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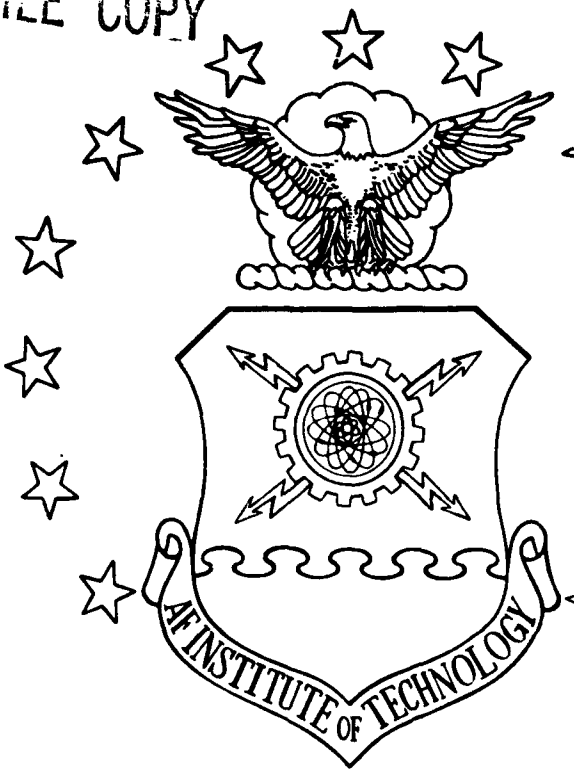

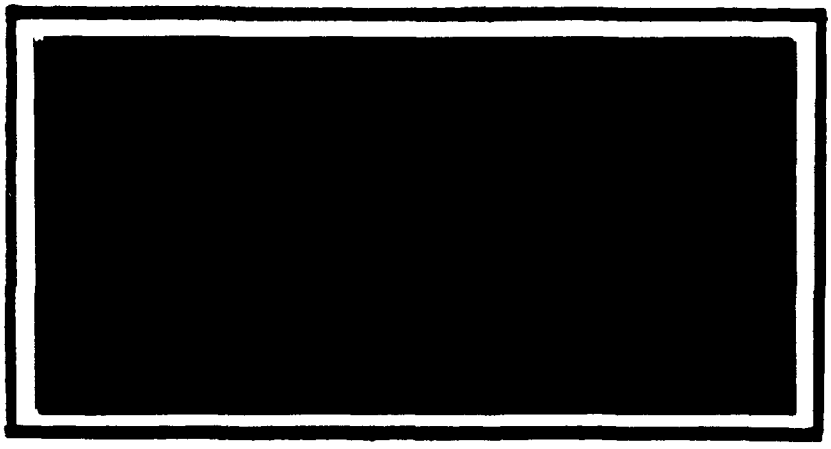

DEPARTMENT OF THE AIR FORCE

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AFIT/GLM/LSM/90S-18

DEVELOPMENT OF A PROTOTYPE DECISION SUPPORT SYSTEM TO MANAGE THE AIR FORCE ALTERNATIVE CARE PROGRAM

THESIS

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AFIT/GLM/LSM/90S-18

The opinions and conclusions in this paper are those of the author and are not intended to represent the official position of the DOD, USAF, or any other government agency.

AFIT/GLM/LSM/90S-18

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THESIS

Presented to the Faculty of the School of Logistics
of the Air Force Institute of Technology
Air University
In Partial Fulfillment of the
Requirements for the Degree
Master of Science in Logistics Management

Steven H. Flowers, B.S.
Captain, USAF, MSC

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Acknowledgements

The intent of this research was to eliminate one of the many "opportunities" which constrains the USAF Medical Service from doing more with less. I hope my efforts improve the Alternative Care Program, and serve as a precedent for the solution of other "opportunities."

First and foremost, I am forever indebted to my family fcr their love and support. Cathy, my wife and best friend, deserves a special thanks for being the unsung hero in all my efforts during the past 15 months. To my sons, Christopher alias Raphael, Brandon alias Michaelangelo, and Andrew alias Donatello, my great appreciation for helping me to keep this endeavor in the proper prospective. Daddy can at long last play Ninja Turtles with you. Cowabunga!

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Finally, several software products were instrumental in my efforts. I salute Nantucket for Clipper™, Wallsoft for the UI Programmer™, and Concentric Data Systems for the R & R Relational Report Writer™ and Code Generator™.

Steven H. Flowers

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Abstract

This research demonstrated the feasibility of developing a decision support system (DSS) for managing the Air Force Alternative Care Program (ACP). A prototype DSS, Alternative Care Assistant, was developed to demonstrate the potential for automating the current manual systems.

First, the ACP process was thoroughly examined through the analysis of several data sources: a Surgeon General questionnaire, Air Force regulations, base regulations and operating instructions, and existing software applications. Next, a flow diagram with a supporting narrative was prepared as an information requirements analysis. Accuracy was verified by 11 representatives from different USAF major commands. Finally, a prototype DSS was developed using Clipper™, and was field tested at USAF Medical Center Scott, Scott AFB, Illinois.

The prototype DSS has a user-friendly interface and the capability to perform all the ACP's clerical tasks and some managerial tasks such as breakeven analysis. Databases for Common Procedure Terminology codes and allowable charges are included in the prototype. These databases were extracted from the Office of Civilian Health and Medical Program of the Uniformed Services. This prototype operates on any IBM™ compatible microcomputer with a hard disk drive and MS-DOS™ Version 3.2 or above.

DEVELOPMENT OF A PROTOTYPE DECISION SUPPORT SYSTEM TO MANAGE THE AIR FORCE ALTERNATIVE CARE PROGRAM

I. Introduction

General Background

The United States Air Force (USAF) Medical Service's mission is:

> To ensure maximum wartime readiness by developing and operating a comprehensive community-based health care system that maintains the health and morale of Air Force members by providing or arranging timely quality medical service for all active duty members, their families and other beneficiaries. (Office of USAF Surgeon General, undated:5)

The USAF Medical Service's capability to provide a complete continuum of services in fulfilling its mission has become increasingly difficult. Three major reasons exist for these difficulties.

First, federal legislation associated with recent world events has increased the pressure to reduce Department of Defense (DOD) expenditures. Obviously, the Balanced Budget and Emergency Deficit Control Act and the Balanced Budget and Emergency Deficit Control Reaffirmation Act, also known as the Gramm-Rudman-Hollings (GRH) Laws, have dramatically impacted the DOD budget (Collender, 1990:17). Unfortunately, the sequestration process which was originally included in this legislation as a fail safe, has become a routine activity in the federal budgeting process

(D' Angelo, 1990; Collender, 1990:19). In addition to the impact of GRH legislation, the DOD budget is being closely scrutinized because of the reduced threat from the "internal decline" of the Soviet Union and its former eastern European satellites (Dudney, 1990:71).

Second, health care costs have increased for the USAF Medical Service. A projected 11 percent increase above the 1989 expenditure level is required to meet the 1990 USAF Medical Service requirements (Willis, 1988:8).

Third, military beneficiar[illegible]' demand for health services has continued to increase. Since 1981, the demand for inpatient care and outpatient care has exceeded the military population growth by two and three times respectively (Newhall, 1989:6). As a result of the combined effect of these factors, the military beneficiary population's demand for health care services has increased significantly more than the USAF Medical Service's capability to supply health care services.

Although the USAF Medical Service is recognized as a distinct health care entity, its function is not isolated from the rest of the health care industry. In fact, the USAF Medical Service is becoming more closely aligned with the civilian sector through an increasing number of alliances. Like the USAF Medical Service, the civilian health care industry is continuously undergoing significant changes.

The civilian sector has developed into a more competitive market for supplying health care services. The civilian health care providers are experiencing a "competitive pinch" from the introduction of health maintenance organizations (HMOs) and preferred provider organizations (PPOs). HMOs and PPOs represent a significant supplier of health services aimed at controlling health care costs (Office of USAF Surgeon General, undated:10). The implementation of a health care insurance mechanism based upon diagnostic-related groups (DRGs) has further increased competition on a cost-basis within the civilian sector (Griffith, 1987:57).

The changes within and pressure upon both the military and the civilian health care sectors underscores the need for change in the USAF Medical Service. Lieutenant General Murphy A. Chesney, the former USAF Surgeon General, viewed the "increasingly competitive" civilian sector as an opportunity "to further strengthen" USAF health care services (Office of USAF Surgeon General, undated:1). General Chesney also pointed out that a "buyer's market" exists for negotiating favorable contracts with civilian sources to help the USAF Medical Service implement a "managed health care" system (Office of USAF Surgeon General, undated:8-10).

The Air Force Surgeon General's strategic planning process has identified goals for improving health care management. These goals aim to increase access to "high

quality, affordable health care" and to simplify the process of obtaining health services from the civilian sector by applying "managed health care" and cost containment techniques (Office of the USAF Surgeon General, undated:8-11). This concept is referred to as Catchment Area Management.

Catchment Area Management is a quality as well as a cost-saving strategy. Lieutenant General Monte B. Miller, the current USAF Surgeon General, stated:

> We know that delivery of health care is a local phenomenon . . . . by delegating responsibility, authority and accountability down to the lower level, the concept will work better toward direct-system care. (Carter, 1990:24)

In support of these strategic goals, the Office of the Air Force Surgeon General identified an initiative to improve the management of the Alternative Care Program (ACP). Additionally, an objective was identified for the development of a microcomputer software application to facilitate management of the ACP (Erickson, 1989; Office of USAF Surgeon General, undated:8-11).

Specific Problem

Air Force Regulation (AFR) 168-10, Obtaining Medical and Dental Care From Civilian Sources, outlines a manual process for arranging, tracking, and paying for health care services provided by other than uniformed services' medical treatment facilities through the Alternative Care Program (ACP). Currently, management of this program is little more than a manual system of record keeping. Three functional

areas, two of which are part of the military hospital, are involved in this process: the Medical Resource Management Office, the Patient Administration Office, and the Accounting and Finance Office. Information and tasks are frequently duplicated, and coordination between these offices is often time-consuming and confusing. As a result of these inefficiencies, the program's overall management capability is ineffective in capitalizing on the competitive civilian health care market, and inefficient in fulfilling mandatory management requirements outlined in AFR 168-10.

The continued use of the present manual procedures is ineffective and inefficient in utilizing available funds. Lieutenant Colonel White, the Inspector General's (IG) Health Services Management Inspection (HSMI) representative for the ACP, states that the manual process prescribed by AFR 168-10 is a barrier to efficient data management. Furthermore, he added that locally developed software for management of the Alternative Care Program promotes efficient and effective management as compared to the manual procedures (White, 1989). At present, there is no standardized ACP software available for use by USAF medical treatment facilities.

Unfortunately, the magnitude of total ACP expenditures is often underestimated since the operations and maintenance funds for the ACP are managed by each base. While the total ACP expenditures only represent approximately 6.3% of the total USAF Medical Service budget (Figure 1), the total ACP

expenditures in fiscal year (FY) 89 were $63.1 million, approximately the total summed budgets of seven small USAF medical treatment facilities.

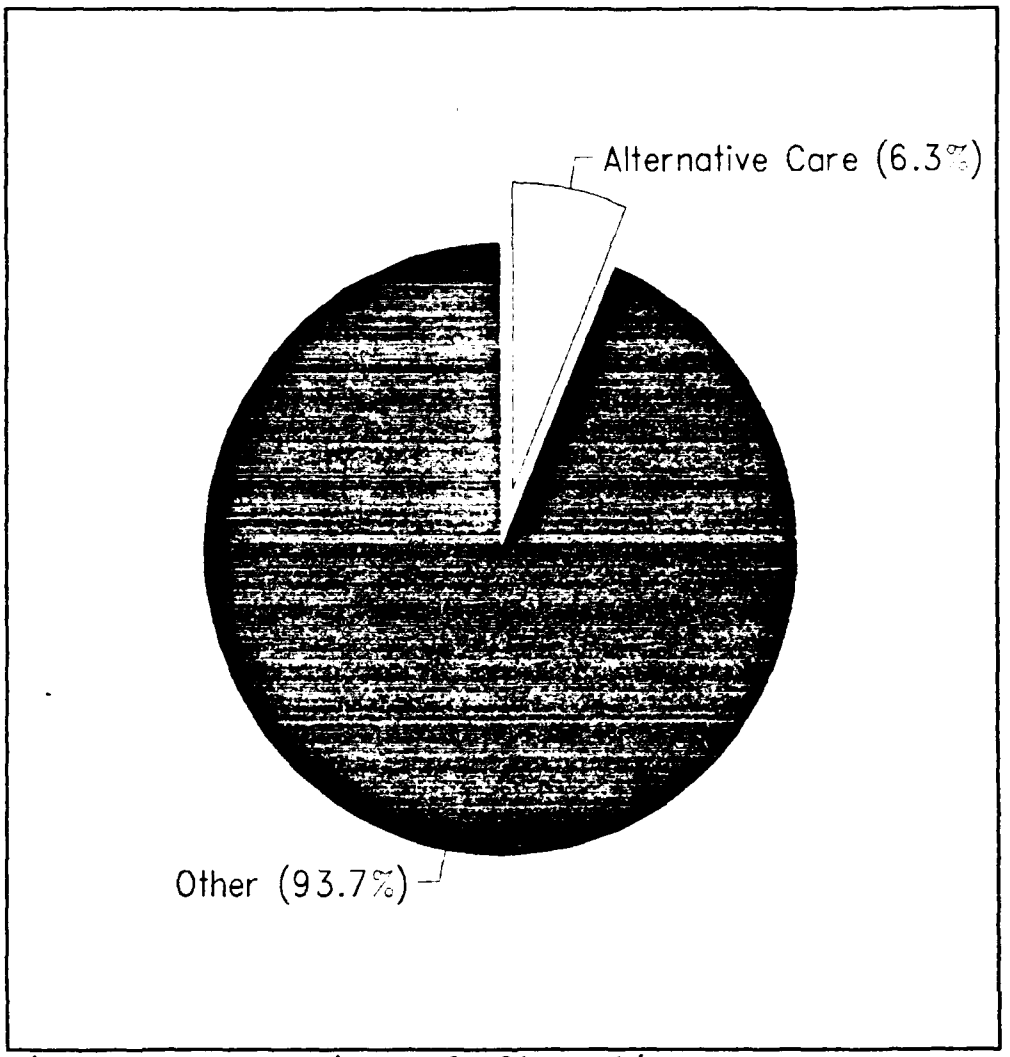


Figure 1. Comparison of Alternative Care Program Expenditures to Total USAF Medical Service Budget (Anderson, 1990)

Figure 2 illustrates the FY 89 total ACP expenditures by the major categories: supplemental care, cooperative care, and (3) Centrally Managed Allotment (CMA) (Anderson, 1990).

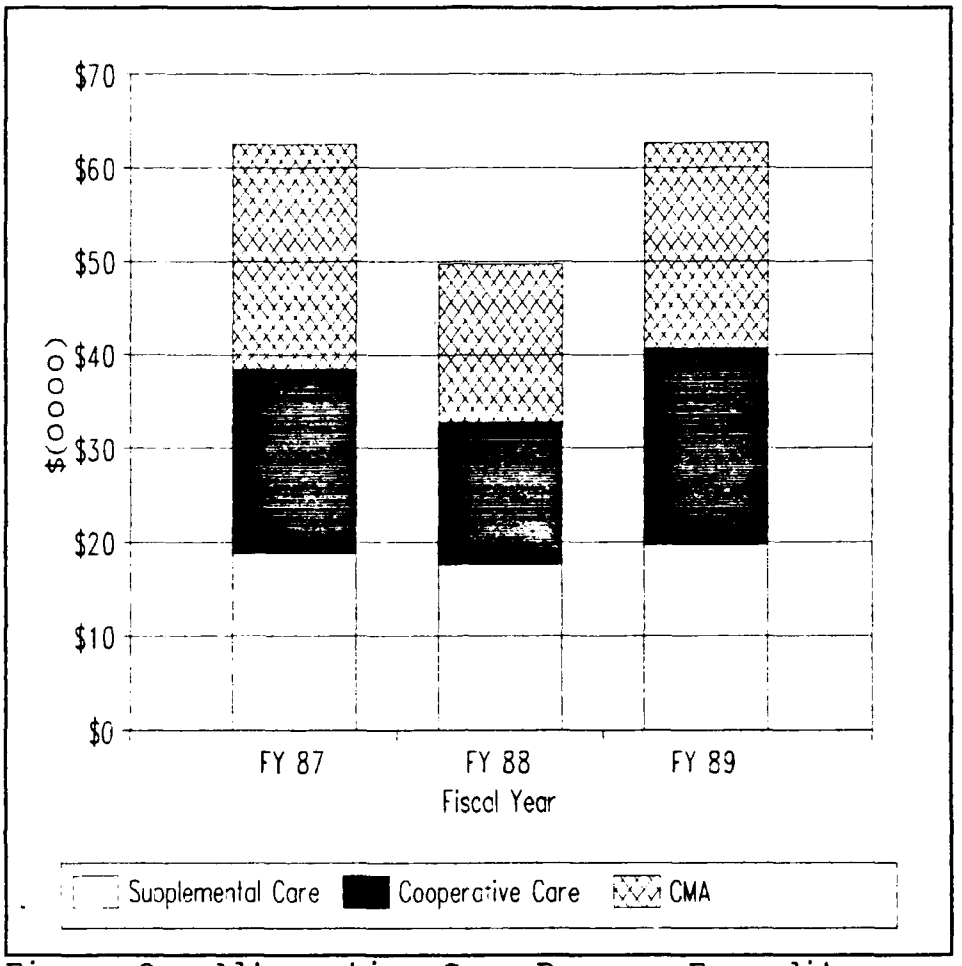


Figure 2. Alternative Care Program Expenditures by Category (Anderson, 1990)

Research Questions

To determine if a software application can be developed to simplify and improve management of the Alternative Care Program, the following research questions must be answered:

1. What are the inputs, processes, and outputs of the Alternative Care Program?
2. What areas of the Alternative Care Program require improved management?
3. What hardware and software resources are available to base level managers of the Alternative Care Program?

4. What are the requirements for the planned software application?

5. Are there any existing software applications which can be modified or enhanced?

6. What are the important user-friendly characteristics that should be included in the developed application?

7. Can a prototype software application be developed to demonstrate the potential benefits using automation to manage the Alternative Care Program?

Limitations

This research will pertain only to the health care services obtained through the Alternative Care Program as managed by Air Force policy and guidance. Health care services obtained through other military health care programs such as the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) are not covered by this research.

II. Background

The USAF Medical Service fulfills its mission by providing a spectrum of services. The Alternative Care Program (ACP) is included within this spectrum and has a significant role in the USAF Medical Service. To understand this role, additional background on the USAF Medical Service's health care system will be discussed to provide an overview of the criteria for categorizing health care services and beneficiaries in the USAF Medical Service. This overview will also illustrate the relationship between these categories and the continuum of services provided.

Health Care Services

In discussing the provision of health care services by the USAF Medical Service, it is necessary to distinguish between the different categories of health care services. For the purposes of this discussion, the health care services provided by the USAF Medical Service are distinguished by two criteria: type of service and urgency of need.

The type of service is categorized as outpatient or inpatient as illustrated in Figure 3. The single distinction between these two subcategories is whether or not a patient resides within a medical facility for treatments. Medical treatments requiring the patient to reside within the medical facility for extensive patient care are referred to as inpatient treatments. In contrast,

a brief medical treatment which does not require a patient to reside within the medical facility for extensive patient care is referred to as outpatient treatment.

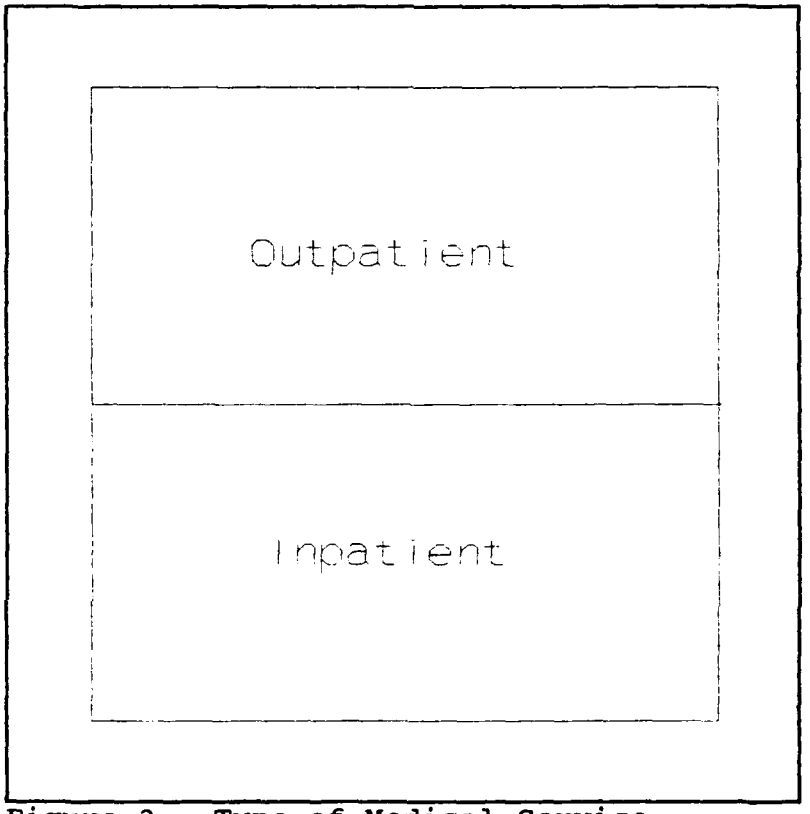


Figure 3. Type of Medical Service

The urgency of need is the second criteria necessary to further categorize a health care service. For the purposes of this discussion, the urgency of need for a health care service is categorized as either emergency or routine as illustrated in Figure 4. Although this categorization appears straightforward, the distinction between the two is often a subjective interpretation of the circumstances and dependent upon how an emergency is defined. Presently, AFR 168-10, Obtaining Medical and Dental Care From Civilian

Sources, defines emergency medical treatment as "immediate medical or dental care required to save life, limb, or sight, or to prevent undue suffering or loss of body tissue" (AFR 168-10, 1989:89). By default, routine medical treatment is any medical treatment not meeting the definition as an emergency.

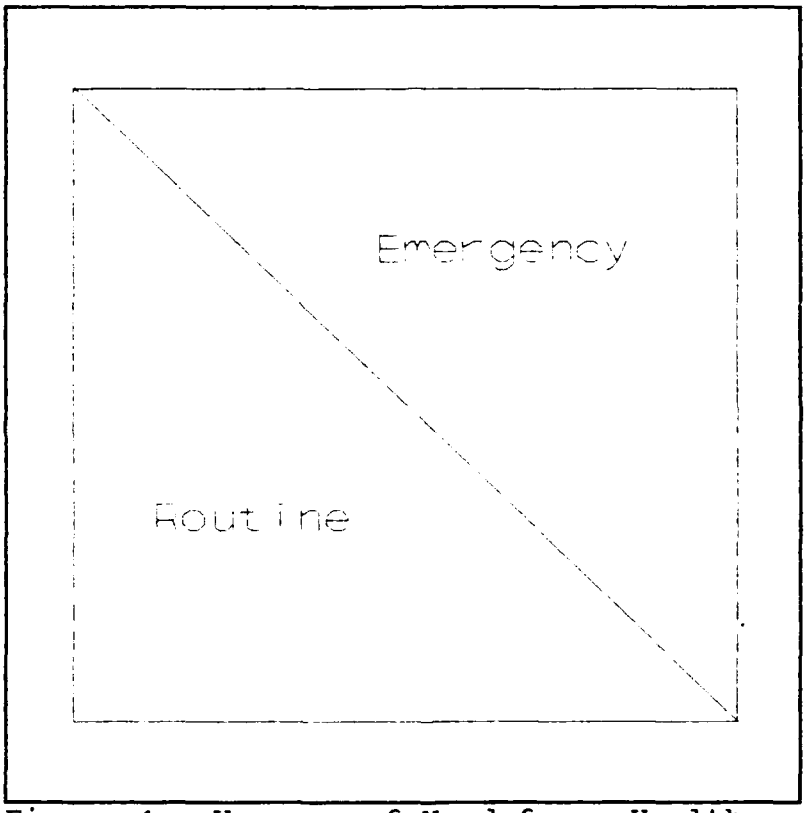


Figure 4. Urgency of Need for a Health Care Service

Like health care services, the "users" or beneficiaries are categorized as well.

Beneficiaries

Presently, there are over 50 different beneficiary categories which are eligible for approximately 13 different

health care services provided by the USAF Medical Service. For the purposes of this research, the USAF Medical Service's beneficiaries will be simply categorized as active duty and other than active duty as illustrated in Figure 5 (AFR 168-6, 1988).

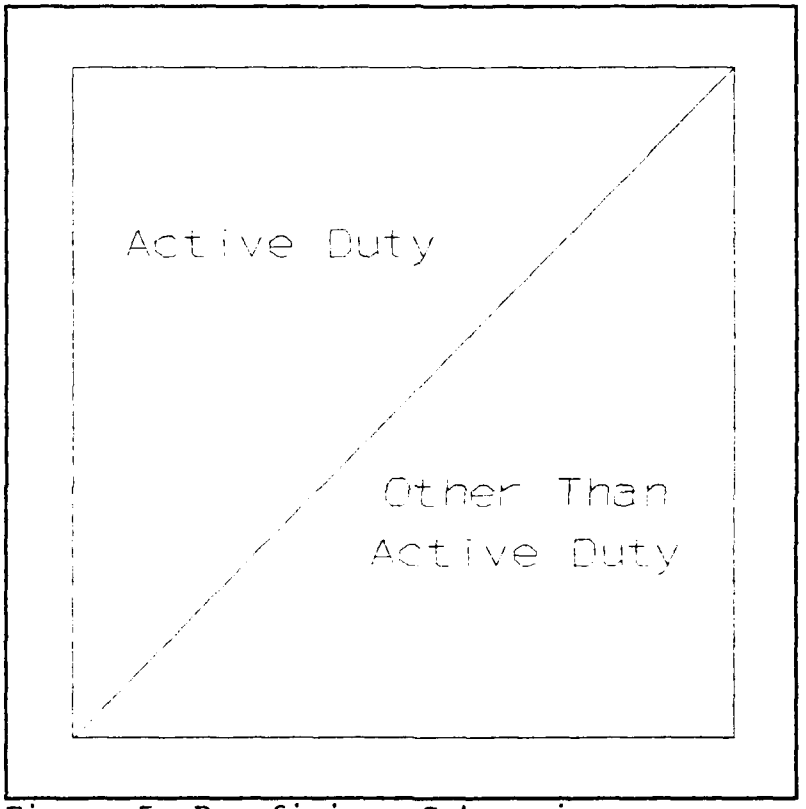


Figure 5. Beneficiary Categories

The USAF Medical Service considers both the health care service and the beneficiary category to determine a beneficiary's eligibility for a particular health care service. This is illustrated by the three-dimensional model in Figure 6. Additionally, this model is applicable along the USAF Medical Service's continuum of services.

Medical Services Continuum

For the purposes of this research, the USAF Medical Service's continuum of services is also categorized by two criteria: control over the medical management of the beneficiary's medical treatment, and the location relative to a uniform services' medical treatment facility where a beneficiary receives a health care service.

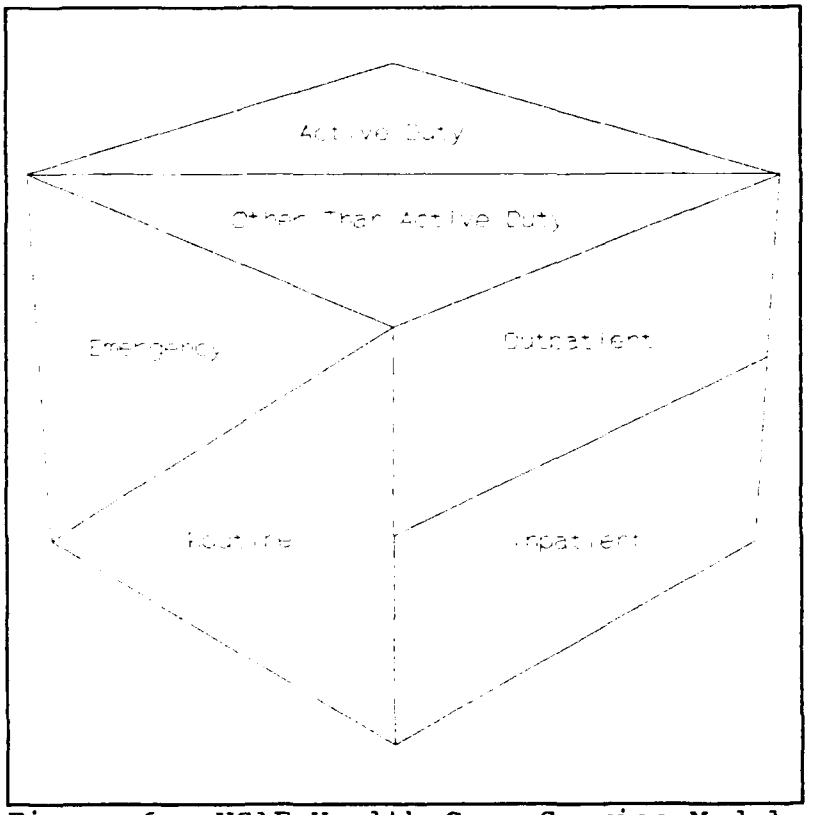


Figure 6. USAF Health Care Service Model

Control over the medical management will be simply described within a range between controlled and uncontrolled, and the location will be simply described within a range of location proximity.

For the purposes of this discussion, all health care services provided by the USAF Medical Service are grouped into four categories: (1) services provided within and controlled by an uniformed services' medical treatment facility, (2) services provided at the uniformed services' medical treatment facility, but controlled by other than an uniformed services' medical treatment facility, (3) services provided at other than the uniformed services' medical treatment facility, but controlled by an uniformed services' medical treatment facility, (4) services provided within and controlled by other than an uniformed services' medical treatment facility. These four categories occupy various positions within the USAF Medical Service's service continuum as illustrated by Figure 7. In this discussion, these categories are portrayed as discrete entities. In reality, however, the distinction between these four is not as clearly defined.

Services provided within and controlled by uniformed services' medical treatment facility. Obviously, the USAF Medical Service provides direct health care services in approximately 122 USAF medical treatment facilities at various worldwide locations. These facilities are the nucleus of this "community-based health care system" (Office of USAF Surgeon General, undated:3). The direct-care services are represented by diagram A in Figure 7.

All active duty beneficiaries have priority to receive the available medical services from the uniformed services'

medical treatment facilities while all other beneficiaries are treated on a space available basis based on their needs.

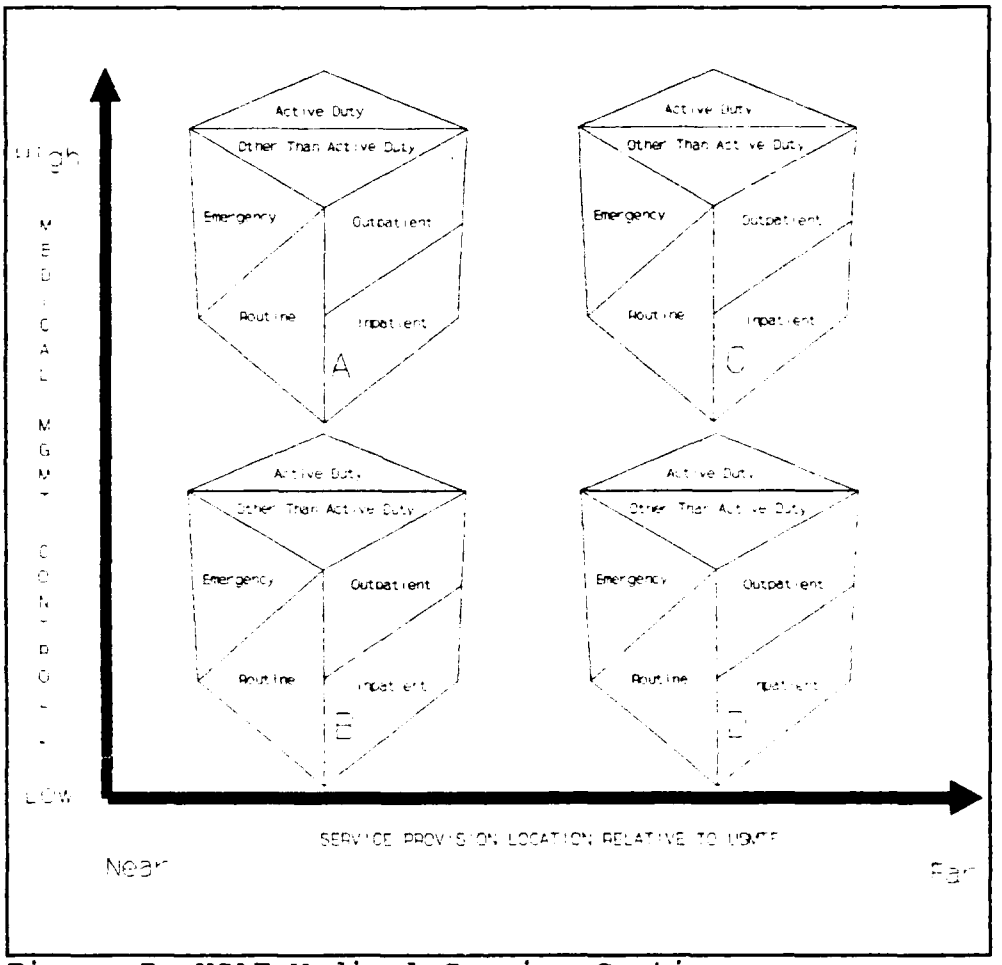


Figure 7. USAF Medical Service Continuum

In the event that the closest uniformed services' medical treatment facility can not provide the necessary services, a beneficiary may still receive the necessary services from another uniformed services' medical treatment facility. Although the associated costs for a referral to another uniformed services' medical treatment facility are considered, cost is not the sole consideration in this decision. For instance, a decision must be made whether the

uniformed services' medical treatment facility will maintain control over the beneficiary's medical care.

Although the uniformed services' medical treatment facilities primarily provide direct health care services, another category of services within the continuum of services is also provided at these facilities.

Services provided within a uniformed services' medical treatment facility, but controlled by other than the uniformed services' medical treatment facility. As the result of the Air Force Surgeon General's goal to improve managed health care, uniformed services' medical treatment facilities are also used by health care providers, who are not directly affiliated with the uniformed services' medical treatment facility, to provide health care services to USAF beneficiaries. This type of service arrangement is referred to as an internal partnership, and is represented by diagram B in Figure 7. There are numerous advantages, but the discounted service fee offered by these partnership arrangements is the primary benefit. The primary difference between the direct-care services and these partnership arrangements is the control over the beneficiary's medical care has been relinquished by the USAF Medical Service. Although partnership arrangements are slightly more complex than discussed here, no further details are necessary for the purposes of this discussion (AFR 168-10, 1989:18.1)

Services provided at other than the uniformed services' medical treatment facility, but controlled by the uniformed

services' medical treatment facility. USAF medical resources are too scarce to provide all health care services at all locations. For this reason, uniformed services' medical treatment facilities often supplement their available resources by purchasing health care services from external sources. This increases accessibility to health care services at locations where it is needed. Although many of these supplemental services are provided by civilian health care providers, an increasing number of strategic alliances are developing with other government agencies such as the Veterans' Administration (VA). Presently, there are over 120 agreements between local VA hospitals and USAF medical treatment facilities (Carter, 1990:24).

The uniformed services' medical treatment facility may "obtain from civilian or government sources those necessary services or supplies required for the patient's proper care and treatment" (AFR 168-10, 1989:15). An example would be the referral of an obstetrics patients from a uniformed services' medical treatment facility, which did not have ultrasound equipment, to a local civilian health institution for an ultrasound evaluation. These services are represented by diagram C in Figure 7. Upon completion of this evaluation, the medical findings are forwarded to and paid by the referring uniformed services' medical treatment facility. These medical findings are then used by the uniformed services' health care providers to prescribe the necessary medical treatment.

The USAF Medical Service refers to these services as supplemental care and cooperative care services. The distinction between these services is based solely upon the patient's beneficiary category, and is primarily for accounting purposes. Services provided to active duty members are referred to as supplemental care services while services provided to other than active duty members are referred to as cooperative care services (AFR 168-10, 1989:13).

Services provided at and controlled by other than uniformed services' medical treatment facility. Despite the capability to supplement its resources, the uniformed services' medical treatment facilities can not always meet the beneficiaries' medical needs, and maintain control over their medical care. This inability to meet their medical needs may be caused by the urgency of need for health care services such as in an emergency. In these situations, the beneficiaries medical needs are controlled and provided by health care providers external to the uniformed services' medical treatment facility (AFR 168-10, 1989:3). Furthermore, medical services provided within this category have different guidelines based on beneficiary categories.

Active Duty. Active duty members are expected to obtain their health care services at uniform services' medical treatment facilities. However, under certain circumstances, active duty beneficiaries may obtain medical care at government expense from other medical treatment

facilities. This is allowed for active duty members if: medical care is necessary due to injury, disease, or illness while in the line of duty; does not result from their own misconduct or negligence; no uniformed services' medical treatment facility is available or "the available facility can not provide the required care" (AFR 168-10, 1989:4-5).

In some situations where the need for medical care is not an "emergency" and a uniformed services' medical treatment facility is not readily accessible to the active duty member, it may be more cost effective for a civilian health care provider closer to the member to provide the medical services. A typical example is the active duty member who is stationed at a geographically separated unit (GSU) without on-site medical treatment facilities and has to travel an extraordinary distance to receive medical treatment at a uniformed services' medical treatment facility. In such situations, care may be provided to active duty members at other than uniformed services' medical treatment facilities at government expense as a "convenience to the government" (Erickson, 1990).

Emergency services rendered to active duty members without the prior knowledge of a uniformed services' medical treatment facility or as a "convenience to the government" are referred to as Centrally Managed Allotment (CMA) services. These services are represented by diagram D in Figure 7. Centrally managed funds are utilized by each

uniformed services' medical treatment facility to pay for these services (AFR 168-10, 1989:3-4).

Other than Active Duty. The other beneficiary categories receiving medical care are governed by guidelines based upon outpatient and inpatient services.

Outpatient Services. Outpatient services for other beneficiaries is less restrictive than for the active duty beneficiaries, and is not dependent upon the urgency of need for the service. These beneficiaries are encouraged to utilize the uniformed services' medical treatment facilities or to use its Health Care Finder service to locate and select local health care providers. However, there is no requirement to obtain approval from or have contact with a uniformed services' medical treatment facility prior to obtaining outpatient services from an external service source (AFR 168-10, 1989:3-4; Erickson, 1990). Even if beneficiaries initially seek outpatient services from the uniformed services' medical treatment facility, they may be referred to a health care provider under the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) because of the limited capacity at the uniformed services' medical treatment facility (AFR 168-10, 1989:3-8). This transfers the control of the beneficiary's medical care and the financial responsibility from the local uniformed services' medical treatment facility.

Inpatient Services. The uniformed services' medical treatment facility control inpatient services more stringently than outpatient services for these beneficiaries. The government will only assume financial responsibility for inpatient services provided to these beneficiaries with approval from the local uniformed services' medical treatment facility. After approval is received, the control of the beneficiary's medical care and the financial responsibility for the services rendered are transferred from the local uniformed services' medical treatment facility. The patient will cost-share the cost of these services with the government. CHAMPUS funds are utilized to pay the government portion of the bill. These services are also represented by diagram D in Figure 7.

In summary, Figure 7 represents the continuum of services provided through the USAF Medical Service. The ACP, however, encompasses portions of two categories along this continuum.

Alternative Care Program

Figure 8 illustrates the domain of the Alternative Care Program (ACP). The ACP is comprised of supplemental care, cooperative care, and Centrally Managed Allotment (CMA) services. As discussed, supplemental and cooperative care services are provided by other than the uniformed services' medical treatment facility, but control of the beneficiary's medical care is maintained by the uniformed services' medical treatment facility. Supplemental and cooperative

care services are represented by diagram C in Figure 7 and Figure 8. The CMA services involve services provided primarily to active duty members in emergency situations. CMA services are represented by diagram D in Figure 7 and Figure 8. As illustrated in Figure 8, the ACP domain does not include all of diagrams C and D (Erickson, 1990; AFR 168-10, 1988:12).

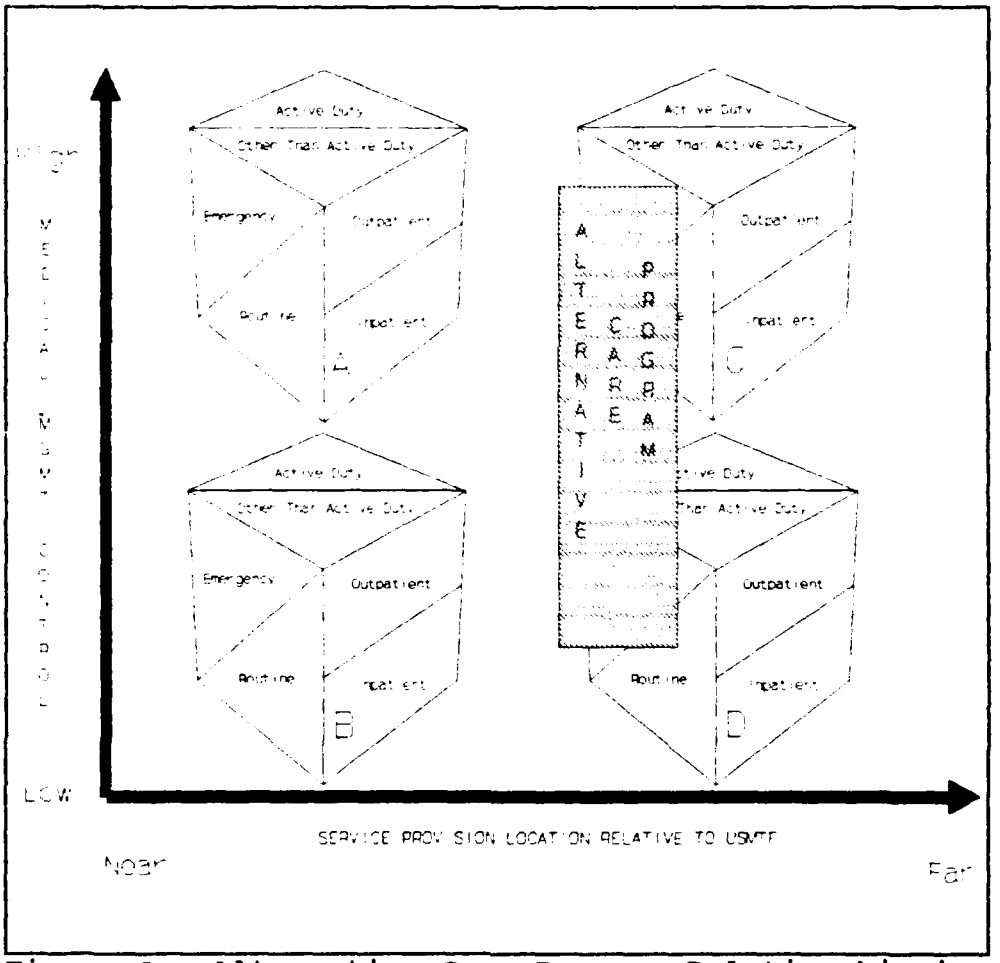


Figure 8. Alternative Care Program Relationship in USAF Medical Service's Continuum of Services

III. Literature Review

A software application must be functionally adequate. However, functional effectiveness is not necessarily the only determinant of "good" software. In order to identify other relevant determinants and considerations, an exhaustive literature review was conducted.

