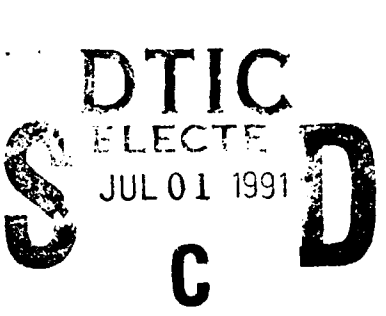

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A STUDY TO DETERMINE

FY88 SAVINGS AS A RESULT OF THE CAPTURE OF OBSTETRICAL SERVICES AT EVANS U.S. ARMY COMMUNITY HOSPITAL FORT CARSON, COLORADO

A Graduate Management Project

Submitted to the Faculty of

Baylor University

In Partial Fulfillment of the

Requirements for the Degree

of

Master of Health Administration

by

Major Dudley J. Schroeder, MSC

November 15, 1989

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Evans U.S. Army Community Hospital (EACH), Fort Carson, Colorado, was chosen as one of two Army hospitals for the Catchment Area Management Demonstration Project (CAM). CAM gives the Commander control of both the Operation and Maintenance, Army (OMA) and the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) budgets. The first initiative the Commander considered, as a result of this new control was to capture the Obstetrical Services (OB) in the EACH catchment area. This study determined that a savings of $1,345,140.72 would have been realized if 77 additional deliveries had been performed at EACH in FY88.

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ACKNOWLEDGMENTS

This Graduate Management Project is dedicated to my wife Jan who served as editor, but even more importantly understood my frustration with data collection. I acknowledge Lieutenant Colonel Art Badgett's assistance with the project from the very beginning. Without his help, I could not have compensated for the many problems and changes that had to be made. When it became apparent that CHAMPUS was not willing to provide the data I needed for the project, an alternate source was sought. Greg Linden, Jerry Griffin, and Donald Hahn, of the Government Accounting Office in Denver provided all the CHAMPUS data they had, which proved sufficient to reach a conclusion.

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I. INTRODUCTION

A 1987 "Concept Paper" prepared by the U.S. Army Health Services Command outlined a demonstration plan to "test the concept of assigning to the Army Medical Treatment Facility (MTF) Commander authority and responsibility for providing all health services to the eligible Department of Defense (DOD) beneficiary population residing within the catchment area." Evans U.S. Army Community Hospital (EACH), Fort Carson, Colorado, and Reynolds U.S. Army Community Hospital, Fort Sill, Oklahoma were chosen as the two Army demonstration sites. The project was given the title of "U.S. Army Catchment Area Management Demonstration Project" (CAM demonstration project).

The objectives of the CAM demonstration project, stated in the concept paper, are as follows:

1. To develop alternative delivery systems to augment services available in the direct care system.
2. To coordinate resource allocation to the MTF in a manner which encourages the most cost-effective mix of MTF and alternative delivery systems assets.
3. To provide the MTF Commander with the necessary authorities and resources to select the most cost-effective source of health services within the catchment area.
4. To improve the accessibility of health services within the catchment area through pre-negotiated agreements with civilian health care providers.

5. To demonstrate the ability of the MTF staff to effectively develop and administer a more complex health care delivery program.

Control of both the Operation and Maintenance, Army, (OMA) and the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) budgets has been given to the MTF Commander enabling the Commander to develop an integrated health care program for all beneficiaries within the catchment area. Because this new authority allows the Commander to "shop around" for the best mix of direct (that provided in the MTF) and CHAMPUS care, as well as the best price, it is anticipated that health care delivery will be enhanced while costs will be contained. These objectives, if truly supported by Health Services Command, the Office of the Surgeon General, and the Department of Defense, provide the MTF Commander with the latitude to implement some initiatives heretofore prohibited by regulations and funding structure.

One initiative the EACH Commander is considering is using direct care for all obstetrical (OB) services. It is generally less expensive to treat patients in a MTF (Slackman 20), however, EACH has not had the staff to provide direct care for all OB patients. Considering that EACH has the second highest CHAMPUS costs of any Army MTF, and that the nonavailability statements for CHAMPUS OB at EACH were 75% of the total CHAMPUS nonavailability statements issued in FY86 (Harold L. Timboe, LTC, Acting Commander and Deputy Commander for Clinical Services (DCCS), letter to COL Plunkett, Health Services Command, Fort Sam Houston, Texas., 24 October 1986), and 72% in FY87 (Sharon Ferguson, Health Benefits Advisor, personal interview, 27

October 1988), it becomes obvious that the savings as a result of this initiative could be substantial.

