3.	5.	2.
3106.	7.	0.	5.	2.	3.
3201.	18.	12.	1.	5.	1.
3202.	9.	5.	0.	4.	0.
3203.	14.	4.	4.	6.	0.
3205.	3.	2.	0.	1.	0.
3301.	22.	8.	10.	4.	8.
3302.	7.	0.	7.	0.	7.
3303.	8.	0.	7.	1.	6.
3401.	10.	8.	2.	0.	1.
3501.	38.	29.	5.	4.	3.
3502.	28.	7.	7.	14.	6.
3504.	16.	10.	4.	4.	3.
3701.	38.	18.	9.	11.	6.
3702.	26.	11.	8.	9.	7.
3703.	14.	12.	1.	1.	0.
3801.	51.	14.	25.	12.	21.
3802.	4.	0.	4.	0.	3.
3803.	14.	0.	7.	7.	5.
3804.	12.	0.	12.	0.	10.
3805.	3.	0.	3.	0.	2.
3901.	22.	18.	4.	0.	1.
3903.	5.	2.	1.	0.	0.
3904.	2.	2.	0.	0.	0.
4101.	22.	5.	13.	4.	10.
4102.	12.	10.	1.	1.	0.
4103.	7.	0.	7.	0.	5.
4104.	8.	5.	2.	0.	1.
4105.	4.	2.	1.	1.	0.
TOTAL	2546	1306	727	513	523

TABLE 8

POTENTIAL FOR INCREASING MULTIPLE DENTAL TREATMENT ROOM (DTR) USE AT DENTACS, US ARMY MULTIPLE OPERATORY STUDY, 1981

Clinic Code	DENTAL TREATMENT ROOMS				Dentists Not in Multiple Mode
	Total	In Multiple Mode	Assumed In Single Mode	Use Unaccounted For	
1	44	12	16	16	14
2	42	24	3	15	2
3	160	89	25	46	14
4	109	40	42	27	34
5	183	115	39	29	28
6	91	66	18	7	11
7	65	40	17	8	8
8	37	26	3	8	0
9	35	16	4	15	3
10	39	24	7	8	4
11	17	10	5	2	2
12	92	41	37	14	28
13	51	14	30	7	25
14	185	84	74	27	62
15	31	22	7	2	4
16	4	2	2	0	2
17	86	50	17	19	10
18	115	66	43	6	35
20	27	21	6	0	3
21	42	25	2	15	0
22	106	51	20	35	12
23	93	52	32	9	25
24	34	13	18	3	13
25	72	55	11	6	4
26	37	16	5	16	3
27	95	60	13	22	9
28	84	32	26	26	20
29	36	2	26	8	20
30	23	18	3	2	0
31	92	35	31	26	21
32	44	23	5	16	1
33	37	8	24	5	21
34	10	8	2	0	1
35	84	46	16	22	12
37	80	41	18	21	13
38	84	14	51	19	42
39	27	22	5	0	1
41	53	23	24	6	16
TOTAL	2546	1306	727	513	523

TABLE 9

DENTACS GROUPED INTO THREE RANGES FOR PERCENT OF DTRS USED IN MULTIPLE MODES OF PRACTICE, US ARMY MULTIPLE OPERATORY STUDY, 1981

Range	DENTACs
Lower Range (0%-33%)	Alaska
	Presidio
	Riley
	Sam Houston
	Hawaii
	Walter Reed
Middle Range (34%-66%)	Benning
	Bliss
	Bragg
	Canal Zone
	Carson
	Devens
	Dix
	Fitzsimmons
	Gordon
	Hood
	Huachuca
	Jackson
	Knox
	Lee
	Leonard Wood
	Lewis
	McClellan
	Monmouth
	Ord
	Polk
	Rucker
	Sill
	Steward
	Irwin
Upper Range (67%-100%)	Belvoir
	Campbell
	Eustis
	Leavenworth
	Meade
	Redstone
	Sheridan
	West Point

TABLE 10

DENTACS GROUPED INTO THREE RANGES FOR PERCENT OF DENTISTS USING MULTIPLE DTR MODE OF PRACTICE, US ARMY, MULTIPLE OPERATORY STUDY, 1981

Range	DENTACs
Lower Range (0%-33%)	Alaska
	McClellan
	Presidio
	Riley
	Sam Houston
	Hawaii
	Walter Reed
	Irwin
Middle Range (34%-66%)	Bliss
	Bragg
	Canal Zone
	Fitzsimmons
	Gordon
	Hood
	Huachuca
	Knox
	Lewis
	Monmouth
	Polk
	Sill
	Stewart
Upper Range (67%-100%)	Belvoir
	Benning
	Campbell
	Carson
	Devens
	Dix
	Eustis
	Jackson
	Leavenworth
	Lee
	Leonard Wood
	Meade
	Ord
	Redstone
	Rucker
	Sheridan
	West Point

TABLE 11

CORRELATIONS** BETWEEN MULTIPLE DTR UTILIZATION AND MEASURES OF PRODUCTIVITY (N=38), US ARMY MULTIPLE OPERATORY STUDY, 1981