Software applications must exhibit certain attributes to capture and maintain user satisfaction. The consumer and business industries have pressured the software industry into an industry which fiercely competes on quality and user-friendly products.

Software quality is one dimension of software development which has not been adequately addressed by the software industry. Ideally, software quality should measure everything from the programming code to software marketing.

Software Quality

Software is expected to function and fulfill two basic expectations: correctness and satisfaction. These two expectations are referred to as software functional quality and software attribute quality respectively. Figure 9 illustrates how these expectations pertain to the software development process. Most of the established software design methodologies include techniques such as testing and debugging to check software functional quality. However, these are all post-development evaluation techniques which do not necessarily improve quality, but evaluate it.

Unfortunately, software attribute quality is rarely specified formally in the established methodologies. Instead, the attributes affecting software quality are left to the knowledge and discretion of the software developer (Podolsky, 1985:119,123).

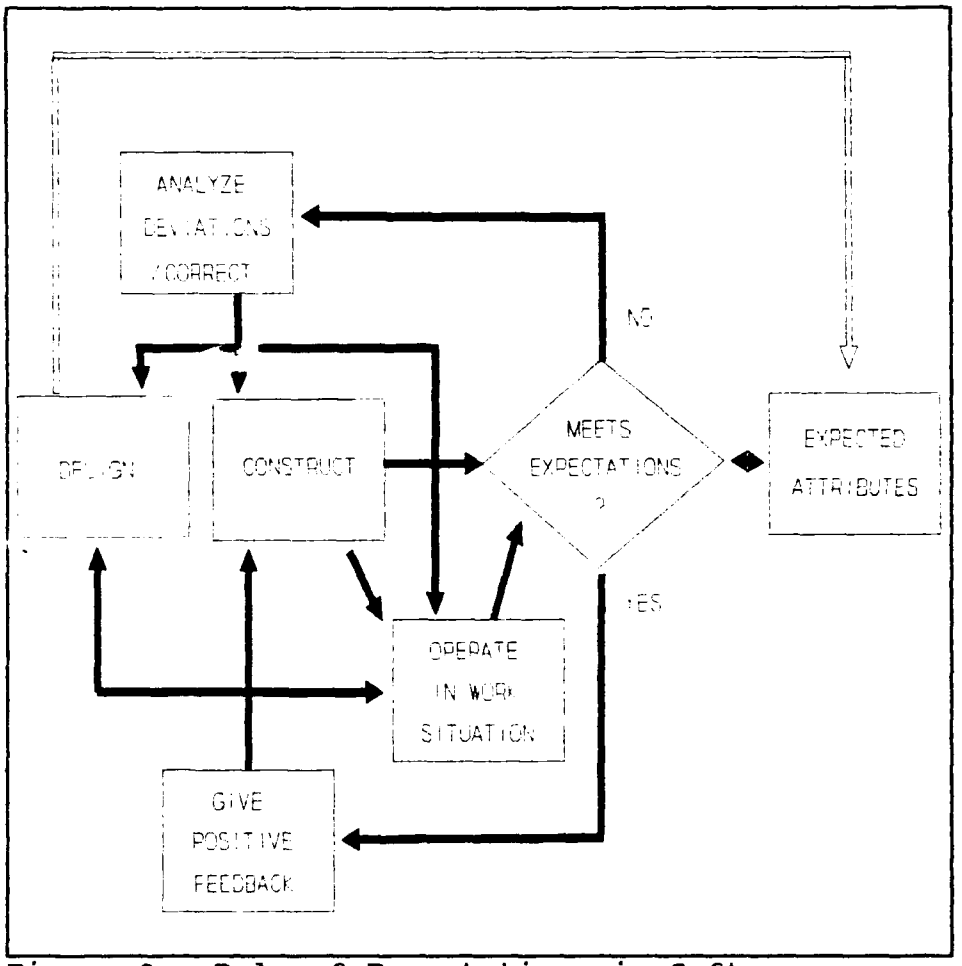


Figure 9. Role of Expectations in Software Quality (Podolsky, 1985:119)

Boehm relates software quality through attributes identifiable and associated with seven characteristics: portability, reliability, efficiency, human engineering, testability, understandability, and modifiability (Boehm,

1978:3-1; Chi, 1987:19). Each characteristic has attributes which provide more specific and understandable terms that can easily be structured into guidelines to access software quality. The attributes, however, are not unique to each characteristic and, in fact, are all related to more than one of the seven characteristics (Podolsky, 1985:123). Figure 10 illustrates the relationship between these attributes, their characteristics, and software quality.

Software portability is the degree of independence in operating on varying computer configurations which indicate portability are device-independence and "self-containedness" (Boehm, 1978:3-7 to 3-8).

Software reliability illustrates the ability to execute the designed functions in an acceptable manner. Accuracy, completeness, robustness, integrity, and consistency are the attributes associated with this characteristic (Boehm, 1978:3-14). Accuracy is considered in terms of the precision required for acceptable performance.

Software efficiency represents the degree of task accomplishment with minimal resources. The attributes for this characteristic are accountability, device efficiency, and accessibility (Boehm, 1978:3-16 to 3-20).

Software human engineering is the magnitude to which functions are accomplished while minimizing the user's time and frustration. Accessibility and communicativeness are the attributes which describe this characteristic (Boehm, 1978:3-22).

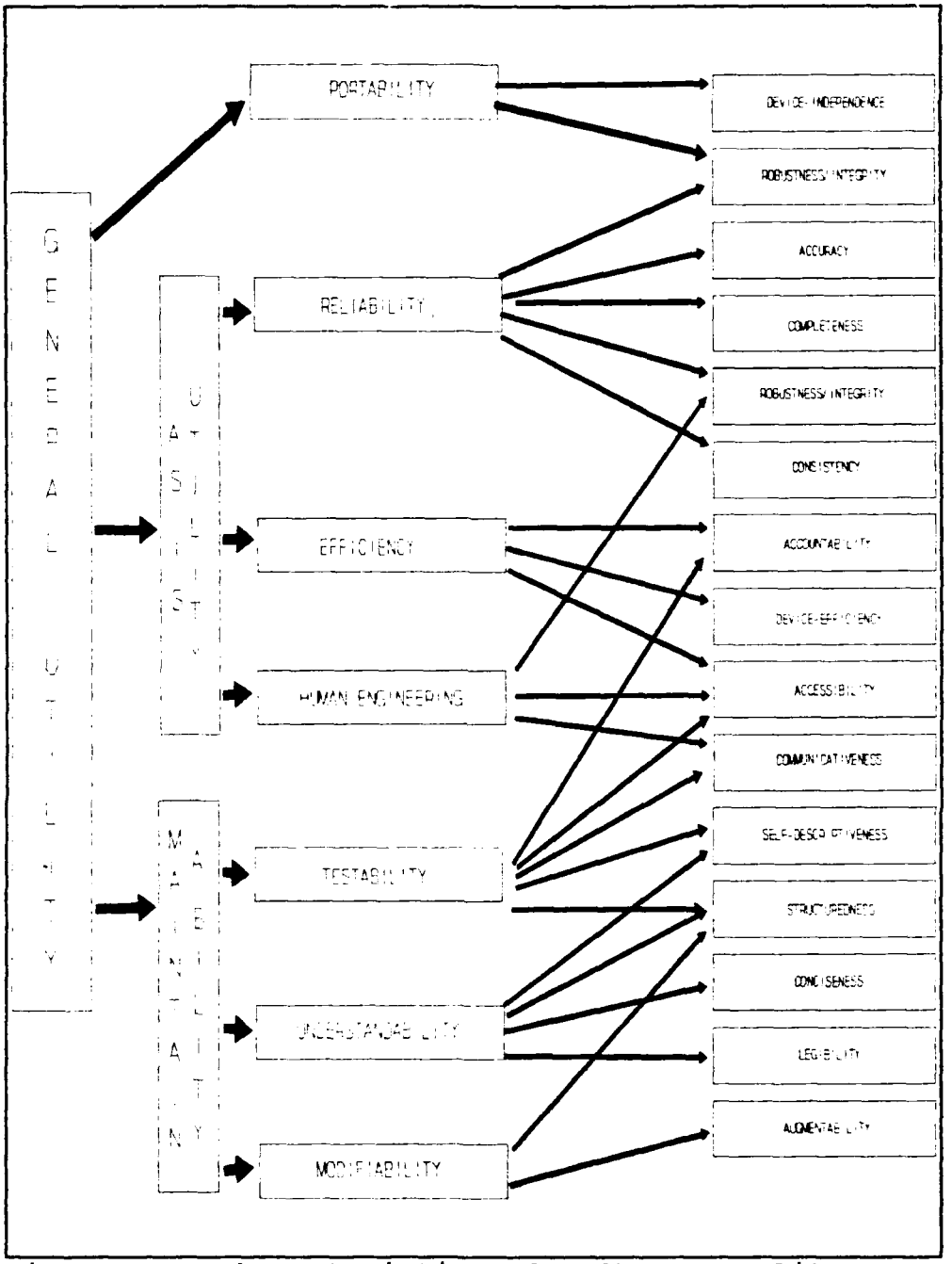


Figure 10. Characteristics of Software Quality (Boehm, 1978:3-19)

Software testability has the attributes of accountability, accessibility, communicativeness, self-descriptiveness, and structuredness. In short, testability

is the ease by which test criteria are defined, evaluated, and used (Boehm, 1978:3-11 to 3-12).

Software understandability reflects how well the software function, interrelationships, and documentation are comprehended. Conciseness, structuredness, self-descriptiveness, legibility, and consistency are the applicable attributes. Consistency is considered in terms of uniformity that permits "content which is traceable to the requirement" (Boehm, 1978:3-9). Conciseness must be within a sensitive range; otherwise, it will conflict with understandability (Boehm, 1978:3-4,3-7).

Software modifiability is simply the ease of change. The attributes of augmentability and structuredness pertain to this characteristic (Boehm, 1978:3-22).

Augmentability is the ease of expanding or abbreviating the physical or logical capacity. Augmentability is much easier with clearly defined, structured software (Boehm, 1978:3-15,3-21 to 3-22).

Software attribute quality is often perceived through the ease of communicating with the software and the ease by which the software satisfies the need to accomplish a task (Podolsky, 1985:123; Raval, 1989:25). Often, software attribute quality is discussed in terms of the software's capability to please the user, or user-friendliness (Oborne, 1985:245-247).

Closely related to software quality, user-friendliness pertains more to the satisfaction received by the user.

User-friendliness

User-friendliness appears to be a self-defining term which has almost become a cliche in the software industry. Yet, there is not a clear-cut working definition of user-friendliness. Nevertheless, many common views are found in the discussions among the experts.

Raval describes user-friendliness as helping the user attain their goals in an easy to use, easy to learn, predictable manner which also protects them from mistakes (Raval, 1989:25). Furthermore, Raval states that input devices, dialogue, information access, documentation, and software features such as utilities, defaults, and protective measures are "dominant" features of user-friendly software (Raval, 1989:25). Raval also states that user-friendliness is often gained as a tradeoff for internal control of the software. Despite this inverse relationship between user-friendliness and control, he further adds:

> The two need not be at odds with each other. There is more to gain by using the strengths of user-friendliness to improve the control environment . . . . the objective is to determine if the dimensions of the system play a synergistic rather than a compromising role. (Raval, 1989:27)

For this reason, Raval points out that user-friendliness is only one variable that ultimately affects user satisfaction and should not be the sole criterion for developing or selecting software (Raval, 1989:25).

Omotayo agrees with Raval as to the importance of user-friendliness, especially during the application's design. He points out that a brilliant technical design is of little

benefit if simple, useful features are omitted. Omotayo goes on to report that successful systems must be adaptable to different users. Although he acknowledges the impossibility of satisfying each and every user, Omotayo states "it is possible to narrow the gap between the various skill levels" by making compromises between "ease-of-learning, or ease-of-use for inexperienced users," and being tolerable for experts or experienced users" (Omotayo, 1984: 16). He warns, however, that successful systems "do not compromise between user-friendliness and ease-to-implement" (Omotayo, 1984:16).

Inmon also reports that user-friendliness is only one of the user's needs to be fulfilled by software, but probably the most important (Inmon, 1984:61). Likewise, Howard states that user-friendliness is an important software attribute which is "graded in a variety of ways" with the most common being speed, menus, and help facilities (Howard, 1987:30).

Despite the great interest in evaluating software in terms of user-friendliness, technology constantly provides improvements so that user-friendliness is a difficult goal to achieve and a continuous process. Despite this dilemma, assessing user-friendliness is further complicated by the multitude of software attributes which can be evaluated. However, three particular areas that comprise a significant proportion of the assessment have been chosen for discussion.

User-friendliness involves a broad spectrum of considerations. Within this spectrum, software "dialogue", ergonomics, and documentation are three "dominant" areas in determining user-friendliness (Raval, 1989:25).

Dialogue. Software dialogue is the method of communicating between the user and the computer. Ideally, the dialogue provides understanding for the user through its features. Although the dialogue is an extremely important determinant of user-friendliness, several factors must be weighed carefully to select an appropriate one (Oborne, 1985:247).

The primary determinants that guide the selection of a user-friendly dialogue is the user and the task. The user's knowledge and experience with the software is an obvious factor in dialogue selection. Software users can be categorized based on their general conceptual and semantic knowledge, and their "procedural and grammatical" or syntatic knowledge (Christie, 1985:215). At one extreme, the inexperienced software user has no semantic or syntactic knowledge while the experienced user will have both semantic and syntactic knowledge. Normally, users of the same software will have different experience levels. Furthermore, a user's knowledge level will vary with the individual's experience with using the software. Finally, the type of task and the information pertaining to the task often require different dialogue requirements. In short, the dialogue must be flexible by minimizing tradeoffs

between what the user's knowledge, the task, and the task information required (Christie, 1985:215-217).

Fortunately, multiple dialogue styles exist. These dialogue styles range from simple question and answer to more complex ones such as a natural language. Obviously, each style has advantages and disadvantages depending upon the operating environment. For these reasons, a hybrid dialogue offers the flexibility to promote a user-friendly dialogue (Christie, 1985:217-228).

The hybrid dialogue is not unique within itself, but simply the combination of dialogue styles. By using multiple dialogue styles in parallel, flexibility is achieved since the user can select the most advantageous dialogue. For example, a menu style used in parallel with a command language style would be effective for situations with users of different knowledge levels (Christie, 1985:222-223).

Although the software dialogue is optimized by using parallel styles, other considerations must also be incorporated to maximize user-friendliness.

Additionally, how a dialogue and its capabilities are presented to the user is important to user-friendliness. To ensure optimal presentation of the software dialogue, straightforward rules of thumb are generally practiced. Foremost, the available dialogue options should be displayed when possible to make the user aware of the functions available (Liffick, 1985:207-208). Furthermore, dialogue

options should have simple, meaningful names or symbols. Abbreviations are acceptable and encouraged for frequently used options or long commands. However, abbreviations should not compromise the user's understanding of the available options (Chi, 1987:275-276). Bullingerser recommends that dialogues provide an option to reverse or "undo" as well as the option to simply abort from a selected option without serious consequences (Bullingerser and Gunzenhauser, 1988:94; Christie, 1985:238; Liffick, 1985:207-208).

After the establishment of a dialogue style with an optimal presentation style, a user-friendly software dialogue will generally provide a help function as well as an error handling capability (Chi, 1987:275-276).

The necessity for a help function increases with software complexity (Chi, 1987:275-276). Although help facilities benefit inexperienced users the most, they also reduce frustration and provide reinforcement to experienced users (Bullingerser and Gunzenhauser, 1988:46; Elkerton, 1988:345). In either case, all users benefit from reduced reliance upon "hard copy manuals"; this allows them to give greater attention to software tasks (Elkerton, 1988:346). Ideally, a help function is available from any location within the software through a "help key" and provides information pertinent to the task being performed at the time help is requested (Bullingerser and Gunzenhauser:46; 16-349). Finally, the help function should provide support

to the error handling capability by assisting to correct errors (Elkerton, 1988:345-346,349).

Ironically, increased user-friendliness increases the potential for user-generated errors. However, a well-planned error handling capability will minimize the potential for any "fatal" errors and always assist by providing specific, descriptive error messages (Liffick, 1985:192-193). Additionally, error messages should be clearly distinguishable as errors to the user. Finally, error feedback is more easily accepted when stated in positive language (Liffick, 1985:190,219-220).

Ergonomics. User-friendliness is also enhanced by software ergonomics which "is primarily concerned with interfaces between the computer and its human user" (Bullingerser and Gunzenhauser, 1988:14). Ideally, software maximizes the user's abilities and minimizes their frustration through functions which are simple and pleasing to the user's "human characteristics" (Bullingerser and Gunzenhauser, 1988:13). More specifically, the software's visual appearance is important.

User-friendly software has additional ergonomic factors which relate to how information is presented to the user. Probably the most obvious aspect of the software dialogue is the visual access of the computer screen or monitor (Tullis, 1988:393). Physical layout and color of the screen are the primary considerations.

Information display on a computer screen must adhere to ergonomic guidelines to ensure user-friendliness. If possible, a consistent format for all display screens is desirable. A consistent screen layout reinforces the software dialogue since the user can expect to find certain information at a particular screen location (Christie, 1985:230; 36:393). Often, this is accomplished by dedicating specific screen areas for displaying information concerning error status and dialogue status (Bullingerser and Gunzenhauser, 1988:59). Symmetrical balance of the information display strengthens readability as well as decreases the time required to find information on the screen (Bullingerser and Gunzenhauser:53; Chrisitie, 1985:230; Tullis, 1988:395). Likewise, the use of standardized formats and alignments for different data types will significantly improve data and screen readability (Bullingerser and Gunzenhauser, 1988:53; Tullis, 1988:395).

Visual access is also dependent upon information grouping (Tullis, 1988:395). Since standard display monitors have physical display size limitations, the information volume may require information structuring into logical or relational display groups to minimize the user's mental effort (Bullingerser and Gunzenhauser, 1988:55). Information grouping based on function, importance, alphabet, or time will decrease search time (Christie, 1985:229). Graphical or color boundaries surrounding display information are also an effective grouping

technique. For instance, Tullis reports a decreased data search time of 37 percent for information displayed in an alphabetized, vertical sequence as compared to an alphabetized, horizontal sequence. (Tullis, 1988:390, 395).

Safire best summarizes the importance of these screen design concerns ". . . the goal in screen design is to minimize keystrokes and maximize efficiency" (Safire, 1988:171).

Finally, the user-friendliness of software is affected by the use of color in screen displays. Colors which sharply contrast usually provide the clearest resolution. For example, red and green, or blue and yellow are recommended (Christie, 1985:233). Green is a versatile color for information display because of its suitable visibility over a broad range of brightness levels. Furthermore, green, yellow, cyan, and white all have the highest legibility when used on a dark background (Christie, 1985:231-232). Color for displaying information, however, must be used judiciously because the use of more than four colors per display screen is detrimental to readability, and often displeases the user (Christie, 1985:233). Although some display monitors do not have color capability, a color effect using varying brightness levels, reverse video, and flashing is possible (Bullingerser and Gunzenhauser, 1988:63). However, these techniques should be used very conservatively because extensive use of reverse video causes an annoying "crossword-puzzle effect" (Tullis, 1988:391-

392). Finally, colors involving flashing or blinking techniques should be used sparingly and appropriately since they are usually associated with critical information such as error messages (Tullis, 1988:393).

Documentation. Software documentation has become increasingly important. Software documentation falls into two categories: internal and external documentation. Internal documentation has always been a necessity to ensure programming continuity while the demand for external documentation has become more important as software complexity has increased. This is particularly true since documentation is often used as a software training tool with the objective of increased user proficiency (Blanding-Clark, 1984:47). Simply, the user expects to use documentation to progress from knowing nothing about the software to successfully mastering the software (Blanding-Clark, 1984:46). Wilkinson and Leonard best highlight the importance of documentation by reporting that it ". . . is the key to your new products' usability . . . . the novice user's lifeline to the new system" (Wilkinson and Leonard, 1989:20).

The current criticisms of software documentation offer an excellent basis for the development of user-friendly documentation. Fowler and Roeger report that common complaints are the result of extreme writing styles used to develop software documentation. At one extreme, complaints arise because the manual is "full of jargon" which seems to

have been written by programmers. At the other extreme, complaints arise because the manual is "too simple which seems to have been written by English majors" (Fowler and Roeger, 1986:21). Asteroff argues, however, software documentation infrequently shows the user "how to apply information and concepts to different situations" (Asteroff, 1985:4). Furthermore, Asteroff blames this deficiency primarily on the inability of technical writers to view themselves as "teachers" more than the possibility that the software applications are "too complex to explain clearly in writing" (Asteroff, 1985:5). Fortunately, these criticisms have lead to a consensus regarding what constitutes user-friendly software documentation.

Consistent findings exist pertaining to the requirements for user-friendly software documentation. Blanding-Clark reports that documentation should totally define the software, use specific formats to clearly communicate these definitions, and show relationships between all the components which comprise the software (Blanding-Clark:47). Liffick further expands upon Blanding-Clark's recommendations by further suggesting that user-friendly documentation informs users of: (1) "just what the system is all about," (2) hardware and software requirements, (3) potential problems of the software, (4) explicit start-up instructions, (5) introduction to help facilities, (6) error messages with descriptive narratives and "helpful hints" to correct the error, (7) input formats,

(8) output descriptions and examples, and (9) complete index referencing (Liffick, 1985:326-335). Asteroff supports these recommendations and further adds that "clear prose narratives," the use of examples, "a comprehensive table of contents," and "an overall spacious design and layout" all further enhance user-friendly documentation (Asteroff, 1985:7).

As Fowler and Roeger note, documentation style is extremely important to ensuring user-friendliness. Rubens reports that a recent survey of undergraduate and graduate students indicated no evidence to support a positive correlation between a person's preference for more sophisticated documentation and their computer expertise. In fact, he further reports that the preferred "good" documentation has simple, conversational style (Rubens, 1986:59). Ledin also recommends that a good user's guide is written "for the intelligent person who is not a computer expert" (Ledin, 1978:214-215). However, Ledin also adds that writing "good" software documentation, like all written documents, must focus on the audience's subject knowledge and their need-to-know (Ledin, 1978:35).

IV. Methodology

Objective

The primary research objective was to develop a comprehensive software application which simplifies and enhances the management of the Alternative Care Program (ACP). A secondary objective was to recommend improvements to the ACP's guidance or procedures.

Data Collection and Compilation

The most significant data sources pertaining to this research are as follows.

Air Force Guidance. Pertinent Air Force policies and regulations were reviewed to identify all the Alternative Care Program's (ACP) management requirements by identifying the inputs, outputs, and processes. The following Air Force guidance was reviewed: AFR 12-35, Air Force Privacy Act Program; AFR 35-99, Nuclear Weapons Personnel Reliability Program; AFR 168-2, Medical Care Third Party Liability Notification; AFR 168-6, Persons Authorized Health Care, Health Care Benefits, Charges and Billing Procedures; AFR 168-10, Obtaining Medical and Dental Care From Civilian Sources; AFR 170-5, Responsibility Center/Cost Center Codes; AFR 177-101, General Accounting and Finance Systems at Base Level; AFR 177-102, Commercial Transactions at Base Level; and the Inspector General's (IG) Health Services Management Inspection (HSMI) checklist. The IG HSMI checklist for the

ACP highlights many of the critical procedures and information requirements established by the Air Force regulations.

Air Force Surgeon General's Questionnaire. In November 1989, the Air Force Surgeon General's Office administered a questionnaire pertaining to the Alternative Care Program at the Medical Resource Management Symposium in Denver, Colorado. Representatives from eighty-four percent (102/122) of the 122 USAF medical treatment facilities completed the questionnaire. Copies of the completed questionnaires were reviewed for pertinent data. Although this questionnaire provided an excellent data source, the validity of this data would have been improved if respondents from the Patient Administration Office (PAO) had been included with the Medical Resource Management Office. A copy of this questionnaire is provided in Appendix A.

Base Specific Information. Each of the 122 USAF medical treatment facilities were asked to provide the following information pertaining to the Alternative Care Program for review: (1) base regulations, (2) base operating instructions, (3) Inspector General's (IG) Health Services Management Inspection (HSMI) reports, (4) local ACP evaluations performed in accordance with Air Force Regulation (AFR) 168-10, Obtaining Medical and Dental Care From Civilian Sources, (5) Air Force Form 1210, Civilian Medical Services Accounts Control, (6) Air Force Form 676, Authorization For Alternative Health Services, (7) Air Force

Form 616, Fund Cite Authorization, (8) Standard Form 1034, Public Voucher for Purchases and Services Other Than Personal, and (9) description of any related software applications.

Overview of Particular Methods

The methodology for this research involves several techniques to collect data and compile existing data in support of the research questions. In order to adequately address each research question and accomplish these objectives, each research question has a slightly different methodology as illustrated by Figure 11.

The Alternative Care Program Process

Question 1: What are the inputs, processes, and outputs of the Alternative Care Program?

The intent of this research question was to provide a meaningful, comprehensive overview of the Alternative Care Program (ACP) process. This was essential since no single data source provides a comprehensive summary of the complete process. As illustrated in Figure 11, four data sources were used: (1) Air Force Surgeon General's questionnaire, (2) Air Force guidance, (3) base specific guidance, and (4) telephone interviews. These four data sources were used to compile a fifth data source: a diagram with a narrative which overviews the ACP process.

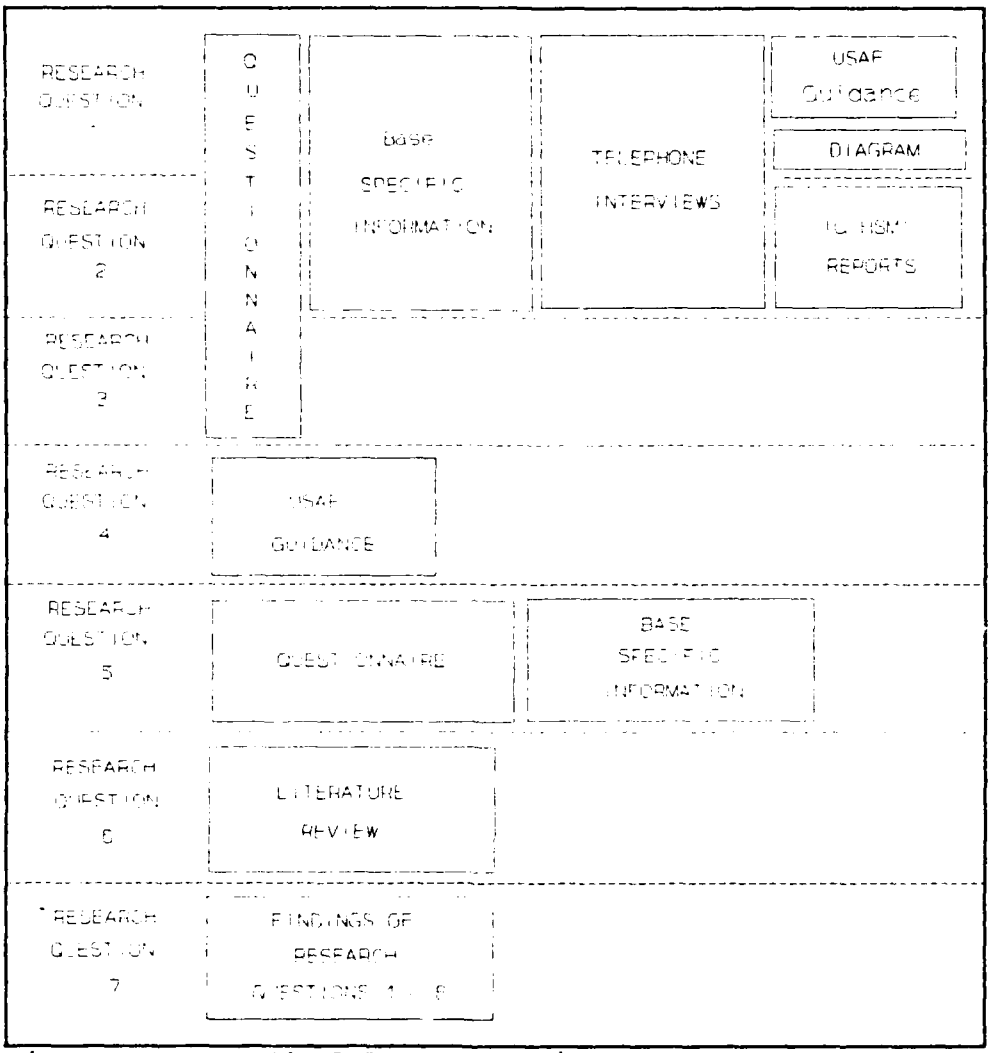


Figure 11. Methodology Overview

Air Force Surgeon General's Questionnaire. Several questions in this questionnaire addressed how specific ACP procedures which were accomplished at each base. The questionnaire responses for questions 5, 6, 7, 8, 9, 10, 11a, 11b, 11c, 11d, 12, 13, 14, 15 were compiled to derive the similarities and differences in the performance of ACP procedures at USAF medical treatment facilities.

Review of Air Force Guidance. Pertinent Air Force policies and regulations were reviewed to identify all the

ACP's management requirements. This guidance provided the foundation for identifying inputs, outputs, and processes involved in the ACP. The following Air Force guidance was reviewed: (1) AFR 12-35, Air Force Privacy Act Program, (2) AFR 35-99, Nuclear Weapons Personnel Reliability Program, (3) AFR 168-2, Medical Care Third Party Liability Notification, (4) AFR 168-6, Persons Authorized Health Care, Health Care Benefits, Charges and Billing Procedures (5) AFR 168-10, Obtaining Medical and Dental Care From Civilian Sources, (6) AFR 170-5, Responsibility Center/Cost Center Codes, (7) AFR 177-101, General Accounting and Finance Systems at Base Level, (8) AFR 177-102, Commercial Transactions at Base Level, and (9) the Inspector General's Health Services Management Inspection checklist for the ACP. Although the Air Force guidance provides all the necessary instructions for meeting the minimum management standards, additional insights into the ACP were identified by reviewing the base specific information.

Review of Base Specific Information. The base regulations, operating instructions, and forms were reviewed to identify any deviations from the Air Force guidance for possible improvements in the overall guidance.

Telephone Interviews. MAJCOM representatives were also contacted to obtain additional information pertaining to the ACP. These individuals are listed in Appendix B. These interviews helped identify any unique ACP processes in the MAJCOMs. The interview outline was pretested with a member

of the Air Force Surgeon General's Office prior to contacting the MAJCOM representatives. Appendix C provides the interview outline.

Alternative Care Program Diagram. A diagram was developed from review of the Air Force guidance, the base specific information, the Air Force Surgeon General's questionnaire, and telephone interviews to provide a general overview of the ACP. This diagram illustrates all the pertinent entities related to the ACP as well as the interactions between these entities. Because this diagram only provides a visual overview, a written narrative was added to provide a more comprehensive, meaningful tool for describing the ACP process.

To ensure that the diagram and narrative accurately reflected the ACP process, the MAJCOM representatives, who were also interviewed for this research (Appendix B), were selected to verify the diagram and narrative. As Allen and Helferich state, verification ensures that the "system" is built right (Allen and Helferich, 1990:125).

The feedback received from these individuals was researched in the Air Force guidance. Telephone interviews were conducted with the individuals performing the verification to clarify their comments as well as conduct an interview as outlined in Appendix C. Upon clarifying and researching their comments, the diagram and narrative were revised as illustrated in Appendix D and E respectively.

Potential Improvement Areas

Question 2. What areas of the Alternative Care Program require improved management?

To identify improvement areas for the Alternative Care Program (ACP), deficiency areas identified in the following data sources were reviewed: (1) the Air Force Surgeon General's questionnaire, (2) Inspector General (IG) Health Services Management Inspector (HSMI) reports, (3) annual evaluations performed in accordance with AFR 168-10, and (4) telephone interviews with MAJCOM representatives.

Air Force Surgeon General's Questionnaire. Two open-ended questions in this questionnaire (Appendix A) pertained to suggested improvements to the ACP. The responses for questions 17 and 18 were reviewed in a listing to identify similar improvement suggestions.

IG HSMI Reports. The IG HSMI reports result from using a standardized checklist to evaluate the ACP at each USAF medical treatment facility. Although the individual differences between inspectors may bias these reports, this checklist provides a common methodology to promote objective evaluations. Only the IG HSMI report sections pertaining to the ACP (implication code FAF) were reviewed for common trends. The IG HSMI checklist which was used as the basis for these IG HSMI reports is provided in Appendix F.

Base Specific Information. AFR 168-10 requires that each USAF medical treatment facility evaluate their ACP annually. AFR 168-10 specifies that the review will:

> Assess use of the supplemental and cooperative care program, identify medical services provided frequently in the civilian sector, and recommend ways to improve cost controls. (AFR 168-10, 1989:16)

These evaluations were reviewed to identify common ACP deficiencies and strengths similar to the review of the IG HSMI Reports. Since these evaluations do not have a common basis like the IG HSMI checklist, the ACP's critical areas, which these evaluations should assess, were identified in AFR 168-10. To simplify the review of these evaluations for common trends, these critical areas were used in a question format (Appendix G) to review each evaluation.

Telephone Interviews. MAJCOM representatives (Appendix B) were contacted primarily to obtain additional information pertaining to the ACP in support of research question 1. These interviews also identify suggested improvements to the ACP. Appendix C provides the interview outline used.

Computer Hardware and Software Resources

Question 3: What hardware and software resources are available to base level managers of the Alternative Care Program?

Data collected by the Air Force Surgeon General's questionnaire was used extensively to support this research question. Specifically, the responses from question 2 were tabulated to determine the computer resources available to Alternative Care Program (ACP) personnel.

Alternative Care Program Software Requirements

Question 4: What are the requirements for the planned software application?

To objectively answer this research question, a requirements checklist was developed for management of the Alternative Care Program (ACP) and for user-friendly software. These requirements were selected from the findings of research question 1, 2, and 6 and their respective data sources, and listed in Appendix H. To evaluate these software applications, these requirements were translated to correspond with the components of a decision support system (DSS).

Davis states that a DSS has five components: (1) database, (2) database management facilities, (3) modeling component, (4) report generator, and (5) user interface (Davis, 1988:75). For this research, the criteria for the database, modeling component, report generator and user interface were referred to in this research as the data, output, management features, and user interface features respectively. Although the database management (DBM) facility is an extremely important component, it was not included in this evaluation checklist since its design has little dependency upon the functional requirements of the process being supported (Davis, 1988:77).

The following summarizes the selected requirements as applied to the DSS components:

Data. The application should have a complete data dictionary to provide complete automated support of the Alternative Care Program (ACP).

Output. The application should have the ability to completely automate support of the ACP.

User-Interface Features. The application should have an adequate user-interface with documentation.

Management Features. The application should be more closely aligned to a decision support system than a management information system.

Existing Alternative Care Program Software

Question 5: Are there any existing software applications which can be modified or enhanced?

The idea of automating the Alternative Care Program (ACP) is not a new one. Among others, the Inspector General's (IG) Health Services Management Inspection (HSMI) representatives for the ACP have recommended the use of ACP software applications to numerous bases. As a result of their recommendations, these bases have developed software applications to assist in managing the ACP

Two data sources were used to address this research question: the Air Force Surgeon General's questionnaire and software applications developed to support the ACP management.

Air Force Surgeon General's Questionnaire. Two questions in this questionnaire (Appendix A) identified the functions performed by existing ACP software applications. The questionnaire responses for questions 3 and 4 were compiled to determine the common functions of the developed

applications and the common software languages used to develop these applications.

Base Specific Information. Based on the responses from the Air Force Surgeon General's questionnaire, all bases with ACP related software applications were solicited to submit evaluation copies. Each software application was evaluated using the checklist developed from the findings for research question 4 (Appendix H). Using these criteria, the strengths and weaknesses of these applications were identified. In addition, each of these applications were evaluated in consideration of Boehm's characteristics of software quality: portability, understandability, efficiency, and modifiabililty (Boehm, 1978:3-19).

Characteristics of User-friendly Software

Question 6: What are the important user-friendly characteristics that should be included in the developed application?

To support this research question, a literature review was conducted to identify the characteristics of quality and user-friendliness in software applications. In this discussion, Boehm's characteristics of software quality were introduced, and the implications upon user-friendliness of the user-interface, ergonomics, and documentation were identified.

Alternative Care Program Software Prototype

Question 7: Can a prototype software application be developed to demonstrate the potential benefits of using automation to manage the Alternative Care Program?

The findings of the research questions 1 through 6 were used to support this research question.

Additionally, an application development model was selected to structure the development process. Since it is necessary to ensure that the users' requirements are reflected in the developed software, the development strategy must account for information variability and uncertainty. The degree of uncertainty associated with the project size, degree of structure, user task comprehension, and developer-task proficiency must all be considered (Davis and Olson, 1985:564-565). For these reasons, the System Development Life Cycle Model was selected to guide the development process.

System Development Life Cycle (SDLC) Model. Davis and Olson recommend this model as a development strategy in situations with low to medium uncertainty. Furthermore, the SDLC model provides a specific framework "by which an application is conceived, developed, and implemented" (Davis and Olson, 1985:572-573). By segmenting the process into a logical flow, each phase's expected outcomes are easily identified (Davis and Olson, 1985:573).

Variations within the SDLC Model are permitted if additional techniques will strengthen the model. Harrison reports prototyping may be used in conjunction with the SDLC. He warns, however, that "the use of prototyping in this manner may blur the distinction between the stages of development" (Harrison, 1985:24). In reality, both the SDLC

and prototyping methodologies often overlap and compliment each other. In fact, at any time of the application's development, it may be difficult to distinguish the primary development methodology (Emmelhanz, 1990). By allowing a user to "try out" a product, user feedback stimulates further software refinements (Davis and Olson, 1985:569-570). In short, this iterative process supports validation and minimizes risk in the continued development process (Harrison, 1985:24).

The available information related to the ACP's management requirements and tasks fall well below the category of medium uncertainty since the ACP has been manually managed since inception. For this reason, the SDLC Model is appropriate for use in this research. However, software prototyping was used in this research to strengthen the SDLC model, and to minimize the uncertainty associated with the automation of the manual ACP procedures.

The SDLC Model has three stages: (1) definition, (2) development, and (3) installation and operation (Davis and Olson, 1985:572-573).

Definition. The desired outcome for this phase was a conceptual design of the software including concurrent development of documentation. To accomplish this outcome, the definition phase was accomplished in two steps: (1) information requirements analysis, and (2) conceptual design (Davis and Olson, 1985:576-577).

Information Requirements Analysis. This initial step identified the information required to manage the ACP. A preliminary information requirements analysis was completed through the findings of research question 1, 2, 3, 4, 5, and 6.

The ACP diagram (Appendix D) and associated narrative (Appendix E) from the findings of research question 1 were the primary basis for the information requirements analysis.

Conceptual Design. The next step in the definition phase was the development of a conceptual design based on the information requirements analysis using structured analysis tools (Davis and Olson, 1985:572-573). Structured analysis tools offer concise, graphical representation to promote understanding and consistency while minimizing redundancy in design (Page-Jones, 1980:58). Colter also recommends using multiple tools to compliment one another and strengthen the development methodology (Colter, 1984:64).

For these reasons, three structured analysis tools were utilized: data flow diagrams, data dictionary, and decision tables.

Data flow diagrams (DFD) were one of the structured analysis tools used. Ostle describes DFDs as a "graphical model of the logical relationships within a system" (Ostle, 1985:93). Colter reports that the strength of DFDs is the "ability to completely represent data flows" (Colter, 1984:62). Page-Jones considers data flow diagrams as a

"principle tool of structured analysis" which clearly represents the "active components of the system and the data interfaces between them" (Page-Jones, 1980:59). Generally, this design method uses "information flow as a driving force for the software design process" (Yau and Tsai, 1986:714).

DFDs, however, do have some shortfalls. Primarily, DFDs are often oriented toward technical instead of user communication. Furthermore, they do not provide strong coverage of the input and output detail for an application, and no coverage of the application's data structure. For this reason, Colter reports that "users often find them initially confusing" (Colter, 1984:62). Another weakness of DFDs is that no consideration is given for "transaction volumes or timing" (Ostle, 1985:95). To strengthen the design for the DFD's weaknesses, two other structure analysis tools were also used.

A data dictionary was developed to strengthen the design of the software's database structure (Colter, 1984:62-63; Ostle, 1985:96). The data dictionary provided a descriptive specification of the data elements as well as a foundation for the development of system documentation by: (1) cross-referencing data element relationships and key field specifications, and (2) including data element descriptions, record type, record size, and input and output format (Modell, 1980:72-74; Ostle, 1985:98-99).

Finally, decision tables were developed to strengthen the design of the software's control structure. These

tables represented the relationships between decision conditions and actions (Ostle, 1985:101). In particular, the decision tables were used for the tri-service beneficiary codes, family member prefix codes, Element Expense Investment Codes (EEIC), Responsibility Center/Cost Center (RC/CC) codes, and fund citations.

Development. The physical design as well as the program structure and development were accomplished during this phase (Davis and Olson, 1985:574). A field test was also conducted.

Before physical software development began, the computer resources available to ACP managers as reported in the findings of research question 3 were considered. By developing an application to operate on existing hardware and using existing software, costs could be minimized, and yet not constrain future enhancements to the application. As reported by research question 3, adequate hardware and software resources are available to ACP personnel. However, a variety of software languages were available and being used by ACP personnel. This was evidenced by the findings of research question 4 that report three different software languages being used in existing ACP software applications. A specific software language was selected for the development of this prototype.