EACH is a modern facility with the physical plant capability to support the OB demand of 140 deliveries per month in the catchment area. That is 77 more deliveries per month than was supported in FY88 (William D. Strampel, LTC, DCCS, personal interview, 7 March 1988). The CAM demonstration project gives the EACH Commander the opportunity to pursue the necessary resources to staff OB at the level needed to perform all the OB services in the catchment area.

STATEMENT OF THE PROBLEM

To determine the amount of money which could have been saved by the Government in FY88, as a result of capturing all OB (less high risk neo-natal) services at Evans U.S. Army Community Hospital, Fort Carson, Colorado.

OBJECTIVES

1. Complete a literature review specific to:
   a. The CAM demonstration project
   b. CHAMPUS
2. Determine CHAMPUS usage for OB services for FY88 in the EACH CAM demonstration project catchment area.
3. Determine the high risk neo-natal OB rate for FY88.
4. Determine the average CHAMPUS cost to the government per patient for OB services in FY88 (less high risk neo-natal).
5. Determine the average per patient, direct care, cost for OB for FY88.

6. Compute the difference between four and five above.
7. Recommend a course of action to the Commander.

CRITERIA

The potential savings will be projected at the 95% confidence level.

ASSUMPTIONS

1. Evans U.S. Army Community Hospital presently cannot provide all the OB services within it's catchment area.
2. The CAM demonstration project will enable EACH to obtain all staffing necessary to provide all the OB services (less high risk neo-natal) within its catchment area.
3. The CHAMPUS figures for OB usage and per patient cost will be accurate and representative.
4. The projected marginal cost of additional personnel and equipment will be accurate and representative.
5. The projected opportunity costs will be accurate and representative.

LIMITATIONS

1. This project pertains only to Evans U.S. Army Community Hospital with its expanded catchment area under the CAM demonstration project.
2. EACH does not have high risk neo-natal capability, therefore it will not be possible to capture 100% of the OB in the catchment area.

3. Because of the nature of the project, the literature review will consist primarily of interviews and reviews of congressional documents.
4. FY88 data must be used to project the savings for FY89.
5. Though a ghost population (see definition below) may exist, it would be impossible to measure and therefore will not be considered.

DEFINITIONS

1. The term "high risk neo-natal" is operationally defined as any OB care that EACH is unable to provide because of the lack of special equipment or specialized personnel.
2. The term "direct care" is defined as health care provided within the MTF.
3. The term "opportunity costs" is defined as those desired activities which must be given up as a trade off to capturing the OB work load, less high risk neo-natal.
4. The term "ghost population" is defined as those beneficiaries who seek their health care outside both the direct care and the CHAMPUS system. For example, a retiree who presently works for a corporation that provides 100% medical coverage to its employees.

RESEARCH METHODOLOGY

Because the current belief is that U.S. Army health care facilities should not be stifled in their search for more cost effective ways of providing services, "free thinking" was encouraged.

A literature search was conducted specific to CHAMPUS and the CAM demonstration project to gain information about CAM in general, and OB specifically.

CHAMPUS usage (number of cases) and CHAMPUS costs for OB could not be obtained from OCHAMPUS but were obtained from the United States General Government Accounting Office, Denver, Colorado (GAO) instead.

Average government CHAMPUS OB costs were calculated by dividing the dollar amount of FY88 CHAMPUS OB claims, less that portion of the claim paid by the patient, by the total number of FY88 CHAMPUS OB claims for the non high risk neo-natal.

The projected cost of additional personnel and supplies was determined by estimates from the organizations responsible, such as the Logistics Division, the Personnel Division, the Resource Management Division, the Patient Administration Division, the newly formed Patient Services Division, the Civilian Personnel Office, the Pharmacy Service, the Department of Pathology, and the Department of Radiology. The projected cost of additional equipment was provided by the GAO.