Measures of Productivity	% DTRs in Multiple Mode	% Dentists Using Multiple DTR Mode
CTVs per dentist	r=.2476, p=.067 (ns*)	r=.3685, p=.011 (Sig)
Unweighted procedures per dentist	r=.2449, p=.069 (ns)	r=.3306, p=.021 (Sig)
Dollar value produced per dentist	r=.2250, p=.087 (ns)	r=.3220, p=.024 (Sig)
Patients per dentist	r=.1127, p=.250 (ns)	r=.2538, p=.062 (ns)
CTVs per provider unit***	r=.1948, p=.121 (ns)	r=.2486, p=.066 (ns)
Unweighted procedures per provider unit	r=.1957, p=.119 (ns)	r=.2143, p=.098 (ns)
Dollar value per provider unit	r=.1739, p=.148 (ns)	r=.2109, p=.102 (ns)
Patients per provider unit	r=.0617, p=.357 (ns)	r=.1575, p=.172 (ns)

* ns = Not Significant
Sig = Significant
** Pearson product-moment correlation coefficient.
$p<.05$ significance level
*** Provider Unit = Dentist plus ½ Dental Therapy Assistant

TABLE 12

ONEWAY ANALYSIS OF VARIANCE OF PRODUCTIVITY AMONG LOWER, MIDDLE, AND UPPER THIRD RANGES* OF PERCENT OF DTRS USED IN MULTIPLE MODE, US ARMY MULTIPLE OPERATORY STUDY 1981

Indicator of Productivity	df	F	P
Dollar value/dentist	2/35	0.8	ns***
Unweighted procedure/dentist	2/35	0.7	ns
Weighted procedure/dentist	2/35	0.7	ns
Total patients/dentist	2/35	0.5	ns
Dollar value/provider unit**	2/35	0.2	ns
Unweighted procedure/provider unit	2/35	0.2	ns
Weighted Procedure/provider unit	2/35	0.4	ns
Total patients/provider unit	2/35	0.1	ns

*Ranges of Multiple DTR Mode Use:

Lower = 0% to 33%
Middle = 34% to 66%
Upper = 67% to 100%

**Provider Unit = Dentist plus ½ Dental Therapy Assistant

***ns = not significant

TABLE 13

ONEWAY ANALYSIS OF VARIANCE OF PRODUCTIVITY AMONG LOWER, MIDDLE, AND UPPER THIRD RANGES* OF PERCENT OF DENTISTS USING MULTIPLE OPERATORY MODE OF PRACTICE, US ARMY MULTIPLE OPERATORY STUDY, 1981

Indicator of Productivity	df	F	P
Dollar value/dentist	2/35	2.7	ns**
Unweighted procedure/dentist	2/35	3.4	.04
Weighted procedure/dentist	2/35	3.2	.04
Total patient/dentist	2/35	1.9	ns
Dollar value/provider unit ***	2/35	1.1	ns
Unweighted procedure/ provider unit	2/35	2.0	ns
Weighted procedure/provider unit	2/35	1.5	ns
Total patients/provider unit	2/35	1.1	ns

* Ranges of Multiple DTR Mode use:

Lower = 0% to 33%
Middle = 34% to 66%
Upper = 67% to 100%

** ns = not significant

*** Provider Unit = Dentists plus ½ Dental Therapy Assistant

TABLE 14

UNWEIGHTED AND COMPOSITE TIME VALUE (CTV) WEIGHTED DENTAL PROCEDURES PER DENTIST FOR RANGES OF PERCENT DENTISTS USING MULTIPLE MODE OF PRACTICE, US ARMY MULTIPLE OPERATORY STUDY, 1981

Group	n	Range of Percent Utilization	Mean Unweighted Procedures*	Mean CTV Weighted Procedures**
1	8	Lower (0%-33%)	1555	1154
2	13	Middle (34%-66%)	1606	1250
3	17	Upper (67%-100%)	1945	1452

Significant Differences:

*Unweighted Procedures Group 3 > Group 1, Group 2

**CTV Weighted Procedures Group 3 > Group 1

APPENDIX A

Indicators of Production and Productivity

APPENDIX A

INDICATORS OF PRODUCTION AND PRODUCTIVITY

1. Unweighted dental procedures are the total frequency of all procedures listed on the Monthly Dental Procedures Report (HSC Form 037) without regard to any weighting system. Thus, for example, one intraoral film counts the same as a full maxillary denture.

2. Weighted dental procedures are the total frequency of each item on the Monthly Dental Procedures Report multiplied by a weighting factor established by the Department of Defense. This weighting factor, the Composite Time Value (CTV), gives more weight to procedures relative to the estimated amount of time required to complete the procedure (see page 34 to page 44 for CTVs). Thus, one intraoral film has a Composite Time Value of 0.2, and one full maxillary denture has a Composite Time Value of 10.3.

3. The number of patients treated is the total of all beneficiary categories of patients treated and reported on the Monthly Dental Treatment Procedure Report.

4. Dollar value produced is the total of the frequency of selected items on the Monthly Dental Procedures Report multiplied by a weighting factor of the dollar value which would have been charged for each on a fee-for-service-basis. The fee schedule was developed based upon the national means for dental services fees published by the American Dental Association (see page 45 to page 49 for US Army FY81 Dollar Values).

5. Each of the above production measures was divided by the number of assigned dentists (from the HSC Form 113) and divided by the number of assigned dentists plus half the assigned DTAs.* This gave two measures of productivity for each measure of production.