Software. The standard for database management software, however, has continued to change with new technology. Ashton Tate's next generation of dBase™

software, dBase III Plus™, was recommended and used as the database management software in two previous AFIT theses completed in 1988 (Beard, 1988:11-12; Thomas, 1988:77). Although dBase IV™ is the most recent release in the dBase™ series, this product has yet to gain user acceptance because of the numerous "bugs" (Swartz, 1989: 99). However, Nantucket's Clipper™, a dBase™ clone, presently represents the best alternative since its command language expands beyond the capabilities of the dBase™ language, and utilizes a compiler to increase software execution speed. Besides increased execution speed, Clipper™ applications only require the disk operating system (DOS) software to operate on any IBM™ compatible microcomputer. This provides software portability at a greatly reduced cost (Schwartz, 1989:101; Tiley, 1988:12-13). Finally, the Office of the Air Force Surgeon General has been satisfied with other small computer applications developed in Clipper™ (Erickson, 1990). For these reasons, Clipper™ was used to develop a prototype software application called the Alternative Care Assistant.

Development Tools. Next, the programming code was prepared using three development tools: (1) Wallsoft's UI Programmer™, (2) Concentric Data Systems' R & R Relational Report Writer™, and (3) Concentric Data Systems' R & R Relational Report Writer Code Generator™.

The UI Programmer™ is an object-oriented program generator. Because of its object-oriented basis, the UI

Programmer™ decreases development time by generating programming code in the selected programming language from the designed objects. This allows the program code to be created or modified within minutes and provides a more iterative approach to the SDLC methodology (Wallsoft, 1989:1-3).

Both the Concentric Data Systems' R & R Relational Report Writer™, and Concentric Data Systems' R & R Relational Report Writer Code Generator™ were used to supplement the report writer function of Clipper™. These development tools also decreased development time and allowed the development of more complex reports. Since the R & R Relational Report Writer™ is executable directly from Clipper™, initial testing of reports was accomplished without using the R & R Relational Report Writer Code Generator™. After the reports were tested and corrected, the R & R Relational Report Writer Code Generator™ was used to transform the R & R Relational Report Writer™ report into Clipper™ source code. The capability to transform these reports into source code reduced the additional software required by the prototype. Like the UI Programmer™, this decreased development time and added flexibility to the SDLC methodology when changes were necessary (Concentric Data Systems, 1988; Concentric Data Systems, 1990).

Initial Testing. During development of the source code, the application modules were tested to ensure functionality and usability. Initial or alpha testing was

performed by cross-referencing the data dictionary and the decision trees to the source code (Modell, 1980:177-178). Likewise, sample output was generated and checked. All decision actions represented in the decision tables were tested to ensure the appropriate alternative was executed. Concurrently, user and system documentation were also checked for consistency with the conceptual design (Ledin, 1978:214-215). The scope of testing primarily focused on evaluating the software's capability to protect the database's integrity, handle errors, and function logically. Preliminary testing was continued until the application functioned like the conceptual design (Modell, 1980:177-178). Upon completion of this initial testing, a field test was conducted.

Field Testing. The application was field tested at USAF Medical Center Scott, Scott AFB, Illinois from 25-27 June 1990. This site was selected for the following reasons. First, the Alternative Care Program (ACP) at this location was managed manually. This allowed a comparison between the manual and automated procedures. Second, executive management was supportive of the field test. Allen and Helferich as well as Davis report that management support is a key issue when developing an application (Allen and Helferich, 1990:110; Davis, 1988:28-46). Finally, this USAF medical treatment facility has over 100 operating beds. Thus, the expected ACP workload provided a more rigorous test of the prototype.

The field test consisted of the following: (1) review of all data screens, (2) adding data to the database, (3) editing data to the database, and (4) printing of selected reports. Upon completion of the field test, corrections to the application were made.

Installation and Operation. Since the objective of this research was to develop a prototype, the final SDLC phase was not a part of this research (Davis and Olson, 1985:576-577). However, portions of the conclusions and recommendations in Chapter 5 are relevant to this phase, and should be considered during further development of the prototype into an operational application.

V. Findings and Discussion

The findings and discussion are presented for each of the research questions. In many of these discussions, tables have been used to display pertinent data. Although this research was not intended to provide any conclusions or comparisons of the data by USAF major command, the data has been presented for each USAF major command. This was done solely for the major commands interested in conducting additional research in the areas addressed by this research. Since the small sample size for each major command causes the percentages to be greatly affected by one or two responses, the aggregate totals are a more useful means of detecting trends for the purposes of this research. Finally, many of the tables list DOD facilities adhering to Air Force guidance. These are medical treatment facilities which are located on USAF bases, but are within a Joint Military Medical Command (JMMC).

The Alternative Care Program Process

Question 1: What are the inputs, processes, and outputs of the Alternative Care Program?

Figure 11 illustrates that five separate data sources were used to answer this research question: Air Force Surgeon General's Questionnaire (Appendix A), Air Force guidance, base specific information, telephone interviews, and the Alternative Care Program (ACP) diagram (Appendix D). Although the ACP diagram reflects the overall findings for

this research question, the findings from the other four data sources are highlighted to illustrate their significance to the development of the ACP diagram.

Air Force Surgeon General's Questionnaire. Several questions from this questionnaire were relevant to this research question. These questions pertained to how specific ACP procedures are accomplished, who is responsible for specific ACP procedures, and the frequency of occurrence for specific situations related to the ACP.

Questions 11a, 11b, 11c, 11d, and 14 all pertain to how specific ACP procedures are accomplished. Presently, the Air Force guidance does not specify a format or method to accomplish many of the routine ACP procedures. Nevertheless, the Inspector General's (IG) Health Services Management Inspectors (HSMI) expect adequate supporting documentation for the tasks being accomplished. Despite this fact, the responses to these questions indicate that the telephone is the most frequently used method of communication in resolving problems and handling complex cases. However, form letters are also used by many bases for initial and routine notifications. Responses for question 11a are provided in Table 1.

Question 11b pertains to bills with charges that appear excessive. Excessive is generally considered to be any amount that is greater than the CHAMPUS allowable cost or greater than the price agreed upon prior to the service being received. Like the responses for question 11a, the

telephone was the most prevalent method of communicating in these situations. Table 2 summarizes the responses to this question.

TABLE 1

METHOD TO COMMUNICATE ERRONEOUS CHARGES[1]

	FORM LETTER		TELEPHONE		OTHER		TOTAL RESPONSES
MAJCOM	#	%	#	%	#	%	#
AAC	0	0%	2	100%	0	0%	2
AFLC	2	33%	4	67%	0	0%	6
AFSC	1	14%	4	57%	2	29%	7
ATC	6	35%	11	65%	0	0%	17
AU	1	50%	1	50%	0	0%	2
MAC	7	39%	11	61%	0	0%	18
OTHER[2]	1	50%	0	0%	1	50%	2
PACAF	5	42%	7	58%	0	0%	12
SAC	10	31%	22	69%	0	0%	32
SPACECOM	0	0%	1	100%	0	0%	1
TAC	8	40%	12	60%	0	0%	20
USAFA	0	0%	1	100%	0	0%	1
USAFE	11	35%	17	55%	3	10%	31
TOTAL	52	34%	93	62%	6	4%	151

Notes:
1. Multiple responses allowed for this question.
2. DOD medical facilities adhering to USAF guidance.

Question 11c pertains to those instances when the government will not pay for certain charges. Usually, these charges are for unauthorized services such as personal telephone charges during an inpatient treatment. To avoid misunderstandings with the health care provider or the patient, both are usually notified immediately. Otherwise, the health care provider and the patient may mistakenly assume that the government is responsible for the entire

bill. Although a form letter is frequently used in these situations, the telephone was still the most prevalent method used in these situations. Table 3 lists the responses to this question.

TABLE 2

METHOD TO COMMUNICATE EXCESSIVE CHARGES[1]

MAJCOM	FORM LETTER #	%	TELEPHONE #	%	OTHER #	%	TOTAL RESPONSES #
AAC	1	33%	2	67%	0	0%	3
AFLC	2	33%	4	67%	0	0%	6
AFSC	1	14%	4	57%	2	29%	7
ATC	6	35%	11	65%	0	0%	17
AU	1	50%	1	50%	0	0%	2
MAC	6	33%	11	61%	1	6%	18
OTHER[2]	1	100%	0	0%	0	0%	1
PACAF	6	46%	7	54%	0	0%	13
SAC	10	32%	20	65%	1	3%	31
SPACECOM	1	100%	0	0%	0	0%	1
TAC	3	20%	11	73%	1	7%	15
USAFA	0	0%	1	100%	0	0%	1
USAFE	6	32%	11	58%	2	11%	19
TOTAL	44	33%	83	62%	7	5%	134

Notes:
1. Multiple responses allowed for this question.
2. DOD medical facilities adhering to USAF guidance.

Question 11d pertains to the AFR 168-10 requirement to notify service providers if payment to them can not be paid within 30 days from the time an itemized bill is received. Presently, AFR 168-10 suggests that the Medical Resource Management Office process bills in 15 days or less, so that the Accounting and Finance Office has adequate time to pay the bill within 30 days of the receipt. Notification does

not, however, relieve the government from paying interest on bills not paid within 30 days from receipt (AFR 168-10, 1989:8). Some bases also use a form letter to inform the service provider that payment will be delayed, or to request an itemized bill. Table 4 provides a summary of the responses to this question.

TABLE 3

METHOD TO COMMUNICATE THAT GOVERNMENT IS NOT RESPONSIBLE FOR CHARGES

	FORM LETTER		TELEPHONE		OTHER		TOTAL RESPONSES
MAJCOM	#	%	#	%	#	%	#
AAC	0	0%	2	100%	0	0%	2
AFLC	3	43%	3	43%	1	14%	7
AFSC	1	14%	3	43%	3	43%	7
ATC	6	38%	8	50%	2	13%	16
AU	1	50%	1	50%	0	0%	2
MAC	9	53%	7	41%	1	6%	17
OTHER [1]	1	100%	0	0%	0	0%	1
PACAF	6	55%	5	45%	0	0%	11
SAC	13	45%	16	55%	0	0%	29
SPACECOM	1	100%	0	0%	0	0%	1
TAC	7	39%	11	61%	0	0%	18
USAFA	1	100%	0	0%	0	0%	1
USAFE	8	30%	17	63%	2	7%	27
TOTAL	57	41%	73	53%	9	6%	139

Note:
1. DOD facilities adhering to USAF guidance.

Question 14 pertains to the procedures required by AFR 168-2 for notifying the Patient Administration Office (PAO) about third party liability cases. Based on the responses to this question, the SF Form 1034 is commonly used to coordinate these cases between the Medical Resource

Management Office (MRMO) and the PAO whenever payment is made on a potential third party liability case. Although this response was not a standard response for this question, 40 percent (40/101) of the bases use this method. As a result of this method, the frequency at which form letters and the telephone were used decreased to only 20 percent (20/101) and 22 percent (22/101) of the bases respectively. Table 5 summarized the responses to question 14.

TABLE 4

METHOD TO COMMUNICATE TO SOURCE PROVIDERS WHEN PAYMENT IS DELAYED[1]

	FORM LETTER		TELEPHONE		OTHER		TOTAL RESPONSES
MAJCOM	#	%	#	%	#	%	#
AAC	1	33%	2	67%	0	0%	3
AFLC	1	20%	4	80%	0	0%	5
AFSC	1	25%	1	25%	2	50%	4
ATC	6	40%	9	60%	0	0%	15
AU	0	0%	1	100%	0	0%	1
MAC	5	38%	7	54%	1	8%	13
OTHER[2]	1	50%	1	50%	0	0%	2
PACAF	7	64%	4	36%	0	0%	11
SAC	16	48%	17	52%	0	0%	33
SPACECOM	0	0%	0	0%	1	100%	1
TAC	5	38%	6	46%	2	15%	13
USAFA	0	0%	1	100%	0	0%	1
USAFE	10	42%	12	50%	2	8%	24
TOTAL	53	42%	65	52%	8	6%	126

Note:
1. Multiple responses allowed for this question.
2. DOD medical facilities adhering to USAF guidance.

Question 6, 9, 12, and 15 identify who is responsible for specific ACP procedures. Review of these questions

provided some understanding of how the bases assign responsibilities and implement procedure controls to ensure adequate ACP management. Although some of these responsibilities are identified in the existing guidance, some deviations are noted at various bases.

TABLE 5

METHOD OF COORDINATING THIRD PARTY LIABILITY CASES

	FORM LETTER		PHONE		SF FORM 1034		OTHER		TOTAL RESPONSES
MAJCOM	#	%	#	%	#	%	#	%	#
AAC	0	0%	1	33%	1	33%	1	33%	3
AFLC	0	0%	2	50%	2	50%	0	0%	4
AFSC	1	25%	0	0%	3	75%	0	0%	4
ATC	2	17%	2	17%	6	50%	2	17%	12
AU	1	50%	0	0%	1	50%	0	0%	2
MAC	2	17%	3	25%	4	33%	3	25%	12
OTHER[1]	1	100%	0	0%	0	0%	0	0%	1
PACAF	4	44%	4	44%	0	0%	1	11%	9
SAC	2	10%	4	19%	13	62%	2	10%	21
SPACECOM	1	100%	0	0%	0	0%	0	0%	1
TAC	2	18%	1	9%	5	45%	3	27%	11
USAFA	1	100%	0	0%	0	0%	0	0%	1
USAFE	3	15%	5	25%	5	25%	7	35%	20
TOTAL	20	20%	22	22%	40	40%	19	19%	101

Note:
1. DOD medical facilities adhering to USAF guidance.

Question 6 indicates which office at these bases receives the bills from the health care providers. The Patient Administration Office (PAO) at 36 percent (37/102) of the bases and the Medical Resource Management Office (MRMO) at another 59 percent (60/102) of the bases have the ACP bill sent directly to their offices (Table 6). It is

surprising to find that most bases have the bill sent to the MRMO since AFR 168-10 specifies that the "PAO will provide the MRMO with verification upon receipt" of the bill (AFR 168-10, 1989:16). Although this deviation compromises the PAO's control over filing the medical results in the patient's medical records, it does streamline the payment process for the MRMO, and helps avoid interest expenses resulting from delinquent payments (AFR 168-10, 1989:8).

TABLE 6

OFFICE OF PRIMARY RESPONSIBILITY FOR RECEIPT OF ACP BILLS

	HBA		MRMO		PATIENT		OTHER		TOTAL RESPONSES
MAJCOM	#	%	#	%	#	%	#	%	#
AAC	1	50%	1	50%	0	0%	0	0%	2
AFLC	1	25%	3	75%	0	0%	0	0%	4
AFSC	1	25%	2	50%	0	0%	1	25%	4
ATC	3	27%	8	73%	0	0%	0	0%	11
AU	0	0%	1	100%	0	0%	0	0%	1
MAC	5	42%	5	42%	0	0%	2	17%	12
OTHER [1]	0	0%	2	100%	0	0%	0	0%	2
PACAF	1	13%	7	88%	0	0%	0	0%	8
SAC	10	43%	11	48%	0	0%	2	9%	23
SPACECOM	0	0%	1	100%	0	0%	0	0%	1
TAC	4	33%	8	67%	0	0%	0	0%	12
USAFA	1	100%	0	0%	0	0%	0	0%	1
USAFE	10	48%	11	52%	0	0%	0	0%	21
TOTAL	37	36%	60	59%	0	0%	5	5%	102

Note:
1. DOD medical facilities adhering to USAF guidance.

Furthermore, the MRMO, not the PAO, is responsible for maintaining the data necessary to control the ACP on the AF

Form 1210. This data is useful in monitoring the payment status of these bills (AFR 168-10, 1989:12).

Table 7 has the responses for question 9 and indicates that the PAO and MRMO maintain the local health care providers' price lists at 27 percent (26/96) and 21 percent (20/96) of the bases respectively. However, 46 percent (44/96) of the bases report that these price lists are maintained by both the MRMO and PAO. The Health Benefits Advisor, who schedules ACP appointments and is functionally assigned to the PAO, has the greatest need for these lists.

TABLE 7

OFFICE OF PRIMARY RESPONSIBILITY
FOR MAINTAINING PRICE LISTS

	PAO		MRMO		PAO & MRMO		OTHER		TOTAL RESPONSES
MAJCOM	#	%	#	%	#	%	#	%	#
AAC	1	50%	0	0%	1	50%	0	0%	2
AFLC	1	25%	0	0%	3	75%	0	0%	4
AFSC	2	50%	0	0%	2	50%	0	0%	4
ATC	4	40%	2	20%	3	30%	1	10%	10
AU	0	0%	1	100%	0	0%	0	0%	1
MAC	3	27%	3	27%	3	27%	2	18%	11
OTHER [1]	0	0%	0	0%	0	0%	1	100%	1
PACAF	1	13%	3	38%	3	38%	1	13%	8
SAC	4	18%	3	14%	14	64%	1	5%	22
SPACECOM	0	0%	0	0%	1	100%	0	0%	1
TAC	6	50%	0	0%	6	50%	0	0%	12
USAFA	0	0%	0	0%	1	100%	0	0%	1
USAFE	4	21%	8	42%	7	37%	0	0%	19
TOTAL	26	27%	20	21%	44	46%	6	6%	96

Note:
1. DOD medical facilities adhering to USAF guidance.

However, the Inspector General's Health Services Management Inspection (HSMI) checklist (Appendix F) highlights responsibilities which require the MRMO to have access to these price lists. Hopefully, these bases do this in a cooperative effort so that the same price lists are easily accessible by both offices. Unfortunately, no insight is provided about bases which do not maintain price lists.

In reviewing Table 7, an adjustment must be made for the overseas locations (Table 8). Although these locations must also maintain price lists, the usefulness of these price lists at these locations is limited since price is not be the primary criterion when selecting a health provider.

TABLE 8

OFFICE OF PRIMARY RESPONSIBILITY FOR MAINTAINING PRICE LISTS AT CONUS BASES

	PAO		MRMO		PAO & MRMO		OTHER		TOTAL RESPONSES
MAJCOM	#	%	#	%	#	%	#	%	#
AAC	1	50%	0	0%	1	50%	0	0%	2
AFLC	1	25%	0	0%	3	75%	0	0%	4
AFSC	2	50%	0	0%	2	50%	0	0%	4
ATC	4	40%	2	20%	3	30%	1	10%	10
AU	0	0%	1	100%	0	0%	0	0%	1
MAC	3	27%	3	27%	3	27%	2	18%	11
OTHER [1]	0	0%	0	0%	0	0%	1	100%	1
SAC	4	18%	3	14%	14	64%	1	5%	22
SPACECOM	0	0%	0	0%	1	100%	0	0%	1
TAC	6	50%	0	0%	6	50%	0	0%	12
USAFA	0	0%	0	0%	1	100%	0	0%	1
TOTAL	21	30%	9	13%	34	49%	5	7%	69

Note:
1. DOD medical facilities adhering to USAF guidance.

If only continental United States (CONUS) bases are considered from Table 7, the total percentage of MRMO maintaining price lists decreases by eight percent while the total percentage of HBA only decreases by three percent.

Table 9 reports the responses for question 12 which pertains to how ACP personnel are notified about the cancellation of scheduled appointments at civilian health care providers. Notification of an appointment cancellation ensures that obligated funds are reprogrammed for other use.

TABLE 9

HOW ALTERNATIVE CARE CLERKS FIND OUT ABOUT CANCELLED APPOINTMENTS[1]

	PATIENT		HBA & PAO		MRMO		OTHER		TOTAL RESPONSES
MAJCOM	#	%	#	%	#	%	#	%	#
AAC	0	0%	2	67%	1	33%	0	0%	3
AFLC	1	25%	1	25%	2	50%	0	0%	4
AFSC	0	0%	4	67%	1	17%	1	17%	6
ATC	4	19%	8	38%	9	43%	0	0%	21
AU	0	0%	1	50%	1	50%	0	0%	2
MAC	1	7%	6	43%	5	36%	2	14%	14
OTHER[2]	1	50%	0	0%	1	50%	0	0%	2
PACAF	1	10%	5	50%	4	40%	0	0%	10
SAC	2	6%	15	43%	14	40%	4	11%	35
SPACECOM	0	0%	1	100%	0	0%	0	0%	1
TAC	1	6%	9	53%	7	41%	C	0%	17
USAFA	0	0%	1	50%	1	50%	0	0%	2
USAFE	2	7%	14	52%	10	37%	1	4%	27
TOTAL	13	9%	67	47%	56	39%	8	6%	144

Notes:
1. Multiple responses allowed for this question.
2. DOD medical facilities adhering to USAF guidance.

Otherwise, these funds are "lost" to the local USAF medical treatment facility's budget since the funds expire at the end of the fiscal year. The bases report that 47 percent (67/144) of the cancellations are reported to the MRMO Alternative Care Clerk by the Patient Administration Office Unfortunately, 39 percent (36/144) of the bases indicate that appointment cancellation are discovered by MRMO follow up. In reality, the patient is heavily relied upon for this notification. However, Table 9 indicates that the MRMO is notified by the patient in only 9 percent (13/144) of the time. Since there is a heavy reliance upon MRMO follow up, the ability to avoid the loss of funds greatly depends upon the capability to identify past due items. The manual procedures prescribed by AFR 168-10 are not effective for this type of monitoring. Since these follow ups create additional work for the MRMO, such tasks are usually performed as allowed by their work schedule or in response to either a problem, an inspection, or end of the fiscal year. Although no guidance highlights the potential problems associated with cancelled appointments, it appears to be common knowledge among experienced ACP personnel (Erickson, 1990).

The responses from question 15 indicate that the MRMO at 82 percent (93/114) of the bases is involved in handling problems associated with payments to civilian health care providers (Table 10). This trend is not surprising since the MRMO is responsible for preparing the payment requests.

Finally, the data does not indicate how the procedure is actually accomplished, just which functional area is responsible.

Questions 5 and 13 pertain to the frequency that specific ACP procedures are accomplished.

Question 5 identifies the time period that bases establish the Air Force (AF) Form 616 to obligate ACP funds. In general, a shorter time period for the AF Form 616 is used at locations with a high volume of ACP referrals.

TABLE 10

OFFICE PRIMARILY INVOLVED IN RESOLVING PROBLEMS WITH PAYMENTS TO CIVILIAN HEALTH CARE PROVIDERS[1]

	MRMO		PAO		OTHER		TOTAL RESPONSES
MAJCOM	#	%	#	%	#	%	#
AAC	2	100%	0	0%	0	0%	2
AFLC	4	100%	0	0%	0	0%	4
AFSC	4	100%	0	0%	0	0%	4
ATC	11	100%	0	0%	0	0%	11
AU	1	100%	0	0%	0	0%	1
MAC	12	86%	1	7%	1	7%	14
OTHER[2]	1	50%	0	0%	1	50%	2
PACAF	8	100%	0	0%	0	0%	8
SAC	21	81%	4	15%	1	4%	26
SPACECOM	1	100%	0	0%	0	0%	1
TAC	11	92%	1	8%	0	0%	12
USAFA	1	50%	1	50%	0	0%	2
USAFE	16	59%	10	37%	1	4%	27
TOTAL	93	82%	17	15%	4	4%	114

Note:
1. Multiple responses allowed for this question.
2. DOD medical facilities adhering to USAF guidance.

This shorter time period ensures that the Accounting and Finance records correspond and balance with the AF Form 616. Because operation and maintenance (O & M) funds must be obligated by the end of the fiscal year in which they were appropriated, the AF Form 616 established for the ACP never exceeds a time period greater than one year. Table 11 reports the responses to question 11 of the Air Force Surgeon General's Questionnaire. Based on the responses to question 11, 55 percent (43/78) and 36 percent (28/78) of the bases establish the AF Form 616 for the ACP on a monthly and quarterly basis respectively.

TABLE 11

TIME PERIOD THAT AF FORM 616 ESTABLISHED[1]

	MONTHLY		QUARTERLY		SEMI-ANNUALLY		ANNUALLY		TOTAL RESPONSES
MAJCOM	#	%	#	%	#	%	#	%	#
AAC	1	100%	0	0%	0	0%	0	0%	1
AFLC	1	33%	2	67%	0	0%	0	0%	3
AFSC	2	100%	0	0%	0	0%	0	0%	2
ATC	4	50%	4	50%	0	0%	0	0%	8
AU	0	0%	1	100%	0	0%	0	0%	1
MAC	4	50%	2	25%	0	0%	2	25%	8
OTHER[2]	1	50%	0	0%	0	0%	1	50%	2
PACAF	0	0%	4	80%	0	0%	1	20%	5
SAC	18	82%	4	18%	0	0%	0	0%	22
SPACECOM	0	0%	0	0%	1	100%	0	0%	1
[illegible]	5	63%	3	38%	0	0%	0	0%	8
USAFA	0	0%	1	100%	0	0%	0	0%	1
USAFE	7	44%	7	44%	1	6%	1	6%	16
TOTAL	43	55%	28	36%	2	3%	5	6%	78

Note:
1. Multiple Responses allowed for this question.
2. DOD medical facilities adhering to USAF guidance.

Again, the Accounting and Finance Office will not generally establish an AF Form 616 for a long time period at a base with a high volume of ACP referrals (Erickson, 1990). This is confirmed by the responses in Table 11.

Question 13 identifies the time period that bases follow up on requests for payment submitted to the Accounting and Finance Office. This is an important consideration since the USAF medical treatment facilities are reliant upon the Accounting and Finance Office to pay ACP bills. Table 12 reports the responses for question 13.

TABLE 12

FREQUENCY OF FOLLOW UP ON REQUESTS FOR PAYMENT[1]

	WEEKLY		MONTHLY		AS REQUIRED		OTHER		TOTAL RESPONSES
MAJCOM	#	%	#	%	#	%	#	%	#
AAC	0	0%	0	0%	0	0%	2	100%	2
AFLC	0	0%	1	25%	0	0%	3	75%	4
AFSC	0	0%	0	0%	0	0%	3	100%	3
ATC	1	9%	2	18%	1	9%	7	64%	11
AU	0	0%	0	0%	0	0%	1	100%	1
MAC	3	27%	3	27%	1	9%	4	36%	11
OTHER[2]	0	0%	1	50%	0	0%	1	50%	2
PACAF	1	13%	2	25%	0	0%	5	63%	8
SAC	2	9%	8	36%	1	5%	11	50%	22
SPACECOM	0	0%	0	0%	0	0%	1	100%	1
TAC	1	8%	2	17%	0	0%	9	75%	12
USAFA	1	50%	0	0%	0	0%	1	50%	2
USAFE	3	14%	10	48%	1	5%	7	33%	21
TOTAL	12	12%	29	29%	4	4%	55	55%	100

Notes:
1. Multiple responses allowed.
2. DOD medical facilities adhering to USAF guidance.

Approximately 41 percent (41/100) of the responding bases routinely follow up on requests for payment submitted to the Accounting and Finance Office (AFO) at least monthly. However, 55 percent (55/100) of the responding bases do not routinely follow up on requests for payment submitted to the AFO. Obviously, this is a potential problem.

Bases not performing routine follow ups have both positive and negative implications. Fortunately, the AFO has incentive to make payments promptly to avoid interest on bills not paid within 30 days of receipt (AFR 168-10, 1989:8). The ACP personnel also have an incentive for prompt payments to health care providers as a means of maintaining a good working relationship. If the AFO is efficient in making payments, follow ups are rarely required. Unfortunately, if procedures are not designed with some capability to monitor bill payment, a trend of late payments will not be recognized until after a major problem has developed. Like the capability for monitoring appointment cancellations, the present manual method for tracking bill payment on the AF Form 1210 is inefficient, and does not permit easy identification of late or potentially late payments (AFR 168-10, 1989:8). For this reason, the only practical alternative for many bases is to follow up as required, or not at all.

Questions 8 and 10 pertain to the probability that Common Procedure Terminology (CPT) codes are utilized on bills and price lists for the ACP.

Table 13 summarizes the responses to question 8. Since CPT codes are unique to the CONUS and rarely used in overseas locations, the overseas locations were omitted from Table 13. Surprisingly, only 46 percent (33/71) of the responding bases estimate that at least 75 percent of their ACP bills have CPT codes, and 10 percent (7/71) of the bases report that none of their ACP bills have CPT codes. AFR 168-10 requires the use of CPT codes and the CHAMPUS fee schedule for ACP bills as a basis for cost comparison (AFR 168-10, 1986:15).

Table 14 reports the responses for question 10. Like Table 13, the overseas locations were omitted from this table since CPT codes are rarely used in overseas locations.

TABLE 13

PERCENTAGE OF BILLS FROM CIVILIAN SOURCES WITH CPT CODING[1]

	PERCENTAGE OF BILLS RECEIVED										
	0%		< 25%		25-49%		50-74%		75-100%		TOTAL
MAJCOM	#	%	#	%	#	%	#	%	#	%	#
AAC	1	50%	1	50%	0	0%	0	0%	0	0%	2
AFLC	0	0%	0	0%	1	25%	1	25%	2	50%	4
AFSC	1	25%	0	0%	0	0%	0	0%	3	75%	4
ATC	1	9%	0	0%	3	27%	2	18%	5	45%	11
AU	0	0%	0	0%	0	0%	0	0%	1	100%	1
MAC	1	9%	1	9%	3	27%	2	18%	4	36%	11
OTHER[2]	1	100%	0	0%	0	0%	0	0%	0	0%	1
SAC	2	9%	3	13%	3	13%	5	22%	10	43%	23
SPACECOM	0	0%	1	100%	0	0%	0	0%	0	0%	1
TAC	0	0%	1	8%	1	8%	2	17%	8	67%	12
USAFA	0	0%	0	0%	0	0%	1	100%	0	0%	1
TOTAL	7	10%	7	10%	11	16%	13	18%	33	46%	71

Notes:
1. CONUS bases only.
2. DOD medical facilities adhering to USAF guidance.

Only 35 percent (25/71) of the bases report that at least 75 percent of their price lists include CPT codes, and 25 percent (19/71) of the bases report that none of their price lists have CPT codes. Although AFR 168-10 does not specifically require CPT codes on the price lists, this is the most practical method to evaluate health care providers for "reasonable" prices (AFR 168-10, 1989:15).

TABLE 14

PERCENTAGE OF CIVILIAN PRICE LISTS WITH CPT CODES[1]

	PERCENTAGE OF PRICE LISTS										
	0%		< 25%		25-49%		50-74%		75-100%		TOTAL
MAJCOM	#	%	#	%	#	%	#	%	#	%	#
AAC	2	100%	0	0%	0	0%	0	0%	0	0%	2
AFLC	1	25%	1	25%	1	25%	1	25%	0	0%	4
AFSC	1	25%	0	0%	0	0%	0	0%	3	75%	4
ATC	2	18%	0	0%	2	18%	2	18%	5	45%	11
AU	0	0%	0	0%	1	100%	0	0%	0	0%	1
MAC	4	36%	1	9%	0	0%	2	18%	4	36%	11
OTHER[2]	1	100%	0	0%	0	0%	0	0%	0	0%	1
PACAF	1	100%	0	0%	0	0%	0	0%	0	0%	1
SAC	4	17%	3	13%	4	17%	4	17%	8	35%	23
SPACECOM	0	0%	1	100%	0	0%	0	0%	0	0%	1
TAC	2	17%	1	8%	2	17%	2	17%	5	42%	12
USAFA	0	0%	0	0%	1	100%	0	0%	0	0%	1
USAFE	0	0%	0	0%	0	0%	0	0%	0	0%	0
TOTAL	18	25%	7	10%	11	15%	11	15%	25	35%	72

Notes:
1. CONUS bases only.
2. DOD medical facilities adhering to USAF guidance.

Review of Air Force Guidance. This review was essential for identifying the regulatory requirements for

the ACP. All references were consulted since no single source provides a comprehensive summary of the entire ACP process. The following summarizes the relevance of each Air Force document to the ACP process.

Air Force Regulation (AFR) 12-35. AFR 12-35, Air Force Privacy Act Program was reviewed since AFR 168-10, the governing regulation of the Alternative Care Program (ACP), specifies that the Privacy Act of 1974 applies to the ACP. In particular, it requires controls to secure personal data such as names, social security numbers and documentation related to the medical services rendered through the ACP. AFR 12-35 identifies the requirements for managing and securing this information (AFR 12-35, 1985: 1,5,8).

Air Force Regulation (AFR) 35-99. AFR 35-99, Nuclear Weapons Personnel Reliability Program (PRP), was reviewed for implications upon PRP status from services rendered through the Alternative Care Program (ACP). AFR 35-99 requires that a member's unit commander be notified whenever the member's ability to perform PRP duties are impaired for health reasons. Since Centrally Managed Allotment (CMA) services usually involve emergency medical treatment to active duty members, a member's PRP status may be affected by receiving these services. Although less likely, supplemental care services may also affect a member's PRP status. For these reasons, the ACP personnel should carefully monitor all services involving PRP personnel and be knowledgeable of PRP requirements (AFR 35-

99, 1988:1-7). Based upon the review of base regulations and operating instructions, no bases incorporate any additional ACP guidance for PRP personnel.

Air Force Regulation (AFR) 168-2. AFR 168-2, Medical Care Third Party Liability Notification, identifies the responsibilities for handling medical and dental cases with potential third party "liability, or financial responsibility" (AFR 168-2, 1989:1). Coordination of these cases between the Patient Administration Office (PAO), the Medical Resource Management Office (MRMO), and the Staff Judge Advocate Office is required by AFR 168-10. Although the PAO has primary responsibility for third party liability notification, the MRMO must coordinate on all payment requests for services with potential third party liability rendered under the ACP; especially, those services rendered to active duty members through the Centrally Managed Allotment (CMA) (AFR 168-2, 1989:2).

Air Force Regulation (AFR) 168-6. AFR 168-6, Persons Authorized Health Care, Health Care Benefits, Charges and Billing Procedures provides guidelines for determining beneficiary eligibility and patient charges associated with the Alternative Care Program (ACP). This regulation is commonly used to compute the subsistence charge for active duty members receiving inpatient medical care in a civilian hospital. This regulation is also used by the PAO and MRMO personnel to determine health benefits eligibility for all health care services including Centrally

Managed Allotment (CMA), supplemental care, and cooperative care services (AFR 168-6, 1988).

Air Force Regulation (AFR) 168-10. AFR 168-10, Obtaining Medical and Dental Care From Civilian Sources, was reviewed since it governs the Alternative Care Program (ACP). AFR 168-10 provides guidance in three categories: policies, responsibilities, and general instructions. (AFR 168-10:1). This regulation is used primarily by the PAO and MRMO personnel involved with the Alternative Care Program.

Air Force Regulation (AFR) 170-5. AFR 170-5, Responsibility Center/Cost Center Codes provides the valid responsibility center/cost center (RC/CC) codes used for all USAF financial management activities including the Alternative Care Program (ACP). The RC/CC is a required data element in the fund citation to obligate and outlay government funds. Furthermore, the RC/CC code is the key element in the Department of Defense (DOD) Medical Expense Performance Reporting System (MEPRS) which compares DOD medical treatment facilities based on cost data. Medical Resource Management Office personnel routinely use this regulation to ensure that fund citations have the proper RC/CC code (AFR 170-5, 1988).

Air Force Regulation (AFR) 177-101. AFR 177-101, General Accounting and Finance Systems at Base Level, prescribes procedures associated with the obligation of government funds for medical services rendered under the Alternative Care Program (ACP). More specifically, AFR 177-

101 provides restrictions, limitations, and instructions for obtaining and maintaining Air Force Form 616, Fund Cite Authorization, to obligate government funds for ACP referrals. Although AFR 177-101 is used primarily by the Accounting and Finance Office as a reference, Medical Resource Management Office personnel handling the ACP may occasionally reference this regulation (AFR 177-101, 1985:150-156).

Air Force Regulation (AFR) 177-102. AFR 177-102, Commercial Transactions at Base Level, prescribes guidance for the payment of government funds. This includes payment for medical services rendered under the Alternative Care Program (ACP). AFR 177-102 describes the process to obligate and outlay government funds for ACP medical services. In particular, AFR 177-102 highlights the important relationship between the AF Form 676, Authorization for Alternative Health Services, the AF Form 616, Fund Cite Authorization, and the SF Form 1034, Public Voucher For Purchases and Services Other Than Personal, in the obligation and outlay of government funds. AFR 177-102 is used primarily by the Accounting and Finance Office, but Medical Resource Management Office personnel handling the ACP may occasionally reference this regulation (AFR 177-102, 1987:127).

Inspector General (IG) Health Services Management Inspection (HSMI) Checklist. The IG HSMI checklist for the Alternative Care Program (ACP) (implication code FAF)

highlights the ACP policies and procedures which are identified by the Office of the Air Force Surgeon General for the Inspector General to monitor. For this reason, this checklist represents the ACP's minimum requirements. Appendix F has this checklist.

Review of Base Specific Information. Base regulations and operating instructions pertaining to the Alternative Care Program (ACP) were reviewed. Regulations from 39 percent (47/122) and operating instructions from 37 percent (45/122) of the bases with USAF medical treatment facilities were reviewed (Table 15). Originally, this review was intended to identify deviations from the USAF guidance.

TABLE 15

BASE REGULATIONS AND OPERATING INSTRUCTIONS REVIEWED

MAJOR COMMAND	REGULATIONS	OPERATING INSTRUCTIONS
AAC	1	1
AFLC	3	0
AFSC	3	3
ATC	4	4
AU	0	0
MAC	8	4
OTHER [1]	2	3
PACAF	1	3
SAC	12	11
SPACECOM	1	1
TAC	7	8
USAFA	1	1
USAFE	4	6
TOTAL	47	45

Note:
1. DOD medical facilities adhering to USAF Guidance

However, few additional insights were identified from this documentation. These base regulations and operating instructions are of limited value since many simply repeat the USAF guidance. Nevertheless, these base regulations and operating instructions did reinforce the findings associated with the review of the Air Force guidance. Despite the similarity between this guidance, three findings are reported.

First, these regulations and operating instructions clearly illustrate that the Alternative Care Program (ACP) is overwhelmed with documentation. This documentation primarily communicates important information pertaining to the basic ACP procedures. Although the telephone is the primary communication mode in many situations, form letters are also commonly used. While the narrative of the form letters and the procedures for their use varied at each base, eight form letters were commonly used for similar reasons:

Patient Appointment Instructions/Reminder Letter. This letter is provided to the patient to describe and explain the procedures and responsibilities to the patient, and the selected health care provider. This letter typically includes information pertaining to the scheduled appointment time as well as special medical instructions.

Responsibility for Charges Letter. This letter is usually sent to the patient and the health care provider as a notice that the government is not responsible for certain

charges incurred by the patient during authorized visits. The government will not pay for personal convenience items such as cable television. In some cases, these letters obtain additional information about the person who received the services. This typically occurs for CMA services because the USAF medical treatment facility does not usually have any prior knowledge that an active duty member receives medical services from a civilian health care provider until a bill is received.

Follow up on Appointment Attendance. This letter is usually sent to the patient or to the health care provider whenever the bill or the medical results for a scheduled appointment have not been received by the referring USAF medical treatment facility.

Nonreceipt of Bill. This letter is usually sent to the health care provider whenever an itemized bill for an ACP referral has not been received in a timely manner by the referring USAF medical treatment facility.

Nonreceipt of Medical Results. This letter is identical to the preceding letter except it is sent when the medical results have not been received.

Request for Itemized Bill. This letter is sent to the health care provider whenever a bill is received which does not itemize charges. An itemized bill must also identify the patient.

Request for Price List. This letter is sent at least annually to local health care providers requesting a

current price list for their services. At some bases, this letter specifies selected services while other bases request complete price lists.

Notification of Subsistence Charge to Patient. This letter notifies the active duty member of the subsistence charge for inpatient services obtained at a civilian hospital. Both the active duty member and Accounting and Finance Office's (AFO) Military Pay Section receive a copy of this letter.

Second, none of the base regulations identified a requirement for monitoring ACP referrals of patients involved in the Personnel Reliability Program (PRP). Although the procedures pertaining to the PRP should be fully incorporated into the standard operating procedures at the appropriate bases in accordance with AFR 35-99. This may be the result of the Air Force guidance failing to address this critical issue.

Third, many of the overseas locations provided very specific instructions for using the approved foreign exchange rate in the obligation and payment of ACP services. Although this is common practice and possibly common knowledge to experienced personnel, these procedures are not referenced in any other ACP guidance.

Telephone Interviews. MAJCOM representatives (Appendix B) were contacted to obtain additional information about the Alternative Care Program (ACP) using the interview outline in Appendix C.

Few differences exist in the management of the ACP between MAJCOMs. Only two MAJCOMs have supplemental regulations to AFR 168-10, and none of the MAJCOMs required any additional reports beyond the AFR 168-10 requirements (Davies, 1990; Day, 1990; Elder, 1990; French, 1990; Geiger, 1990; Hosman, 1990; Littleton, 1990; Magee, 1990; McDaniel, 1990; Oaks, 1990; Perry, 1990; Willaheur, 1990; Wildman, 1990). However, a few differences do exist.

One difference among major commands was the level of detail used for the Element Expense Investment Code (EEIC) in the fund citation of ACP referrals. The EEIC must have a minimum of three digits, but an additional suffix of two digits may be added. This suffix is commonly called a shreadout, and is an accounting mechanism to track expenses with greater detail. Three of the thirteen MAJCOMs contacted used EEIC shreadouts for monitoring ACP expenditures. Since EEIC shreadouts are not standardized between MAJCOMs, one MAJCOM used different shreadouts. Although these three MAJCOMs reported that the EEICs relevant to the ACP are monitored at the three-digit detail by their offices, they agreed that shreadouts improved the monitoring of ACP expenditures at the base-level (French, 1990; Geiger, 1990; Wildman, 1990).

Another difference identified was the procedures for Centrally Managed Allotment (CMA) services in the United States Air Forces Europe (USAFE) MAJCOM. Although the associated procedures and requirements for payment of CMA

services are very similar for USAFE and CONUS bases, CMA services provided by European health care providers are paid by the Office of Civilian Health and Medical Program for the Uniformed Services in Europe (OCHAMPUSEUR) instead of the local Accounting and Finance Office. In certain circumstances, USAFE bases also process a few CMA payments through their local Accounting and Finance Offices.

ACP Diagram. Verification of the ACP Diagram was accomplished by representatives from 11 MAJCOMs or equivalent: Alaskan Air Command (AAC), Air Force Logistics Command (AFLC), Air Force Systems Command (AFSC), Air Training Command (ATC), Military Airlift Command (MAC), Pacific Air Forces (PACAF), Strategic Air Command (SAC), Space Command (SPACECOM), United States Air Force Academy (USAFA), and United States Air Forces Europe (USAFE), and Joint Military Medical Command (JMMC) - San Antonio. USAFE provided three responses. One from each size medical facility in their MAJCOM: medical center, hospital, and clinic.

These responses were reviewed to correct the original diagram and narrative. Five transactions of the fifty-four transactions in the diagram had no comments for research. The other forty-nine transactions required further research as a result of the respondents' comments. The majority of these comments pointed out the permissible variations in ACP procedures. The narrative became more comprehensive by adding these comments. However, two transactions were

incorrectly described in the original narrative. The final diagram and narrative were corrected and are presented as Appendix D and E respectively.

Potential Improvement Areas

Question 2. What areas of the Alternative Care Program require improved management?