The projected opportunity costs were determined in conjunction with the Deputy Commander For Clinical Services and the Commander.

The Medical Expense and Performance Reporting System (MEPRS) provides financial performance data to managers within DOD MTFs. The MEPRS determines a cost for functional work centers and was to be used to determine the average per patient, direct care, cost for OB FY88. MEPRS provides average cost per patient based on the summary work center data but does not use individual patient data and therefore, it was impossible to compute a measure of variability for direct care.

Initially it appeared that CHAMPUS data would provide both an average cost per patient as well as a measure of variability (Arthur L. Badgett, LTC, Chief, Patient Services Division (PSD) and CAM project officer, personal interview, 1 November 1988). However, the individual data necessary to compute variability was not provided by CHAMPUS. Because neither MEPRS nor CHAMPUS data provided variances, it was impossible to construct a 95% confidence interval on the potential savings (CHAMPUS-MEPRS). Consequently, the 95% confidence interval using the following formula could not be constructed:

LV-MEPRS ave. $\leq \mu_c \leq$ UV-MEPRS ave. (where LV=the lower 95% confidence value for CHAMPUS, UV=the upper 95% confidence value for CHAMPUS, and U=average savings).

The following is the statistical formula that was to be used:

$(\bar{X}c-\bar{X}dc)\pm 1.96\sqrt{\frac{\sigma_c^2}{N_c}}$ where c=CHAMPUS and dc=direct care.

This would have accounted for variability and would have given the Commander a more valid estimate of savings with which to make any management decisions he deemed appropriate. Subsequently, a single dollar amount had to be provided.

IMPLEMENTATION PLAN

An implementation plan was outside the scope of this study. However, the results of the study will be used to make recommendations to the Commander on the CAM demonstration project objectives.

REVIEW OF THE LITERATURE

The literature review for this project was limited by the uniqueness of the CAM demonstration project itself. Very little is written about the project and CAM is a new and untried concept.

CAM may have evolved as a result of a study titled "Capitation Budgeting in the Military Health Services" conducted in the mid 1970s by McKinsey & Company, Inc.. This study recognized that Commanders of military health facilities have far less latitude and flexibility than their civilian counterparts when it concerns managing resources. They, nor their services, have any control over CHAMPUS funds, effectively precluding advantageous trade-offs between direct care and CHAMPUS. Moreover, the study observed that Commanders have no control over Military Pay and Allowance (MP&A) and limited control over their manpower authorizations and assignments. McKinsey & Company, Inc. felt that this lack of local control stood in the way of total force management (i.e., trade-offs among military, civilian, and contract personnel and between labor and capital). McKinsey & Company, Inc. made six recommendations as a result of their findings and conclusions. Keep in mind that their final report was completed in December 1978, almost eleven years ago!

1. Resource budgeting and funding for the catchment area portions of CHAMPUS should be integrated with the direct care system at the facility level.
2. A concerted effort should be undertaken to determine how (a) budgeting, and possibly the funding, for the Operations and Maintenance (O&M), MP&A, and Investment

Equipment appropriations might be more fully integrated at the facility level, and (b) civilian and military manpower ceilings might be either removed entirely or replaced with a combined ceiling.

3. Changes in the number and demographic mix of catchment area beneficiaries should be taken into account prospectively in budgeting CHAMPUS, O&M, and MP&A resources. However, costs per beneficiary should not be developed and used as a measure of efficiency and performance among facilities or as the basis for allocating resources.
4. Utilization rates for catchment area beneficiary population groups should be explicitly considered in resource budgeting and emphasized as an item of local managerial and professional concern.
5. Comparisons of staffing relative to workload among similar facilities for similar functions should be developed and used as a tool in resource budgeting and as an aid to local management.
6. The continuation of the test during FY 1979 should be used as an opportunity to resolve remaining methodological issues and concerns.

While not all six of these recommendations have a direct relationship to CAM, 1, 2, and 4 are part of the basic premise of the CAM demonstration project.