* A dentist and ½ DTA is termed a "provider unit" in this paper.

WEIGHTING FACTORS: COMPOSITE TIME VALUES

Clinical Services, weighting factors are based on time values, and are termed Composite Time Values (CTV). The following weighting factors have been developed for the Defense Code on Dental Procedures and Nomenclature.

Procedure Codes and Services		CTVs
a.	Diagnostic 001000-00999	
	00100 Clinical Oral Examination	
	00120 Oral Examination (Annual or Periodic)	0.8
	00130 Other Examination	0.4
	00133 Screening Examination	0.4
	00140 Comprehensive Examination	3.6
	00141 Post Mortem Examination	6.2
	00150 Dental Consultation	0.7
	00160 Blood Pressure Recording	0.2
	00200 Radiographs	
	00210 Intraoral Series	1.4
	00220 Intraoral Film	0.2
	00250 Extraoral Film	0.5
	00310 Sialography	1.9
	00330 Panoramic Film	0.4
	00340 Cephalometric Film	0.4
	00400 Tests And Laboratory Examination	
	00410 Bacteriologic Cultures	0.3
	00420 Caries Susceptability Test	0.8
	00450 Macroscopic Tissue Examination	0.6
	00451 Microscopic Tissue Examination	1.8
	00460 Endodontic Diagnostic Test	0.8
	00471 Diagnostic Clinical Photography	0.5
	00472 Identification Photography	0.3

b. Preventive 01000-01999

01100 Dental Prophylaxis	
01110 Adult Prophylaxis	1.8
01120 Child Prophylaxis	1.0
01200 Fluoride Treatment	
01240 Topical Application	0.7
01245 Topical Fluoride - Self Applied	0.9
01300 Other Preventive Services	
01310 Dietary Planning	1.4
01330 Individual Oral Health Counseling	0.3
01331 Group Oral Health Counseling	1.9
01350 Application of Pit and Fissure Sealants	0.6
01360 Plaque and Tissue Indices	0.4

c. Restorative 02000-02999

02100 Amalgam Restorations	
02140 Amalgam - One Surface	1.0
02150 Amalgam - Two Surface	1.9
02160 Amalgam - Three Surface	2.2
02161 Amalgam - Four or more Surfaces	2.6
02200 Silicate Restoration	
02210 Silicate Cement	1.2
02300 Resin Restoration - Unfilled or Composite	
02320 Resin, Simple	1.2
02336 Resin, Complex	1.9
02340 Acid Etch	0.2
02341 Glazing Composite	0.2
02342 Sealant, Operative	0.6
02400 Gold Foil Restoration	
02410 Gold Foil Class I	2.8
02420 Gold Foil Class II	5.9
02430 Gold Foil Class III	5.9
02440 Gold Foil Class IV	8.1
02450 Gold Foil Class V	6.2
02460 Gold Foil Class VI	3.4
02500 Cast Inlay Restoration	
02511 Inlay - One Surface	4.9
02521 Inlay - Two Surface	6.6

02531	Inlay - Three Surface	7.0
02541	Onlay (Cusp Coverage)	7.8
02542	Pinledge Restoration	6.4
	02600 Porcelain Restoration	
02610	Porcelain Inlay	4.9
	02900 Other Restorative Service	
02910	Recement Inlay, Crown or Fixed PTR DTR	1.4
02940	Sedative, Temporary Restoration	0.5
02950	Crown Substructure	2.5
02952	Restoration Polish	0.8
02953	Pin Retention	0.4
02954	Intermediate Base	0.2
02960	Rubber Dam Application	0.4
02970	Enameloplasty/Odontoplasty	0.2

d. Endodontics 03000-03999

	03100 Pulp Capping	
03110	Direct Pulp Cap	1.0
03120	Indirect Pulp Cap	0.9
	03200 Pulpotomy	
03210	Pulotomy - Deciduous	1.5
03220	Pulotomy - Permanent	1.5
03230	Pulpectomy - Total	1.6
03231	Pulpectomy - Partial	0.7
	03300 Root Canal Therapy	
03311	Anterior, One Canal Filled	2.3
03312	Anterior, Two or More Canals Filled	2.5
03321	Premolar, One Canal Filled	2.7
03322	Premolar, Two Canals Filled	3.2
03323	Premolar, Three or More Canals Filled	3.0
03331	Molar, One Canal Filled	3.1
03332	Molar, Two Canals Filled	3.7
03333	Molar, Three Canals Filled	3.9
03334	Molar, Four or More Canals Filled	4.4
03340	Deciduous Root Canal Filling	2.4
00350	Apexification/Specification Treatment	2.5
03360	Endodontic Interim Treatment	1.8