Air Force Surgeon General's Questionnaire. Responses for question 17 and 18 were reviewed for suggested improvements to the Alternative Care Program (ACP). Of the 102 responding bases, 31 responses to these two questions were provided and reviewed. From these 31 responses, two general categories of suggested improvements were identified.

First, nine responses suggested consolidation of ACP responsibilities so that one office was totally responsible for the ACP. By consolidating the fragmented responsibilities for the ACP, the process would be streamlined. While this suggestion has been considered in the past by the Office of the Air Force Surgeon General, a consensus decision was never reached concerning to which office should assume full responsibility (Erickson, 1990).

Second, eight respondents felt that some type of standardized automation would improve the efficiency and effectiveness in managing the ACP.

IG HSMI Reports. Forty-one IG HSMI reports from 1988 and 1989 were reviewed for common deficiencies and

strengths. Table 16 lists by MAJCOM the inspection reports reviewed.

Review of these inspection reports identified three common deficiency areas: cost comparisons, annual evaluations, and data management.

First, 15 percent (6/41) of the inspection reports review had deficiencies pertaining to cost comparisons.

TABLE 16

INSPECTIONS REPORTS REVIEWED BY MAJOR COMMAND

MAJCOM	#
AFLC	3
AFSC	2
ATC	5
AU	0
MAC	5
OTHER [1]	1
PACAF	1
SAC	12
SPACECOM	1
TAC	6
USAFA	1
USAFE	4
TOTAL	41

Note:
1. DOD medical facilities adhering to USAF guidance.

Presently, these deficiencies were related to maintaining current price lists from local health providers, verifying CHAMPUS allowable costs, and justifying ACP costs which exceeded the CHAMPUS allowable charges. Such deficiencies compromise the USAF Medical Service's objective to obtain

medical services at a "reasonable" cost (AFR 168-10, 1989:16).

Second, 12 percent (5/41) of the inspection reports reviewed had deficiencies in the annual ACP evaluation performed by each base. In most cases, these deficiencies resulted from not completing an annual evaluation in accordance with AFR 168-10 (AFR 168-10, 1989:16). Although these deficiencies occur for several reasons, the lack of trained personnel to perform these evaluations, and the difficulty in extracting the necessary ACP data are the two most likely explanations (White, 1989).

Third, 15 percent (6/41) of the inspection reports reviewed had deficiencies pertaining to ACP data management. In particular, the AF Form 1210 or its facsimile was not being updated with all the required information. Although this occurred primarily at locations with manual procedures, it was also reported at a location with an automated AF Form 1210.

Inspection reports primarily provide deficiency findings. Occasionally, strengths and recommendations are also reported.

One area commonly identified as either a strength or a recommendation in these inspection reports was the use of automated ACP tools. Twenty-nine percent (12/41) of the inspection reports either recognized existing ACP applications as a strength, or recommended automated tools to improve ACP management. This recommendation is not

without rationale. The three common deficiency areas identified in this research are all data intensive, and would benefit from a more efficient method to capture, maintain, and report data.

Base Specific Information. Annual ACP evaluations from 26 bases were reviewed to identify common strengths and weaknesses. Table 17 lists the MAJCOMS which were reviewed. The seven areas in Appendix G were selected from AFR 168-10 to represent the objective requirements for the annual ACP evaluation. These evaluations should provide either positive or negative findings for these areas.

TABLE 17

ANNUAL ACP EVALUATIONS REVIEWED BY MAJOR COMMAND

MAJCOM	#
AAC	0
AFLC	1
AFSC	2
ATC	3
AU	0
MAC	4
OTHER [1]	0
PACAF	1
SAC	6
SPACECOM	1
TAC	4
USAFA	1
USAFE	3
TOTAL	26

Note:
1. DOD medical facilities adhering to USAF guidance.

Table 18 illustrates that over one-third of these evaluations reported negative findings for cost controls and

historical data maintenance. However, some concern is warranted over the number of evaluations which did not report either negative or positive findings in the seven areas of evaluation; especially, the area pertaining to the timely payment of ACP bills which had no findings in 96 percent of the reviewed evaluations. This trend suggests that these annual evaluations are not a questionable source for the purposes of this research.

Telephone Interviews. The MAJCOM representatives (Appendix B) all reported bases with existing software applications to assist in ACP management.

TABLE 18

ANNUAL ACP EVALUATIONS NOT MEETING CRITERIA OR NOT INCLUDED IN ACP EVALUATIONS

	NEGATIVE FINDINGS		NOT REFERENCED IN EVALUATION	
EVALUATION AREA	#	% [1]	#	% [1]
OVERALL ASSESSMENT OF ACP	8	31%	6	23%
FREQUENTLY USED SERVICES	5	19%	7	27%
COST CONTROL RECOMMENDATIONS	11	42%	6	23%
HISTORICAL DATA	10	38%	8	31%
EXCEEDING CHAMPUS ALLOWABLE	5	19%	11	42%
PAYMENT IN TIMELY MANNER	0	0%	25	96%
DOCUMENTATION	1	4%	12	46%

Note:
1. Percentages based on the 26 evaluations reviewed.

These representatives also reported potential advantages of ACP software applications. First, the automation of routine ACP functions would improve data

management, and ultimately improve decision making (Magee, 1990; Oaks, 1990). Second, manual tasks would be replaced by more efficient, accurate methods. This increased efficiency would allow additional time for other management responsibilities. Third, adequate software programming would minimize simple mistakes which ultimately lead to more significant data errors. Finally, data for management analysis would be improved since the data is stored on a computer media (Willaheur, 1990).

Computer Hardware and Software Resources

Question 3: What hardware and software resources are available to base level managers of the Alternative Care Program?

The availability of computer resources to ACP personnel is an important consideration in the development of a software application if costs are to be minimized.

Table 19 illustrates that 96 percent (98/102) of the base level ACP managers have access to a Zenith™ Z-248 or equivalent microcomputer and 87 percent (89/102) of these microcomputers have at least a 20 megabyte hard disk drives. Of the 14 bases without hard disk drives, six are located overseas. Fortunately, overseas locations require less ACP data storage than continental United States (CONUS) locations because CPT-4 codes are not utilized, and the ACP has a smaller volume of referrals. Ninety-six percent (98/102) of the responding bases have ALPS™ P2000G printers. Although color monitors and tape backup devices are not essential accessories, a color monitor does enhance the

ergonomic appeal, and a tape backup device does provide better data security of a microcomputer. Finally, 85 percent (85/100) of the responding bases have color monitors (Table 20), and 44 percent (45/102) have tape backup system (Table 21)

TABLE 19

MICROCOMPUTERS AVAILABLE TO ACP PERSONNEL BY MAJCOM WITH HARDWARE CONFIGURATION - HARD DISK

	MICROCOMPUTERS W/O HARD DISK		MICROCOMPUTERS WITH HARD DISK		TOTAL RESPONSES
MAJCOM	#	%	#	%	#
AAC	0	0%	2	100%	2
AFLC	1	25%	3	75%	4
AFSC	0	0%	4	100%	4
ATC	2	18%	9	82%	11
AU	0	0%	1	100%	1
MAC	2	17%	10	83%	12
OTHER[1]	0	0%	2	100%	2
PACAF	1	13%	7	88%	8
SAC	1	4%	22	96%	23
SPACECOM	0	0%	1	100%	1
TAC	1	8%	11	92%	12
USAFA	0	0%	1	100%	1
USAFE	5	24%	16	76%	21
TOTAL	13	13%	89	87%	102

Note
1. DOD medical facilities adhering to USAF guidance.

These findings are not surprising since a central buy of microcomputer systems for all base level ACP managers was made by the Office of the Air Force Surgeon General from the existing standardized microcomputer contract (Erickson, 1990). This "standard" system included a Zenith™ Z-248

microcomputer with a 20 megabyte hard disk and an ALPS™ P2000G printer which were selected based on their compatibility with the IBM™ microcomputer and Epson™ printer respectively (AFCAC, 1986:62-76,79). These findings indicate that the microcomputer systems purchased during this central buy are still available to the ACP personnel.

TABLE 20

MICROCOMPUTERS AVAILABLE TO ACP PERSONNEL BY MAJCOM WITH HARDWARE CONFIGURATION - MONITOR

	MONOCHROME		COLOR		TOTAL RESPONSES
MAJOR COMMAND	#	%	#	%	#
AAC	1	50%	1	50%	2
AFLC	0	0%	4	100%	4
AFSC	1	25%	3	75%	4
ATC	1	9%	10	91%	11
AU	0	0%	1	100%	1
MAC	2	18%	9	82%	11
OTHER [1]	0	0%	2	100%	2
PACAF	0	0%	8	100%	8
SAC	6	27%	16	73%	22
SPACECOM	0	0%	1	100%	1
TAC	1	8%	11	92%	12
USAFA	1	100%	0	0%	1
USAFE	2	10%	19	90%	21
TOTAL	15	15%	85	85%	100

Note:
1. DOD medical facilities adhering to USAF guidance.

The microcomputer software resources available to the Alternative Care Program (ACP) personnel are also adequate. Ashton Tate's dBASE III™ was among the software purchased through the central buy, and was considered the standard database management software for the Air Force (AFCAC,

1986:62-76,79; Chapman, 1986:3-9; Erickson, 1990). Based on the responses to question 4 of the Air Force Surgeon General's questionnaire, 48 percent (41/86) of the existing ACP software applications are developed with dBase™, and 23 percent are developed with Enable™ or the Basic language.

TABLE 21

MICROCOMPUTERS AVAILABLE TO ACP PERSONNEL BY MAJCOM WITH HARDWARE CONFIGURATION - TAPE DRIVE

	MICROCOMPUTERS WITH TAPE DRIVE		MICROCOMPUTERS W/O TAPE DRIVE		TOTAL RESPONSES
MAJCOM	#	%	#	%	#
AAC	1	50%	1	50%	2
AFLC	1	25%	3	75%	4
AFSC	2	50%	2	50%	4
ATC	6	55%	5	45%	11
AU	1	100%	0	0%	1
MAC	5	42%	7	58%	12
OTHER[1]	0	0%	2	100%	2
PACAF	5	63%	3	38%	8
SAC	8	35%	15	65%	23
SPACECOM	1	100%	0	0%	1
TAC	4	33%	8	67%	12
USAFA	0	0%	1	100%	1
USAFE	11	52%	10	48%	21
TOTAL	45	44%	57	56%	102

Note:
1. DOD medical facilities adhering to USAF guidance.

Word processing, database management, and spreadsheet software were all included in the central purchase by the Air Force Surgeon General's Office (Erickson, 1990). Since the questionnaire only pertains to the software resources used in ACP applications, no complete description of the

software resources available to ACP personnel is possible. Since the hardware resources purchased during the central buy are still available to ACP personnel, it is safe to assume that the software resources are also still available to them.

Alternative Care Program Software Requirements

Question 4: What are the requirements for the existing or planned software application?

The findings from research questions 1, 2, and 6 were used to identify criteria for selecting essential requirements for the ACP software application. Although a management information system (MIS) design closely emulates the present manual procedures, a decision support system (DSS) design was selected because it includes additional management capabilities.

Davis states that a decision support system has five components: database, database management facilities, modeling component, report generator, and user interface (Davis, 1988:75). For this research, the database, modeling component, report generator, and user interface were referred to as ne data, output, management features, and user-interface features respectively. Although the database management (DBM) facility is an extremely important component, it was not included since the DBM design is has little dependency upon the functional requirements of the process being supported (Davis, 1988:75).

The requirements are listed in Appendix H and were used to assess existing ACP software applications for research question 5. For each of the four components, the desired ACP requirements were identified.

Existing Alternative Care Program Software

Question 5: Are there any existing software applications which can be modified or enhanced?

Air Force Surgeon General's Questionnaire. Question 3 identifies software applications developed by individual bases for the Alternative Care Program (ACP). Thirty-four percent (35/102) of the responding bases have no automated application to assist with the ACP. The other 66 percent (67/102) of the bases have software applications for a variety of ACP functions: 36 percent (37/102) have an automated AF Form 1210; 45 percent (46/102) have an automated SF Form 1034; and 19 percent (19/102) have an automated AF Form 616. Table 22 summarizes the functions performed by the existing ACP software applications. Although these applications improve upon the manual procedures, some barriers prevent them from being more effective alternatives.

First, these applications only automate a portion of the ACP process. None of the applications automated all four manual processes required to produce the AF Form 676, AF Form 1210, AF Form 616, and the SF Form 1034. In fact, none of the applications had automated versions of the AF Form 676. Only nine percent (9/102) of the responding bases

have applications which automated the AF Form 1210, SF Form 1034, and the AF Form 616.

Second, there is no software language commonality among these applications. As reported for research question 3, 40 percent (41/102) use dBase™ ; 26 percent (27/102) use Enable™ ; and 5 percent (5/102) use the Basic language. The variety of applications and development languages highlights the lack of standardization caused by bases independently and individually developing software applications. Although these applications offer an advantage over the manual procedures, there are some disadvantages as well.

TABLE 22

ACP PROCEDURES SUPPORTED BY EXISTING SOFTWARE APPLICATIONS

	AF FORM 1210	SF FORM 1034	AF FORM 616
MAJCOM	#	#	#
AAC	0	1	0
AFLC	1	1	0
AFSC	3	2	0
ATC	4	7	3
AU	0	1	1
MAC	4	5	1
OTHER [1]	0	0	1
PACAF	2	5	1
SAC	10	11	6
SPACECOM	0	0	0
TAC	8	9	3
USAFA	0	0	0
USAFE	5	4	3
TOTAL	37	46	19

Note:
1. DOD medical facilities adhering to USAF guidance.

Finally, this variety of applications violates the intent of AFR 168-10 to standardized ACP procedures. Since each base has a slightly different software application, little continuity exists between bases.

Base Specific Information. Seventeen existing ACP software applications were reviewed. Table 23 lists the bases which developed these applications and the software language used. Fifty-nine percent (10/17) of these applications were developed in dBase™ and 24 percent (4/17) in Enable™. This is consistent with the responses for question 3 of the Air Force Surgeon General's questionnaire since dBase™ and Enable™ were the most prevalent development languages used by the responding bases.

TABLE 23

REVIEW OF ALTERNATIVE CARE PROGRAM SOFTWARE APPLICATIONS

BASE	LANGUAGE
Mountain Home AFB	Basic
Scott AFB	Basic
Ellsworth AFB	Enable™
Plattsburg AFB	Enable™
Travis AFB	Enable™
Wright-Patterson AFB	Enable™
Andrews AFB	dBase™
Barksdale AFB	dBase™
Cannon AFB	dBase™
Carswell AFB	dBase™
Chanute AFB	dBase™
Griffiss AFB	dBase™
Grissom AFB	dBase™
Myrtle Beach AFB	dBase™
Sheppard AFB	dBase™
Vance AFB	dBase™
Elmendorf AFB	Lotus™

These applications were evaluated in the four areas reported for research question 4: data, output, user interface features, and management features. Boehm's characteristics of software quality were also considered: portability, reliability, efficiency, human-engineering, testability, understandability, and modifiability (Boehm, 1978:3-19).

Data. Each application was evaluated for the completeness of its data dictionary by comparing its data elements to those identified by research question 4 in Appendix H. Table 24 illustrates the frequency of existence for each data element in the 17 applications reviewed.

The completeness of these applications' data dictionaries was less than desirable since several essential data elements were missing. For instance, only 18 percent (3/17) of the applications had data elements for Common Procedure Terminology (CPT) codes, and only 12 percent (2/17) for CHAMPUS allowable charges. Without these two data elements, the accuracy in cost comparisons, studies, and annual ACP evaluations is greatly reduced.

Table 24 only identifies deficiencies in data elements for the applications as a group, and does not illustrate the completeness of individual applications. For instance, Table 24 does not illustrate whether all the applications have a few missing data elements, or if a few applications have a lot of missing data elements. However, a review of each individual application revealed a similar trend.

TABLE 24

REQUIRED DATA ELEMENTS FOUND IN EXISTING ACP APPLICATIONS

DATA ELEMENTS	FOUND	
PATIENT RELATED	#	%[1]
Name	16	94%
SSAN	15	88%
Beneficiary Category	13	76%
PRP Status	0	0%
Address	0	0%
SPONSOR RELATED		
Name	9	53%
SSAN	6	35%
Pay Grade	5	29%
Work Organization	5	29%
Base Assigned	5	29%
HEALTH CARE SERVICE RELATED		
Common Procedure Terminology (CPT) Code	3	18%
Champus Allowable Charge	2	12%
Service type	4	24%
Number and category of treatment authorization	2	12%
Referring clinic	4	24%
Appointment or service dates and times	11	65%
Estimated Cost	10	59%
Actual Cost	14	82%
Element Expense Investment Code	8	47%
Responsibility Center/Cost Center Code	6	35%
Date of service request	5	29%
Date of results receipt	4	24%
Date of bill receipt	11	65%
Date payment request processed	11	65%
Date payment is made	10	59%
Payment voucher number	9	53%
Reason for referral	2	12%
Authorization number	9	53%
Referring physician	7	41%
Medical urgency of request	0	0%
Fiscal Year of fund obligation	3	18%
Subsistence Rate	1	6%
Category of CMA	1	6%
Prior knowledge case	0	0%
Foreign currency rate	0	0%
Third Party Liability Status	8	47%
Source name and title	14	82%
Source address	8	47%
Source phone number	0	0%
Source point-of-contact	0	0%

Note:
1. Percentage based on 17 applications reviewed.

More specifically, the individual applications only had 25 percent (10/40) to 55 percent (22/40) of the data elements from Appendix H.

Output. The output from these applications was very limited. In fact, only 3 of the output requirements in Appendix H were identified in the 17 applications. The facsimile of the AF Form 1210 was the most prevalent and was found in 59 percent (10/17) of the applications. Facsimiles of the SF Form 1034 and the AF Form 616 were found in 47 percent (8/17) and 12 percent (2/17) of the applications respectively. Although the equivalent of these forms was generated by these applications, many did not maintain all the data elements required for these forms. For instance, the AF Form 1210 requires data elements for the patient's address and the circumstances necessitating medical services. From Table 24, zero percent and twelve percent (2/17) of these applications had these two data elements in their data dictionary respectively. Although some variations were noted in these applications, the necessary data elements to generate the SF Form 1034 were found. This is not surprising since the SF Form 1034 is a financial document which is more closely scrutinized than the AF Form 1210. Finally, most of these applications were designed primarily to generate specific output, such as the AF Form 1210, and not to maintain data after the form was generated. For this reason, a limited number of output products were found in the review of the existing applications. However,

other output products could have been developed if some additional data elements were added into the application. Finally, some of these applications used preprinted forms, but none produced facsimile forms.

Management Features. In general, the reviewed applications are more closely aligned to a management information system (MIS) than a decision support systems (DSS). This distinction is quite clear since their objective is primarily to "increase efficiency through reduction of paperwork" by collecting, rearranging, and reporting data (Allen and Emmelhainz, 1984:130). Although some of these applications do support decision making, most of the applications were inadequately designed to effectively do so. Furthermore, many of these applications' decision support capability was limited by their incomplete data dictionary.

User Interface Features. Overall, the reviewed applications were not very user-friendly. This subjective assessment was based on the following observations.

First, only three of the reviewed applications were accompanied by any documentation. Only one application had documentation that resembled a user manual, and no application had documentation similar to a system specification manual (Davis, 1988:188). Since two-thirds of the applications did not have installation instructions, operation of these applications was hindered. Finally, none of the applications had an on-line help system.

Second, the user interface was assessed by operating each of these applications. The user interface was primitive because few ergonomic considerations were applied to the dialogue and screen design.

In particular, the screen displays did not have consistent layouts, especially in the menu-driven applications. As a result, information was difficult to locate on the display screen. Unfortunately, this deficiency was further magnified by the lack of documentation. Apparently the user interface for these applications was treated as an afterthought and not as a prime motivation for these applications.

Finally, these applications did not provide adequate controls in the user interface. In fact, many of these applications assumed that the user was knowledgeable of the software language used to develop the application. Although this may be a valid assumption, it is a potential barrier to some users.

In summary, the existing applications are not acceptable based on the requirements in Appendix H. However, one application possessed some commendable attributes, and has potential to evolve into a useful application. Unfortunately, the modifications would require as much work as the development of a new application.

Despite the deficiencies in existing applications, they are nonetheless improvements over the manual procedures prescribed by AFR 168-10 and serve their bases well. Since

these applications were only designed to support only a portion of the ACP process, a decision support system with a comprehensive design would be more practical than modifying the existing applications.

Characteristics of User-friendly Software

Question 6: What are the important user-friendly characteristics that should be included in the developed application?

To support this research question, an exhaustive literature review was conducted to identify the characteristics of software quality and user-friendliness for software applications. The following summarizes the important points of this literature review.

Boehm identified seven characteristics of software quality. Four or these characteristics are particularly applicable to the development of an application for the Alternative Care Program: portability, reliability, efficiency, and understandability (Boehm, 1978:3-1; Chi:19, 1987). If an application exhibits these characteristics, the likelihood that the software will be well-received by the user is greatly increased. These attributes collectively are often referred to as user-friendliness.

User-friendliness is dependent upon many aspects of the software application. The quality of the collective presence of certain capabilities will determine the degree of user-friendliness that an application exhibits. In particular, the user-interface or "dialogue", ergonomics,

and documentation significantly contribute to an application being user-friendly.

Alternative Care Program Software Prototype

Question 7: Can a prototype software application be developed to demonstrate the potential benefits of using automation to manage the Alternative Care Program?

Development of the prototype was the culmination of the research. The development and field test findings are the most important aspects of this research area.

Development. The primary objective in the development of this prototype was to exhibit a user-friendly, functional application to improve ACP management. Based on the findings for research question 3, the application was developed in consideration of the available microcomputer hardware resources requirements: the Zenith Z-248™ microcomputer and the ALPS™ P2000G printer. Clipper™ was used to develop the 40,000-line application. Since this is a prototype application, the source code is not included, but is available upon request.

The prototype was divided into three separate applications: main module, database maintenance, and reports. This separation was necessary for two reasons. First, this segmentation improved development and testing of the individual segments. Second, the microcomputer's random access memory (RAM) limited the size of the application's compiled source code. By segmenting the prototype, the application was not constrained by the 640 kilobytes of RAM.

Databases. Twenty-eight databases are used in this prototype. Of these twenty-eight databases, only four databases primarily serve to capture and maintain data in this application. The other twenty-four databases primarily serve as lookup tables to support these four databases. All of these databases were normalized for effective database design. To promote commonality with existing USAF Medical Service applications, standardized codes for common data elements were used. Despite the commonality among data elements, all but two of the databases were created specifically for this prototype. These two databases maintain the Common Procedure Terminology (CPT) codes and allowable costs, and were extracted from mainframe databases at the Office of Civilian Health and Medical Program for Uniformed Services (OCHAMPUS) at Lowry AFB, Colorado.

Documentation. Davis states that system documentation ". . . provides continuity throughout the life of any information system" (Davis, 1988:186). Davis identifies three important parts of documentation for a software application: user manual, installation guide, and system specification manual (Davis, 1988:186). First, an initial user's manual has been completed and is included in Appendix J. This user's manual serves primarily to provide a road map for the prototype. Second, a short installation guide is included in this user's manual. Third, the system's specification manual provides the technical aspects of the prototype. In particular, this manual includes

listings of files, variable cross-references, index files, report files, tree diagrams, procedure and function summaries, a system summary, and the source code. The SNAP!™ software by Walter J. Kennamer was used to complete this system documentation. Although this documentation is not provided with this research, the data dictionary in Appendix I provides a portion of this documentation. The remainder of this documentation is available upon request.

Field Test. A field test was conducted at USAF Medical Scott, Scott AFB, Illinois to validate the initial version of the prototype. This validation was necessary to ensure the "right" application was developed from the information requirements analysis (Allen and Helferich, 1990:125). During the field test, findings related to the hardware, software, and the application were identified.

Hardware. The prototype application was operated on microcomputers with two different Random Access Memory (RAM) configurations: 512 kilobytes and 640 kilobytes. As expected, the prototype was limited by 512 kilobytes RAM, but not by 640 kilobytes RAM. In fact, the application would not function with less than 640 kilobytes RAM. Although the modular program design will allow reorganization of the application so that less than 640 kilobytes RAM is not an operating constraint, it is recommended that a microcomputer with at least 640 kilobytes RAM be used until additional field testing is completed.

Software. Additional software considerations were also identified during the field test. The prototype was developed using Clipper™ with MS-DOS™ Version 3.3. During the field test, the prototype was operated using MS-DOS™ Version 3.2. As a result of the differences in these two versions of MS-DOS™, the application had to be modified to the limitations of MS-DOS™ Version 3.2 which does not allow more than 20 open files at one time in an application. Although this changed the sequence that files are opened, it did not limit the application.

Application. Finally, two problems were identified which pertain to the prototype's functional capabilities.

First, the application did not allow the use of CHAMPUS allowable costs from more than one state. Since the CHAMPUS allowable costs vary for each state, bases located near a state's border require the allowable costs for more than one state. Although this limitation would not hinder many using locations, some bases, like the field test site which use health care providers in more than one state, need this capability. This situation was not identified in the information requirements analysis or the development process. Fortunately, this deficiency is easily corrected by adding a data field to identify the applicable state for each CHAMPUS allowable cost.

Second, the present database design was based on one bill being received for each Alternative Care Program (ACP)

referral. Although this is true for most ACP referrals, an ACP referral may have multiple bills. For instance, radiological procedures often have two bills: one bill from the medical facility for the use of the radiology equipment and supplies, and one bill from the radiologist for interpreting the radiology test results. Presently, the ACP authorization number was the key field to identify each bill. However, another key field is needed since an ACP authorization may actually apply to more than one bill. The simple solution is to add another data element into the appropriate database as the key field. Unfortunately, this changes the relational database design since a key field is being changed.

Prototype Limitations. Although the information requirements analysis was accomplished with the objective to develop a fully operational application, this prototype is only the first step. To demonstrate the capability of this application in a timely manner, some features and capabilities were not fully developed in the prototype. Since these features were identified in the information requirements analysis and included in the data dictionary, the prototype design will facilitate their inclusion in the final version. These features are listed in the conclusions and recommendations of this research.

VI. Conclusions and Recommendations

Conclusions

This research began by identifying seven research questions for investigating the feasibility of developing a decision support system (DSS) to improve the management of the Alternative Care Program (ACP). The majority of this research was concerned with accurately and completely documenting the ACP process. As a result, the ACP process has been documented in a diagram with a supporting narrative. Both served as an information requirements analysis and were verified by representatives from 11 USAF major commands to ensure the ACP process was accurately identified. In addition to developing a detailed description of the ACP process, this deliberate and carefully structured development process helped ensure that the developed software would provide a comprehensive management tool to compliment the ACP process. This prototype application, the Alternative Care Assistant, was a very important result of this research.

The Alternative Care Assistant represents an alternative to the present manual clerical procedures and an improvement in the managerial use of ACP data. Although the Alternative Care Assistant is only a prototype, it provides a strong foundation for future development of an application which supports all the necessary ACP functions, and improves

decision making. Even as a prototype, the Alternative Care Assistant outdistances the nearest competitor.

Recommendations

Several recommendations are provided to conclude this research. These pertain both to the ACP process and the prototype application.

The ACP Process. Documentation of the ACP process highlighted one glaring problem with the current system -- there is more than one office of primary responsibility.

Consolidation of ACP Responsibilities. Presently, the Medical Resource Management Office (MRMO) and the Patient Administration Office (PAO) have joint responsibility for the ACP. Under the present process, the MRMO has management responsibilities for functional tasks which are performed by the PAO. Since the PAO performs the majority of the functional tasks, the ACP responsibilities are best aligned under the PAO. This realignment of responsibilities would not diminish the MRMO's control in managing the medical budget, just change the manner in which it is controlled. Furthermore, this new alignment would be more consistent with the alignment of other medical programs with similar expenditure levels. This alternative has been discussed by the Air Force Surgeon General's Office in years past, but never implemented. The Alternative Care Assistant would facilitate this consolidation.

Other Concerns. The following areas of concerns are expressed with the existing ACP process. Additional

management emphasis and control should alleviate these problem areas.

Base Regulations and Operating Instructions. Many of the ACP base regulations and operating instructions were of little value in managing the ACP. In general, this guidance did little more than reiterate the Air Force guidance. As a result, unique base guidance is lost among the regurgitation of the Air Force guidance. If the bases concentrated primarily on supplementing the Air Force guidance, both the Air Force guidance and the local guidance would be more effective. Finally, this highlights a more deeply rooted problem with the misconceptions that the quantity of documentation is more important than the quality of it.

Annual Evaluations of the ACP. An annual evaluation of each base's ACP is a necessary requirement. Although AFR 168-10 provides adequate policies pertaining to these evaluations, few valid evaluation methodologies or procedures are utilized to perform these evaluations. Based on the review of base evaluations for this research, a need exists for more qualified personnel to perform these evaluations. Improvements to the evaluation methodologies are also needed if accurate assessments are to be made with a high degree of confidence.

Common Procedure Terminology (CPT) Codes. CPT codes are the key elements used by the USAF Medical Service for verifying that medical services are obtained at

a reasonable cost. Not only is the CPT code necessary for equitable cost comparison of service providers, but it also serves as an easy mechanism for verifying that the services received are the same as the services requested. Ironically, many USAF bases do not require bills with CPT codes, use price lists with CPT codes, or know how to interpret CPT codes. Since CPT codes are used by the civilian insurance industry as the basis for their diagnosis related group (DRG) reimbursement, most civilian health care providers use CPT codes within their billing system. Thus, USAF medical treatment facilities have little justification for not requesting and expecting CPT codes on bills. If CPT codes are to be used as outlined in AFR 168-10, additional research into this matter is required.

Personnel Reliability Program (PRP). The PRP is a very sensitive program simply because of its purpose. Presently, AFR 168-10 has no reference which identifies any relationship between the ACP and the PRP. Although the current PRP procedures are well-designed, the services rendered through the ACP may affect the PRP status of an active duty member. AFR 168-10 should at least mention that such a relationship exists. Ideally, this reference would be similar to the AFR 168-10 references pertaining to third party liability.

Status Monitoring of ACP Referrals. The present capability to monitor the status of ACP referrals is inefficient and ineffective. As discussed in this research,

follow up procedures for the receipt of medical results, receipt of bills, and the payment of bills were only accomplished as required. This monitoring capability is a necessary control mechanism for proper management of the ACP. However, if the monitoring capability is difficult or time-consuming, the probability that it will be performed routinely is greatly reduced.

Element Expense Investment Codes (EEIC). Standardized EEICs should be established to include the use of EEIC shreadouts. Although some additional guidance is required, the existing financial management system would easily accommodate this additional data. A well-planned system of EEIC shreadouts would create new management data. For instance, EEIC shreadouts could be assigned to categories of health care services to monitor operations and maintenance (O & M) fund expenditures by the category of health care service. Since the shreadout only has two digits, only 100 categories of health care services could be tracked. Assuming that the Pareto Principle applies, 100 categories is more than adequate since 20 to 25 categories of health care services would identify 80 percent of the total expenditures.

Prototype Application. The prototype application should be developed into a fully operational application. However, more extensive field testing is required for the next version. Although most of the prototype's functions are fully developed, other functions have not been

adequately tested. Finally, the following capabilities would further enhance the final application.

From the field test, it was confirmed that the microcomputer RAM is a limiting factor to the application in ceratin situations. However, careful planning is needed to ensure that the source code is efficiently organized. Or, the purchase of additional RAM microchips may be a possible alternative since they are inexpensive and would not present a significant cost.

Management Data and Reports. The prototype was designed as a decision support system so that managerial tasks as well as clerical tasks could be easily accomplished. Unfortunately, only a small number of management functions and reports have been included.

This occurred primarily for two reasons. First, much of the initial development time was devoted to providing an easy, flexible user interface. This was a time consuming process which required a tremendous amount of source code. Second, little information was available to determine which management functions to include. After the application has been fielded, user feedback may provide some useful information in this area. Finally, the capability to analyze historical ACP workload data was identified, but too late for inclusion into the prototype. This capability should be included in the next version.

Form Generation. Presently, the prototype uses some printed government forms. Although this is acceptable,

software technology exists that is capable of generating quality facsimile forms from normal computer paper. This capability will require some reorganization of the prototype's use of random access memory.

A few software products were identified to potentially support the capability to generate quality facsimile forms. The DisplayForm II™ from Deerfield Systems and PerForm™ from Delrina were two commercial software products with the potential to perform this function. T_EX™, a public domain software from the American Mathematical Society, is another alternative. T_EX™ was recently used by the Air Force Institute of Technology in a microcomputer application for Temporary Duty (TDY) orders and Officer Performance Rating (OPR) reports. The capability to generate ACP forms would greatly reduce the need for printed forms, provide tremendous cost saving, and improve the convenience of using the ACP application. Finally, additional information is required to determine the advantages and disadvantages of form-generating software.

Health Care Provider Price List. The Alternative Care Assistant has the capability to maintain a price list for each health care provider. Although this would allow the Alternative Care Assistant to make source selections, the additional time required to maintain this data may offset the benefit of having this capability. Additional research is required before this capability is incorporated into the Alternative Care Assistant.

Software Operating Environment. Although one recommendation of this research is to consolidate the ACP responsibilities, the Alternative Care Assistant has enough flexibility to adapt to almost any alignment of responsibilities. In the event that the consolidation of responsibilities does not occur, a network application should be considered. This will require different software and hardware configurations. Fortunately, Clipper™ supports network applications. Finally, the basic design of the Alternative Care Assistant may be applied to other computer platforms which are becoming more prevalent in USAF organizations.

Other Applications. The use of the developed prototype is currently limited to use within the United States Air Force. However, little, if any, modifications would be required for the final application to be used by the United States Army. In fact, the Joint Military Medical Command, which includes U.S. Army and U.S. Navy medical facilities, has participated in this research.

Finally, this prototype offers the potential to improve the management of the Alternative Care Program in a more customer-oriented and fiscally responsible manner. As in the past years of austere budgets, both of these concerns will continue to have a high priority in the USAF Medical Service.

Research Limitations

This research is not without limitations. First, this research relied heavily upon data from the Medical Resource Management Office (MRMO) personnel. Although the MRMO has many Alternative Care Program responsibilities, additional information from the Patient Administration Office (PAO) would strengthen this research and provide additional insights to the ACP process. Second, this research only considered microcomputer resources during the software development. Although this may have been fiscally realistic, the proposed application may be more effectively used in another hardware configuration such as a minicomputer. Third, the prototype requires additional testing and development. Although the field test was successful and provided some important feedback, a more rigorous beta test is required to adequately validate the Alternative Care Assistant. Furthermore, the user's manual requires verification to ensure it accurately describes the software.

Future Research

This research has implications beyond the scope of this thesis. Research may be beneficial in any of the following areas.

Additional study is required to assess the implications of consolidating or reorganizing the ACP responsibilities within the medical treatment facility. This research should consider the costs and benefits for all of the possible

alternatives as well as the implications upon customer service.

A follow up field evaluation of the Alternative Care Assistant would provide a useful continuance of this research. In particular, this feedback would be useful for identifying improvements as well as confirming the usefulness of the existing capabilities. Additional research to identify the management capabilities required for the ACP in the Alternative Care Assistant would contribute to the expansion of these functions in the next version.

Appendix A: Air Force Surgeon General's Questionnaire

Please provide a short response or circle the appropriate letter as indicated.

1. What base are you assigned: _____.

2. Do you have a Z-248 microcomputer or IBM clone (XT/AT) microcomputer in the Medical Resource Management Office? PLEASE CIRCLE ALL THAT APPLY to this microcomputer.

   a. DO NOT HAVE A Z-248 or IBM CLONE. (Go to # 5).
   b. Winchester hard disk drive.
   c. ALPS printer.
   d. Other printer. Please list model:_____.
   e. Tape backup.
   f. Monochrome monitor or Color monitor (Circle one).

3. Do you use a microcomputer application to perform any of the following functions? (Circle all that apply)

   a. Generate AF Form 1210 or related information.
   b. Generate SF Form 1034 or related information.
   c. Generate or maintain AF Form 616.
   d. None. (GO TO Question 5).

4. What software is required to use the microcomputer application listed in question 2?

   a. Enable.
   b. dBase II/III/III+.
   c. Basic.
   d. Other. Please list:_____.
   e. Do not know.

5. If you use AF Form 616, Fund Cite Authorization, for committing funds for the Supplemental/Cooperative Care referrals, how often does the AF Form 616 have to be coordinated with the Accounting and Finance office?

   a. Monthly.
   b. Quarterly.
   c. Semi-annually.
   d. Annually.
   e. Other. Please list:_____.

6. Where do the civilian providers supposed to send a bill for medical care rendered to a beneficiary under the Supplemental/cooperation care program ?

   a. Health Benefits Advisor/Patient Administration/DAS.
   b. RMO.
   c. Patient.
   d. Other. Please list_____

7. How is the RMO Alternative Care clerk notified that medical results of Alternative Care referrals have been received ?

   a. Form letter.
   b. Annotation on bill.
   c. Phone call.
   d. Other. Please list:_____

8. What estimated percentage of the bills from civilian sources have Common Procedural Terminology (CPT-4) codes?

   a. 0%.
   b. Less than 25%.
   c. Between 25% and 50%.
   d. Between 50% and 75%.
   e. Between 75% and 100%.

9. What functional area maintains copies of civilian providers price lists for Alternative Care services?

   a. Health Benefits Advisor/DAS.
   b. RMO.
   c. Both Health Benefits Advisor/RMO.
   d. Other. Please list: _____.

10. What estimated percentage of the civilian source price lists identify the CPT-4 code with the service?

   a. 0%.
   b. Less than 25%.
   c. Between 25% and 50%.
   d. Between 50% and 75%.
   e. Between 75% and 100%.

11. How are civilian sources contacted about:

   a. Possible erroneous charges on bills? (Circle all that apply)

      (1) Form letter.
      (2) Phone call.
      (3) Other. Please list:_____.

14. How are civilian source contacted about (con't)

b. Excessive charges on bills? (Circle all that apply)

(1) Form letter.
(2) Phone call.
(3) Other. Please list: _____.

c. Charges that are not the government responsibility? (Circle all that apply)

(1) Form letter.
(2) Phone call.
(3) Other. Please list: _____.

d. Payments (to civilian provider) that will take over 30 days? (Circle all that apply)

(1) Form letter.
(2) Phone call.
(3) Other. Please list: _____.

12. How does the RMO Alternative Care clerk find out about scheduled referrals that were cancelled or not attended by the patient?

a. Notified by the Patient.
b. Notified by Health Benefits Advisor/DAS.
c. RMO follow up.
d. Other. Please list: _____

13. How frequently does the RMO Alternative Care Clerk follow-up on SF Form 1034 submitted to the Accounting and Finance Office for payment?

a. Weekly.
b. Monthly.
c. Quarterly.
d. As required.
e. Other. Please list:_____.

14. How does the RMO Alternative Care Clerk notify Patient Administration about possible third party liability cases?

a. Form letter.
b. Phone call.
c. Other. Please list: _____.

15. What functional area is responsible for handling problems associated with payment to the civilian sources?

a. Medical Resource Management Office.
b. Patient Administration/Health Benefits Advisor/DAS.
c. Other. Please list: _____.

16. Assuming that the following information is provided to you as the RMO or the Health Benefits Advisor (HBA), please indicate how useful this information would be to managing the Alternative Care and CMA programs. Use a scale of 0 to 5 (0=NO PREFERENCE, 1=NOT USEFUL, 2=SLIGHTLY USEFUL, 3=USEFUL, 4=MODERATELY USEFUL,5=VERY USEFUL). Place this rating in the blank to the left of each item. If you are presently compiling a similar report, please circle the letter of the appropriate line item.

____ a. Most requested services by total cost

____ b. Most requested services by specialty

____ c. Most requested services by referring physician.

____ d. Referrals by patient beneficiary category (Active Duty, Dependent, Retired etc.)

____ e. Expenditures by payment category: CMA, Supplemental, Cooperative.

____ f. Comparison of previous fiscal year and current fiscal year Alternative Care and CMA referrals and expenditures

____ g. Patients referred from other bases which are subsequently referred to civilian sources by your facility using Supplemental/Cooperative funds.(MAINLY APPLIES TO REFERRAL MEDICAL CENTERS/REGIONAL HOSPITALS)

____ h. Cost variance between estimated and actual cost of referrals.

____ i. Cost variance between CHAMPUS allowable and actual cost.

____ j. Completed referrals that test results have not been received

____ k. Referrals with test results received, but itemized bill not received.

____ l. Request for payment made to Accounting and Finance, but no evidence that payment has been made (i.e. confirmation copy of SF Form 1034 not received by RMO).

____ m. Current fiscal year projection (straightline) of expenditures for Alternative Care and CMA.

____ n. Patient satisfaction with care rendered at civilian source.

____ o. Bill totaling over $1000.

____ p. Active duty referrals which the military medical treatment facility had prior knowledge (PEC 87713)

____ q. Status of bills related to Third-party liability cases.

r. Time analysis of referral process:

____ (1) Number of days between date of referral request and date appointment is scheduled

____ (2) Number of days between date appointment is scheduled and date of appointment

____ (3) Number of days between date of appointment and date results are received

____ (4) Number of days between date of appointment and date bill is received

____ (5) Number of days between date bill is received and date SF Form 1034 is forwarded to Accounting and Finance.

____ (6) Number of days between date that SF Form 1034 is forwarded to Accounting and Finance and date that payment is made by Accounting and Finance

17. Is there any information or report which is not listed above or presently required by AFR 168-10, Obtaining Medical and Dental Care from Civilian Sources, that YOU feel would improve management of the Alternative Care and CMA programs? If so, please provide a brief description below. If necessary, continue on the back.

18. Aside from changing the regulations, what changes would you make to improve management of the following programs:

    a. Supplemental/Cooperative Care

    b. Centrally Managed Allotment

19. Would you like to receive an analysis of this survey?

    a. No.

    b. Yes, please send to:_____.

20. Would you be interested in serving as a beta test site for this microcomputer application?

    a. No.
    b. Yes, please contact me in advance.

21. Is there information at your office which would be beneficial to the development process of this microcomputer application?

    a Please contact me to discuss.
    b. Yes, I'll send it to you shortly.
    c. No.

22. Do you have FAX capability at your base ?

    a. Yes, in the hospital. FAX # is _____.
    b. Yes, please contact me for the FAX #.