In March 1980, Arthur Young and Company was retained to evaluate the McKinsey & Company Inc. results and to assist in deciding the future of the concept (John H. Moxley, III, M.D., Assistant Secretary of Defense, Health Affairs, Memorandum for the Deputy Secretary of Defense, Washington, D.C., 7 May, 1981). Arthur Young and Company concluded that "the management flexibilities provided under the test offer a potential for improved efficiency, effectiveness and reduction in total cost of DoD health care at some medical facilities." They also indicated that the "integration of CHAMPUS and O&M offers the most apparent flexibility," and the "removal of civilian end-strength constraints must be directly linked to integration of CHAMPUS and O&M at the facility level" (Executive Summary, OASD (HA) Capitation Budget Evaluation, Arthur Young and Company).

II. DISCUSSION

CHAMPUS usage

It was not as easy to obtain data from CHAMPUS as was initially anticipated. While it was thought that the data would be readily available, none of the data requested from CHAMPUS was provided during this project. However, it was discovered that the GAO was conducting a similar study and they were willing to share their data.

The total number of CHAMPUS deliveries for the Fort Carson catchment area during FY88 was 1,254 and the total cost of these deliveries (hospital cost of $2,051,742 plus non-hospital cost of $1,713,277) was $3,765,019 (Donald Hahn, Evaluator, United States General Government Accounting Office, Denver Colorado, personal interview, 5 September 1989). The total cost of deliveries divided by the total number of deliveries results in an average government cost per delivery of $3,002.41. Note that these figures represent the government's cost only and have thus already factored out the patients' cost share of these deliveries.

Additional cost of personnel and equipment

To determine the savings if more deliveries were done in-house, the additional cost of personnel, supplies, and equipment had to be computed. The projected cost of additional personnel was determined by estimates from the organizations responsible; the Personnel Division, the Resource Management Division, the Patient Administration Division, the newly formed Patient Services Division, the Civilian Personnel Office, the Pharmacy Service, the Department of Pathology, and the Department of Radiology.

Also used was a "Summary of Fort Carson Projections for Obstetrics/Gynecology" provided by the GAO in Denver, which was derived from an estimate of staff needs from Fort Carson Medical Officers, see Figure 1.

DIRECT CARE AREA ONLY	ADDITIONAL NEEDED	TOTAL NEEDED
OB/GYN CLINICIANS	4	8
PEDIATRICIANS	2	6.5
CLINICAL RNs	5	14
OB TECHNICIANS	8	15
ADMIN. PERSONNEL	1	1
OB/GYN WARE AREA ONLY		
REGISTERED NURSES	1	8
TECHNICIANS & LPNs	6	11
ADMIN. PERSONNEL	0	1
NEWBORN NURSERY AREA ONLY		
REGISTERED NURSES	2	9
TECHNICIANS & LPNs	5	13
ADMIN. PERSONNEL	0	1
OVERALL TOTAL ADDITIONAL STAFF		
OB/GYN CLINICIANS	4	8
PEDIATRICIANS	2	6.5
REGISTERED NURSES	8	31
TECHNICIANS & LPNs	19	39
ADMIN. PERSONNEL	1	3

Figure 1. Summary of Fort Carson Staffing Projections of OB/GYN

From this estimate, all staffing projections were made with the exception of staffing from the Department of Radiology, the Department of Pathology, and the Pharmacy Service. These staffing projections were made by the respective Chiefs based on an additional 77 deliveries per month. The dollar impact of these additional deliveries performed in-house is illustrated in Figure 2.

Obstetricians.....	4
Cost of one FTE, grade level 14, step 5, plus $12,000 Physician Comparability allowance.	$75,012
Additional cost per year for 4 obstetricians...	**$300,048**
Pediatricians.....	2
Cost of one FTE, grade level 14, step 5, plus $12,000 Physician Comparability allowance..	$75,012
Additional cost per year for 2 pediatricians...	**$150,024**
Registered Nurse (RN).....	8
Cost of one FTE, GS-9, middle step.....	$27,026
Additional cost per year for 8 RNs.....	**$216,208**
Licensed Practical Nurses (LPN).....	14
Cost of one FTE, GS-6, middle step.....	$19,882
Additional cost per year for 14 LPNs.....	**$278,348**
OB technicians.....	5
Cost of one FTE, GS-5, middle step.....	$17,838
Additional cost per year for 5 technicians.....	**$89,190**
Clerk.....	1
Cost of one FTE, GS-4, middle step.....	$15,943
Additional cost per year for 1 clerk.....	**$15,943**
Laboratory Technician (lab tech).....	1
Cost of one FTE, GS-7, middle step.....	$22,093
Additional cost per year for 1 lab tech.....	**$22,093**
Pharmacy Technician (pharm tech).....	.3
Cost of one FTE, GS-8, middle step.....	$24,470
Additional cost per year for 1 pharm tech.....	**$7,341**
Radiology Technician (x-ray tech).....	.2
Cost of one FTE, GS-8, middle step.....	$24,470
Additional cost per year for 1 x-ray tech.....	**$4,894**