03400	Periapical Treatment	
03410	Apicoectomy	3.3
03420	Retrograde Filling	0.9
03470	Surgical Fenestration	1.0
03480	Pneumatization	1.6
03900	Other Endodontic Procedures	
03960	Bleaching of Discolored Teeth	1.9
03970	Perforation Repair	1.8
03980	Endodontic Endosseus Implant	7.7
03981	Endodontic Internal Splint	2.8

e. Periodontics 04000-04999

04200	Surgical Services	
04210	Gingivectomy/Gingivoplasty	1.5
04220	Gingival Curretage	1.3
04230	Distal Wedge	0.7
04240	Gingival Flap	2.0
04250	Mucogingival Flap	2.6
04260	Osseous Resective Surgery	1.4
04261	Osseous Graft	1.7
04270	Pedicle Soft Tissue Graft	2.4
04271	Free Soft Tissue Graft	2.4
04272	Vestibuloplasty	3.1
04300	Adjunctive Periodontal Service	
04320	Provisional Splint, Intracoronal	2.9
04321	Provisional Splint, Extracoronal	3.0
04330	Occlusal Adjustment, Limited	0.7
04331	Occlusal Adjustment, Complete	7.2
04342	Periodontal Scaling	0.6
04343	Periodontal Scaling and Root Planning	1.4
04351	Root Desensitization	0.7
04361	Occlusal Orthopedic Appliance	2.8
04363	Other Periodontal Appliance	1.1
04370	Hemisection	1.2
04371	Root Amputation	1.8
04372	Biscuspidization	1.6

f. Prosthodontics, Removable 05000-05999

05100	Complete Dentures	
05110	Maxillary	10.3
05120	Mandibular	10.3

05130	Immediate Maxillary	11.4
05140	Immediate Mandibular	11.4
05150	Metal Bases	1.9
05160	With Cast Metal Occlusals	15.2
05170	With Amalgam Occlusal	11.8
05200	Partial Denture	
05201	Resin Maxillary	3.2
05202	Resin Mandibular	3.2
05203	Cast Metal Maxillary	12.3
05204	Cast Metal Mandibular	12.3
05205	Cast Metal Maxillary Resin	12.3
05206	Cast Metal Mandibular Resin	12.3
05207	Precision Attachment	7.1
05208	Maxillary With Precision Attachments	40.1
05209	Mandibular With Precision Attachments	40.1
05210	With Cast Metal Occlusals	15.0
05220	With Amalgam Occlusals	11.9
05330	Corrected Cast, Partial Denture	2.6
05600	Removable Denture Repairs	
05611	Complete Denture	1.0
05621	Partial Denture	1.0
05699	Precision Attachment Partial Denture	5.9
05700	Denture Duplication, Relining or Rebasing	
05711	Maxillary Duplicate Denture	1.9
05712	Mandibular Duplicate Denture	1.9
05731	Reline Complete Maxillary (Chairside)	2.6
05732	Reline Complete Mandibular (Chairside)	2.6
05741	Reline Removable PTR Maxillary (Chairside)	2.6
05742	Reline Removable PTR Mandibular (Chairside)	2.6
05751	Reline Complete Maxillary (Laboratory)	4.2
05752	Reline Complete Mandibular (Laboratory)	4.2
05761	Reline Removable PTR Maxillary (Laboratory)	1.9
05762	Reline Removable PTR Mandibular (Laboratory)	1.9

05763	Rebase Complete Maxillary (Laboratory)	5.6
05764	Rebase Complete Mandibular (Laboratory)	5.6
05765	Rebase Removable PTR Maxillary (Laboratory)	4.2
05766	Rebase Removable PRT Mandibular (Laboratory)	4.2

05800	Other Prosthetic Services	
05810	Denture, Temporary Maxillary	2.9
05811	Denture, Temporary Mandibular	2.9
05812	Duplicate Maxillary Overdenture	1.8
05813	Duplicate Mandibular Overdenture	1.8
05814	Overdenture Immediate Maxillary	13.6
05815	Overdenture Immediate Mandibular	13.6
05816	Overdenture Maxillary Metal	13.9
05817	Overdenture Mandibular Metal	13.9
05825	Precision Overdenture Attachment	4.7
05862	Overdenture Maxillary	17.4
05863	Overdenture Mandibular	17.4
05864	Overdenture Partial Maxillary	17.7
05865	Overdenture Partial Mandibular	17.7
05866	Overdenture Immediate MAX REM PTR	17.5
05867	Overdenture Immediate MAND REM PRT	17.5

05900	Maxillofacial Prosthetics	
05905	Prosthetic Cast	4.4
05910	Ear Prosthesis	18.5
05915	Nose Prosthesis	18.5
05920	Eye Prosthesis	18.5
05925	Other Prosthesis	18.5
05930	Face Mask, Custom	18.5
05935	Facial Prosthesis	18.5
05940	Implants	16.8
05950	Maxillary Inclined Plane or Occlusal Table	19.4
05955	Mandibular Guide Flange	16.8
05960	Palatal Lift Prosthesis	12.4
05970	Obturator	21.7
05980	Speech Bulb	18.4