Appendix B: Population for Telephone Interviews

Air Force Logistics Command (AFLC)	Major McDaniels
Air Force Systems Command (AFSC)	Lt Col Elder
Air Training Command (ATC)	Major Geiger
Air University (AU)	Major Oaks
Alaskan Air Command (AAC)	Major Magee
Joint Military Medical Command (JMMC)	Major French
Military Airlift Command (MAC)	Major Wildman
Pacific Air Forces Command (PACAF)	Major Davies
Space Command (SPACECOM)	SMSgt Perry
Strategic Airlift Command (SAC)	Lt Col Hosman
Tactical Airlift Command (TAC)	Ms. Day
U. S. Air Forces Europe (USAFE)	Colonel Willauer
U. S. Air Force Academy (USAFA)	Capt Littleton

Appendix C: Telephone Interview Outline

MAJCOM/SOA:_____ PERSON:_____ DATE:_____

1. Would you participate in the verification of the information requirements for the Alternative Care Process?

2. Will you be able to complete it in the next two weeks? If not, when will you be able to complete?

3. What Element Expense Investment Codes (EEIC) does your MAJCOM for the Alternative Care Program the following services?

Medical Care	57X10	57_____
Surgical Care	57X20	57_____
OB/GYN Care	57X30	57_____
Pediatrics	57340	57_____
Orthopedic care	57X50	57_____
Psychiatric care	57X60	57_____
Clinical pathology services	57X70	57_____
Radiology services	57X80	57_____
Cat scans	57X81	57_____
Public health services	57X83	57_____
VA supplemental services	57X85	57_____
Other Services	57X90	57_____

4. Are any other EEICs used? YES NO

5. Do you have a MAJCOM Supplement to AFR 168-10, Obtaining Medical and Dental Care From Civilian Sources?

YES NO

6. Do you require any special Alternative Care Program reports above and beyond those required by Air Force regulation? If so, would you send examples with reporting instructions?

YES NO

7. Is there any base in your MAJCOM that you would like to serve as a test site?

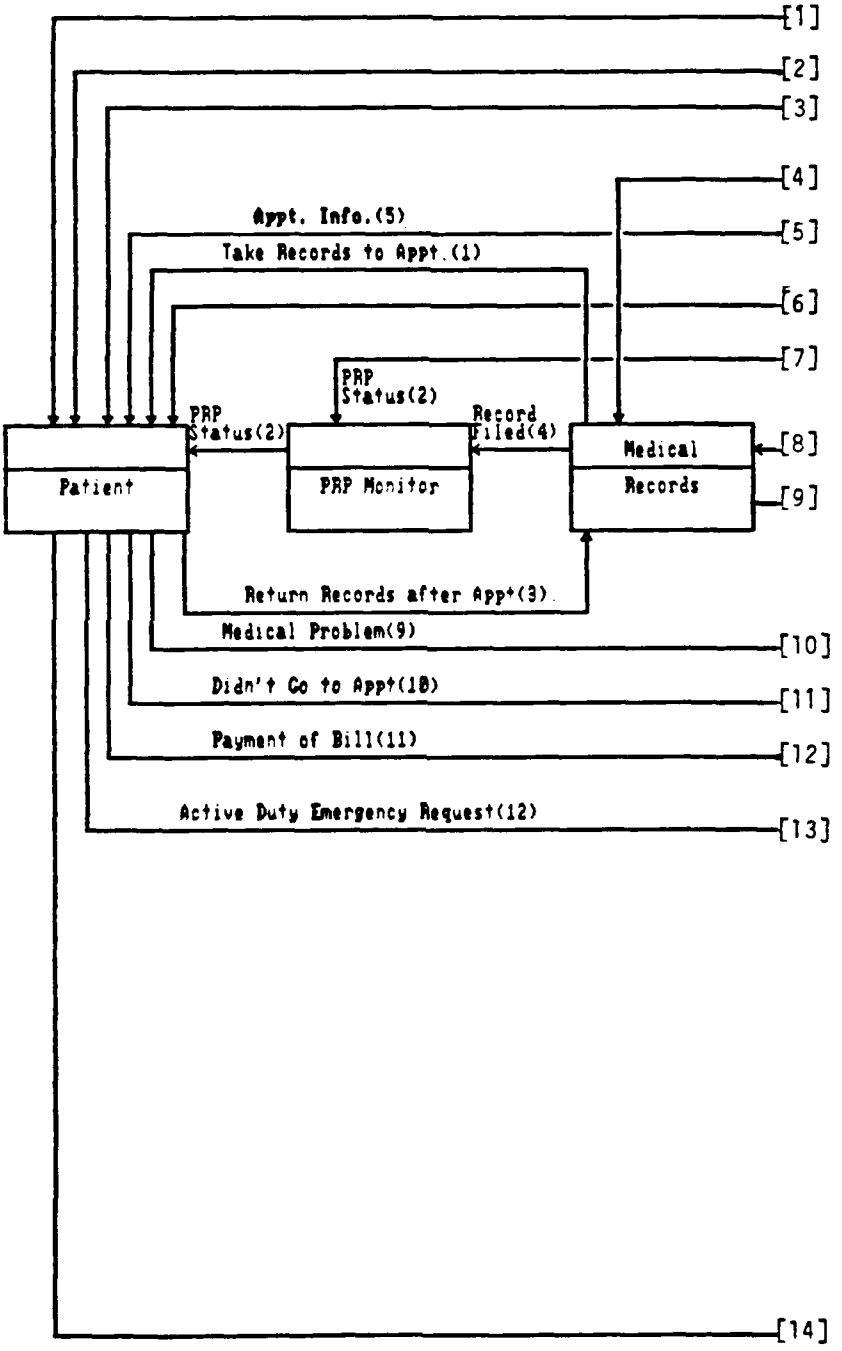
YES NO

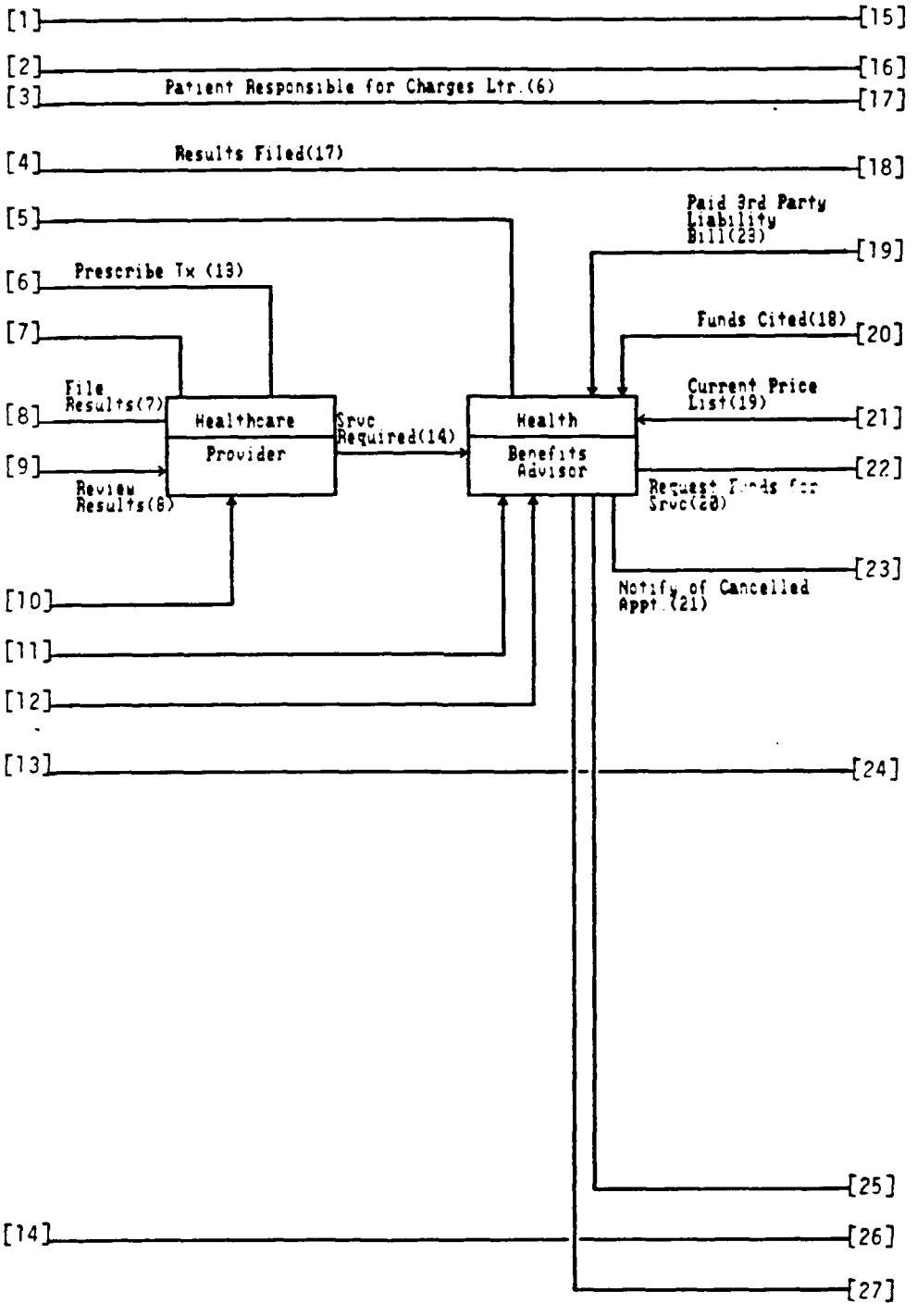
8. Is there any recommendations concerning the development of this software that you would like to provide?

YES NO

OTHER NOTES:

Appendix D: Alternative Care Program Diagram

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Results Filed(17)
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Paid 3rd Party Liability Bill(23)
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[6]
Prescribe Tx (13)
[7]
Funds Cited(18)
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File Results(7)
[8]
Healthcare Provider
Srvc Required(14)
Health Benefits Advisor
Current Price List(19)
[21]
[9]
[22]
Review Results(8)
Request Funds for Srvc(20)
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Notify of Cancelled Appt.(21)
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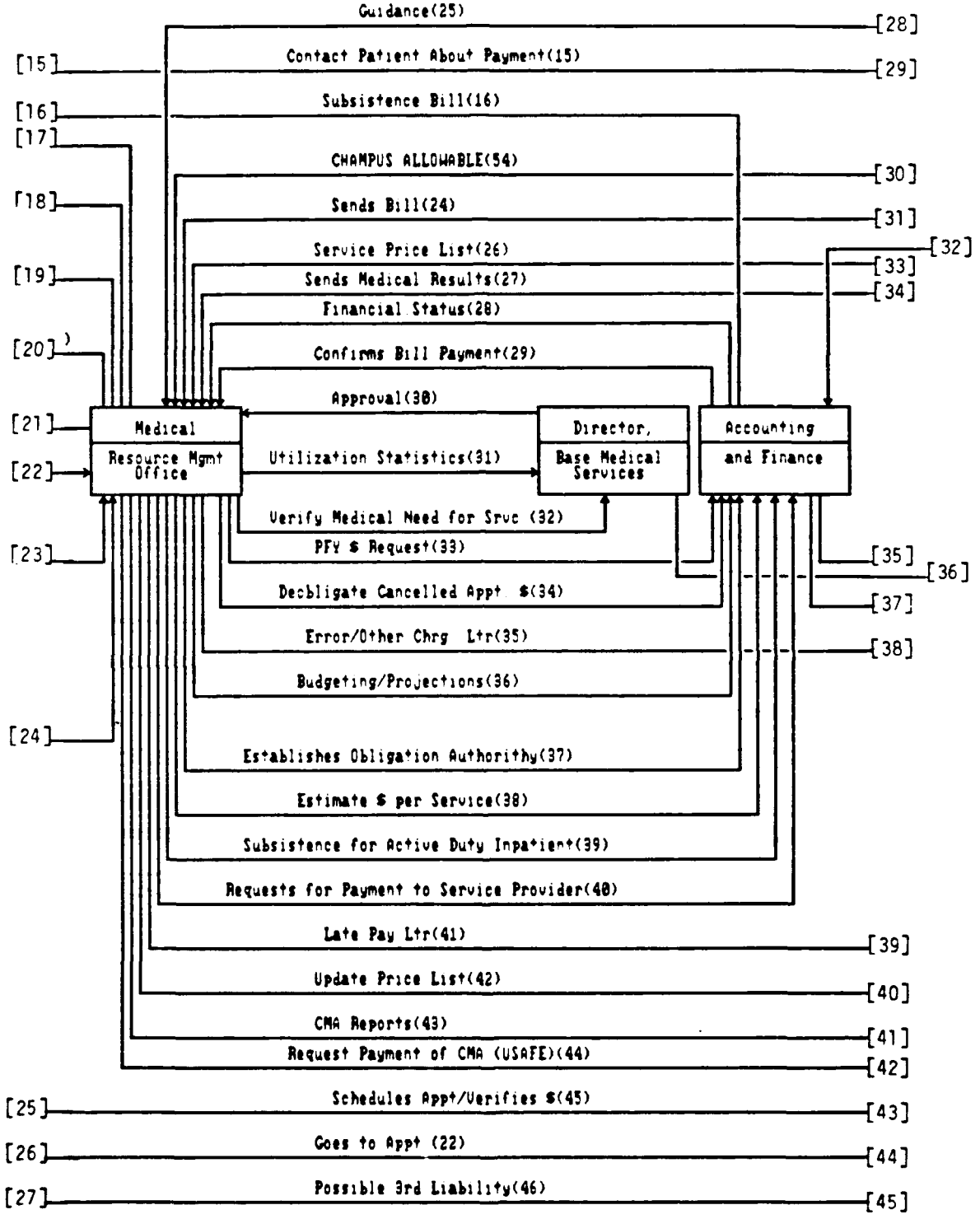
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Contact Patient About Payment(15)
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Subsistence Bill(16)
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CHAMPUS ALLOWABLE(54)
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Sends Bill(24)
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Service Price List(26)
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Sends Medical Results(27)
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Financial Status(28)
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Confirms Bill Payment(29)
Approval(30)
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Medical
Director,
Accounting
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Resource Mgmt Office
Utilization Statistics(31)
Base Medical Services
and Finance
Verify Medical Need for Srvc (32)
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PFY $ Request(33)
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Decbligate Cancelled Appt $(34)
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Error/Other Chrg Ltr(35)
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Budgeting/Projections(36)
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Establishes Obligation Authorithy(37)
Estimate $ per Service(38)
Subsistence for Active Duty Inpatient(39)
Requests for Payment to Service Provider(40)
Late Pay Ltr(41)
[39]
Update Price List(42)
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CMA Reports(43)
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Request Payment of CMA (USAFE)(44)
[42]
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Schedules Appt/Verifies $(45)
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Goes to Appt (22)
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Possible 3rd Liability(46)
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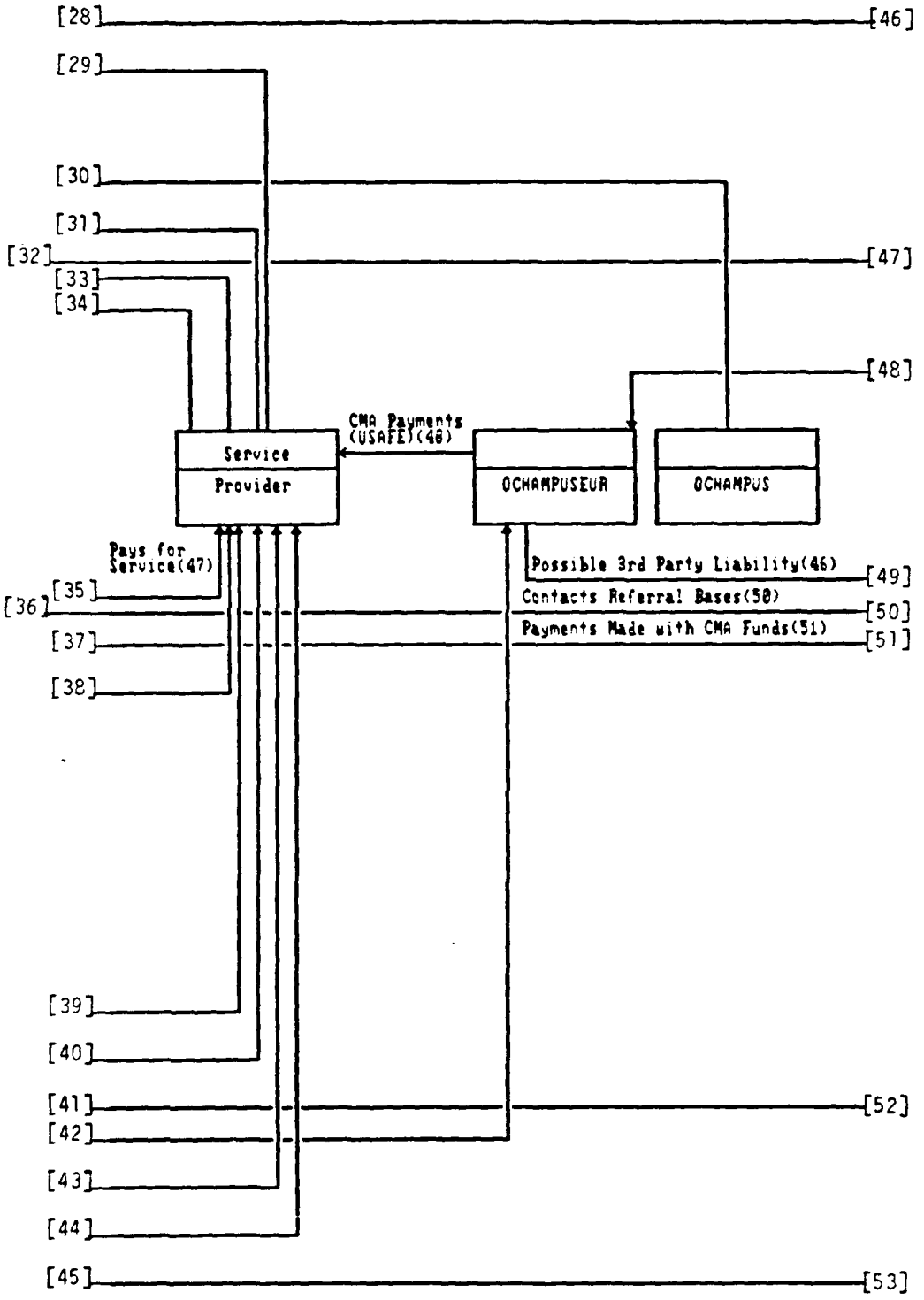
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CMA Payments (USAFE)(48)
Service Provider
OCHAMPUSEUR
OCHAMPUS
Pays for Service(47)
Possible 3rd Party Liability(46)
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Contacts Referral Bases(50)
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Payments Made with CMA Funds(51)
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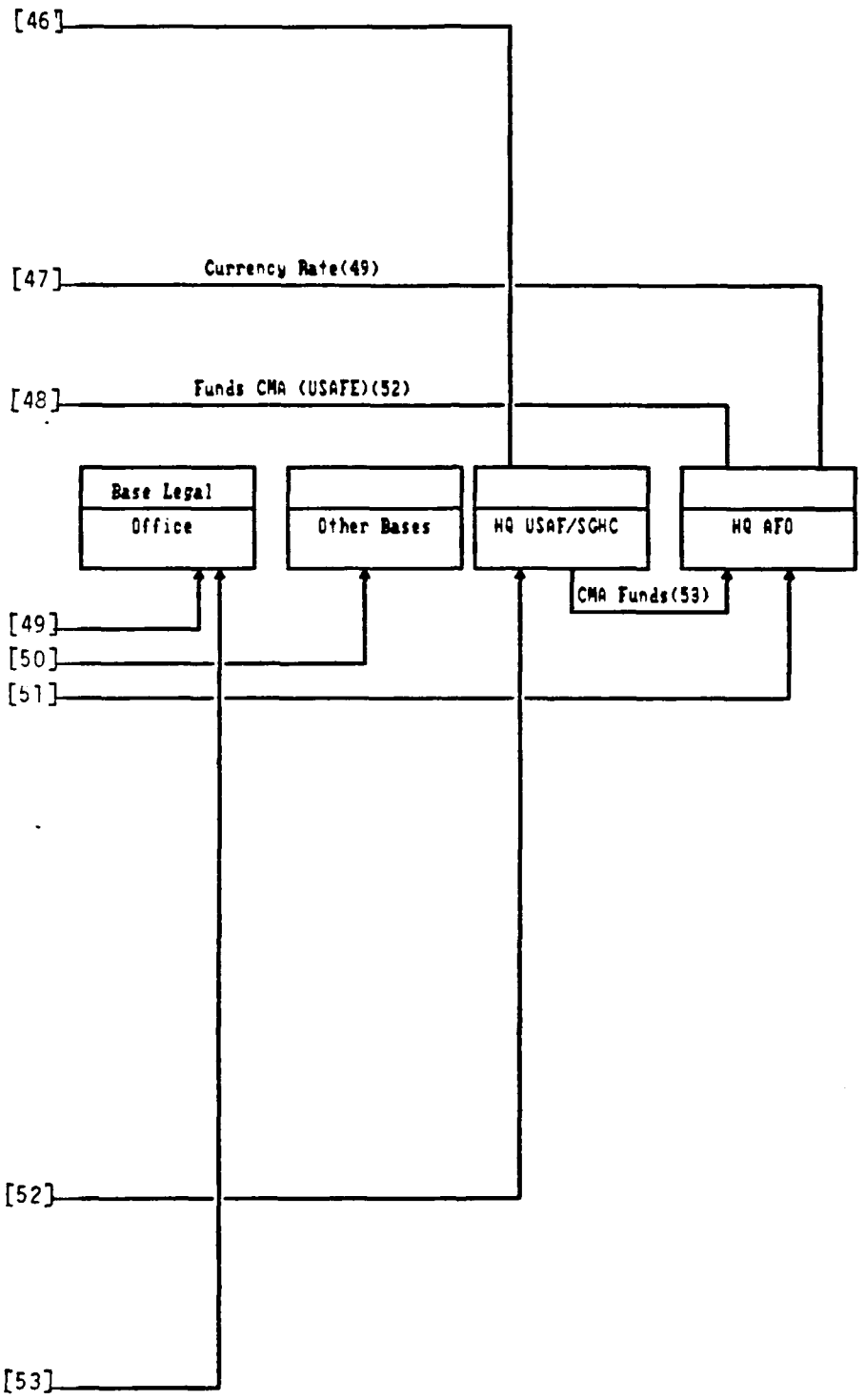
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Currency Rate(49)
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Funds CMA (USAFE)(52)
Base Legal Office
Other Bases
HQ USAF/SGHC
HQ AFO
CMA Funds(53)
[49]
[50]
[51]
[52]
[53]

Appendix E: Final Alternative Care Program Diagram Narrative

ENTITIES INVOLVED

1. Patient.
2. Personnel Reliability Program (PRP) Monitor.
3. Medical Records.
4. Health care Provider.
5. Health Benefits Advisor (HBA).
6. Medical Resource Management (MRMO).
7. Director Base Medical Services (DBMS).
8. Accounting and Finance.
9. Service Provider.
10. Office of Civilian Health and Medical Programs for the Uniformed Services - Europe (OCHAMPUSEUR).
11. Office of Civilian Health and Medical Programs for the Uniformed Services(OCHAMPUS). Commonly called CHAMPUS.
12. Base Legal Office.
13. Other Bases.
14. Financial Mgmt. Division, Office of the Air Force Surgeon General, HQ USAF/SGHC.
15. Accounting and Finance Center, SAF/FM.

TRANSACTIONS INVOLVED

1. Take Records to Appointment. Although not routinely required for referrals for Supplemental Care or Cooperative Care services, patients may be required to take their medical records from the military medical treatment facility to the appointment. If so, the patient will pick up the medical records from the Outpatient Records Section. Furthermore, in most Centrally Managed Allotment services, the patient will not have their medical records with them since the service is not usually scheduled or planned.

2. Personnel Reliability Program Status. If the particular patient is in the Personnel Reliability Program (PRP), AFR 35-99 requires the individual's unit commander to beis notified of any relevant change in the patient's health resulting from any medical findings or subsequent treatment. The patient is notified through their organization.

3. Return Records after Appointment. If the patient took their medical records from the referring military medical treatment facility to their appointment, they should return the records to the military medical treatment facility.

4. Record Filed. In accordance with AFR 35-99, Personnel Reliability Program (PRP) records are identified with AF Form 745 and require review by the PRP monitor to determine if a change in PRP status is required and notification as outlined in transaction #2, Personnel Reliability Program Status.

5. Appointment Information. The Health Benefits Advisor notifies the patient of the appointment time and special requirements. The patient is usually provided written instructions outlining patient responsibilities, a copy of the DD Form 2161, Referral For Civilian Medical Care, with instructions for the service provider explaining where to bill and mail the test or medical results, and a copy of the AF Form 676, Authorization for Alternative Health Services. The method of notification varies from base to base and some locations include the patient instruction on the DD Form 2161.

6. Patient's Responsibility for Charges Letter. If the bill for the Alternative Care services include charges for services which the patient, not the government, is responsible, then a letter is sent to the patient to notify them which portion of the bill is not the government's responsibility. A copy is also sent to the service provider as outlined in transaction #35, Error/Other Charges Letter. Normally, charges categorized as personal convenience, such as telephone calls, are not paid by the government.

7. File Results. After the health care professional, who originally requested the service, reviews the records, the records are returned to file in the Outpatient Records Section of the local military medical treatment facility.

8. Review Results. The health care professional, who originally requested the service, is notified that the results are available. On this diagram, the Outpatient Records Section notifies the health care professional. However, this notification may be accomplished by any office which receives the medical results. Sometimes the results are sent directly to the health care professional who referred the patient anyway. This review occurs prior to a follow up appointment with the patient.

9. Medical "Problem". An individual, who is an eligible beneficiary in the Military Medical System, has a medical condition which requires medical evaluation or treatment.

10. Didn't Go to Appointment. After an appointment had been approved by the hospital commander or his representative and scheduled by the Health Benefits Advisor, the patient did not attend or cancelled the appointment. The Health Benefits Advisor or Medical Resource Management Office should be notified so that government funds obligated for the appointment can be deobligated as outlined in transaction #34, Deobligate Cancelled Appointment Dollars ($).

11. Payment of Bill. Occasionally, the service provider directly contacts the patient about payment as outlined in transaction #15, Contact Patient about Payment, when the government is fully responsible for payment. As a result, the patient subsequently contact the Health Benefits Advisor or the Medical Resource Management Office to check the payment status of the bill.

12. Active Duty Emergency Request. In emergency situations, active duty personnel who can not receive medical treatment at a uniform services' medical treatment facility are permitted to go to a civilian health care provider IAW AFR 168-10. "Claims for civilian medical or dental care are sent to the Air Force medical treatment facility nearest the civilian source of care, to be processed for payment . . . ." However, when another Air Force medical treatment facility receives a claim and can easily obtain enough information to pay the bill, that facility is expected to do so. Bills received at overseas medical treatment facilities for treatment received by active duty Air Force members from United States European Command, Africa, Middle East, and the Malagasy Republic will be sent for payment to OCHAMPUSEUR; and sent to the "member's servicing organization" for Air Force members in the United States Pacific Command." (AFR 168-10 para.9)

13. Prescribes Treatment. Upon review of the test results, the health care professional may request additional test or services. Hopefully, the test results will allow the health care professional to prescribe treatment for the patient.

14. Services Required. A health care professional at the military medical treatment facility determines that the patient requires a service which is beyond the capability of the local military medical treatment facility.

15. Contact Patient About Payment. Occasionally, the service provider will contact the patient about payment of the bill. Subsequently, the patient may respond as outlined in transaction #11, Payment of Bill.

16. Subsistence Bill. As outlined in transaction #39, Subsistence for Active Duty Inpatient, an active duty inpatient will owe a subsistence charge. If so, the active duty patient and the Accounting and Finance Office is notified by the Medical Resource Management Office that a subsistence charge is due to be collected by the Accounting and Finance Officer.

17. Results Filed. Upon verifying the receipt of the test or medical results, the results are forwarded to the Outpatient Records section to be filed. Occasionally, the military medical treatment facility's health care professional, who originally requested the service, will review the results prior to being filed as outlined in transaction #8, Review Results. Ideally, the results are reviewed along with the entire medical record. The diagram indicates that the results are sent to the Medical Resource Management Office, this is not necessarily the case. The results are often sent to the Health Benefits Advisor, Patient Administration, or to the Medical Records Sections. The Medical Resource Management Office must be notified that the results have been received so that payment to the service provider may be requested as outlined in transaction #40, Requests for Payment to Service Provider.

18. Funds Cited. Approved AF Form 676, Authorization for Alternative Health Services, are returned to the Medical Resource Management Office. The Medical Resource Management Office prepares the necessary financial documents by: (1) annotating the appropriate fund cite on the AF Form 676, Authorization for Alternative Health Services, (2) updating the AF Form 616, Fund Cite Authorization, (3) forward one copy of AF Form 676 to Accounting and Finance Office, and (4) filing a copy of AF Form 676, and (5) initiating AF Form 1210, Civilian Medical Services Accounts Control. However, some military medical treatment facilities do not use AF Form 616, Fund Cite Authorization, but coordinate with the Accounting and Finance Office for each AF Form 676.

19. Current Price List. The service provider's current price list by Common Procedure Terminology Code (CPT-4) is used by the Health Benefits Advisor to select the cheapest source for the required services. NOTE: The Health Benefits Advisor normally accomplishes this task at many locations without the Medical Resource Management Office's involvement. Since CPT-4 codes are not used at overseas locations, other methods are used to compare costs of similar medical services.

20. Request Funds for Services. The Health Benefits Advisor reviews the current price list of the local health care providers and the CHAMPUS allowable charges for the requested procedure(s). Based on this information, the Health Benefits Advisor requests funds for the required procedure(s) from the Medical Resource Management Office (MRMO) by forwarding a completed AF Form 676, Authorization for Alternative Health Services. Again, overseas locations will not have CPT-4 prices available for use. However, they may locally devise a similar methodology.

21. Notify of Cancelled Appointment. Whenever a patient does not attend a scheduled appointment, the Medical Resource Management Office should be notified so that the appropriate actions may be taken as outlined in transaction #34, Deobligate Cancelled Appointment Dollar ($).

22. Goes to Appointment. The patient attends the appointment at the selected service provider. The billing and mailing instructions are prepared by the Health Benefits Advisor and given to the service provider as outlined in transaction #5, Appointment Information.

23. Paid Third Party Liability Bill. If a third party liability case is pending, the Medical Resource Management Office notifies the Health Benefits Advisor or Patient Administration Office in accordance with AFR 168-2, paragraph 4b of all payment requests (SF Form 1034, Public Voucher for Purchases and Services Other Than Personal) prepared for reimbursement of civilian care received by an active duty member. Usually, a statement such as "Reviewed for Third Party Liability" is typed on the SF Form 1034, Public Voucher for Purchases and Services Other Than Personal, and is initialled by the Patient Administration Office. Subsequently, the Patient Administration Office will keep the Base Legal Office informed. Normally, this only applies to the active duty medical emergency cases involving accidents, but may involve other beneficiary categories as well.

24. Sends Bill. Upon providing the service(s) specified on the AF 676, Authorization for Alternative Health Services, the service provider sends a bill to the Medical Resource

Management Office, the Health Benefits Advisor or the Patient Administration Office. This bill must be itemized.

25. Guidance. HQ USAF/SGHC provides policy for the Alternative Care Program. They also review special Centrally Managed Allotment (CMA) cases as specified by AFR 168-10. An annual CMA message is transmitted September 20 - 28. NOTE: Although not listed on this diagram, all reviews include a review by the appropriate MAJCOM and then HQ USAF/SGHC.

26. Service Price List. The service provider sends a price list of all available services with CPT-4 codes to the military medical treatment facility for use by the Health Benefits Advisor as outlined in transaction #45, Schedules Appointment/Verifies Dollars ($). Again, CPT-4 codes are not used in most overseas locations since the local civilian providers do not use CPT-4 codes.

27. Sends Medical Results. Upon providing the specified service, the service provider forwards the test or medical results to the military medical treatment facility. These results are sent to either the Medical Resource Management Office, Health Benefits Advisor or Patient Administration as discussed in transaction #17, Results Filed.

28. Financial Status. The Accounting and Finance Office provides status on obligation authority, unpaid obligated funds, and paid obligated funds through financial reports such as the Operating Budget Ledger (OBL), the RC/CC Managers Report, or the Open Document Listing.

29. Confirms Bill Payment. The Accounting and Finance Office notifies the Medical Resource Management Office that payment was made for the submitted SF Form 1034, Public Voucher for Purchases and Services Other Than Personal, by returning a copy of the SF Form 1034 annotated with a voucher number which is commonly referred to as a 'S' number.

30. Approval. The AF Form 676, Authorization for Alternative Health Services, is returned to the Medical Resource Management Office (MRMO) and subsequently to the Health Benefits Advisor (HBA). If approved, the HBA schedules the appointment as outlined in transaction #45, Schedules Appointment/Verifies Dollars ($). If disapproved, the request is returned and the patient is notified. Disapproval of the request only denies the use of the Alternative Care Program for the requested medical services. If disapproved, the patient may be referred to another military medical treatment facility or disengaged to CHAMPUS or Medicare.

31. Utilization Statistics. The Medical Resource Management Office provides financial and utilization statistics for all Alternative Care Program referrals. This is usually accomplished routinely for the military medical treatment facility's Executive Committee meetings and the written management summary.

32. Verify Medical Need for Services. After verifying that funds are available to pay for the required service, the Medical Resource Management Office requests the Director, Base Medical Services or his designated representative to review the service request for appropriateness and necessity. At this time, the request may be approved or disapproved as outlined in transaction #30, Approval.

33. Prior Fiscal Year Dollar ($) Request. If a Supplemental Care or Cooperative Care service was rendered in the previous fiscal year and funds were not obligated prior to 30 September following the date that the service was rendered, prior fiscal year funds may be used. The Medical Resource Management Office (MRMO) MAJCOM counterpart should be contacted for further advice or assistance in obtaining prior fiscal year funds. If prior fiscal year funds are not available, current fiscal year funds must be used. For Centrally Managed Allotment (CMA) services, emergency medical services use the fiscal year funds for the date that the bills are approved for payment, regardless of the date services were rendered. For nonemergency CMA services, fiscal year funds that is current on the date medical services are rendered.

34. Deobligate Cancelled Appointments Dollars ($). The Accounting and Finance Office is notified by an annotated copy of the original AF Form 676, Authorization for Alternative Health Services, or letter from the Medical Resource Management Office to deobligate any previously obligated funds whenever an appointment was cancelled or the patient did not attend the appointment as outlined in transaction #10, Didn't Go To Appointment and in transaction #21, Notify of Cancelled Appointment.

35. Error/Other Charges Letter. If the bill includes erroneous charges or charges for which the government is not responsible, a letter is sent to the service provider to notify them which charges the government is not responsible. A copy is also sent to the patient as outlined by transaction #6, Patient's Responsibility for Charges Letter.

36. Budgeting/Projections. The military medical treatment facility's financial resource advisor provides projected expenditures for the current and future fiscal years to the Accounting and Finance Office as part of the normal budgeting process. The projections include estimates for

operations and maintenance (O & M) expenditures for supplemental and cooperative care services.

37. Establishes Obligation Authority. The Medical Resource Management Office must request and receive approval to obligate funds for services from the Accounting and Finance Office. In most cases, this is accomplished using an AF Form 616, Fund Cite Authorization. Since operation and maintenance (O & M) funds must be spent within the fiscal year for which they are appropriated, the obligation authority can not exceed one year or the end of the current fiscal year.

38. Estimates Dollars ($) per Service. The Medical Resource Management Office deducts the estimated service cost from the Obligation Authority as outlined in transaction #18, Funds Cited, and transaction #37, Establishes Obligation Authority. This estimate is forwarded to the Accounting and Finance Office on a copy of the AF Form 676, Authorization for Alternative Health Services. The time interval before the AF Form 676 is submitted to the Accounting and Finance varies from base to base, but must occur before the expiration date of the established AF Form 616, Fund Cite Authorization, as outlined in transaction #37, Establishes Obligation Authority.

39. Subsistence for Active Duty Inpatient. If an active duty patient is hospitalized in a civilian institution, the patient incurs a subsistence charge just as if they had been hospitalized in a military medical treatment facility. Notification is normally sent as outlined in transaction #16, Subsistence Bill.

40. Requests for Payment to Service Provider. Upon receipt of medical results as outlined in transaction #27, Sends Medical Results, and an itemized bill as outlined in transaction #24, Sends Bill, the bill is verified against the original AF Form 676, Authorization for Alternative Health Services. If there are no discrepancies between the bill services and the AF Form 676, then a SF Form 1034, Public Voucher For Purchases and Services Other Than Personal, is forwarded to the Accounting and Finance Office to request payment to service source. If any discrepancy in the billed charges exists, the discrepancies must be resolved before the bill is paid. If the patient is responsible for a portion of the charges, a notification is sent to the patient as outlined by transaction #6, Patient's Responsibility for Charges Letter, and the service provider as outlined in transaction #35, Error/Other Charge Letter. If the patient has already paid the medical bill, the payment request will reimburse the patient instead of the service provider.

41. Late Pay Letter. If payment can not be made within 30 days from the time that receipt of medical results as outlined in transaction #27, Sends Medical Results, and an itemized bill as outlined in transaction #24, Sends Bill are received by the Medical Resource Management Office, the service provider should be notified that the payment will be delayed. These bills are subject to the Prompt Payment Act which requires interest payment for invoices not paid within 30 days.

42. Update Price List. The Medical Resource Management Office or the Health Benefits Advisor must maintain a current price list for each local service providers. This list should provide the price for each service by Common Procedure Terminology Code (CPT-4) and is used as outlined in transaction #19, Current Price List and transaction #45, Schedules Appointment/Verifies Dollars ($).

43. Centrally Managed Allotment (CMA) Reports. Monthly and End-of-Fiscal Year reports are required for Centrally Managed Allotment expenditures IAW AFR 168-10. These reports are consolidated by each MAJCOM and forwarded to HQ USAF/SGHC.

44. Request Payment of CMA (USAFE). In USAFE, Centrally Managed Allotment (CMA) services rendered in the overseas location where the active duty member is assigned are paid by OCHAMPUSEUR instead of the Accounting and Finance Office. However, if CMA services are rendered to an active duty member while on leave in a continental United States' (CONUS) location, the bill is paid through the local Accounting and Finance Office by the medical treatment facility receiving the bill so long as sufficient information is available to approve the bill as outlined by transaction #51, Payments Made With CMA Funds. Test results and itemized bills must be received as outlined in transaction #27, Send Medical Results, and transaction #24, Sends Bill.

45. Schedules Appointment/Verifies Dollars ($). Upon receipt of the approved AF 676, Authorization for Alternative Health Services, the Health Benefits Advisor contacts a service source to schedule an appointment. If the price differs from the current price list, the Health Benefits Advisor updates his list. If the appointment can not be scheduled in a timely manner, an alternative source is selected. If the cheapest source is not selected or the price is above the CHAMPUS allowable, the Health Benefits Advisor must maintain documentation to support the source selection. The Health Benefits Advisor records the appointment time and special requirements to give to the patient as outlined by transaction #5, Appointment Information.

46. Possible Third Party Liability. The Base Legal Office is notified about all third party liability cases and associated bills. The Patient Administration Office or the Health Benefits Advisor usually accomplishes this task. Reference transaction #23, Paid Third Party Liability BIll. This is of particular concern for Centrally Managed Allotment services since they are usually rendered in emergency medical situations.

47. Pays for Service. Upon receipt of the request to make payment, the Accounting and Finance Office references the original AF Form 676, Authorization for Alternative Health Services, and the AF Form 616, Fund Cite Authorization, which obligated the government funds, and pays the service provider. The Accounting and Finance Office annotate an 'S' number on the completed SF Form 1034, Public Voucher For Purchases and Services Other Than Personal, and returns a copy to the Medical Resource Management Office to indicate that the payment has been made.

48. Centrally Managed Allotment (CMA) Payments (USAFE). OCHAMPUSEUR makes Centrally Managed Allotment payments to European service providers who provide services to Active Duty beneficiaries in Europe. OCHAMPUSEUR does not make CMA payments to active duty members assigned in Europe who received CMA services in the CONUS. Reference transaction #44, Request Payment of Centrally Managed Allotment (CMA) (USAFE)

49. Currency Rate. Annually the SAF/FM notifies the appropriate agencies of the currency exchange rates that will be used to pay service providers in foreign countries. The currency rate is effective through the fiscal year or until the next notification from SAF/FM.

50. Contacts Referral Bases. Smaller military medical treatment facilities often refer patients to larger military treatment facilities. Sometimes these patients are subsequently referred to service providers at the larger facility's expense. If significant trends exist, more cost-effective means of providing the service may be discussed between the bases.

51. Payments Made With Centrally Managed Allotment (CMA) Funds. Payments are made at all CONUS bases by the local the Accounting and Finance Office using the Centrally Managed Allotment's fund citation. Bases in European countries also may CMA payments through the local Accounting and Finance Office for assigned active members who received CMA services in the CONUS. Reference transaction #44, Request Payment of Centrally Managed Allotment (CMA) (USAFE)

52. Fund Centrally Managed Allotment (CMA) (USAFE). The Centrally Managed Allotment's fund citation is provided to OCHAMPUSEUR by HQ USAF/SGHC to make payments for authorized services rendered to active duty beneficiaries in USAFE. Also see transaction #48, Centrally Managed Allotment (CMA) Payments (USAFE).

53. Centrally Managed Allotment (CMA) Funds. Medical funds are allocated for Centrally Managed Allotment (CMA) expenditures.

54. CHAMPUS ALLOWABLE. CHAMPUS provides the allowable charges by state by CPT-4 Code for each medical care service. This is usually distributed annually on a paper medium.

Appendix F: Inspector General Health Service Management Inspection Checklist

1. Did the Medical Resource Management Office (MRMO) establish auditable procedures?

2. Was AF Form 1210, Civilian Medical Services Accounts Control, used to centrally control and document all payment procedures?

3. Was there an effective relationship between the MRMO and patient administration?

4. Did the MRMO identify potential third party liability cases?

5. Were billings paid only after documentation of services rendered was received?

6. Were billings from civilian providers paid within 30 days?

7. Were civilian agencies advised if a bill could not be paid in 30 days?

8. Were proper fund cites used for supplemental and cooperative care on AF Form 676, Authorization for Supplemental Civilian Health Services?

9. Were centrally managed allotment (CMA) funds properly use?

10. Were CMA episodes of care greater than $25,000 forwarded to the MAJCOM in a timely manner?

11. Did the MRMO advise the hospital commander concerning other sources of care before provider contracts and purchased care agreements were established? Was the advice documented?

12. Did a disinterested medical third party in the grade of E-7 or above, officer, or civilian equivalent perform an annual evaluation of the supplemental/cooperative care program?

13. Were the prices of high volume services verified with the applicable civilian sources?

14. Was a representative sample of the sample of the supplemental/cooperative care cases reviewed to compare billed charges to the CHAMPUS allowable levels?