Additional cost per year.....	$1,084,089
(X .155 [benefits cost factor])	$168,034
Total additional cost per year.....	$1,252,123
(minus 4.1% 1989 pay raise)	$51,337
Total adjusted additional cost per year.....	**$1,200,786**

Figure 2. Labor costs for 77 additional deliveries per month in FY88.

Notice that an additional 15.5% was factored in to account for the cost of benefits and that 4.1% was factored out because of a pay raise that became effective in January 1989 (Charles R. Reece, Budget Officer, personal interview, 10 May 1989).

The projected cost of additional supplies was determined by estimates from the organizations responsible; the Logistics Division, the Pharmacy Service, the Department of Pathology, and the Department of Radiology.

The following is a breakdown of the additional supply costs incurred by the Logistics Division based on an additional 77 births per month in FY88.

14 C-Section Packs	@ $10.10 ea.	(x 12)	$1,696.80
63 Birth Packs	@ $64.90 ea.	(x 12)	$49,064.40
600 Receiving Blankets	@ $2.25 ea.		$1,350.00
924 T-Shirts	@ $1.07 ea.		$988.68
144 Sheets	@ $11.25 ea.		$1,620.00
77 Pillowcases	@ $2.21 ea.		$170.17
		Total	$54,890.05

Note: There are no additional housekeeping costs because the contract for these services is a "firm fixed price."

Figure 3. Logistics supply costs for 77 additional births per month in FY88.

The following is a breakdown of the additional supply costs incurred by the Pharmacy Service based on a projected increase of 77 births per month in FY88.

PRIMARY C-SECTION (8.7% = 7 births)			
DRUG	DOSES	COST/DOSE	TOTAL COST
NUBAIN	2	$2.25	$4.49
DEMEROL 50-100MG	5	$0.40	$2.00
VISTARIL 50MG	5	$0.42	$2.08
IV BAGS	10	$0.75	$7.50
PITOCIN 60 UNITS	1	$1.20	$1.20
PRENATAL VITS	3	$0.03	$0.08
FERROUS SULFATE	6	$0.02	$0.10
COLACE	6	$0.03	$0.15
MOTRIN	12	$0.06	$0.67
MYLICON	16	$0.02	$0.27
TYLOX	10	$0.03	$0.31
	TOTAL COST PER PATIENT		$18.86

REPEAT C-SECTION (9.1% = 7 births)			
DRUG	DOSES	COST/DOSE	TOTAL COST
DEMEROL 50-100MG	5	$0.40	$2.00
VISTARIL 50MG	5	$0.42	$2.08
IV BAGS	8	$0.75	$6.00
PITOCIN 40 UNITS	1	$0.80	$0.80
PRENATAL VITS	3	$0.03	$0.08
FERROUS SULFATE	6	$0.02	$0.10
COLACE	6	$0.03	$0.15
MOTRIN	12	$0.06	$0.67
MYLICON	16	$0.02	$0.27
TYLOX	10	$0.03	$0.31
	TOTAL COST PER PATIENT		$12.47

VAGINAL DELIVERY (82.2% = 63 births)			
DRUG	DOSES	COST/DOSE	TOTAL COST
NUBAIN	2	$2.25	$4.49
IV BAGS	2	$0.75	$1.50
PITOCIN 20 UNITS	1	$0.40	$0.40
PRENATAL VITS	3	$0.03	$0.08
FERROUS SULFATE	6	$0.02	$0.10
COLACE	6	$0.03	$0.15
RUBELLA (1 IN 20)	0.05	$9.18	$0.46
PARLODEL (30-40%)	2.1	$0.53	$1.11
	TOTAL COST PER PATIENT		$8.30

ADDITIONAL NON-LABOR COST PER YEAR..... $8,866.65

Figure 4. Pharmacy supply costs for 77 additional births per month in FY88.