g. Prosthodontics, Fixed 06000-06999

06000 Fixed Partial Denture

06100	Fixed Partial Denture Retainers	
06110	Acrylic Resin, Veneered Crown	5.4

06120	Porcelain	6.8
06130	Porcelain Fused To Metal	6.8
06140	Reverse Pin Facing and Metal	4.8
06150	Partial Veneer, Metal	5.7
06160	Complete Crown, Metal	5.4
06200	Fixed Partial Denture Pontics	
06201	Cast Metal	1.4
06203	Porcelain	1.2
06204	Acrylic Veneered Pontic	1.2
06205	Reversed Pin Facing	1.2
06220	Slotted Facing or Pontic	1.9
06240	Porcelain Fused to Metal	1.5
06600	Repairs	
06610	Replace Broken Facing	2.5
06611	Stain and Glaze	2.1
06612	Broken Connector	4.1
06700	Artificial Crowns	
06710	Acrylic Resin (Processed)	3.8
06711	Acrylic Resin Interim (Prefabricated	2.1
06712	Acrylic Resin Interim (Autopolymerizing)	2.1
06713	Acrylic Resin, Veneered Crown	8.1
06718	Dowel and Core, Metal	4.4
06719	Stainless Steel, Aluminum, Interim	2.1
06740	Porcelain	11.1
06750	Porcelain Fused to Metal	11.1
06760	Reverse Pin Facing and Metal	10.6
06780	Partial Veneer, Metal	7.9
06790	Complete Crown, Metal	7.6

h. Oral and Maxillofacial Procedures

07100	Odontogenic Procedures	
07110	Tooth Removal	0.7
07120	Tooth Removal, Complicated	1.2
07130	Tooth Removal, Impacted	1.4
07140	Tooth Implantation, Re, and Transplantation	3.2
07150	Surgical Exposure, Tooth	2.7
07200	Repair Procedures	
07210	Repair Traumatic Wounds, Simple Under 5cm	1.2
07211	Repair Traumatic Wounds, Simple Under 5cm	1.8

07212	Repair Traumatic Wounds, Complex Under 5cm	2.6
07213	Repair Traumatic Wounds, Complex Over 5cm	5.3
07260	Cleft Palate Repair	10.6
07265	Cleft Lip Repair	7.2
07270	O-A Fistula or Communication Repair	1.9
07275	O-N Fistula Repair	5.3
07280	Skin or Mucosal Grafts	2.4
07285	Bone Graft or Osseous Implant	17.6
07300	Preprosthetic Surgery	
07310	Alveoloplasty With Extractions	0.8
07320	Alveoloplasty	1.2
07340	Stomatoplasty, Uncomplicated	1.8
07350	Stomatoplasty, Complicated	5.3
07400	Surgical Excision	
07405	Salivary Gland Surgery	4.9
07412	Excision, Soft Tissue	1.1
07432	Excision, Benign Tumor	2.4
07442	Excision, Malignant Tumor	5.3
07452	Removal of Odontogenic Cyst or Tumor	2.5
07462	Removal of Non-Odontogenic Cyst or Tumor	1.2
07465	Destruction of Lesions	1.2
07470	Removal of Exostoses	1.7
07480	Partial Resection, Maxilla or Mandible	3.5
07481	Sequestrectomy	1.3
07485	Radical Resection	8.8
07500	Surgical Incision	
07511	Incision and Drainage	1.1
07520	Biopsy	1.4
07530	Removal or Foreign Body	1.5
07560	Maxillary Sinusotomy	2.8
07570	Cricothyrotomy	0.3
07580	Tracheostomy	2.7
07600	Treatment of Fractures	
07610	Maxilla, Open Reduction	5.2
07620	Maxilla, Closed Reduction	3.6
07630	Mandible, Open Reduction	5.2
07640	Mandible, Closed Reduction	3.6
07651	Zygomatic Complex Fracture	4.7
07680	Facial Bone Fractures	10.6

07681	Other Fracture Reduction	4.8
07685	Intermaxillary Fixation	3.6
07690	Maxillofacial Appliances	3.1
07700	Orthognatic Surgery	
07711	Maxillary Osteotomy, Total	10.6
07712	Maxillary Osteotomy, Segmental	7.1
07721	Mandibular Osteotomy, Ramus	8.8
07722	Mandibular Osteotomy, Body	7.1
07755	Augmentation, Contouring, Reduction	5.3
07800	Temporomandibular Joint Dysfunction	
07811	Reduction of Dislocation	0.9
07815	Myofascial Pain Dysfunction Treatment	1.9
07835	Mandibular Manipulation	0.8
07845	Temporomandibular Joint Surgery	8.8
07880	Arthrocentesis, Arthrography Injection	1.8
07900	Other Surgery	
07901	Postsurgical Treatment	0.5
07902	Osteitis Treatment	0.5
07960	Frenectomy	1.3

i. Orthodontics 08000-08999

08100	Space Maintenance Appliances	
08110	Space Maintainer, Removable	1.2
08120	Space Maintainer, Simple Fixed	1.5
08121	Space Maintainer, Complex Fixed	1.8
08200	Habit Breaking Appliances	
08210	Habit Breaker, Removable	0.9
08212	Habit Breaker, Mouth Breathing	0.9
08220	Habit Breaker, Fixed	1.5
08300	Active or Interceptive Appliances	
08310	Simple Hawley Appliance	0.9
08311	Complex Hawley Appliance	1.2
08320	Removable Expansion Appliance, Simple	1.0
08322	Fixed Expansion Appliance	1.6
08330	Bite Plane, Anterior	1.2
08331	Bite Plane, Posterior	1.2