15. For those cases in which billed charges exceeded the CHAMPUS allowable amount, had documentation of the cost deviation been verified and found to be adequate?

16. Were all AF Forms 676, Authorization for Alternative Health Services, approved by either the DBMS or Chief, Hospital/Clinical Services?

17. If the Chief, Hospital/Clinical Services approved the AF Forms 676, has he/she been authorized in writing to do so by the DBMS?

18. Was the providers' estimated fee recorded by the Health Care Finder in the accounting data block of the AF Form 676, Authorization for Alternative Health Services?

19. At the time the appointment was made, was the provider's stated charge compared to the CHAMPUS rate determined reasonable fee (the prevailing fee scheduled to included both the government and patient cost shares)?

20. If the stated provider fee exceeded the CHAMPUS reasonable fee, was care sought from another provider who charged no more than the CHAMPUS prevailing rate?

21. If care was still obtained from a provider charging more than the CHAMPUS reasonable (prevailing) fee, was the price deviation and appropriate justification documented by the Health Care Finder in this locally prepared supplemental/cooperative care log?

22. Had a list of frequently procedure health care services been developed?

23. Was the provider fee schedule updated at least annually?

24. Where the provider charges exceed the CHAMPUS reasonable fee, had an effort been made and documented to demonstrate the provider was contracted by the Health Care Finder and asked if he/she would accept the CHAMPUS reasonable fee as full payment for AIr Force beneficiaries?

25. Was the appropriate CHAMPUS procedure code for each service rendered record by the provider rendered recorded by the provider on the itemized bill prior to adjudicating the claim?

26. Had the annual evaluation been document in writing and reviewed and approved by the medical facility's Executive Committee?

Appendix G: ACP Annual Evaluation Criteria Checklist

1. Was an overall assessment of the supplemental and cooperative care program provided?
2. Were frequently requested services reviewed or identified?
3. Were recommendations for cost control made?
4. Was a review made of historical data for frequently used services?
5. Did the cost of any referrals exceed the associated CHAMPUS allowable cost?
6. Were bills paid in a timely manner?
7. Was a review made of Alternative Care Program documentation?

Appendix H: Alternative Care Program Software Applications Assessment Criteria

1. Data requirements:

   A. Patient related.

      (1) Name
      (2) SSAN
      (3) Beneficiary Category
      (4) PRP Status
      (5) Address

   B. Sponsor related.

      (1) Name
      (2) SSAN
      (3) Pay grade
      (5) Work organization
      (6) Base Assigned

   C Health Care Service related.

      (1) Common Procedure Terminology (CPT) Code
      (2) Champus allowable charge
      (3) Service type
      (4) Number consultations/procedures authorized
      (5) Referring clinic
      (6) Appointment date
      (7) Appointment time
      (8) Estimated cost
      (9) Actual cost
      (10) Element Expense Investment Code (EEIC)
      (11) Responsibility Center/Cost Center (RC/CC) code
      (12) Date of service request
      (13) Date of results receipt
      (14) Date of bill receipt
      (15) Date payment request processed
      (16) Date payment is made
      (17) Payment voucher number
      (18) Reason for referral
      (19) Authorization number
      (20) Referring physician
      (21) Medical urgency of request
      (22) Fiscal year of fund obligation
      (23) Subsistence Rate
      (24) Category of CMA (if applicable)
      (25) Prior knowledge case (if applicable).
      (26) Foreign currency rate (if applicable)
      (27) Third Party Liability Status (if applicable)

D. Source related

(1) Name and title
(2) Address
(3) Phone number
(4) Point-of-contact

2. Output requirements:

A. Monthly Centrally Management Allotment (CMA) Report to MAJCOM/SG.

B. CMA Report for Care Episodes Exceeding $25,000

C. AF Form 1210, Civilian Medical Services Accounts Control

D. AF Form 616, Fund Cite Authorization

E. AF Form 676, Authorization for Alternative Health Services

F. SF Form 1034, Public Voucher For Purchases and Services Other Than Personal

G. Correspondence to patient:

(1) Appointment instructions.
(2) Government nonresponsibility for charges.
(3) Notification of subsistence charge for inpatient care.
(4) Follow up on appointment attendance.

H. Correspondence to service provider:

(1) Appointment instructions.
(2) Erroneous charges or incomplete bill.
(3) Nonreceipt of bill.
(4) Nonreceipt of medical results.
(5) Request for price list.

I. Other:

(1) Notification of Third Party Liability
(2) Withholding of payment for subsistence charge.

3. User interface features:

A. Help facility

B. Multiple Dialogues

C. Ergonomic considerations

D. Documentation

4. Management features:

A. Breakeven analysis

B. Pareto analysis

C. Expenditure projections

D. Random sample

E. Event Tracking

F. Financial Management

(1) Assign proper fund citations
(2) Calculate total subsistence charge for inpatient care of active duty members.
(3) Cost comparison using CHAMPUS allowable
(4) Operation and Maintenance Funds Status
(5) Convert charges to foreign currency
(6) Least cost source selection

G. Ad hoc query

Appendix I: Alternative Care Assistant Data Dictionary

The data dictionary is organized as follows:

SECTION 1.	Required database files.
SECTION 2.	Required index files.
SECTION 3.	Summary of database fields
SECTION 4.	Database descriptions.
SECTION 5-31.	Individiual databases

Part A. Database structure
Part B. Indexes
Part C. Field descriptions

SECTION 1. DATABASE FILES FOR ALTERNATIVE CARE ASSISTANT:

DATABASE	SECTION
ALTDEF.dbf	5
ALTDICT.dbf	6
ALTJUST.dbf	7
BASES.dbf	8
CMATYPE.dbf	9
CPT4MOD .dbf	10
EEIC.dbf	11
FMP.dbf	12
FOREIGN.dbf	13
FUNDS.dbf	14
GRADE.dbf	15
HELP.dbf	16
MAJCOM.dbf	17
OA.dbf	18
PATCODE.dbf	19
PATIENTS.dbf	20
PRICE.dbf	21
PRIOR.dbf	22
PROCODE.dbf	23
QUERIES.dbf	24
RCCC.dbf	25
REQSTAT.dbf	26
SERCAT.dbf	27
SERVICES.dbf	28
SOURCES.dbf	29
SPONSOR.dbf	30
SUBSIST.dbf	31
TXPERIOD.dbf	32

SECTION 2. INDEX FILES FOR ALTERNATIVE CARE ASSISTANT:

DATABASE	INDEX	KEY FIELD EXPRESSION
ALTJUST	ALTJUST	J_DESC
BASES	BASES	BASENAME
CMATYPE	CMATYPE	TYPE
CPT4MOD	CPT4MOD	PRCPT4MOD
EEIC	EEICDESC	EEIC_DESC
EEIC	EEIC	EEIC
FMP	FMP	FMP
FOREIGN	FOREIGN	CURRENCY
GRADE	GRADE	GRADE
HELP	HELP	PROC + VAR
MAJCOM	MAJCOM	MAJCOM
OA	OA	DTOS(TRANDATE)
PATCODE	PATBEN	PBEN_DESC
PATCODE	PATCODE	PBENCODE
PATIENTS	PATSSAN	P_SSAN
PATIENTS	PATREF	PATREF
PATIENTS	PATIENTS	P_LNAME
PATIENTS	PATSSSAN	S_SSAN
PRICE	PRICE	PRPROCDE
PRIOR	PRIOR	URGENCY
PROCODE	PROCODE	PRPROCDE
RCCC	RCCC	CC_SUFFIX
RCCC	RCCCNAME	RCCC_NAME
REQSTAT	REQSTAT	STAT
SERCAT	SERCAT	CAT
SERVICES	SERVPAT	PAT_REF
SERVICES	SERVSRC	SOURCENO
SERVICES	SERVICES	AUTH_NO
SOURCES	SRCENAME	SRCNAME
SOURCES	SRCREF	SRC_REF
SPONSOR	SPONSOR	SSSAN
SPONSOR	SLNAME	SLNAME
TXPERIOD	TXPERIOD	TX

SECTION 3. SUMMARY OF DATABASE FIELDS FOR ALTERNATIVE CARE ASSISTANT.

DATABASE	FIELD NAME	FIELD TYPE	LEN	DEC	FIELD FORMAT
ALTDEF	RMO_SYM	Character	6	0	"@!"
ALTDEF	ALT_SYM	Character	6	0	"@!"
ALTDEF	TRZIP	Character	10	0	"99999-9999"
ALTDEF	TRSTATE	Character	2	0	"@!"
ALTDEF	SG_SYM	Character	6	0	"@!"
ALTDEF	MRED_SYM	Character	7	0	"@!"
ALTDEF	AFO_BUD	Character	30	0	"@!"
ALTDEF	AFO_COMM	Character	30	0	"@!"
ALTDEF	AFO_MPAY	Character	30	0	"@!"
ALTDEF	TRCITY	Character	20	0	"@!"
ALTDEF	TRADD3	Character	40	0	"@!"
ALTDEF	BILLADD3	Character	40	0	"@!"
ALTDEF	BILLADD2	Character	40	0	"@!"
ALTDEF	BILLADD1	Character	40	0	"@!"
ALTDEF	MAJZIP	Character	10	0	"99999-9999"
ALTDEF	BILLCITY	Character	20	0	"@!"
ALTDEF	BILLSTATE	Character	2	0	"@!"
ALTDEF	TRADD2	Character	40	0	"@!"
ALTDEF	TRADD1	Character	40	0	"@!"
ALTDEF	BILLZIP	Character	10	0	"99999-9999"
ALTDEF	PRP_SYM	Character	30	0	"@!"
ALTDEF	LEGAL_OFF	Character	30	0	"@!"
ALTDEF	FIADD1	Character	60	0	"@!"
ALTDEF	AF616ATIT	Character	60	0	"@!"
ALTDEF	AF616ADM	Character	60	0	"@!"
ALTDEF	AF616TIT	Character	60	0	"@!"
ALTDEF	FIADD2	Character	40	0	"@!"
ALTDEF	FIADD3	Character	40	0	"@!"
ALTDEF	FIZIP	Character	10	0	"99999-9999"
ALTDEF	FISTATE	Character	2	0	"@!"
ALTDEF	FICITY	Character	20	0	"@!"
ALTDEF	AF616REQ	Character	60	0	"@!"
ALTDEF	SF1034TIT	Character	60	0	"@!"
ALTDEF	ALTTITLE	Character	60	0	"@!"
ALTDEF	ALT_SIG	Character	60	0	"@!"
ALTDEF	RMOTITLE	Character	60	0	"@!"
ALTDEF	RMO_SIG	Character	60	0	"@!"
ALTDEF	SG_SIG	Character	60	0	"@!"
ALTDEF	SGTITLE	Character	60	0	"@!"
ALTDEF	SF1034AP	Character	60	0	"@!"
ALTDEF	AF676TIT	Character	60	0	"@!"
ALTDEF	AF676CO	Character	60	0	"@!"
ALTDEF	MAJSTATE	Character	2	0	"@!"
ALTDEF	MAJCITY	Character	20	0	"@!"
ALTDEF	UNITAFONE	Character	13	0	"(999)999-9999"
ALTDEF	CC_1ST3	Character	3	0	"999"
ALTDEF	UNITCFONE	Character	13	0	"(999)999-9999"
ALTDEF	F_CURRATE	Numeric	7	4	<none>

SECTION 3. con't

DATABASE	FIELD NAME	FIELD TYPE	LEN	DEC	FIELD FORMAT
ALTDEF	FILEPATH	Character	40	0	"A:\@!"
ALTDEF	ISCONUS	Logical	1	0	<none>
ALTDEF	OANUM	Character	8	0	<none>
ALTDEF	LASTEOD	Date	8	0	<none>
ALTDEF	LAST_PRICE	Date	8	0	<none>
ALTDEF	LASTEOM	Date	8	0	<none>
ALTDEF	ENDFY	Date	8	0	<none>
ALTDEF	F_CUR	Character	10	0	"@!"
ALTDEF	BACKPATH	Character	40	0	"A:\@!"
ALTDEF	FUNDLIM	Numeric	7	2	<none>
ALTDEF	MAJADD1	Character	40	0	"@!"
ALTDEF	MAJCOM	Character	8	0	"@!"
ALTDEF	MAJADD2	Character	40	0	"@!"
ALTDEF	MAJADD3	Character	40	0	"@!"
ALTDEF	UNITNAME	Character	40	0	"@!"
ALTDEF	BASE	Character	35	0	"@!"
ALTDEF	UNITZIP	Character	10	0	"99999-9999"
ALTDEF	UNITMAIL2	Character	40	0	"@!"
ALTDEF	UNITMAIL1	Character	40	0	"@!"
ALTDEF	UNITMAIL3	Character	40	0	"@!"
ALTDEF	UNITCITY	Character	20	0	"@!"
ALTDEF	UNITSTATE	Character	2	0	"@!"
ALTDICT	NTX	Character	8	0	<none>
ALTDICT	NTX_KEY	Character	40	0	<none>
ALTDICT	WORKAREA	Numeric	2	0	<none>
ALTDICT	DBF	Character	8	0	<none>
ALTDICT	DO_UPDATE	Logical	1	0	<none>
ALTDICT	MEMO_FLD	Logical	1	0	<none>
ALTDICT	SORT_KEY	Character	40	0	<none>
ALTDICT	DO_ARCHIVE	Logical	1	0	<none>
ALTJUST	CMA	Logical	1	0	"Y"
ALTJUST	J_DESC	Character	20	0	"@!"
BASES	STATE	Character	2	0	"@!"
BASES	BASENAME	Character	35	0	"@!"
BASES	BASE_ZIP	Character	10	0	"99999-9999"
BASES	L_UPDATE	Date	8	0	<none>
BASES	STATION	Character	5	0	"99999"
BASES	UNIT_ID	Character	2	0	"99"
BASES	CONUS	Logical	1	0	"Y"
BASES	MAJCOM	Character	7	0	"@!"
CMATYPE	TYPE	Character	12	0	"@!"
CPT4MOD	CPT4MODESC	Character	200	0	"@!"
CPT4MOD	PRCPT4MOD	Character	4	0	"9999"
EEIC	DEF_MEPRS	Character	5	0	"@!"
EEIC	DEF_RCCC	Character	6	0	"999999"
EEIC	EEIC	Character	5	0	"99999"
EEIC	L_UPDATE	Date	8	0	<none>
EEIC	EEIC_DESC	Character	50	0	"@!"
FMP	FMP	Character	2	0	"99"
FMP	FMP_DESC	Character	20	0	"@!"

SECTION 3. con't

DATABASE	FIELD NAME	FIELD TYPE	LEN	DEC	FIELD FORMAT
FMP	L_UPDATE	Date	8	0	<none>
FOREIGN	CURRENCY	Character	10	0	"@!"
FOREIGN	USDOLRATE	Numeric	7	4	<none>
FOREIGN	EFF_DATE	Date	8	0	<none>
FUNDS	TARGET	Numeric	11	2	<none>
FUNDS	MONTH	Numeric	2	0	<none>
FUNDS	CUR_BAL	Numeric	11	2	<none>
GRADE	USMC	Character	8	0	"@!"
GRADE	USN	Character	8	0	"@!"
GRADE	USCG	Character	8	0	"@!"
GRADE	GRADE	Character	4	0	"A-!!"
GRADE	USAF	Character	8	0	"@!"
GRADE	USA	Character	8	0	"@!"
GRADE	L_UPDATE	Date	8	0	<none>
HELP	PROC	Character	10	0	<none>
HELP	VAR	Character	10	0	<none>
HELP	TEXT	Memo	10	0	<none>
HELP	TOPROW	Numeric	2	0	<none>
HELP	BOTROW	Numeric	2	0	<none>
HELP	LT_COL	Numeric	2	0	<none>
HELP	RT_COL	Numeric	2	0	<none>
HELP	BOXCOLOR	Numeric	3	0	<none>
HELP	TITCOLOR	Numeric	3	0	<none>
HELP	TXTCOLOR	Numeric	3	0	<none>
HELP	BOXNO	Numeric	1	0	<none>
HELP	TITLE	Character	30	0	<none>
MAJCOM	L_UPDATE	Date	8	0	<none>
MAJCOM	MAJCOMDESC	Character	31	0	"@!"
MAJCOM	MAJCOM	Character	8	0	"@!"
MAJCOM	OP_AGENCY	Character	2	0	"99"
OA	TRANDATE	Date	8	0	<none>
OA	OA_NUM	Character	8	0	"@!"
OA	SRC_DOC	Character	8	0	"@!"
OA	OBLIGATE	Numeric	10	2	<none>
OA	REMARK	Character	50	0	"@!"
PATCODE	PBENCODE	Character	3	0	"A99"
PATCODE	L_UPDATE	Date	8	0	<none>
PATCODE	PBEN_DESC	Character	60	0	"@!"
PATIENTS	P_FMP	Character	2	0	"99"
PATIENTS	P_LDATE	Date	8	0	<none>
PATIENTS	P_FNAME	Character	20	0	"@!"
PATIENTS	P_ADD3	Character	40	0	"@!"
PATIENTS	P_LNAME	Character	25	0	"@!"
PATIENTS	P_PHONE	Character	13	0	"(999)999-9999"
PATIENTS	S_SSAN	Character	11	0	"999-99-9999"
PATIENTS	P_SSAN	Character	11	0	"999-99-9999"
PATIENTS	PRP	Logical	1	0	"Y"
PATIENTS	P_ADD2	Character	40	0	"@!"
PATIENTS	P_ADD1	Character	40	0	"@!"
PATIENTS	PATREF	Numeric	5	0	"99999"

SECTION 3. con't

DATABASE	FIELD NAME	FIELD TYPE	LEN	DEC	FIELD FORMAT
PATIENTS	P_CAT	Character	3	0	"A99"
PRICE	PRTYPCARE	Character	1	0	<none>
PRICE	PRSTCNTCDE	Character	2	0	<none>
PRICE	PFINUM	Numeric	2	0	<none>
PRICE	PRSPCDE	Character	2	0	"99"
PRICE	PRPROCDE	Character	5	0	"99999"
PRICE	STATE	Character	2	0	"@!"
PRICE	PREFF_MO	Numeric	2	0	<none>
PRICE	PREFF_YR	Numeric	2	0	<none>
PRICE	PRPREV_FEE	Numeric	8	2	<none>
PRICE	PRCPT4MOD	Character	4	0	"9999"
PRICE	PREFF_DAY	Numeric	2	0	<none>
PRIOR	URGENCY	Character	9	0	"@!"
PROCODE	USER_DESC	Character	60	0	"@!"
PROCODE	PROCDESC	Character	240	0	"@!"
PROCODE	PRPROCDE	Character	5	0	"99999"
QUERIES	DESCRIP	Character	50	0	"@!"
QUERIES	MFILTER	Memo	10	0	<none>
QUERIES	MEFILTER	Memo	10	0	<none>
QUERIES	QUERY_FILE	Character	8	0	<none>
RCCC	MEPR_CODE	Character	5	0	"@!"
RCCC	FIN_MEPRS	Character	5	0	"@!"
RCCC	RCCC_NAME	Character	45	0	"@!"
RCCC	L_UPDATE	Date	8	0	<none>
RCCC	FIN_CC	Character	6	0	"999999"
RCCC	CC_SUFFIX	Character	6	0	"999999"
REQSTAT	STAT	Character	10	0	"@!"
SERCAT	CAT	Character	10	0	"@!"
SERVICES	CHAMPLO	Numeric	7	2	<none>
SERVICES	CHAMPHI	Numeric	8	2	<none>
SERVICES	PAT_REF	Numeric	5	0	"99999"
SERVICES	AUTH_NO	Character	8	0	"99-99999"
SERVICES	CPT_CODE	Character	5	0	"99999"
SERVICES	CPT_MOD	Character	4	0	"9999"
SERVICES	SERVICECAT	Character	10	0	"@!"
SERVICES	NO_TX_APPD	Numeric	3	0	<none>
SERVICES	SF1034DATE	Date	8	0	<none>
SERVICES	RESULTDATE	Date	8	0	<none>
SERVICES	R_BILLDATE	Date	8	0	<none>
SERVICES	AF676_DATE	Date	8	0	<none>
SERVICES	PAID_DATE	Date	8	0	<none>
SERVICES	SF1034_VNO	Character	8	0	"99-99999"
SERVICES	THIRD_PRTY	Logical	1	0	"Y"
SERVICES	REQ_STATUS	Character	10	0	"@!"
SERVICES	CMA_TYPE	Character	12	0	"@!"
SERVICES	PD_S_NUM	Character	7	0	"S-99999"
SERVICES	D2161_DATE	Date	8	0	<none>
SERVICES	ACT_COST	Numeric	10	2	<none>
SERVICES	REF_CLINIC	Character	6	0	"999999"
SERVICES	SOURCENO	Numeric	5	0	"99999"
SERVICES	MED_NEED	Character	9	0	"@!"

SECTION 3. con't

DATABASE	FIELD NAME	FIELD TYPE	LEN	DEC	FIELD FORMAT
SERVICES	CYFUNDS	Logical	1	0	"Y"
SERVICES	REF_MD	Character	25	0	"@!"
SERVICES	APPT_BEG	Date	8	0	<none>
SERVICES	EST_COST	Numeric	10	2	<none>
SERVICES	APPT_MADE	Date	8	0	<none>
SERVICES	APPT_TIME	Character	5	0	"99:99"
SERVICES	APPT_END	Date	8	0	<none>
SERVICES	PRIOR_KNOW	Logical	1	0	"Y"
SERVICES	TX_PERIOD	Character	10	0	"@!"
SERVICES	OA_NUM	Character	8	0	"@!"
SERVICES	RCCC	Character	6	0	"999999"
SERVICES	ACCT_NO	Character	15	0	<none>
SERVICES	INPUT_DATE	Date	8	0	<none>
SERVICES	L_UPDATE	Date	8	0	<none>
SERVICES	JUSTCODE	Character	2	0	"99"
SERVICES	EEIC	Character	5	0	"99999"
SERVICES	FCURRATE	Numeric	7	5	<none>
SERVICES	FCUR	Character	10	0	"@!"
SERVICES	THIS_ONE	Logical	1	0	"Y"
SERVICES	REPORTS	Character	5	0	"@!"
SOURCES	SRCADD2	Character	40	0	"@!"
SOURCES	SRCADD1	Character	40	0	"@!"
SOURCES	SRCADD3	Character	40	0	"@!"
SOURCES	SRCCITY	Character	20	0	"@!"
SOURCES	SRC_REF	Numeric	5	0	"99999"
SOURCES	SRCNAME	Character	40	0	"@!"
SOURCES	SRCSTATE	Character	2	0	"@!"
SOURCES	L_UPDATE	Date	8	0	<none>
SOURCES	PLIST_DATE	Date	8	0	<none>
SOURCES	SRCPOC	Character	35	0	"@!"
SOURCES	SRCZIP	Character	10	0	"99999-9999"
SOURCES	SRCFONE	Character	13	0	"(999)999-9999"
SPONSOR	SPRP	Logical	1	0	"Y"
SPONSOR	SL_UPDATE	Date	8	0	<none>
SPONSOR	SCAT	Character	1	0	"A"
SPONSOR	SORG	Character	25	0	"@!@K"
SPONSOR	SSSAN	Character	11	0	"999-99-9999"
SPONSOR	HOME_BASE	Character	30	0	"@!@K"
SPONSOR	SGRADE	Character	8	0	"@!"
SPONSOR	SLNAME	Character	25	0	"@!"
SPONSOR	SFNAME	Character	20	0	"@!"
SUBSIST	EFF_DATE	Date	8	0	<none>
SUBSIST	SUB	Numeric	5	2	<none>
TXPERIOD	TX	Character	10	0	"@!"

SECTION 4. SUMMARY OF DATABASE DESCRIPTIONS.

DATABASE	AREA	FIELDS	DESCRIPTION
ALTDEF	2	70	Maintains all the defaults for the entire applications.
ALTDICT	11	8	System database used to reindex, sort all the databases.
ALTJUST	19	2	Maintains all the acceptable field entries allowed for the database field JUSTCODE in SERVICES.dbf. Used as a lookup table.
BASES	13	8	Maintains all the pertinent data pertaining to USAF bases. Used as a lookup table.
CPT4MOD	7	2	Maintains data pertinent to the Common Procedure Terminology (CPT) code modifier descriptions. Used in conjunction with PRICE.dbf and PROCODE.dbf.
EEIC	12	5	Maintains all the acceptable Elements Expense Investment Codes for the database field EEIC in SERVICES.dbf.
FMP	14	3	Maintains all the acceptable entries for the database field P_FMP in PATIENTS.dbf. Used as a lookup table.
GRADE	16	7	Maintains the acceptable abbreviated pay grade titles for the Army, Air Force, Navy, Marines and Coast Guard. Used as a lookup table.
HELP	1	12	Provides on-line help function.
FUNDS	28	3	Maintains the current Operations and Maintenance funds balance for the Alternative Care Program.
CMATYPE	26	1	Maintains all the acceptable entries for the database field CMA_TYPE in SERVICES.dbf. Used as a lookup table.

SECTION 4. SUMMARY OF DATABASE DESCRIPTIONS.

DATABASE	AREA	FIELDS	DESCRIPTION
MAJCOM	18	4	Maintains all the data pertaining to the USAF major commands
OA	29	5	Maintains all the obligation authorization transactions which affect the operations and maintenance funds balance.
QUERIES	31	4	Maintains the AD HOC QUERY function.
PATCODE	17	3	Maintains all the acceptable entries for the database field PATCODE in PATIENTS.dbf.
PATIENTS	2	13	Maintains all the data pertinent to the patients referred under the Alternative Care Program.
PRICE	5	11	Maintains data pertaining to the CHAMPUS allowable cost based on Common Procedure Terminology (CPT) codes. Used in conjunction with PROCODE.dbf and CPT4MOD.dbf.
PRIOR	21	1	Maintains all the acceptable field entries for the database field MED_NEED in SERVICES.dbf. Used as a lookup table.
PROCODE	6	3	Maintains the Common Procedure Terminology (CPT) code descriptions. Used in conjunction with PRICE.dbf and CPT4MOD.dbf
RCCC	15	6	Maintains all the Responsibility Center/Cost Center (RC/CC) codes. Used as a table lookup for several functions.
REQSTAT	24	1	Maintains all the acceptable entries for the database field REQ_STATUS in SERVICES.dbf. Used as a lookup table.

SECTION 4. SUMMARY OF DATABASE DESCRIPTIONS.

DATABASE	AREA	FIELDS	DESCRIPTION
FOREIGN	27	3	Maintains all the acceptable entries for foreign currency and foreign currency exchange rates for the database fields FCUR and FCURRATE in SERVICES.dbf respectively.
SERCAT	22	1	Maintains all the acceptable entries for the database field SERVICECAT in the SERVICES.dbf. Used as a lookup table.
SERVICES	3	43	Maintains all the pertinent data for the services rendered under the Alternative Care Program.
SOURCES	4	12	Maintains all the data pertinent to the health care providers which provides Alternative Care Program services.
SPONSOR	25	9	Maintains all the pertinent data for sponsors of patients referred under the Alternative Care Program.
SUBSIST	30	2	Maintains all subsistence rates as specified by AFR 168-6.
TXPERIOD	20	1	Maintains the acceptable entries allowed for the database field TX_PERIOD in SERVICES.dbf. Used as a lookup table.

SECTION 5. ALTDEF.dbf WORK AREA:2 NO. FIELDS: 70

A. DATABASE STRUCTURE: ALTDEF.dbf

Field	Field Type	Len	Dec	Picture
AF616ADM	Character	60	0	"@!"
AF616ATIT	Character	60	0	"@!"
AF616REQ	Character	60	0	"@!"
AF616TIT	Character	60	0	"@!"
AF676CO	Character	60	0	"@!"
AF676TIT	Character	60	0	"@!"
AFO_BUD	Character	30	0	"@!"
AFO_COMM	Character	30	0	"@!"
AFO_MPAY	Character	30	0	"@!"
ALT_SIG	Character	60	0	"@!"
ALT_SYM	Character	6	0	"@!"
ALTTITLE	Character	60	0	"@!"
BACKPATH	Character	40	0	"A:\@!
BASE	Character	35	0	"@!"
BILLADD1	Character	40	0	"@!"
BILLADD2	Character	40	0	"@!"
BILLADD3	Character	40	0	"@!"
BILLCITY	Character	20	0	"@!"
BILLSTATE	Character	2	0	"@!"
BILLZIP	Character	10	0	"99999-9999"
CC_1ST3	Character	3	0	"999"
ENDFY	Date	8	0	<none>
F_CUR	Character	10	0	"@!"
F_CURRATE	Numeric	7	4	<none>
FIADD1	Character	40	0	"@!"
FIADD2	Character	40	0	"@!"
FIADD3	Character	40	0	"@!"
FICITY	Character	20	0	"@!"
FILEPATH	Character	40	0	"A:\@!
FISTATE	Character	2	0	"@!"
FIZIP	Character	10	0	"99999-9999"
FUNDLIM	Numeric	7	2	<none>
ISCONUS	Logical	1	0	<none>
LAST_PRICE	Date	8	0	<none>
LASTEOD	Date	8	0	<none>
LASTEOM	Date	8	0	<none>
LEGAL_OFF	Character	30	0	"@!"
MAJADD1	Character	40	0	"@!"
MAJADD2	Character	40	0	"@!"
MAJADD3	Character	40	0	"@!"
MAJCITY	Character	20	0	"@!"
MAJCOM	Character	8	0	"@!"
MAJSTATE	Character	2	0	"@!"
MAJZIP	Character	10	0	"99999-9999"
MRED_SYM	Character	7	0	"@!"
OANUM	Character	8	0	<none>
PRP_SYM	Character	30	0	"@!"
RMO_SIG	Character	60	0	"@!"
RMO_SYM	Character	6	0	"@!"

SECTION 5. con't

A. DATABASE STRUCTURE: ALTDEF.dbf con't

Field	Field Type	Len	Dec	Picture
RMOTITLE	Character	60	0	"@!"
SF1034AP	Character	60	0	"@!"
SF1034TIT	Character	60	0	"@!"
SG_SIG	Character	60	0	"@!"
SG_SYM	Character	6	0	"@!"
SGTITLE	Character	60	0	"@!"
TRADD1	Character	40	0	"@!"
TRADD2	Character	40	0	"@!"
TRADD3	Character	40	0	"@!"
TRCITY	Character	20	0	"@!"
TRSTATE	Character	2	0	"@!"
TRZIP	Character	10	0	"99999-9999"
UNITAFONE	Character	13	0	"(999)999-9999"
UNITCFONE	Character	13	0	"(999)999-9999"
UNITCITY	Character	20	0	"@!"
UNITMAIL1	Character	40	0	"@!"
UNITMAIL2	Character	40	0	"@!"
UNITMAIL3	Character	40	0	"@!"
UNITNAME	Character	40	0	"@!"
UNITSTATE	Character	2	0	"@!"
UNITZIP	Character	10	0	"99999-9999"

B. INDEXES: 0 for ALTDEF.dbf

C. FIELD DESCRIPTIONS: ALTDEF.dbf

FIELD NAME	FIELD DESCRIPTION
AF616ADM	Signature name of the official administering the AF Form 616.
AF616ATIT	Signature title for the official administering the AF Form 616.
AF616REQ	Signature name of the requesting official for the AF Form 616.
AF616TIT	Signature title of the requesting official for the AF Form 616.
AF676CO	Signature name of the certifying official for the AF Form 676.
AF676TIT	Signature title of the certifying official for the AF Form 676.
AFO_MPAY	Accounting and Finance - Military Pay Office Symbol.

SECTION 5. con't

C. FIELD DESCRIPTIONS: ALTDEF.dbf con't

FIELD NAME	FIELD DESCRIPTION
AFO_COMM	Accounting and Finance - Commercial Services Office symbol.
AFO_BUD	Accounting and Finance - Budget Office symbol.
ALT_SYM	Office symbol of the Medical Resource Management Office Alternative Care Clerk.
ALT_SIG	Signature name of the Alternative Care Program Clerk.
ALTTITLE	Signature title of the Alternative Care Program Clerk.
BACKPATH	DOS file path that will maintain data backup.
BASE	Base of military medical treatment facility.
BILLADD1	Address line 1 for the health care provider to send bill.
BILLADD2	Address line 2 for the health care provider to send bill.
BILLADD3	Address line 3 for the health care provider to send bill.
BILLCITY	Address city of health care provider to send bill.
BILLSTATE	Address state for the health care provider to send bill.
BILLZIP	Address zip code for the health care provider to send bill.
CC_1ST3	Default cost center prefix for the military medical treatment facility.
ENDFY	Last day of the current fiscal year.

SECTION 5. con't

C. FIELD DESCRIPTIONS: ALTDEF.dbf con't

FIELD NAME	FIELD DESCRIPTION
F_CUR	Default foreign currency used to pay Alternative Care Program bills. Field value is obtained by performing a lookup of FOREIGN.dbf.
F_CURRATE	Conversion rate to convert foreign currency to US dollars for bill payments. Field value is obtained by performing a lookup of FOREIGN.dbf.
FIADD1	Financial intermediary address line 1 serving the military medical treatment facility.
FIADD2	Financial intermediary address line 2 serving the military medical treatment facility.
FIADD3	Financial intermediary address line 3 serving the military medical treatment facility.
FICITY	Financial intermediary address city serving the military medical treatment facility.
FISTATE	Financial intermediary address state serving the military medical treatment facility.
FIZIP	Financial intermediary address zip code serving the military medical treatment facility
FILEPATH	DOS file path that the software will operate.
FUNDLIM	The fund balance which the Alternative Care Assistant will begin to display reminders that the fund balance will soon be exhausted.
ISCCNUS	Indicates whether the base is a continental United States location or overseas location.
LASTEOM	Date of last End-of-Month processing occurred.

SECTION 5. con't

C. FIELD DESCRIPTIONS: ALTDEF.dbf con't

FIELD NAME	FIELD DESCRIPTION
LASTEOD	Date that last End-of-Day processing occurred.
LAST_PRICE	Date of last update of price list from health care provider.
MAJCOM	USAF major command of military medical treatment facility.
MAJADD1	USAF major command address line 1.
MAJADD2	USAF major command address line 2.
MAJADD3	USAF major command address line 3.
MAJCITY	USAF major command address city.
MAJSTATE	USAF major command address state.
MAJZIP	USAF major command address zip.
MRED_SYM	Outpatient records office symbol.
OANUM	AF Form 616 authorization number for obligation authority.
PRP_SYM	Personnel Reliability Program (PRP) Monitor office symbol.
LEGAL_OFF	Staff Judge Advocate's Office symbol or legal office responsible for Third Party Liability cases.
RMO_SIG	Signature block of the Director Medical Resource Management.
RMO_SYM	Medical Resource Management Office symbol.
RMOTITLE	Signature title of Director Medical Resource Management.
SF1034AP	Signature name of the approver of the SF Form 1034.
SF1034TIT	Signature title of the approving official for the SF Form 1034.

SECTION 5. con't

C. FIELD DESCRIPTIONS: ALTDEF.dbf con't

FIELD NAME	FIELD DESCRIPTION
SG_SIG	Signature name of the Hospital commander.
SG_SYM	Hospital Commander's office symbol.
SGTITLE	Signature title of the hospital commander.
TRADD1	Undefined. Reserved for future use.
TRADD2	Undefined. Reserved for future use.
TRADD3	Undefined. Reserved for future use.
TRCITY	Undefined. Reserved for future use.
TRSTATE	Undefined. Reserved for future use.
TRZIP	Undefined. Reserved for future use.
UNITCFONE	Military medical treatment facility commercial phone number.
UNITAFONE	Military medical treatment facility autovon phone number.
UNITMAIL2	Military medical treatment facility address line 2.
UNITMAIL3	Military medical treatment facility address line 3.
UNITCITY	Military medical treatment facility address city.
UNITSTATE	Military medical treatment facility address state.
UNITZIP	Military medical treatment facility address zip code.
UNITNAME	Military medical treatment facility using the software.
UNITMAIL1	Military medical treatment facility address line 1.

SECTION 6. ALTDICT.dbf WORK AREA:11 NO. FIELDS: 8

A. DATABASE STRUCTURE: ALTDICT.dbf

FIELD	FIELD TYPE	LEN	DEC	PICTURE
DBF	Character	8	0	"@!"
DO_ARCHIVE	Logical	1	0	"Y"
DO_UPDATE	Logical	1	0	"Y"
MEMO_FLD	Logical	1	0	"Y"
NTX	Character	8	0	"@!"
NTX_KEY	Character	40	0	"@!"
SORT_KEY	Character	40	0	"@!"
WORKAREA	Numeric	2	0	"99"

B. INDEXES: 0 for ALTDICT.dbf

C. FIELD DESCRIPTIONS: ALTDICT.dbf

FIELD NAME	FIELD DESCRIPTION
DBF	Database filename.
DO_UPDATE	Indicates if the database has been modified which requires the database to be sorted and reindexed.
DO_ARCHIVE	Indicates whether the database and associated index files need to be archived.
MEMO_FLD	Indicates if the database file has a memo field.
NTX	Index file associated with database file.
NTX_KEY	Key field to create index file.
SORT_KEY	Key field to sort database file.
WORKAREA	Database work area.

SECTION 7. ALTJUST.dbf WORK AREA:19 NO. FIELDS: 2

A. DATABASE STRUCTURE: ALTJUST.dbf

FIELD	FIELD TYPE	LEN	DEC	PICTURE
CMA	Logical	1	0	"Y"
J_DESC	Character	20	0	"@!"

B. INDEXES: 1 Index for ALTJUST.dbf

INDEX NAME	KEY FIELD EXPRESSION
ALTJUST	J_DESC

C. FIELD DESCRIPTIONS: ALTJUST.dbf

FIELD NAME	FIELD DESCRIPTION
CMA	Indicates whether the justification (J_DESC) is valid for Centrally Managed Allotment services.
J_DESC	Category for justification of the ACP referral.

SECTION 8. BASES.dbf WORK AREA: 13 NO. FIELDS: 8

A. DATABASE STRUCTURE: BASES 13 8

FIELD	FIELD TYPE	LEN	DEC	PICTURE
BASE_ZIP	Character	10	0	"99999-9999"
BASENAME	Character	35	0	"@!"
CONUS	Logical	1	0	"Y"
L_UPDATE	Date	8	0	<none>
MAJCOM	Character	7	0	"@!"
STATE	Character	2	0	"@!"
STATION	Character	5	0	"99999"
UNIT_ID	Character	2	0	"99"

B. INDEXES: 1 Index for BASES.dbf

INDEX NAME	KEY FIELD EXPRESSION
BASES	basename

C. FIELD DESCRIPTIONS: BASES.dbf

FIELD NAME	FIELD DESCRIPTION
BASENAME	Name of the USAF base.
MAJCOM	Major Command responsible for the base. Field value is obtained from lookup of the MAJCOM.dbf.
STATE	State the base is located.
BASE_ZIP	Zip code for the base.
CONUS	Indicates whether the base is located in the continental United States or overseas.
L_UPDATE	Last update of this database record.
UNIT_ID	Unit identification code used in the fund citation.
STATION	Station code used in the fund citation.

SECTION 9. CMATYPE.dbf WORK AREA: 26 NO. FIELDS: 1

A. DATABASE STRUCTURE: CMATYPE.dbf

FIELD	FIELD TYPE	LEN	DEC	PICTURE
TYPE	Character	12	0	"@!"

B. INDEXES: 1 Index for CMATYPE.dbf

INDEX NAME	KEY FIELD EXPRESSION
CMATYPE	TYPE

C. FIELD DESCRIPTIONS: CMATYPE.dbf

FIELD NAME	FIELD DESCRIPTION
TYPE	Categories of Centrally Managed Allotment services.

SECTION 10. CPT4MOD.dbf WORK AREA: 7 NO. FIELDS: 2

A. DATABASE STRUCTURE: CPT4MOD.dbf

FIELD	FIELD TYPE	LEN	DEC	PICTURE
CPT4MODESC	Character	240	0	"@!"
PRCPT4MOD	Character	4	0	"9999"

B. INDEXES: 1 Index for CPT4MOD.dbf

INDEX NAME	KEY FIELD EXPRESSION
CPT4MOD	PRCPT4MOD

C. FIELD DESCRIPTIONS: CPT4MOD.dbf

FIELD NAME	FIELD DESCRIPTION
CPT4MODESC	Description of the Common Procedure Terminology (CPT) code modifier.
PRCPT4MOD	Common Procedure Terminology (CPT) code modifier. Key field for relation to PRICE.dbf.

SECTION 11. EEIC.dbf WORK AREA: 12 NO. FIELDS: 5

A. DATABASE STRUCTURE: EEIC.dbf

FIELD	FIELD TYPE	LEN	DEC	PICTURE
DEF_MEPRS	Character	5	0	"@!"
DEF_RCCC	Character	6	0	"999999"
EEIC	Character	5	0	"99999"
EEIC_DESC	Character	50	0	"@!"
L_UPDATE	Date	8	0	<none>

B. INDEXES: 2 Indexes for EEIC.dbf

INDEX NAME	KEY FIELD EXPRESSION
EEIC	EEIC
EEICDESC	EEIC_DESC

C. FIELD DESCRIPTIONS: EEIC.dbf

FIELD NAME	FIELD DESCRIPTION
DEF_RCCC	Default Responsibility Center/Cost Center (RC/CC)which applies to this Element Expense Investment Center (EEIC).
DEF_MEPRS	Default Medical Expense Performance Reporting System (MEPRS) which applies to the default RC/CC (DEF_RCCC) for this Element Expense Investment Code (EEIC).
EEIC	Element Expense Investment Code (EEIC).
EEIC_DESC	Description of the Element Expense Investment Code (EEIC).
L_UPDATE	Last update of this database record.

SECTION 12. FMP.dbf WORK AREA: 14 NO. FIELDS: 3

A. DATABASE STRUCTURE: FMP.dbf

FIELD	FIELD TYPE	LEN	DEC	PICTURE
FMP	Character	2	0	"99"
FMP_DESC	Character	20	0	"@!"
L_UPDATE	Date	8	0	<none>

B. INDEXES: 1 Index for FMP.dbf

INDEX NAME	KEY FIELD EXPRESSION
FMP	fmp

C. FIELD DESCRIPTIONS: FMP.dbf

FIELD NAME	FIELD DESCRIPTION
FMP	Family member prefix.
FMP_DESC	Description of family member prefix.
L_UPDATE	Last update for this database record.

SECTION 13. FOREIGN.dbf WORK AREA: 27 NO. FIELDS: 3

A. DATABASE STRUCTURE: FOREIGN.dbf

FIELD	FIELD TYPE	LEN	DEC	PICTURE
CURRENCY	Character	10	0	"@!"
EFF_DATE	Date	8	0	<none>
USDOLRATE	Numeric	7	4	<none>

B. INDEXES: 1 Index for FOREIGN.dbf

INDEX NAME	KEY FIELD EXPRESSION
FOREIGN	CURRENCY

C. FIELD DESCRIPTIONS: FOREIGN.dbf

FIELD NAME	FIELD DESCRIPTION
CURRENCY	Foreign currency.
USDOLRATE	Conversion rate from foreign currency to US dollars.
EFF_DATE	Effective date of the conversion rate.