The following is a breakdown of the additional supply costs incurred by the Department of Pathology had 77 more deliveries per month been performed at Evans US Army Community Hospital in FY88.

TEST	COST
HCG	$10.50
UA	$5.50
CBC	$4.50
HIV	$19.50
AFP	$33.60
ABO	$11.90
AAB SCREEN	$8.40
RPR	$5.60
RUBELLA	$11.90
CORD AB	$8.40
CBC (ADMISSION)	$4.50
N-BILI	$5.95
	$130.25 per delivery
	x 77
Total additional cost per month..	$10,029.25
	x 12
Total additional cost per year...	**$120,351.00**

Figure 5. Pathology supply costs for 77 additional births per month in FY88.

The following is a breakdown of the additional supply costs incurred by the Department of Radiology based on an additional 77 births per month at Evans US Army Community Hospital in FY88.

COST PER OB ULTRASOUND.....	$25.41
NUMBER OF OB ULTRASOUNDS PER PATIENT....	1.5
ADDITIONAL NUMBER OF ULTRASOUNDS PER MONTH.	115.5
ADDITIONAL COST PER MONTH.....	$2,934.86
ADDITIONAL NON-LABOR COST PER YEAR.....	**$35,218.26**

Figure 6. Radiology supply costs for 77 additional births per month in FY88.

The projected cost of additional capital equipment was determined by the GAO. They calculated Capital Equipment useful cost valuations for Obstetrics using staight-line depreciation. A breakdown of the program requirements for an increase of 77 additional births per month is reflected in the appendix. Their estimate of $8,975 for additional equipment plus the estimate of $1,200,786 for additional personnel and the estimate of $219,325.96 for additional supplies equals a total additional cost of $1,429,086.96, per year.

Opportunity costs

There are no opportunity costs associated with the capture of OB at EACH. Because of the uniqueness of CAM, other programs do not have to be eliminated or ignored as a result of the capture of OB. The Commander now has the resources and the flexibility to hire personnel to design, implement, and monitor programs as he sees fit (Freeman Howard, Commander, EACH, personal interview, 31 October 1989, and William Strampel, Deputy Commander for Clinical Services (DCCS), EACH, personal interview, 27 October 1989).

Medical Expense and Performance Reporting System (MEPRS)

Data from the MEPERS is no longer relevant to this project. It is no longer possible to approximate the 95% confidence interval because of the lack of variability for the CHAMPUS data. All the information needed to determine a dollar amount of savings has been calculated.

Calculation of total savings and average savings per delivery

The average cost per CHAMPUS delivery in the EACH catchment area is $3,002.41. Including all the costs identified in the discussion above, the cost per direct care delivery is $1,546.63 ($1,429,086.96/77/12). Thus, the savings per delivery is $1,455.78 ($3,002.41-$1,546.63) or a savings of $1,345,140.72 in FY88 if 77 additional direct care deliveries had been performed every month.

III. CONCLUSION AND RECOMMENDATIONS

Primary Conclusion

The selection of 77 additional births per month was a target number proposed by the DCCS and used by all agencies involved in any way with the capture of OB at EACH. If EACH had delivered 77 additional babies each month, the Commander would have saved $1,345,140.72 in FY88. However, had all the CHAMPUS deliveries been direct care deliveries the Commander would have saved $1,825,548.12 ($1,455.78 x 1,254).

Primary Recommendation

The Commander should make every effort to capture the OB in the EACH catchment area.

Secondary Conclusions and Recommendations

Although the calculations in this project were performed on FY88 data, it is recommended that the average savings per delivery be applied to FY90 workload. The CAM demonstration project makes it possible to disregard incremental costs because the Commander has the flexibility under CAM to purchase any fraction of a resource he desires, and that includes personnel. It is for this reason that the above conclusions and recommendations are specific to EACH alone.