08400	Fixed Appliances	
08410	Banding	0.9
08420	Bonding (Each Tooth)	0.5
08440	Sectional Wire (Each)	0.6
08441	Round Ideal Archwire	0.9
08442	Round Complex Archwire	1.5
08443	Rectangular Ideal Archwire	1.2
08444	Rectangular Complex Archwire	1.8
08445	Passive Lingual or Palatal Wire	1.2
08446	Face Bow, J Hooks, Clinical Cup	1.2
08447	Active Lingual or Palatal Wire	1.2
08448	Multi-Stranded Wire	0.6
08510	Archwire Adjustment	0.6
08511	Removable Appliance Adjustment	0.5
08512	Headgear Adjustment	0.5
08513	Ligation Adjustment	0.3
08520	Addition of Auxillaries	0.3
08530	Band Removal	0.3
08531	Bonded Attachment Removal	0.3
08532	Fixed Lingual or Palatal Arch Removal	0.6
08540	Positioner Insertion	1.1
08552	Appliance Repair	1.1
08553	Craniofacial Analysis	1.5

j. Adjunctive General Services 09000-09999

09200	Anesthesia	
09210	Local Anesthesia, Diagnositc	0.6
09211	Local Anesthesia, For Therapy	0.4
09212	Trigeminal Division Block	0.6
09220	General Anesthesia	1.6
09231	Intravenous Sedation or Analgesia	1.2
09232	Intramuscular Sedation of Analgesia	0.6
09233	Inhalation Sedation or Analgesia	0.8
09234	Oral Sedation or Analgesia	0.3
09235	Hypnosis	0.9
09600	Drugs	
09610	Therapeutic Medication by Injection	0.5
09630	Other Therapeutic Medication	0.6
09631	Prescriptions	0.3
09700	Hospital Services	
09710	Hospital Ward Rounds	0.3
09715	Grand Rounds	0.6
09720	Hospital Admissions	5.3

09900	Miscellaneous Services	
09918	Postoperative Treatment	0.5
09922	Surgical Procedure for Diagnosis	1.8
09923	Dental Cast	0.8
09924	Diagnostic Mounting	4.1
09925	Mandibular Recording (Three Dimensional)	9.7
09926	Laboratory Procedures, Adjunctive Medical	0.7
09927	Cellulitis Treatment	0.8
09940	Mouth Protectors	0.9
09941	Resin Stents	5.9
09942	Fluoride Carriers	0.9
09943	Radiation Shield	2.6
09944	Radiation Needle Carriers	7.1
09971	Hyperbaric Monitoring	10.6
09972	Patient Handling Time, Diagnostic & PREV	0.8
09973	Patient Handling Time, All Other Services	1.1

WEIGHTING FACTORS: US ARMY FY81 DOLLAR VALUES

I. DIAGNOSTIC

CODE	PROCEDURE	DOLLAR VALUE PER PROCEDURE
00120	Periodic Oral Exam	7.00
00140	Comprehensive Exam	7.00
00210	Intraoral Series	30.00
00220	Intraoral Film	2.50
00250	Extraoral Film	25.00
00330	Panoramic Film	20.00

II. PREVENTIVE

01110	Adult Prophylaxis	17.00
01120	Child Prophylaxis	13.00
01240	Topical Application	10.00
01350	Application of Pit & Fissure Sealants	10.00

III. RESTORATIVE

02140	Amalgam - 1 Surface	15.00
02150	Amalgam - 2 Surfaces	24.00
02160	Amalgam Restoration - 3 Surfaces	30.00
02161	Amalgam Restoration - 4 or more Surfaces	38.00
02320	Resin, Simple	20.00
02336	Resin, Complex	26.00
02410	Gold Foil Clas I	60.00
02420	Gold Foil Class II	175.00
02430	Gold Foil Class III	125.00
02440	Gold Foil Class IV	200.00
02450	Gold Foil Class V	60.00
02511	Inlay, 1 Surface	100.00
02521	Inlay, 2 Surfaces	130.00
02531	Inlay, 3 Surfaces	160.00
02541	Onlay - Cusp Coverage	130.00
02542	Pinledge Restoration	150.00
02910	Recement Inlay, Crown or Fix Partial Denture	12.00
02953	Pin Retention	8.00

IV. ENDODONTICS

03210	Pulpotomy, Deciduous	25.00
03220	Pulpotomy, Permanent	25.00
03311	Anterior 1 canal filled	125.00
03312	Anterior 2 or more Canals filled	125.00
03321	Premolar 1 canal filled	150.00
03322	Premolar 2 canals filled	150.00
03323	Premolar 3 or more canals filled	150.00
03331	Molar 1 canal filled	200.00

IV. ENDODONTICS contd...

03332	Molar 2 canals filled	200.00
03333	Molar 3 canals filled	200.00
03334	Molar 4 or more canals filled	200.00
03340	Deciduous Root Canal filling	120.00
03960	Bleaching of Discolored teeth	50.00

V. PERIODONTICS

04210	Gingivectomy	115.00
04220	Gingival Curettage	15.00
04260	Osseous Resective Surgery	150.00
04261	Osseous Graft	150.00
04270	Pedicle Soft Tissue Graft	125.00
04271	Free Soft Tissue Graft	150.00
04272	Vestibuloplasty	150.00
04320	Provisional Splint, Intracoronal	150.00
04321	Provisional Splint, Extracoronal	75.00
04331	Occlusal Adjustment, Complete	95.00
04343	Periodontal Scaling & Root Planing	20.00
04351	Root Desensitization	15.00
04361	Occlusal Orthopedic Appliance	100.00
04363	Other Periodontal Appliances	100.00
04371	Root Amputation	100.00