SECTION 14. FUNDS.dbf WORK AREA: 28 NO. FIELDS: 3

A. DATABASE STRUCTURE: FUNDS

FIELD	FIELD TYPE	LEN	DEC	PICTURE
CUR_BAL	Numeric	11	2	<none>
MONTH	Numeric	2	0	<none>
TARGET	Numeric	11	2	<none>

B. 0 Indexes for FUNDS.dbf

C. FIELD DESCRIPTIONS: FUNDS.dbf

FIELD NAME	FIELD DESCRIPTION
CUR_BAL	Unobligated fund (O&M) balance. Computed as the Alternative Care Program obligation authority (TARGET) less the summation of referrals cost.
MONTH	Month that the target amount expires.
TARGET	The total operations and maintenance (O&M) obligation authority for the Alternative Care Program.

SECTION 15. GRADE.dbf WORK AREA: 16 NO. FIELDS: 7

A. DATABASE STRUCTURE: GRADE.dbf

FIELD	FIELD TYPE	LEN	DEC	PICTURE
GRADE	Character	4	0	"A-!!"
L_UPDATE	Date	8	0	<none>
USA	Character	8	0	"@!"
USAF	Character	8	0	"@!"
USCG	Character	8	0	"@!"
USMC	Character	8	0	"@!"
USN	Character	8	0	"@!"

B. INDEXES: 1 Index for GRADE.dbf

INDEX NAME	KEY FIELD EXPRESSION
GRADE	GRADE

C. FIELD DESCRIPTIONS: GRADE.dbf

FIELD NAME	FIELD DESCRIPTION
GRADE	Active Duty member pay grade.
L_UPDATE	Last update of this database record.
USAF	Pay grade abbreviation for United States Air Force.
USA	Pay grade abbreviation for United States Army.
USN	Pay grade for the United States Navy.
USMC	Pay grade for the United States Marine Corps.
USCG	Pay grade for the United States Coast Guard.

SECTION 16. HELP.dbf WORK AREA: 1 NO. FIELDS: 12

A. DATABASE STRUCTURE: HELP.dbf

FIELD	FIELD TYPE	LEN	DEC	PICTURE
BOTROW	Numeric	2	0	<none>
BOXCOLOR	Numeric	3	0	<none>
BOXNO	Numeric	1	0	<none>
LT_COL	Numeric	2	0	<none>
PROC	Character	10	0	<none>
RT_COL	Numeric	2	0	<none>
TEXT	Memo	10	0	<none>
TITCOLOR	Numeric	3	0	<none>
TITLE	Character	30	0	<none>
TOPROW	Numeric	2	0	<none>
TXTCOLOR	Numeric	3	0	<none>
VAR	Character	10	0	<none>

B. INDEXES: 1 Index for HELP.dbf

INDEX NAME	KEY FIELD EXPRESSION
HELP	PROC + VAR

C. FIELD DESCRIPTIONS: HELP.dbf

FIELD NAME	FIELD DESCRIPTION
BOTROW	Bottom row of text display when help is called.
BOXCOLOR	Display color of box containing help text.
BOXNO	Help reference number.
LT_COL	Left column of text display when help is called.
PROC	Procedure calling help function.
RT_COL	Right column of text display when help is called.
TEXT	Text to display when help function is called.
TITCOLOR	Display color of help title.
TITLE	Title of help box.
TOPROW	Top row of text display when help is called.
TXTCOLOR	Display color of help text.

SECTION 16. HELP.dbf con't

C. FIELD DESCRIPTIONS: HELP.dbf con't

FIELD NAME	FIELD DESCRIPTION
VAR	Variable being read when help function is called.

SECTION 17. MAJCOM.dbf WORK AREA: 18 NO. FIELDS: 4

A. DATABASE STRUCTURE: MAJCOM.dbf

FIELD	FIELD TYPE	LEN	DEC	PICTURE
L_UPDATE	Date	8	0	<none>
MAJCOM	Character	8	0	"@!"
MAJCOMDESC	Character	31	0	"@!"
OP_AGENCY	Character	2	0	"99"

B. INDEXES: 1 Index for MAJCOM.dbf

INDEX NAME	KEY FIELD EXPRESSION
MAJCOM	MAJCOM

C. FIELD DESCRIPTIONS: MAJCOM.dbf

FIELD NAME	FIELD DESCRIPTION
L_UPDATE	Last update of this database record.
MAJCOM	USAF major command acronym.
MAJCOMDESC	Description/name of USAF major command.
OP_AGENCY	Operating agency code.

SECTION 18. OA.dbf WORK AREA: 29 NO. FIELDS: 5

A. DATABASE STRUCTURE: OA.dbf

FIELD	FIELD TYPE	LEN	DEC	PICTURE
OA_NUM	Character	8	0	"@!"
OBLIGATE	Numeric	10	2	<none>
REMARK	Character	50	0	"@!"
SRC_DOC	Character	8	0	"@!"
TRANDATE	Date	8	0	<none>

B. INDEXES: 1 Index for OA.dbf

INDEX NAME	KEY FIELD EXPRESSION
OA	DTOS(TRANDATE)

C. FIELD DESCRIPTIONS: OA.dbf

FIELD NAME	FIELD DESCRIPTION
OA_NUM	Identification number assigned to the AF Form 616 by the Accounting and Finance Office.
OBLIGATE	The amount of the transaction which obligates and deobligates Alternative Care Program operation and maintenance funds.
REMARK	Miscellaneous comments pertaining to the transactions.
SRC_DOC	A reference number, usually the authorization number (AUTH_NO from SERVICES.dbf).
TRANDATE	Date that a transaction affects the current balance of funds.

SECTION 19. PATCODE.dbf WORK AREA: 17 NO. FIELDS: 3

A. DATABASE STRUCTURE: PATCODE.dbf

FIELD	FIELD TYPE	LEN	DEC	PICTURE
L_UPDATE	Date	8	0	<none>
PBENCODE	Character	3	0	"A99"
PBEN_DESC	Character	60	0	"@!"

B. INDEXES: 2 Indexes for PATCODE.dbf

INDEX NAME	KEY FIELD EXPRESSION
PATCODE	PBENCODE
PATBEN	PBEN_DESC

C. FIELD DESCRIPTIONS: PATCODE.dbf

FIELD NAME	FIELD DESCRIPTION
L_UPDATE	Last update of this database record.
PBENCODE	Patient beneficiary code taken from the Tri-service beneficiary category codes.
PBEN_DESC	Description of patient beneficiary categories.

SECTION 20. PATIENTS.dbf WORK AREA: 2 NO. FIELDS: 13

A. DATABASE STRUCTURE: PATIENTS.dbf

FIELD	FIELD TYPE	LEN	DEC	PICTURE
P_ADD1	Character	40	0	"@!"
P_ADD2	Character	40	0	"@!"
P_ADD3	Character	40	0	"@!"
P_CAT	Character	3	0	"A99"
P_FMP	Character	2	0	"99"
P_FNAME	Character	20	0	"@!"
P_LDATE	Date	8	0	<none>
P_LNAME	Character	25	0	"@!"
P_PHONE	Character	13	0	"(999)999-9999"
P_SSAN	Character	11	0	"999-99-9999"
PATREF	Numeric	5	0	"99999"
PRP	Logical	1	0	"Y"
S_SSAN	Character	11	0	"999-99-9999"

B. INDEXES: 4 Indexes for PATIENTS.dbf

INDEX NAME	KEY FIELD EXPRESSION
PATIENTS	P_lNAME
PATSSAN	P_SSAN
PATREF	PATREF
PATSSSAN	S_SSAN

C. FIELD DESCRIPTIONS: PATIENTS.dbf

FIELD NAME	FIELD DESCRIPTION
PATREF	Serves as the key field for the PATIENTS.dbf. Used as the key field instead of P_SSAN since some dependents do not have a social security number. Relates PATIENTS.dbf with SERVICES.dbf.
PRP	Patient is or is not on Personnel Reliability Program.
P_ADD1	Patient address line 1
P_ADD2	Patient address line 2
P_ADD3	Patient address line 3
P_CAT	Patient beneficiary category. Taken from the TRI-Service Beneficiary Categories.
P_FMP	Patient's family member prefix (FMP).

SECTION 20. PATIENTS.dbf con't

C. FIELD DESCRIPTIONS: PATIENTS.dbf con't

FIELD NAME	FIELD DESCRIPTION
P_FNAME	Patient first name
P_LDATE	Date record was last updated or edited.
P_LNAME	Patient last name
P_PHONE	Patient phone number including area code.
P_SSAN	Patient social security number.
S_SSAN	Sponsoring active duty members' social security number. Key field which relates PATIENTS.dbf with SPONSOR.dbf.

SECTION 21. PRICE.dbf WORK AREA: 5 NO. FIELDS: 11

A. DATABASE STRUCTURE: PRICE.dbf

FIELD	FIELD TYPE	LEN	DEC	PICTURE
PFINUM	Numeric	2	0	<none>
PRCPT4MOD	Character	4	0	"9999"
PREFF_DAY	Numeric	2	0	<none>
PREFF_MO	Numeric	2	0	<none>
PREFF_YR	Numeric	2	0	<none>
PRPREV_FEE	Numeric	8	2	<none>
PRPROCDE	Character	5	0	"99999"
PRSPCDE	Character	2	0	"99"
PRSTCNTCDE	Character	2	0	<none>
PRTYPCARE	Character	1	0	<none>
STATE	Character	2	0	"@!"

B. INDEXES: 1 Index for PRICE.dbf

INDEX NAME	KEY FIELD EXPRESSION
PRICE	PRPROCDE

C. FIELD DESCRIPTIONS: PRICE.dbf

FIELD NAME	FIELD DESCRIPTION
STATE	State that the CHAMPUS allowable cost is applicable.
PFINUM	Financial intermediary file number.
PRSTCNTCDE	Pricing file state country code.
PRPROCDE	Common Procedure Terminology (CPT) code. Relates PRICE.dbf with PROCODE.dbf.
PRTYPCARE	Type of medical care.
PRSPCDE	Medical specialty code.
PRPREV_FEE	CHAMPUS allowable cost.
PREFF_YR	Year CHAMPUS allowable cost is effective.
PREFF_MO	Month that the CHAMPUS allowable cost is effective.
PREFF_DAY	Day that the CHAMPUS allowable cost is effective.
PRCPT4MOD	Common Procedure Terminology (CPT) code modifier. Links to the CPT4MOD.dbf.

SECTION 22. PRIOR.dbf WORK AREA: 21 NO. FIELDS: 1

A. DATABASE STRUCTURE: PRIOR.dbf

FIELD	FIELD TYPE	LEN	DEC	PICTURE
URGENCY	Character	9	0	"@!"

B. INDEXES: 1 Index for PRIOR.dbf

INDEX NAME	KEY FIELD EXPRESSION
PRIOR	URGENCY

C. FIELD DESCRIPTIONS: PRIOR.dbf

FIELD NAME	FIELD DESCRIPTION
URGENCY	Describes the urgency of a request.

SECTION 23. PROCODE.dbf WORK AREA: 6 NO. FIELDS: 3

A. DATABASE STRUCTURE: PROCODE.dbf 6 3

FIELD	FIELD TYPE	LEN	DEC	PICTURE
PRPROCDE	Character	5	0	"99999"
PROCDESC	Character	40	0	"@!"
USER_DESC	Character	60	0	"@!"

B. INDEXES: 1 Index for PROCODE.dbf

INDEX NAME	KEY FIELD EXPRESSION
PROCODE	PRPROCDE

C. FIELD DESCRIPTIONS: PROCODE.dbf

FIELD NAME	FIELD DESCRIPTION
PRPROCDE	Common Procedure Terminology (CPT) code. Links to the PRICE.dbf.
PROCDESC	Description of the Common Procedure Terminology (CPT) codes.
USER_DESC	User description for the Common Procedure Terminology (CPT) code.a

SECTION 24. QUERIES.dbf WORK AREA: 31 NO. FIELDS: 4

A. DATABASE STRUCTURE: QUERIES.dbf

FIELD	FIELD TYPE	LEN	DEC	PICTURE
DESCRIP	Character	50	0	<none>
MFILTER	Memo	10	0	<none>
MEFILTE	Memo	10	0	<none>
QUERY_FILE	Character	8	0	<none>

B. INDEXES: 0 Index for QUERIES.dbf

C. FIELD DESCRIPTIONS: QUERIES.dbf

FIELD NAME	FIELD DESCRIPTION
DESCRIP	Description of the ad hoc query.
MFILTER	Database filter condition for ad hoc query.
MEFILTE	Database filter condition for ad hoc query.
QUERY_FILE	Database file for which the query is used with (listed in MFILTER or MEFILTE.

SECTION 25. RCCC.dbf WORK AREA: 15 NO. FIELDS: 6

A. DATABASE STRUCTURE: RCCC.dbf

FIELD	FIELD TYPE	LEN	DEC	PICTURE
CC_SUFFIX	Character	6	0	"999999"
FIN_CC	Character	6	0	"999999"
FIN_MEPRS	Character	5	0	"@!"
L_UPDATE	Date	8	0	<none>
MEPR_CODE	Character	5	0	"@!"
RCCC_NAME	Character	45	0	"@!"

B. INDEXES: 2 Indexes for RCCC.dbf

INDEX NAME	KEY FIELD EXPRESSION
RCCC	CC_SUFFIX
RCCCNAME	RCCC_NAME

C. FIELD DESCRIPTIONS: RCCC.dbf

FIELD NAME	FIELD DESCRIPTION
CC_SUFFIX	Cost center.
RCCC_NAME	Description of the cost center.
MEPR_CODE	Medical Expense Performance Reporting System (MEPRS) code.
L_UPDATE	Last update of this database record.
FIN_CC	Default cost center used in fund citations.
FIN_MEPRS	Default Medical Expense Performance Reporting System (MEPRS) used with the default cost center (FIN_CC).

SECTION 26. REQSTAT.dbf WORK AREA: 24 NO. FIELDS: 1

A. DATABASE STRUCTURE: REQSTAT.dbf

FIELD	FIELD TYPE	LEN	DEC	PICTURE
STAT	Character	10	0	"@!"

B. INDEXES: 1 Index for REQSTAT.dbf

INDEX NAME	KEY FIELD EXPRESSION
REQSTAT	STAT

C. FIELD DESCRIPTIONS: REQSTAT.dbf

FIELD NAME	FIELD DESCRIPTION
STAT	Status of an ACP referral.

SECTION 27. SERCAT.dbf WORK AREA: 22 NO. FIELDS: 1

A. DATABASE STRUCTURE: SERCAT.dbf

FIELD	FIELD TYPE	LEN	DEC	PICTURE
CAT	Character	10	0	"@!"

B. INDEXES: 1 Index for SERCAT.dbf

INDEX NAME	KEY FIELD EXPRESSION
SERCAT	CAT

C. FIELD DESCRIPTIONS: SERCAT.dbf

FIELD NAME	FIELD DESCRIPTION
CAT	Categorizes the type of service as either inpatient or outpatient. Used as a lookup for the database field SERVICECAT in the SERVICES.dbf.

SECTION 28. SERVICES.dbf WORK AREA: 3 NO. FIELDS: 43

A. DATABASE STRUCTURE: SERVICES.dbf

FIELD	FIELD TYPE	LEN	DEC	PICTURE
ACCT_NO	Character	15	0	<none>
ACT_COST	Numeric	10	2	<none>
AF676_DATE	Date	8	0	<none>
APPT_BEG	Date	8	0	<none>
APPT_END	Date	8	0	<none>
APPT_MADE	Date	8	0	<none>
APPT_TIME	Character	5	0	"99:99"
AUTH_NO	Character	8	0	"99-99999"
CHAMPHI	Numeric	8	2	<none>
CHAMPLO	Numeric	7	2	<none>
CMA_TYPE	Character	12	0	"@!"
CPT_CODE	Character	5	0	"99999"
CPT_MOD	Character	4	0	"9999"
CYFUNDS	Logical	1	0	"Y"
D2161_DATE	Date	8	0	<none>
EEIC	Character	5	0	"99999"
EST_COST	Numeric	10	2	<none>
FCUR	Character	10	0	"@!"
FCURRATE	Numeric	7	5	<none>
INPUT_DATE	Date	8	0	<none>
JUSTCODE	Character	2	0	"99"
L_UPDATE	Date	8	0	<none>
MED_NEED	Character	9	0	"@!"
NO_TX_APPD	Numeric	3	0	<none>
OA_NUM	Character	8	0	"@!"
PAID_DATE	Date	8	0	<none>
PAT_REF	Numeric	5	0	"99999"
PD_S_NUM	Character	7	0	"S-99999"
PRIOR_KNOW	Logical	1	0	"Y"
R_BILLDATE	Date	8	0	<none>
RCCC	Character	6	0	"999999"
REF_CLINIC	Character	6	0	"999999"
REF_MD	Character	25	0	"@!"
REPORTS	Characters	5	0	"@!"
REQ_STATUS	Character	10	0	"@!"
RESULTDATE	Date	8	0	<none>
SERVICECAT	Character	10	0	"@!"
SF1034_VNO	Character	8	0	"99-99999"
SF1034DATE	Date	8	0	<none>
SOURCENO	Numeric	5	0	"99999"
THIRD_PRTY	Logical		0	"Y"
THIS_ONE	Logical	1	0	"Y"
TX_PERIOD	Character	10	0	"@!"

SECTION 28. SERVICES.dbf con't

B. INDEXES: 3 Indexes for SERVICES.dbf

INDEX NAME	KEY FIELD EXPRESSION
SERVICES	AUTH_NO
SERVPAT	PAT_REF
SERVSRC	SOURCENO

C. FIELD DESCRIPTIONS: SERVICES.dbf

FIELD NAME	FIELD DESCRIPTION
PAT_REF	Patient reference. Establishes relationship with PATIENTS.dbf.
AUTH_NO	Authorization number for Alternative Care Program referral.
CPT_CODE	Common Procedure Terminology (CPT) code. Key field that relates SERVICES.dbf to PRICE.dbf and PROCODE.dbf.
CPT_MOD	Common Procedure Terminology (CPT) Code Modifier. Used with the database field CPT_CODE to relate SERVICES.dbf with PRICE.dbf and CPT4MOD.dbf.
SERVICECAT	Category of service. Field value is obtained from a lookup of SERCAT.dbf.
NO_TX_APPD	Number of service procedures authorized by an Alternative Care Program referral. Must be considered with TX_PERIOD.
TX_PERIOD	Category of service durations. This specifies the service as a procedure, visit etc. The field value is obtained from a lookup of TXPERIOD.dbf.
MED_NEED	Urgency of need of the referral. The field value is obtained from a lookup of PRIOR.dbf.
SOURCENO	Identifies the health care provider providing the service. Links this record to the SOURCES.dbf.

SECTION 28. SERVICES.dbf con't

C. FIELD DESCRIPTIONS: SERVICES.dbf con't

FIELD NAME	FIELD DESCRIPTION
REF_CLINIC	The Responsibility Center/Cost Center (RC/CC) of the referring clinic within the military medical treatment facility. This code is obtained from a lookup of RCCC.dbf.
REF_MD	Physician referring the patient to the health care provider.
APPT_BEG	Beginning date of the Alternative Care Program referral. Usually, the APPT_BEG and the APPT_END are the same date.
APPT_END	The endi date of the Alternative Care Program referral. Usually, the APPT_BEG and the APPT_END are the same date.
APPT_TIME	Time of the appointment for the Alternative Care Program.
APPT_MADE	Date the appointment for the Alternative Care Program referral was arranged by the military medical treatment facility with the health care provider.
EST_COST	Estimated cost of the Alternative Care Program referral.
ACT_COST	Actual cost of the Alternative Care Program referral.
D2161_DATE	Date the DD Form 2161 was initiated.
AF676_DATE	Date the AF Form 676 was approved.
R_BILLDATE	Date the bill from the Alternative Care Program referral is received.
RESULTDATE	Date the medical results from the Alternative Care Program were received.
SF1034DATE	Date the SF Form 1034 was generated to request payment of the Alternative Care Program bill.

SECTION 28. SERVICES.dbf con't

C. FIELD DESCRIPTIONS: SERVICES.dbf con't

FIELD NAME	FIELD DESCRIPTION
PAID_DATE	Date that the Accounting and Finance Office paid the bill for the Alternative Care Program referral.
SF1034_VNO	Local voucher number assigned to the SF Form 1034 by the Medical Resource Management Office. This is an optional field.
PD_S_NUM	Voucher number assigned to the SF Form 1034 whenever payment is made by the Accounting and Finance Office.
CMA_TYPE	Category of Centrally Management Allotment service. Field value is obtained from lookup of CMATYPE.dbf.
REQ_STATUS	Status of Alternative Care Program referral. Field value is obtained from lookup of REQSTAT.dbf.
THIRD_PRTY	Indicates whether the Alternative Care Program referral is or is not a potential Third Party Liability case.
PRIOR_KNOW	Indicates whether the local military medical treatment facility had prior knowledge of a medical service rendered to an active duty member at a civilian health care provider.
ACCT_NO	Health care provider account number for the bill.
EEIC	Element Expense Investment Code (EEIC). Used for the fund citation. Field value is obtained from lookup of EEIC.dbf.
RCCC	Responsibility Center/Cost Center for the fund citation. Field value is obtained from lookup of RCCC.dbf.
OA_NUM	Voucher number assigned to the AF Form 616 for obligation authority.
INPUT_DATE	Date information was input into this software application.

SECTION 28. SERVICES.dbf con't

C. FIELD DESCRIPTIONS: SERVICES.dbf con't

FIELD NAME	FIELD DESCRIPTION
L_UPDATE	Date of last update to this record.
FCUR	Foreign currency that will be used for bill payment. Field value will be obtained from FOREIGN.dbf.
FCURRATE	Conversion rate from foreign currency to US dollars. Field value will be obtained from lookup of FOREIGN.dbf.
JUSTCODE	Category of justification for Alternative Care Program referral. Field value obtained from lookup of ALTJUST.dbf.
CYFUNDS	Indicates whether current fiscal year operations and maintenance (O&M) funds will be used to pay the Alternative Care Program bill.
CHAMPHI	Highest CHAMPUS allowable cost for this procedure.
CHAMPLO	Lowest CHAMPUS allowable cost for this procedure.
THIS_ONE	Indicates that the database record has been selected for use by the Alternative Care Assistant.
REPORTS	Indicates that the database record has been selected for a report(s).

SECTION 29. SOURCES.dbf WORK AREA: 4 NO. FIELDS: 12

A. DATABASE STRUCTURE: SOURCES 4 12

FIELD	FIELD TYPE	LEN	DEC	PICTURE
L_UPDATE	Date	8	0	<none>
PLIST_DATE	Date	8	0	<none>
SRC_REF	Numeric	5	0	"99999"
SRCADD1	Character	40	0	"@!"
SRCADD2	Character	40	0	"@!"
SRCADD3	Character	40	0	"@!"
SRCCITY	Character	20	0	"@!"
SRCFONE	Character	13	0	"(999)999-9999"
SRCNAME	Character	40	0	"@!"
SRCPOC	Character	35	0	"@!"
SRCSTATE	Character	2	0	"@!"
SRCZIP	Character	10	0	"99999-9999"

B. INDEXES: 2 Indexes for SOURCES.dbf

INDEX FILE	KEY FIELD EXPRESSION
SRCENAME	SRCNAME
SRCREF	SRC_REF

C. FIELD DESCRIPTIONS: SOURCES.dbf

FIELD NAME	FIELD DESCRIPTION
SRC_REF	Key field for SOURCES.dbf.
SRCNAME	Name of the health care provider.
SRCADD1	Address line 1 for health care provider.
SRCADD2	Address line 2 for health care provider.
SRCADD3	Address line 3 for health care provider.
SRCCITY	Health care provider's address city.
SRCSTATE	Health care provider's address state.
SRCZIP	Health care provider's zip code.
SRCFONE	Health care provider's phone number with area code.
SRCPOC	Health care provider's point of contact.
PLIST_DATE	Date of update to health care provider's price list.

SECTION 29. SOURCES.dbf con't

C. FIELD DESCRIPTIONS: SOURCES.dbf con't

FIELD NAME	FIELD DESCRIPTION
L_UPDATE	Last update to this database record.

SECTION 30. SPONSOR.dbf WORK AREA: 25 NO. FIELDS: 9

A. DATABASE STRUCTURE: SPONSOR 25 9

FIELD	FIELD TYPE	LEN	DEC	PICTURE
HOME_BASE	Character	30	0	"@!@K"
SCAT	Character	1	0	"A"
SFNAME	Character	20	0	"@!"
SGRADE	Character	8	0	"@!"
SL_UPDATE	Date	8	0	<none>
SLNAME	Character	25	0	"@!"
SORG	Character	25	0	"@!@K"
SPRP	Logical	1	0	"Y"
SSSAN	Character	11	0	"999-99-9999"

B. INDEXES: 2 Indexes for SPONSOR.dbf

INDEX NAME	KEY FIELD EXPRESSION
SPONSOR	SSSAN
SLNAME	SLNAME

C. FIELD DESCRIPTIONS: SPONSOR.dbf

FIELD NAME	FIELD DESCRIPTION
SFNAME	Sponsor first name.
SLNAME	Sponsor last name.
SSSAN	Sponsor social security number.
SGRADE	Sponsor grade.
SORG	Base organization which the sponsor is assigned.
SCAT	Sponsor category. This is equivalent to the first digit of the P_CAT field in the PATIENTS.dbf.
SPRP	Indicates whether the sponsor is or is not in the Personnel Reliability Program.
SL_UPDATE	Last date the database record was updated.
HOME_BASE	Based that the sponsor is assigned.

SECTION 31. SUBSIST.dbf WORK AREA: 30 NO. FIELDS: 2

A. DATABASE STRUCTURE: SUBSIST.dbf

FIELD	FIELD TYPE	LEN	DEC	PICTURE
EFF_DATE	Date	8	0	<none>
SUB	Numeric	5	2	<none>

B. INDEXES: 0 indexes for SUBSIST.dbf

C. FIELD DESCRIPTIONS: SUBSIST.dbf

FIELD NAME	FIELD DESCRIPTION
SUB	The subsistence rate taken from AFR 168-6.
EFF_DATE	Effective date of subsistence rate.

SECTION 32. TXPERIOD.dbf WORK AREA: 20 NO. FIELDS: 1

A. DATABASE STRUCTURE: TXPERIOD 20 1

FIELD	FIELD TYPE	LEN	DEC	PICTURE
TX	Character	10	0	"@!"

B. INDEXES: 1 Index for TXPERIOD.dbf

INDEX NAME	KEY FIELD EXPRESSION
TXPERIOD	TX

C. FIELD DESCRIPTIONS: TXPERIOD.dbf

FIELD NAME	FIELD DESCRIPTION
TX	Describes the type of service to be received.

Appendix J: Alternative Care Assistant User's Manual

Introduction

The Alternative Care Assistant is a prototype application designed to improve the management of the Alternative Care Program. As specified by AFR 168-10, the Alternative Care Program includes supplemental care, cooperative care, and Centrally Managed Allotment services. Although the Alternative Care Assistant has a simplistic design, over 30 databases and 40,000 lines of source code are compiled by Clipper into this prototype.

This user's manual contains seven sections: INTRODUCTION, APPLICATION REQUIREMENTS, GENERAL CONVENTIONS AND FEATURES, INSTALLATION, BEFORE YOUR START, GETTING STARTED, and USING THE ALTERNATIVE CARE ASSISTANT.

Assumptions. In developing the Alternative Care Assistant and this user's manual, two assumptions were made. First, the user is familiar with the Alternative Care Program. Second, the user has a basic knowledge of computers and terms such as megabyte and lookup window.

Application Requirements

The Alternative Care Assistant has the following hardware and software requirements:

a. IBM XT/AT compatible microcomputer.

b. MS-DOS Version 3.2 or greater.

c. 640 kilobytes of Random Access Memory (RAM).

d. At least 1 floppy diskette drive.

e. At least 1 hard disk drive with a minimum of 10 megabytes of disk space.

f. A color monitor is recommended.

General Conventions and Features

The Alternative Care Assistant provides a powerful, yet user-friendly environment. To exploit the program's capability, the following features are highlighted.

On-line Help. On-line help can be accessed from almost every part of the Alternative Care Assistant by pressing the F1 key. Help windows are context sensitive in that the help information is relevant to the module being used when the F1 key was pressed. There is, however, a slight difference between the help windows for the menus (Figure 12), and those for the data screens (Figure 13).

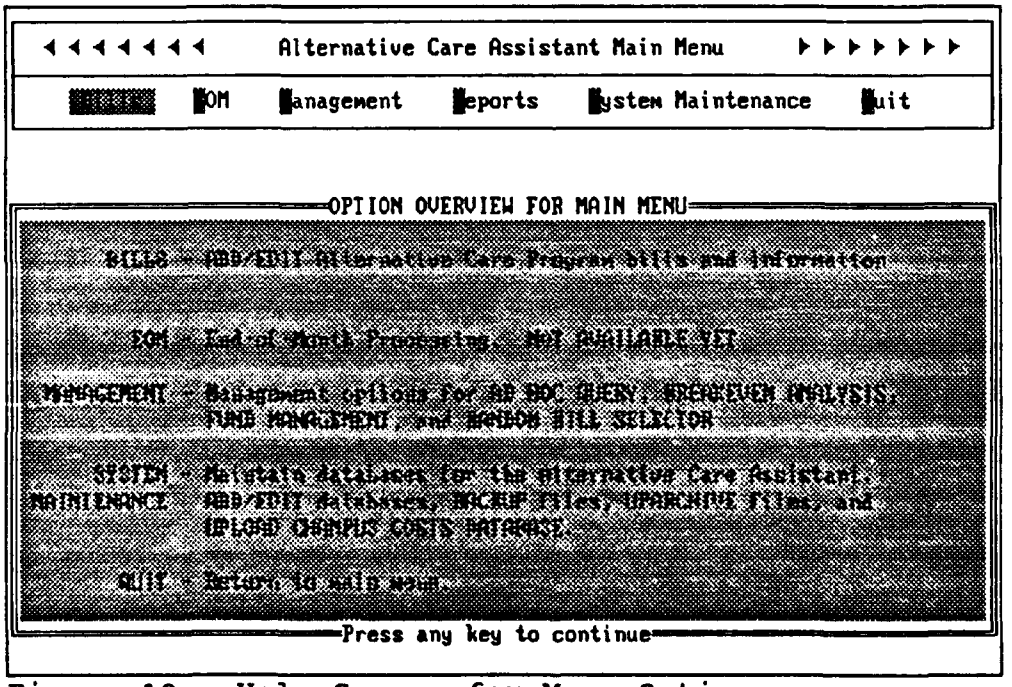

Figure 12. Help Screen for Menu Option

The help window for a data screen has a scroll capability so that the amount of help information is not limited by display size of the help window. The information in the window may be viewed by using the PgUp and PgDn keys to scroll all the information through the window.

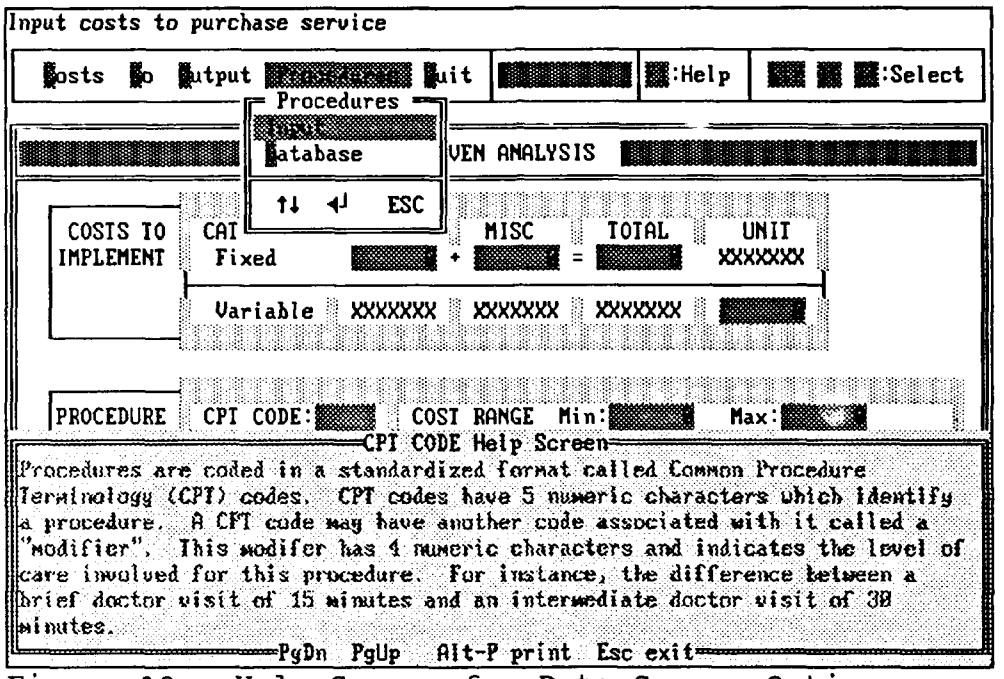

Figure 13. Help Screen for Data Screen Option

Lookup Windows. First, a lookup window is a small, "pop up" display screen which lists all the acceptable values for a data field. Lookup windows are associated with many of the data fields in the Alternative Care Assistant. These lookup windows ensure standardized data entries without requiring the user to memorize codes or use additional documentation.

There are two styles of lookup windows used in the Alternative Care Assistant.

The first style is activated automatically whenever an inappropriate entry is made into a data field. Figure 14 illustrates this style. To select an entry, use the arrow keys to highlight the desired value, and press <ENTER>. Some of these lookup windows also have a quick search capability. When using these lookup windows, type the desired data value. The matching data value will be highlighted. Also, this value will be displayed on the top line of the lookup window as it is being typed. The lookup window in Figure 14 has this quick search capability.

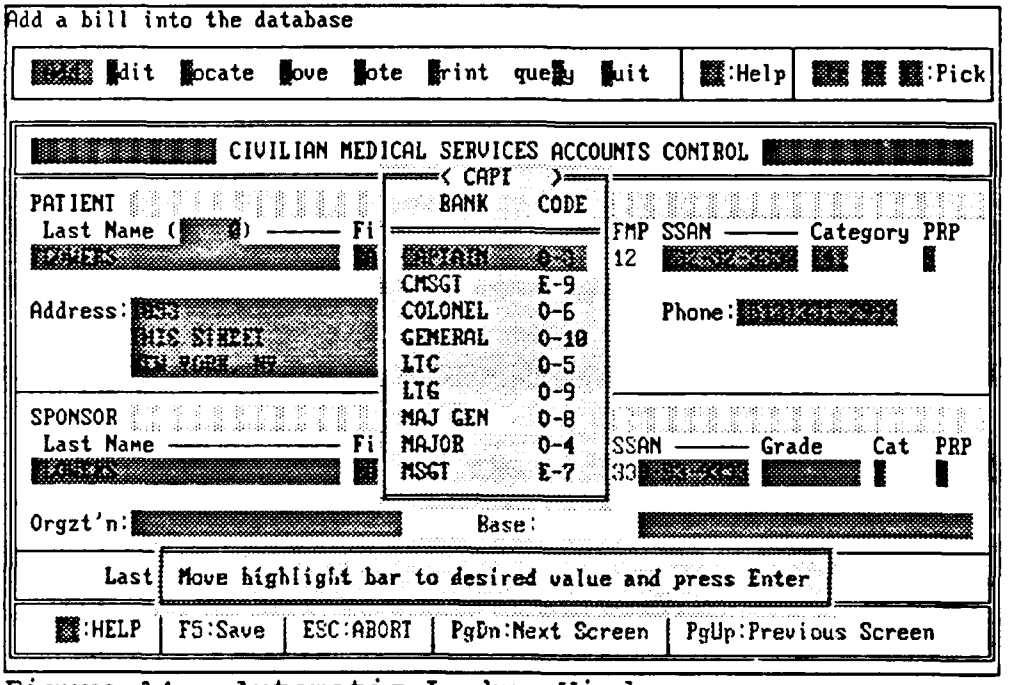

Figure 14. Automatic Lookup Window

The second style of look up window is activated only at the user's discretion. Figure 15 illustrates this style of lookup window.

Like the other style of lookup window, this lookup window uses similar features. To select data values, use the arrow keys to move the highlight bar to the desired value, and press <ENTER>. These lookup windows also have a search capability. When using these lookup windows, type the first digit or character of the key data field. In most cases, the key data field will be in the first column of the lookup window. Unlike the other lookup window style, only the first digit or character is used for the search. After entering this digit or character, the first matching data field value will be highlighted. The available option keys are displayed on the bottom line of the lookup window.

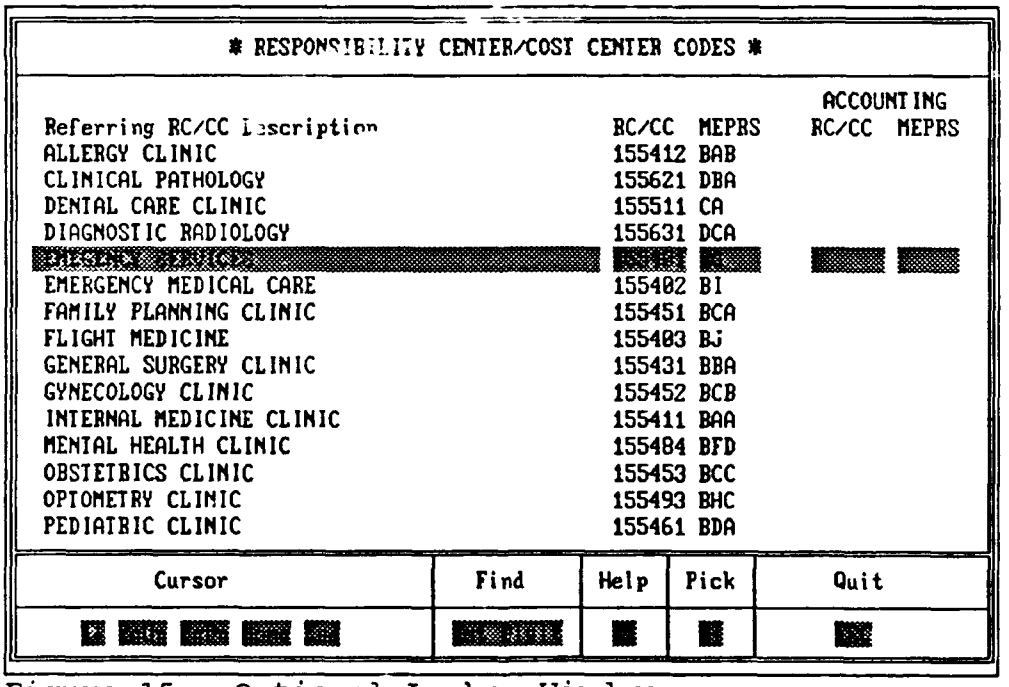

Figure 15. Optional Lookup Window

Bar Menus. Bar menus are prevalent throughout the Alternative Care Assistant. All bar menu options are

accessible by two methods. Either press the highlighted letter in the menu title, or use the arrow keys to highlight the desired option, and press <ENTER>.

Options Being Developed. Since the Alternative Care Assistant is a prototype, certain features are not fully developed. If an unimplemented option is selected, a message at the bottom right of the screen will be displayed such as illustrated in Figure 16.

Errors. Although the Alternative Care Assistant should operate without error, there is always the chance that an error will occur. In the event that an error occurs, a message will be displayed as illustrated in Figure 17. The error message will also be saved to the disk file ERROR.TXT.

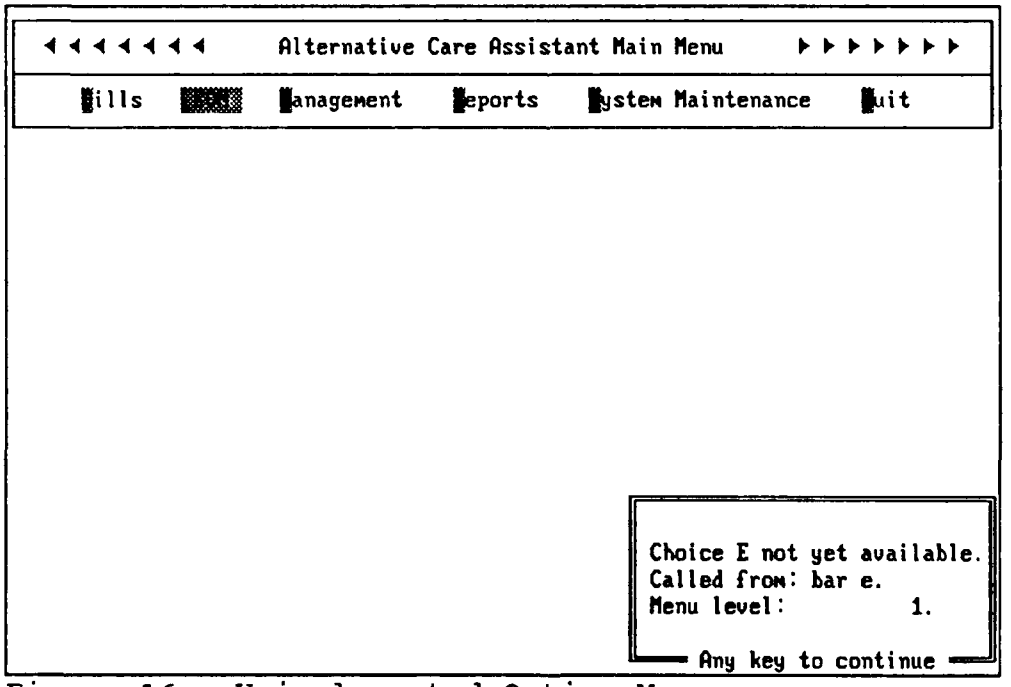

Figure 16. Unimplemented Option Message

If an error occurs, record the following information as soon as possible:

a. Option being used when the error occurred.

b. Other options used prior to the option that caused the error.

c. Any relevant circumstances or observations. For example, any erroneous keys that were pressed.

When an error occurs, reboot the microcomputer by pressing the Del key while holding down the <Ctrl> and <Alt> keys, and reenter the Alternative Care Assistant. If the error continues to be a problem, contact the system manager.