APPENDIX

CAPITAL EQUIPMENT USEFUL COST VALUATIONS-OBSTETRICS

NAME OF WORKSHEET: EQUIPVAL.WK1

FACILITY: EVANS HOSPITAL, FT. CARSON, CO — Prepared by: Jerry Griffin - DNSC

DATE: JUNE 5, 1989

DATA ENTERED IS FOR FY 88. — CODE: 16.334

PURPOSE: CALCULATE CAPITAL EQUIPMENT USEFUL COST VALUATIONS FOR OBSTETRICS.
USING STRAIGHT-LINE DEPRECIATION, AS DOCUMENTED BY ARMY REGULATIONS.
AND ENTER THE APPLICABLE DATA IN SCHEDULE OF GRAND TOTAL PROJECTED COSTS.

SOURCES OF DATA: SEE SOURCES LISTED BELOW EACH COLUMN.

A CAPITAL EQUIPMENT	B ACQUISITION COST	C RESIDUAL VALUE (3.5%)	D DEPRECIABLE VALUE	E LIFE (YRS.) EXPECTANCY	F USEFUL COST*
1) PHOTOTHERAPY UNIT INFANT BILI-LITE (ACQ.: 4 @ $695.50) (RESID.: 4 @ $24.45)	$2,794	$98	$2,696	9	$307
2) REMOTE DISPLAY FETAL HEART	2,190	77	2,113	10	$211
3) MONITOR VITAL SIGN MSMT W/ TEMP PROBE AND STAND MBL	2,995	105	2,890	10	$289
4) COLPOSCOPE (ACQ.: 2 @ $4,940) (RESID.: 2 @ $177)	9,880	346	9,534	10	$953
5) NEOSCOPE MONITORING SYSTEM	4,995	175	4,820	10	$482
6) BED BIRTHING	7,990	280	7,710	10	$771
7) SCANNER DIAGNOSTIC ULTRA SOUND - LABOR & DEL.	35,098	1,228	33,870	12	$2,822
8) SCANNER DIAGNOSTIC ULTRA SOUND - DESIGN	38,663	1,353	37,310	12	$3,109
TOTALS	$104,605	$3,661	$100,944		$8,975

SOURCES OF DATA:

FT. CARSON PROGRAM REQUIREMENTS JOHN MCDONALD	FT. CARSON PROGRAM REQUIREMENTS JOHN MCDONALD	ESTIMATE PER ARMY HSC ACCEPTED PRACTICE	CALCULATION SEE METHOD	HSC REG. 750-1, APPENDIX E F(I)SIMMONS ARMY ARTHUR DESPOCHES	CALCULATION SEE METHOD

* STRAIGHT-LINE METHOD OF DEPRECIATION:
ACQ. COST - RESID. VAL. = DEPREC. VALUE
DEPREC. VALUE / USEFUL LIFE = DEPREC. EXPENSE OR USEFUL COST

BIBLIOGRAPHY

Arthur Young and Company. OASE (HA) Capitation Budget Evaluation. Executive Summary.

Badgett, Arthur L., LTC, MS, Catchment Area Management Demonstration Project Officer. Personal interview. 2 November 1988.

Catchment Area Management Demonstration Project Concept Paper. U.S. Army Health Services Command, Fort Sam Houston, Texas.

Ferguson, Sharon, Assistant Health Benefits Advisor. Personal interview. 27 October 1988.

Howard, Freeman I., COL, MC, Commander. Personal interview. 31 October 1989.

McKinsey & Company, Inc.. Capitation Budgeting in the Military ılth Services. Final Report and Executive Summary. December 1978.

Moxley, John H., Assistant Secretary of Defense, Health Affairs. Memorandum for the Secretary of Defense, subject: Decision on Capitation Budgeting Project. 7 May 1981.

Reece, Charles R., Budget Officer. Personal interview. 10 May 1989.

Slackman, Joel. Reforming the Military Health Care System. The Congress of the United States Congressional Budget Office, 1988.

Strampel, William D., LTC, MC, DCCS. Personal interview. 7 March 1988.

Strampel, William D., LTC, MC, DCCS. Personal interview. 27 October 1989.

Timboe, Harold L., COL, MC, DCCS. Personal interview. 18 October 1988.

Timboe, Harold L., LTC, MC, Acting Commander. Letter to COL Plunkett. 24 October 1986. Health Services Command, Fort Sam Houston, Texas.