VI. PROSTHODONTICS, Removable

05110	Maxillary	350.00
05120	Mandibular	350.00
05130	Immediate Maxillary	350.00
05140	Immediate Mandibular	350.00
05201	Resin Maxillary	150.00
05202	Resin Mandibular	150.00
05203	Cast Metal Maxillary	350.00
05204	Cast Metal Mandibular	350.00
05205	Cast Metal Maxillary Resin	350.00
05206	Cast Metal Mandibular Resin	350.00
05210	With Cast Metal Occlusals	350.00
05220	With Amalgam Occlusals	350.00
05611	Complete Denture	30.00
05621	Partial Denture	30.00
05711	Maxillary Duplicate Denture	150.00
05731	Reline Complete Maxillary (Chairside)	60.00
05732	Reline Complete Mandibular (Chairside)	60.00
05741	Reline Removable Partial Maxillary(Chairside)	60.00
05742	Reline Removable Partial Mandibular (Chairside)	60.00
05751	Reline Complete Maxillary (Laboratory)	100.00

VI. PROSTHODONTICS, Removable contd....

05752	Reline Complete Mandibular (Laboratory)	100.00
05761	Reline Removable Partial Maxillary (Laboratory)	75.00
05762	Reline Removable Partial Mandibular (Laboratory)	75.00
05763	Rebase Complete Maxillary (Laboratory)	100.00
05764	Rebase Complete Mandibular (Laboratory)	100.00
05765	Rebase Removable Partial Maxillary (Laboratory)	75.00
05766	Rebase, Removable Partial Mandibular (Laboratory)	75.00
05810	Denture, Temporary (Complete, Removable Partial or Fixed Partial), Maxillary	100.00
05811	Denture, Temporary (Complete, Partial or Fixed) Mandibular	100.00
05814	Overdenture Immediate Maxillary	350.00
05815	Overdenture Immediate Mandibular	350.00
05816	Overdenture Maxillary, Metal	350.00
05817	Overdenture Mandibular, Metal	350.00
05862	Overdenture Maxillary	350.00
05863	Overdenture Mandibular	350.00
05864	Overdenture Partial Maxillary	350.00
05865	Overdenture Partial Mandibular	350.00
05866	Overdenture, Immediate Maxillary Removable Partial Denture	350.00
05867	Overdenture, Immediate Mandibular Removable Partial Denture	350.00
05910	Ear Prosthesis	700.00
05915	Nose Prosthesis	600.00
05920	Eye Prosthesis	350.00
05970	Obturator	750.00
05980	Speech Bulb	900.00

VII. PROSTHODONTICS, Fixed

06110	Acrylic Resin, Veneered Crown	200.00
06130	Porcelain Fused to Metal	250.00
06140	Reverse Pin Facing and Metal	250.00
06150	Partial Veneer, Metal	200.00
06160	Complete Crown, Metal	200.00
06201	Cast Metal	200.00
06203	Porcelain	200.00
06204	Acrylic Veneered Pontic	200.00
06220	Slotted Facing or Pontic	200.00
06240	Porcelain Fused to Metal	250.00
06610	Replace Broken Facing	30.00
06710	Acrylic Resin (Processed)	80.00
06713	Acrylic Resin, Veneered Crown	200.00
06718	Dowel and Core, Metal	70.00
06719	Stainless Steel, Aluminum, Interim	50.00
06740	Porcelain	200.00
06750	Porcelain Fused to Metal	250.00
06760	Reverse Pin Facing and Metal	250.00
06780	Partial Veneer, Metal	200.00
06790	Complete Crown, Metal	200.00

VIII. ORAL AND MAXILLOFACIAL SURGERY

07110	Tooth Removal	15.00
07120	Tooth Removal, Complicated	20.00
07130	Tooth Removal, Impacted	85.00
07150	Surgical Exposure, Tooth	30.00
07270	Oral Antral Fistula or Communication Repair	200.00
07280	Skin or Mucosal Grafts	500.00
07285	Bone Graft or Osseous Implant	1,000.00
07310	Alveoloplasty with Extractions	50.00
07320	Alveoloplasty	50.00
07340	Stomatoplasty, Uncomplicated	100.00
07350	Stomatoplasty, Complicated	400.00
07405	Salivary Gland Surgery	300.00
07432	Excision, Benign Tumor	50.00
07462	Removal of Non-Odontogenic Cyst or Tumor	300.00
07465	Destruction of lesions	200.00
07470	Removal of Exostoses	200.00
07480	Partial Resection, Maxilla or Mandible	1,100.00
07520	Biopsy	50.00
07530	Removal of Foreign Body	200.00
07560	Maxillary Sinusotomy	400.00
07610	Maxilla, Open Reduction	800.00
07620	Maxilla, Closed Reduction	400.00
07630	Mandible, Open Reduction	700.00
07640	Mandible, Closed Reduction	450.00
07651	Zygomatic Complex Fracture	700.00
07680	Facial Bone Fractures	1,100.00
07681	Other Fracture Reduction	700.00
07711	Maxillary Osteotomy, Total	1,400.00
07712	Maxillary Osteotomy, Segmental	800.00
07721	Mandibular Osteotomy, Ramus	1,400.00
07722	Mandibular Osteotomy, Body	1,400.00
07755	Augmentation, Contouring, Reduction	650.00
07811	Reduction of Dislocation	100.00
07815	Myofascial Pain Dysfunction Treatment	250.00
07835	Mandibular Manipulation	100.00
07845	Temporomandibular Joint Surgery	250.00
07880	Arthrocentesis, Arthrography, Injection	100.00
07960	Frenectomy	50.00

IX. ORTHODONTICS

08997	Full banded cases (start)	800.00
08998	(finish)	700.00
08999	Partial treatment i.e., Uprighting cross bite corrections opening spaces interceptive orthodontics	250.00

X. ADJUNCTIVE GENERAL SERVICE

09220	General Anesthesia	40.00
09231	Intravenous Sedation or Analgesia	20.00
09233	Inhalation Sedation or Analgesia	20.00

APPENDIX B

Questionnaire Package

DEPARTMENT OF THE ARMY
HEADQUARTERS, UNITED STATES ARMY HEALTH SERVICES COMMAND
FORT SAM HOUSTON, TEXAS 78234

REPLY TO
ATTENTION OF:

S: 8 July 1981

HSDS

17 June 1981

SUBJECT: Multiple Operatory Utilization

Commander
US Army Dental Activity West Point
West Point, NY 10996

1. The Dental Studies Office, Directorate of Combat Developments and Health Care Studies, Academy of Health Sciences, US Army has been tasked with conducting a study to determine the extent to which multiple operatories are being used within the Army Dental Care System. This is an approved study under The Army Study Program.

2. It is requested that you distribute the inclosed questionnaires, with cover letters and return envelopes, to your clinic chiefs for completion. Please omit any clinic which is used exclusively as an oral health center. The clinic chiefs are being asked to give responses which depict the usual operation of their clinics. Although the results of this survey will be forwarded to MG Kuttas for his use, no individual DENTAC or clinic will be identified. Subsequent to the mail survey, selected DENTAC will be visited by members of the Dental Studies Office in order to enhance data collection.

3. Your cooperation in this project, as well as in future studies, will be appreciated.

FOR THE DIRECTOR OF DENTAL SERVICES:

John R. Belasco

JOHN R. BELASCO
COL, DC
Dental Staff Officer

3 Incl
as

DEPARTMENT OF THE ARMY
ACADEMY OF HEALTH SCIENCES, UNITED STATES ARMY
FORT SAM HOUSTON, TEXAS 78234

REPLY TO
ATTENTION OF:

S: 8 July 1981

HSA-CDE

17 June 1981

SUBJECT: Multiple Operatory Use Questionnaire

TO: HSC Dental Clinic Chiefs

1. The Dental Studies Office, Directorate of Combat Developments and Health Care Studies, Academy of Health Sciences, US Army is conducting a survey to determine the extent to which multiple operatories are being used within the Army Dental Care System. The proponent of this study, approved under The Army Study Program, is the Assistant Surgeon General for Dental Services and Chief, Army Dental Corps.

2. Please complete the inclosed questionnaire and return it in the inclosed envelope as soon as possible but no later than 8 July 1981. The questions are designed to be straightforward. Although there may be some personnel turbulence at this time, your responses should reflect the manner in which your clinic customarily operates.

3. Thank you for your assistance in completing and returning the questionnaire in a timely and accurate manner.

2 Incl
as

DAVID G. BRUNNER
COL, DC
Dental Projects Officer

Preliminary Multiple Operatory Utilization Questionnaire

1. Name of DENTAC _____

2. Name of Dental Clinic _____

   UIC (If known) _____

   AUTOVON Number _____

3. Type of Dental Clinic:

   Individual operatory _____

   Modular _____

   WW II _____

   Other _____ (Describe) _____

4. Number of dental chairs available for use by dentists and/or dental hygienists _____

5. Number of dentists assigned _____

   General Duty Dentists (GDD) (63A and 63B) _____

   Specialists _____

(For the following three questions please indicate the numbers of individuals working at least 75 percent of the time in their SSI or Job Title.)

6. Number of Dental Hygienists (DH) assigned _____

7. Number of Dental Assistants (DA) assigned _____

8. Number of Dental Therapy Assistants (DTA) assigned _____

9. Are there opportunities for General Duty Dentists to use more than one dental chair on a routine basis? _____

10. Are there opportunities for Specialists to use more than one dental chair on a routine basis? _____

11. If dentists in your clinic routinely use more than one dental chair please indicate the team configuration(s) and the number of each type.

EXAMPLES:

1 - GDD	1 - 63N	1 - GDD	1 - GDD	1 - 63G
(4)1 - DTA	(1)3 - DA	3 - DTA	2 - DTA	2 - DA
2 - Chairs	4 - Chairs	(2)1 - DA	(3)1 - DA	(1)2 - Chairs
		3 - Chairs	1 - DH	
			3 - Chairs	

_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
( )_____	( )_____	( )_____	( )_____	( )_____	( )_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

12. How many dental chairs are usually available for use in a multiple-chair practice mode? ____

13. How many dental chairs are typically used in a multiple-chair practice fashion? ____

14. If there are dental chairs in your clinic which you feel are underutilized please indicate why you think this occurs.

15. Comments:

THANK YOU

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