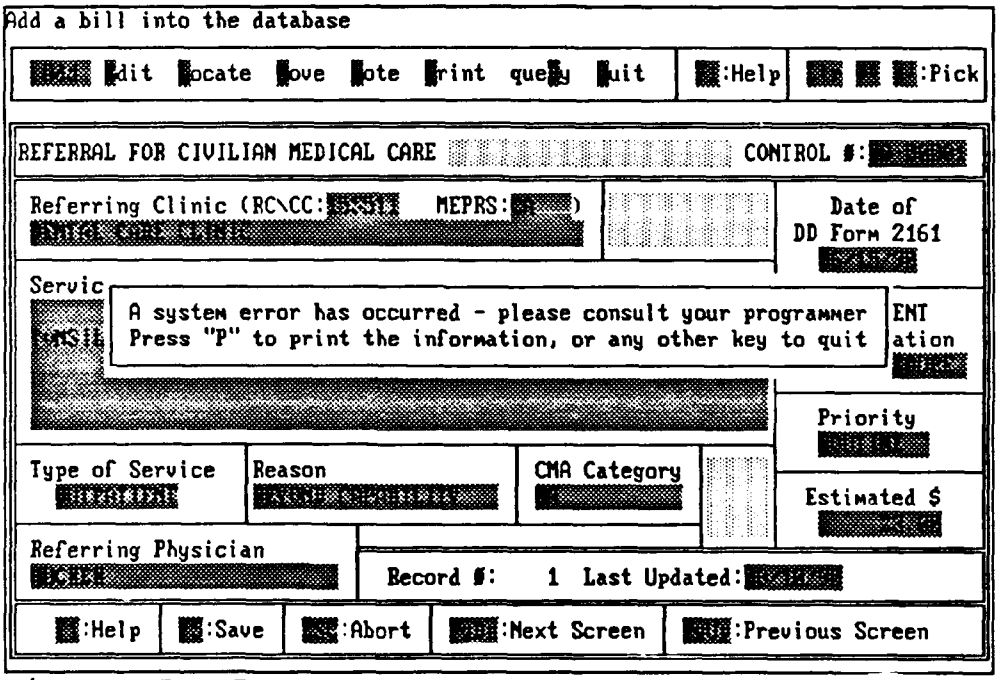

Figure 17. Error Message

Installation.

The Alternative Care Assistant is provided on multiple diskettes. Use the following installation instructions:

Step 1 Set the DOS prompt to show the directory being used by typing "PROMPT PG" and pressing <ENTER>.

Step 2 Change the default disk drive to A: by typing "A:" and pressing <ENTER>. The DOS prompt should display "A:\>".

Step 3 The hard drive must have at least 5 megabytes of disk space available to proceed. If this much disk space is not available, you must decide what disk files you will delete, or accept the fact that you will not be able to use the Alternative Care Assistant!

Step 4 Place the Alternative Care Assistant DISK #1 into the A: disk drive. Type "INSTALL" and press <ENTER>.

Step 5 When prompted by the screen display, place the next Alternative Care Assistant disk into the A: diskette drive. Continue this process for all of the Alternative Care Assistant disks.

Before You start

The Alternative Care Assistant is a very flexible and comprehensive application. These attributes are achieved through the use of default data values which configure the Alternative Care Assistant to each using location. In order to configure the Alternative Care Assistant to your location, have the following information available prior to installation.

Common Procedure Terminology (CPT) Codes and CHAMPUS Costs. CPT codes are essential to managing the Alternative Care Program. For this reason, the Alternative Care Assistant relies upon several databases to provide the CPT codes and the associated CHAMPUS allowable costs. OCHAMPUS at Lowry AFB, Colorado provides the CPT code and CHAMPUS allowable costs for each state in a dBase™ database format.

You may obtain these diskettes by calling AUTOVON 943-3580.

Installing the CHAMPUS Diskettes. The installation process is quite simple although this data is contained on approximately 20 diskettes. Approximately four megabytes of disk space is initially required to install these databases. Instructions are provided with these diskettes, but are summarized below.

Step 1 You should start at the C: disk drive. Set the DOS prompt to show the directory being used by typing "PROMPT PG" and pressing <ENTER>. Assuming you started at the C: disk drive, your DOS prompt should display "C:\>" now.

Step 2 The hard drive must have approximately 5 megabytes of disk space available before proceeding. If this much space is not available, you must decide what to delete, or accept the fact that you will not be able to use the Alternative Care Assistant!

Step 3 Make a new subdirectory named PF on the hard disk drive by typing "MD PF" and pressing <ENTER>.

Step 4 Change to this new subdirectory by typing "CD PF" and pressing <ENTER>. If using the C: disk drive, the prompt should display "C:\PF>".

Step 5 Insert the CHAMPUS diskette number 1 into the A: disk drive.

Step 6 Type "A:INSTALL" and press <Enter>.

Step 7 Follow the messages displayed on the computer screen for selecting the correct state's CHAMPUS/CPT data. DO NOT INSTALL MORE THAN ONE STATE with this version!

In the event that the instructions provided by OCHAMPUS differ from these instructions, please follow those provided by OCHAMPUS. Regardless of which instructions you use, it is essential that these databases be installed in the C:\PF subdirectory.

Defaults. Please refer to Figures 54-62 for the information required for the defaults.

Element Expense Investment Codes (EEIC). Have a listing of the EEIC, EEIC description, EEIC shreadouts, and any RC/CC codes which are associated with the EEIC.

Responsibility Center/Cost Centers (RC/CC). Have a listing of the RC/CC codes, Medical Expense Performance Reporting System (MEPRS) codes, and clinic names for all the clinics which make referrals through the Alternative Care Program. If a different RC/CC is used in the fund citation other than the referring clinic RC/CC, please have this RC/CC and the associated MEPRS code on this listing.

Obligation Authority. Have the current AF Form 616 and the operations and maintenance fund target for supplemental care (572XX) and cooperative care (573XX).

Sources of Health Care Services. Have a listing of all the health care providers in the local area that provide Alternative Care Program services to your base. The following information is required for each provider: official name, complete mailing address, phone number, and point of contact.

Getting Started.

The Alternative Care Assistant is operated by typing:

ACA <HARD DISK DRIVE> <SUBDIRECTORY>

where the following is:

<HARD DISK DRIVE> is the hard disk drive containing the Alternative Care Assistant files. Type only the letter without a colon (:) or backslash (\).

<SUBDIRECTORY> is the subdirectory which contains the Alternative Care Assistant files. Type only the name without the colon (:) or backslash (\).

For example, if the Alternative Care Assistant was located on the C: drive in the ALTCARE subdirectory (C:\ALTCARE), you would type the following.

ACA C ALTCARE

Next, the opening screen for the Alternative Care Screen should appear (Figure 18).

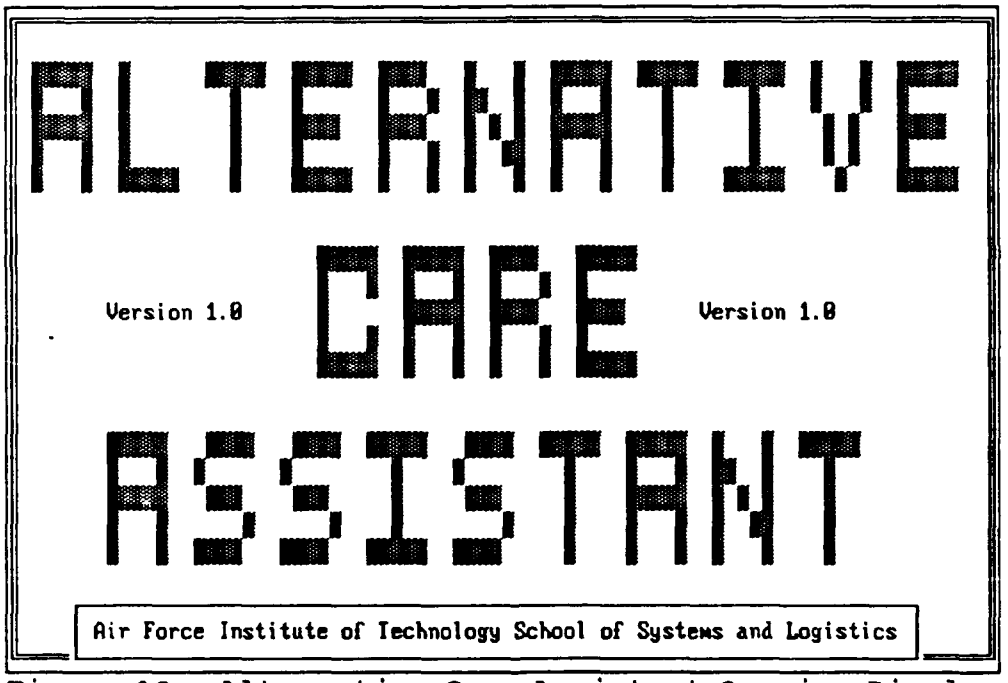

Figure 18. Alternative Care Assistant Opening Display

Although this screen will only display for a second, you may minimize the delay by pressing any key.

The next screen is a reminder that the information used for the Alternative Care Program is governed by the Privacy Act of 1974.

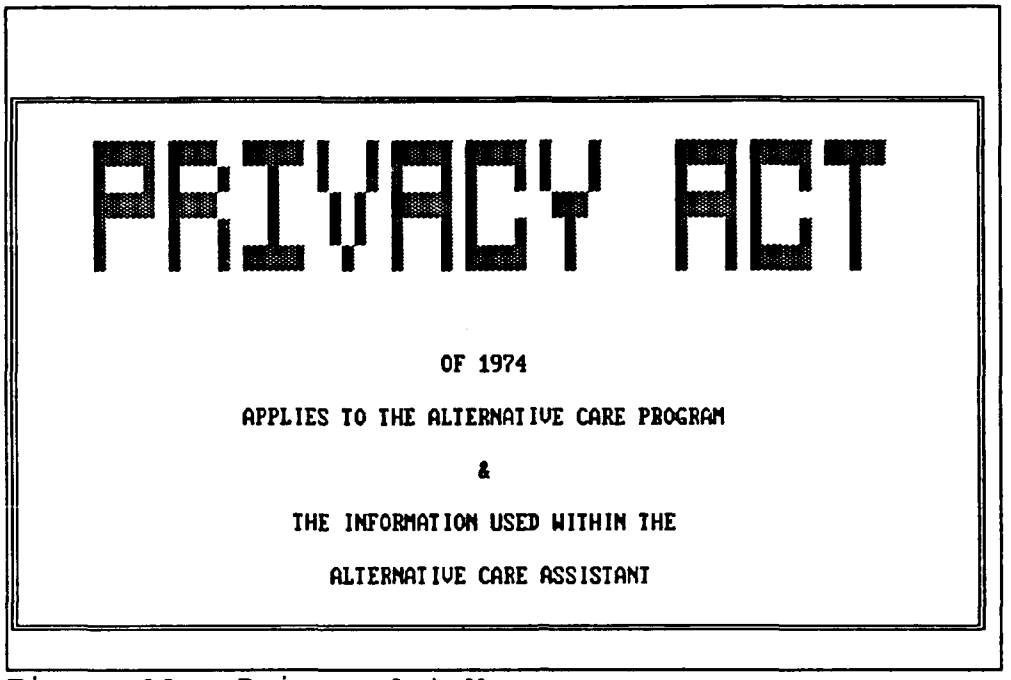

Figure 19. Privacy Act Message

Again, this screen will only display for a second, but you may minimize the delay by pressing any key.

Using the Alternative Care Assistant

All of the Alternative Care Assistant's options are accessible from the main menu by pressing the highlighted letter in their menu title, or moving the highlight bar to the desired option and pressing <ENTER>. Figure 20 overviews the Alternative Care Assistant menus.

Each option is briefly discussed: BILLS, EOM, MANAGEMENT, REPORTS, SYSTEM MAINTENANCE, and QUIT.

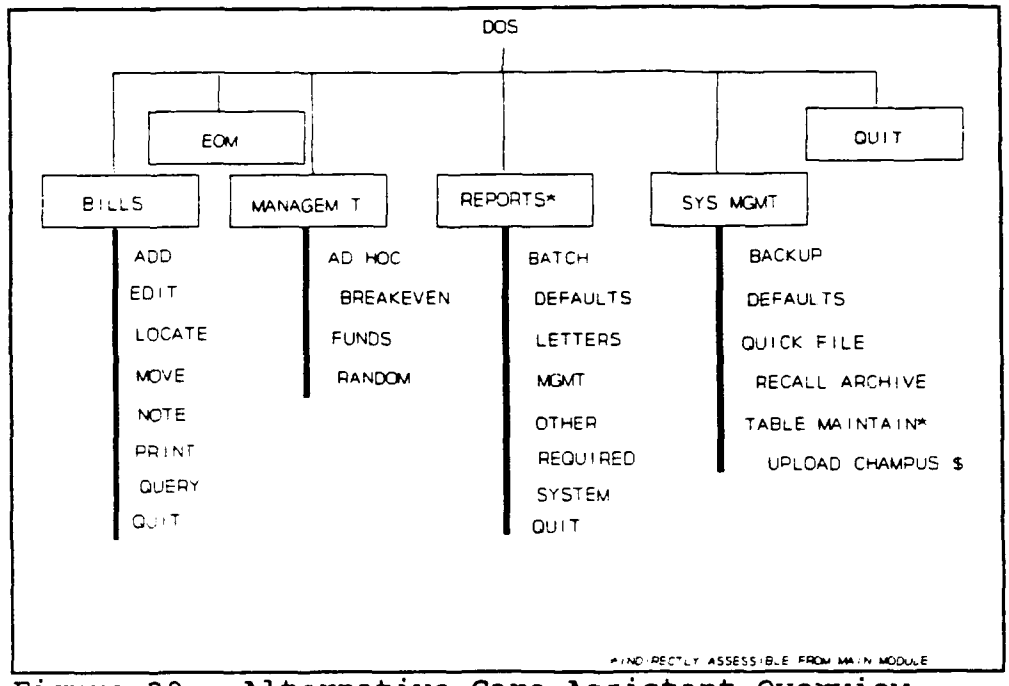

Figure 20. Alternative Care Assistant Overview

BILLS

The BILLS option is the "heart" of the Alternative Care Assistant since it performs many of the Alternative Care Program's clerical tasks. There are eight options available: ADD, EDIT, LOCATE, MOVE, NOTE, PRINT, QUERY, and QUIT. Any of these options may be accessed by typing the highlighted letter in their menu title or using the arrow keys to highlight the option and press <ENTER>

Add or Edit. The data screens for adding and editing information to the database are identical except for a few minor differences. For instance, the edit option skips data screens which do not require editing while the add option requires input to all five data screens. Any other

differences between these two functions are highlighted in the following instructions for inputing an ACP bill.

The following instructions have up to four subsections: USER, VALID ENTRY, ACTION, and NOTES. The USER subsection describes the user actions. The VALID ENTRY subsection describes any special requirements for the data entry. The ACTION subsection describes the actions performed by the Alternative Care Assistant as well as any subsequent actions for the user. Finally, the NOTES subsection provides any pertinent information not in the other subsections.

Step 1 USER. Enter the responsibility center/cost center (RC/CC) code, Medical Expense Performance Reporting System (MEPRS) code, or the name of the referring clinic (Figure 21).

VALID ENTRY. Entered value must have a matching data value in the RCCC.dbf database.

ACTION. If no value is entered or if a matching value is not found in database, you reenter a value, use a lookup window, or abort this function (Figure 22). If you use the lookup window (Figure 23), use the HOME, END, and arrow keys to highlight the desired value, and press <ENTER>. Whenever a matching value is found, the RC/CC code, MEPRS code, and the clinic name is displayed.

NOTES. The RCCC.dbf database is updated by the SYSTEM MAINTENANCE-TABLE MAINTENANCE option.

Step 2 USER. Enter the authorization number (CONTROL #) for the Alternative Care Program referral (Figure 21).

VALID ENTRY. The following applies:

1. Has a format with the first two digits representing the fiscal year that the Alternative Care Program referral was approved, and the last five digits represent a serial sequence which begins at zero for each fiscal year.

2. Each authorization number is specific to one Alternative Care Program referral. No duplicates!

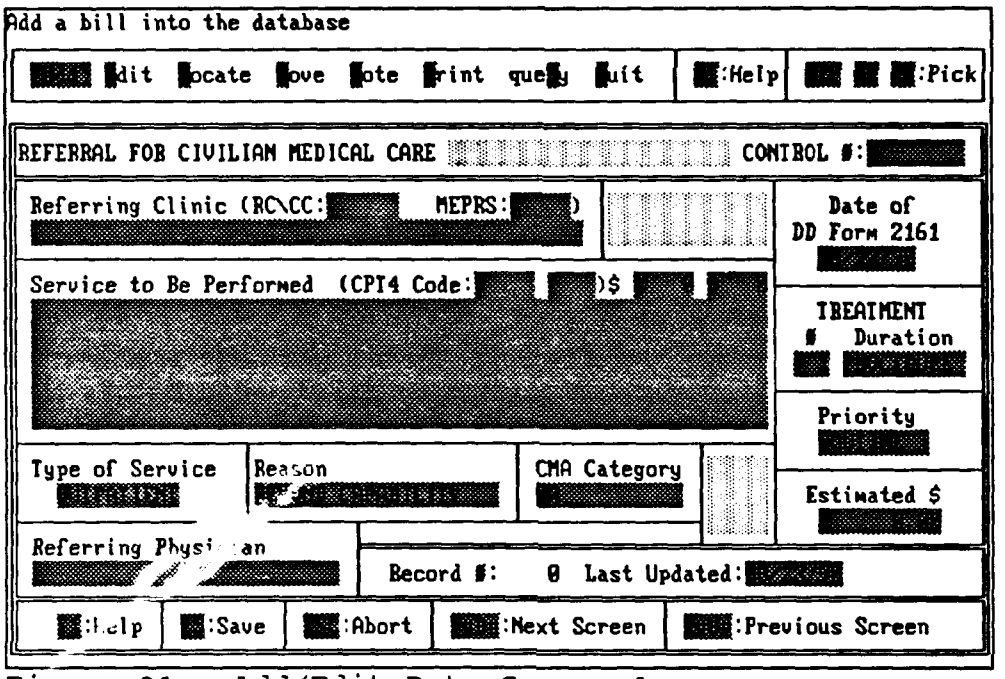

Figure 21. Add/Edit Data Screen 1

3. An entry such as 90-1, 90-01, or 90-0001 is acceptable; however, the Alternative Care Assistant will translate all of these entries into 90-00001.

ACTION. The Alternative Care Assistant displays the next authorization number which is not a duplicate. You may use this default, or enter another authorization number. If you enter a different authorization number and it is a duplicate, the Alternative Care Assistant will display an error message, and increment this authorization number by one until the next available authorization number is found.

NOTES. An authorization number is a prerequisite for supplemental and cooperative care services. However, it is only a tracking mechanism for Centrally Managed Allotment (CMA) services.

Step 3 USER. Enter the date the DD Form 2161 was completed by the referring health care provider (Figure 21).

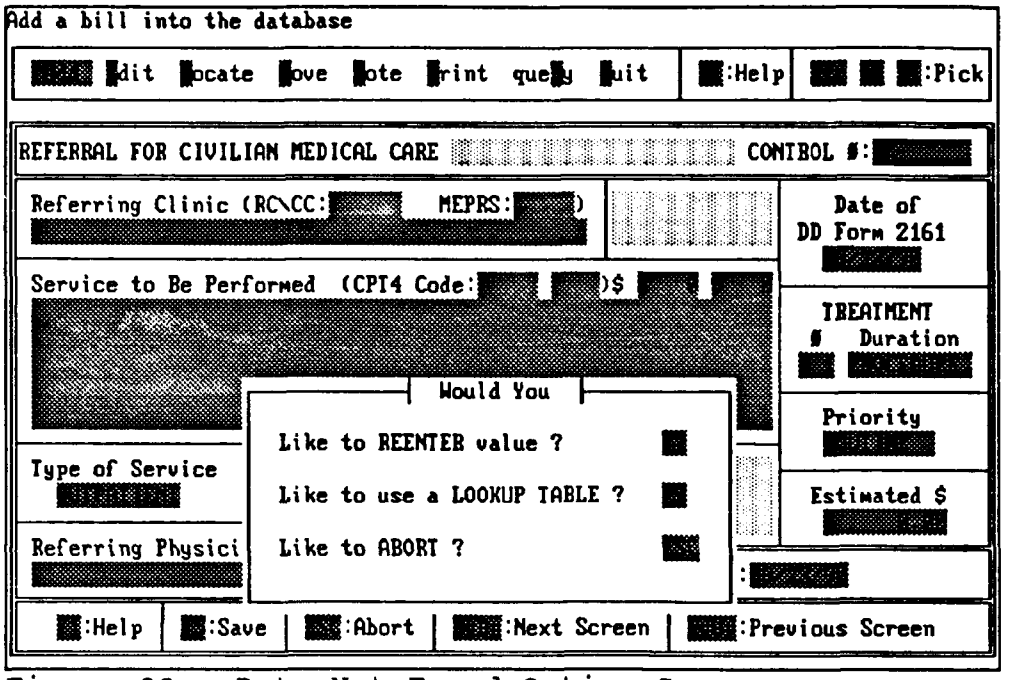

Figure 22. Data Not Found Option Screen

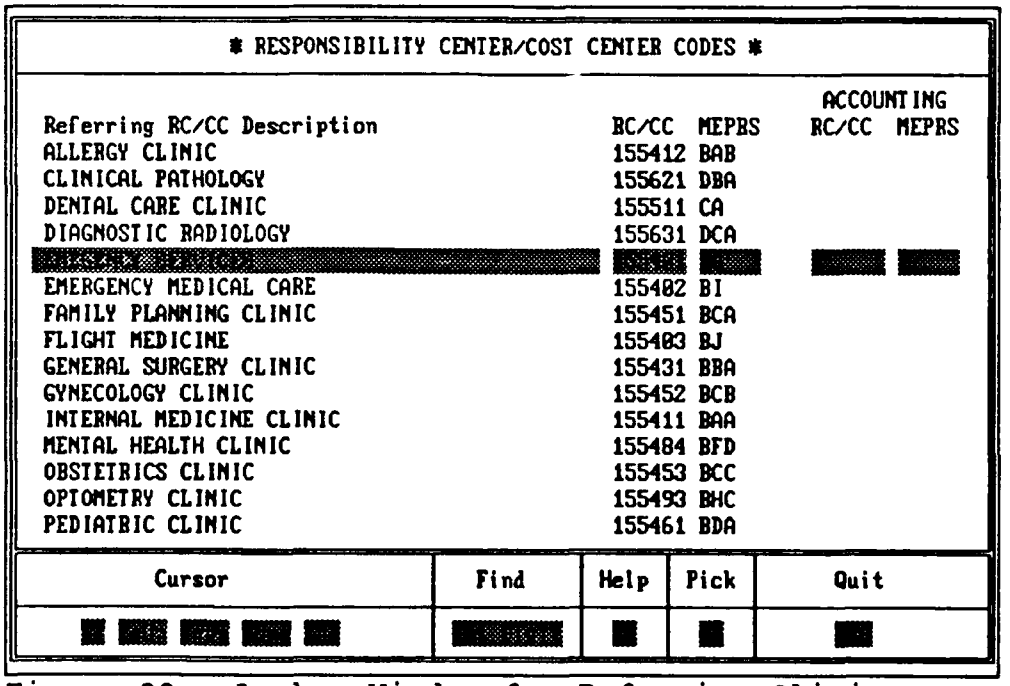

Figure 23. Lookup Window for Referring Clinic

VALID ENTRY. The date format is MM/DD/YY.

Step 4 USER. Enter the Common Procedure Terminology (CPT) code, and the CPT code modifier (Figure 21).

VALID ENTRY. The following applies:

1. The CPT code has five numeric characters.

2. The CPT code modifier has four numeric characters.

3. Entered value must have a matching value in the PROCODE.dbf database.

ACTION. If no CPT code is entered or a CPT code is entered which does not have a matching record in the PROCODE.dbf database, you must reenter the CPT code, use a lookup window, or abort the function. If you use the lookup window (Figure 24), the VIEW (F5) option (Figure 25) is useful for displaying additional information about each CPT code. When using this lookup window, use the HOME, END, and arrow keys to review the CPT codes before selecting one. When the desired CPT code is highlighted, press <ENTER> to return to the original data screen. When a CPT code is selected, the highest and the lowest CHAMPUS allowable cost are extracted from the PRICE.dbf database and displayed next to the CPT code.

NOTES. The estimated cost should not exceed the CHAMPUS allowable cost.

Step 5. USER. Enter the number of services authorized, and the description or duration of the service. This is on the DD Form 2161 (Figure 21).

VALID ENTRY. The following applies:

1. The number of services authorized must be greater than zero.

2. The description or duration of the service must have a matching data record in the TXPERIOD.dbf database.

3. Initial data values in TXPERIOD.dbf are: PROCEDURE, VISIT, TREATMENT.

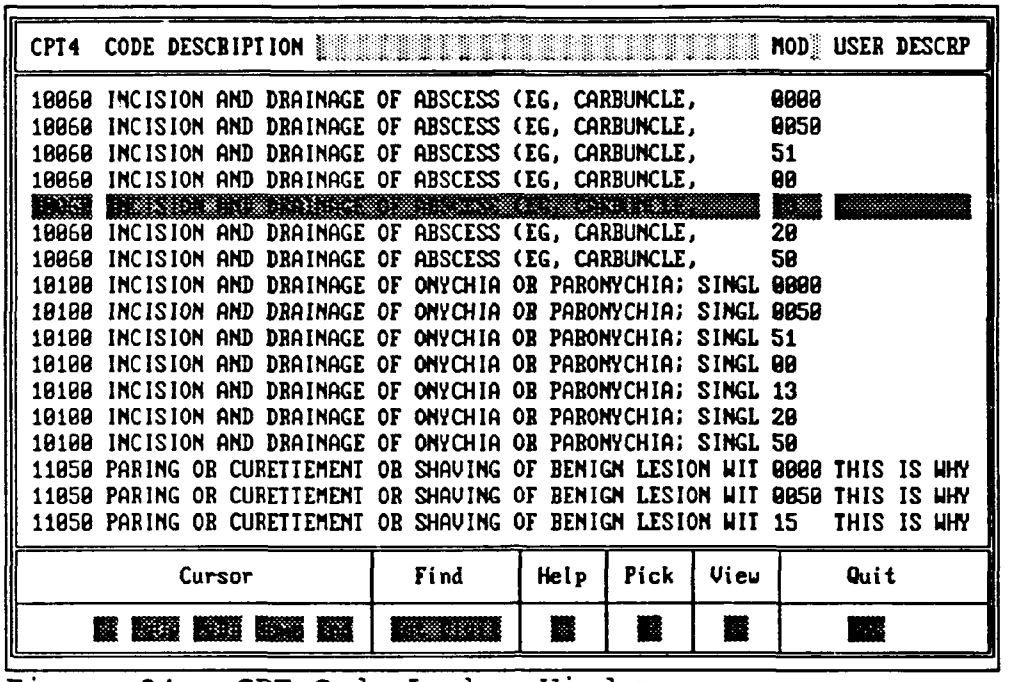

Figure 24. CPT Code Lookup Window

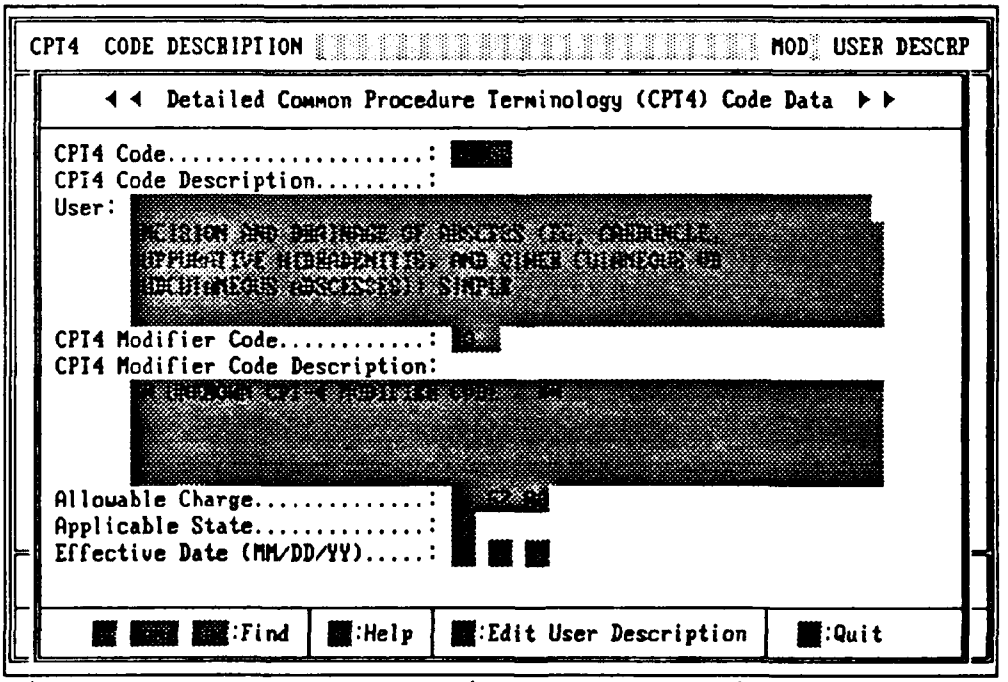

Figure 25. CPT Lookup Window VIEW Option

ACTION. If no value is entered, or if a matching value is not found in the TXPERIOD.dbf database, you must use a lookup window. When using the lookup window, use the arrow keys to highlight the desired value, and press <ENTER>.

NOTE. The following is provided:

1. The TXPERIOD.dbf database is updated by using the SYSTEM MAINTENANCE-TABLE MAINTENANCE option.

2. Carefully select the service duration. If this is not done, confusion over the payment responsibility may result. For instance, some procedures require multiple visits while some visits involve multiple procedures.

Step 6 USER. Enter the priority of this request as indicated on the DD Form 2161 (Figure 21).

VALID ENTRY. The following applies:

1. Entered value must have a matching data record in the PRIOR.dbf database.

2. Initial values in PRIOR.dbf data are: ROUTINE, EMERGENCY, 72 HOURS, and TODAY.

ACTION. If a priority value is entered which does not have a matching data record in the PRIOR.dbf database, a lookup window is used. Use the arrow keys to highlight the desired value, and press <Enter>.

NOTE. The PRIOR.dbf database is updated by using the SYSTEM MAINTENANCE-TABLE MAINTENANCE option.

Step 7 USER. Enter the estimated cost for the authorized service (Figure 21).

VALID ENTRY. This cost must be greater than zero.

NOTE. The estimated cost should be less than the CHAMPUS allowable cost. If not, DOCUMENT!

Step 8 USER. Enter the type of service which will be received (Figure 21).

VALID ENTRY. The following applies:

1. Entered value must have a matching data record in the SERCAT.dbf database.

2. Initial data values in SERCAT.dbf are: INPATIENT and OUTPATIENT.

ACTION. If a value is entered for the type of service which does not match a data record in the SERCAT.dbf database, you use a lookup window. Use the arrow keys to highlight the desired value, and press <ENTER>.

NOTE. The SERCAT.dbf database is updated through the SYSTEM MAINTENANCE-TABLE MAINTENANCE option.

Step 9 USER. Enter the justification for the Alternative Care Referral from the AF Form 676 (Figure 21).

VALID ENTRY. The following applies:

1. Entered values must have a matching data record in the ALTJUST.dbf database.

2. The initial values in ALTJUST.dbf are: GEOGRAPHICALLY SEPARATED UNIT and ECONOMIC.

ACTION. If a value is entered for the justification which does not match a data record in the ALTJUST.dbf database, you use a lookup window. Use the arrow keys to highlight the desired value, and press <ENTER>.

NOTE. The ALTJUST.dbf database is updated through the SYSTEM MAINTENANCE-TABLE MAINTENANCE option.

Step 10 USER. Enter the Centrally Managed Allotment (CMA) category (Figure 21).

VALID ENTRY. The following applies:

1. Entered value must have a matching record in the CMATYPE.dbf database.

2. Initial data values in CMATYPE.dbf are: EMERGENCY, NONEMERGENCY, and NA.

ACTION. If a value is entered which does not have a matching data record in the CMATYPE.dbf database, you use a lookup window. Use the arrow keys to highlight the desired value, and press <ENTER> to select the desired value. NOTE. The ALTJUST.dbf database is updated through the SYSTEM MAINTENANCE-TABLE MAINTENANCE option. Since this database field is specific to the Centrally Managed Allotment (CMA) services, the "NA" value should be selected for supplemental and cooperative care referrals.

Step 11 USER. Enter the referring physician's last name from the DD Form 2161 (Figure 21).

VALID ENTRY. Any value with at least one character.

Step 12 USER. This data screen is complete. If you want to EDIT any entry on this screen, select the EDIT option. Otherwise, the next data screen is displayed (Figure 21).

VALID ENTRY. The following applies:

1. Press "E" for EDIT or "C" for CONTINUE

2. Or, use the arrow key to highlight the desired option, and press <ENTER> to select it.

ACTION. If EDIT is selected, you return to the first field on this data screen (Step 1). Move to the desired data field by pressing <ENTER> at any preceding data field. If CONTINUE is selected, the next data screen is displayed.

NOTE. Once you have finished with a data screen, you can not return to it in the ADD option. You must use the EDIT option.

Step 13 USER. Enter the name of the service source or the applicable reference number for the service source (Figure 26).

VALID ENTRY. The following applies:

1. The source reference number is numeric.

2. The entered value must have a matching data record in the SOURCES.dbf database.

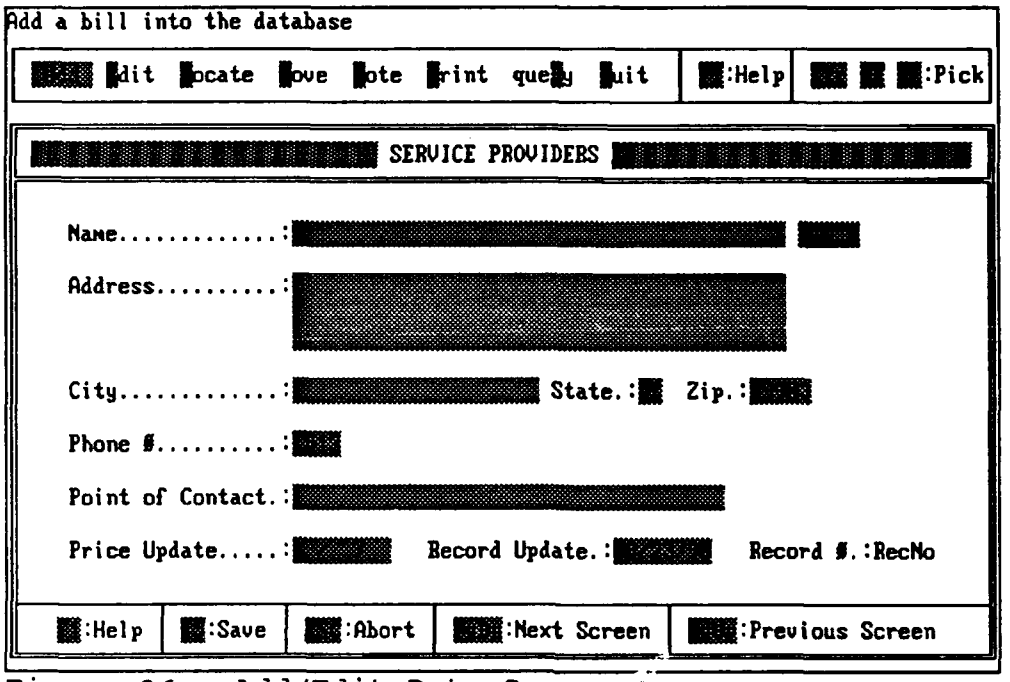

Figure 26. Add/Edit Data Screen 2

ACTION. If a value is entered which does not have a matching data record in the SOURCES.dbf database, reenter the value or use a lookup window. Use the arrow keys to highlight the desired value and press <ENTER>. After a matching data record is found, the remaining data fields for the selected source are displayed.

NOTE. The SOURCES.dbf database is updated through the SYSTEM MAINTENANCE-TABLE MAINTENANCE option.

Step 14 USER. This data screen is complete. If you want to EDIT any entry on this screen, select the EDIT option. Otherwise, the next data screen is displayed.

VALID ENTRY. The following applies:

1. Press "E" for EDIT or "C" for CONTINUE

2. Or, use the arrow key to highlight the desired option, and press <ENTER> to select it.

ACTION. If EDIT is selected, you return to the first field of this data screen (Step 13). Move to the desired data field by pressing <ENTER> at any preceding data field. If CONTINUE is select, the next data screen is displayed.

NOTE. Once you have finished with a data screen, you can not return to it in the ADD option. You must use the EDIT option.

Step 15 USER. Enter the patient's last name, first name, family member prefix and the patient's social security number. If the patient has been referred before, their information is displayed from the database (Figure 27).

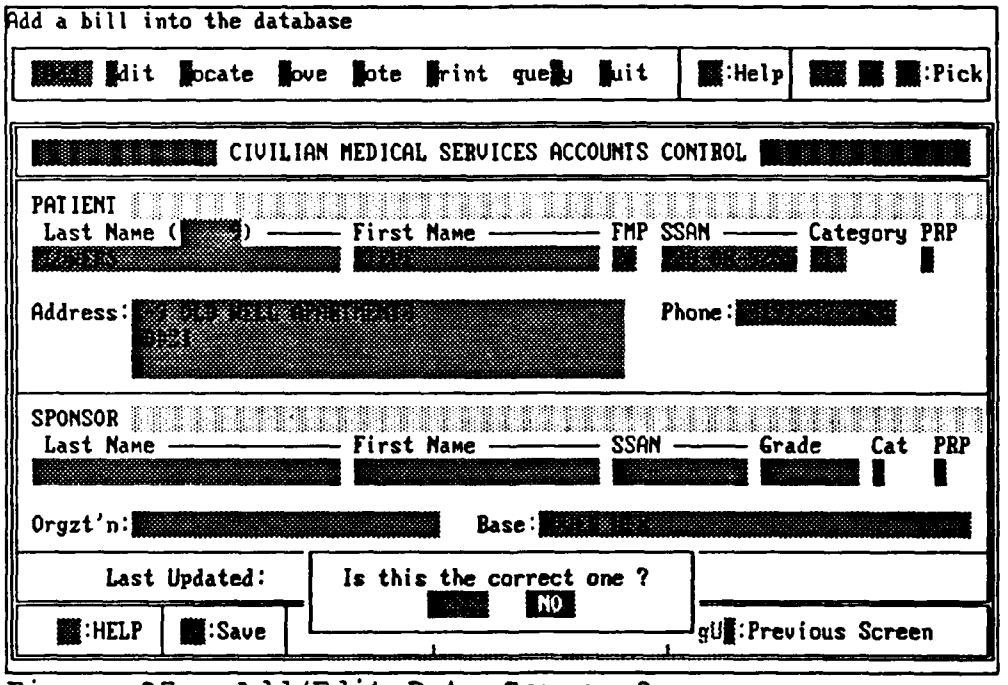

Figure 27. Add/Edit Data Screen 3

VALID ENTRY. The following applies:

1. The patient first and last name are mandatory entries.

2. The family member prefix is a two digit character code between "10" and "99".

3. The social security number format is "999-99-9999".

ACTION. The following applies:

1. If the value entered for the family member prefix does not have a matching record in the FMP.dbf database, you use a lookup window. Use the arrow keys to highlight the desired value, and press <ENTER> to select the desired value. When using the lookup window, you may quickly find a family member prefix by typing the value. If a matching value exists, it will be highlighted. Pressing <ENTER> will select it.

2. After the patient name, family member prefix, and social security are entered, press <ENTER>. Next, a database search for a matching patient is performed. The following outcomes are possible:

   a. Match is not found. If this is the case, you have three choices (Figure 28):

      (1) Press F3 because the patient is a new referral which has never been referred through the Alternative Care Program, and continue to enter the remaining patient data fields.

      (2) Press F7, and reenter the information. Use this option if the original input was in error.

      (3) Press F9, and use a lookup window. When using the lookup window, use the HOME, END, and arrow keys to highlight the desired patient, and press <ENTER> to select. If you do not locate the desired patient, press the ESC key.

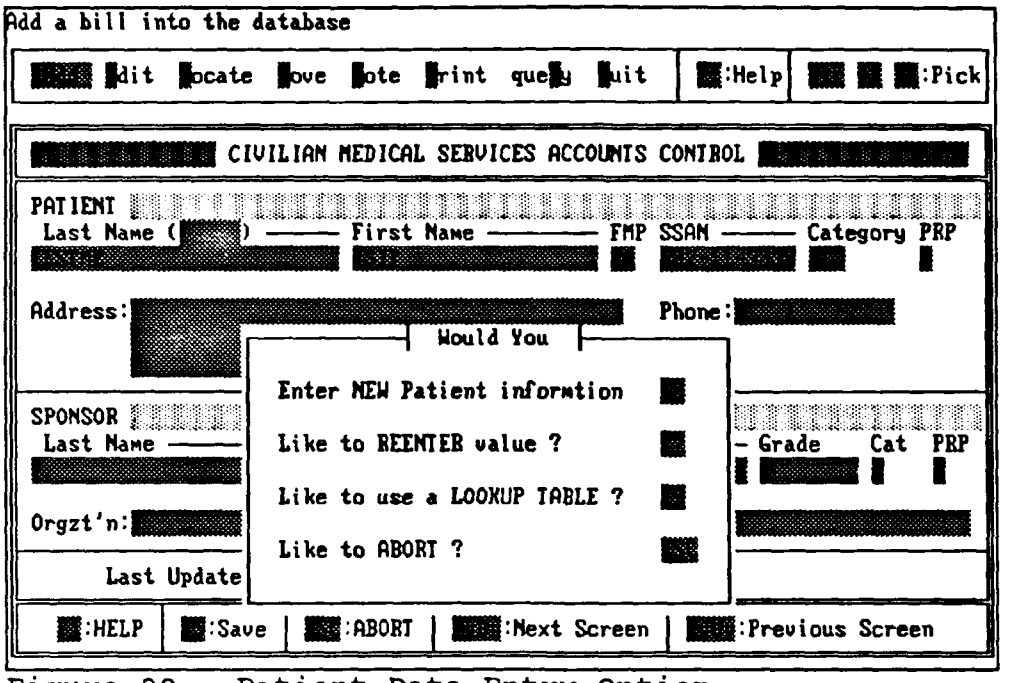

Figure 28. Patient Data Entry Option

(4) Press ESC to abort the add option.

b. Match is found. If a match is found, all of the patient data field values are displayed (Figure 29). First, verify that this is the correct patient. Remember, it is possible to have individuals with the same names! If this is not the correct patient, press "N" for NO at the verification prompt. Second, verify the data in all the data fields. If any data field need correcting, do so!

NOTE. The following is provided:

1. Be careful to avoid entry of erroneous patient data. Two common mistakes create difficulties for the Alternative Care Assistant in handling data.

a. First, the entry of the wrong social security number for a patient who has previously been referred is a potential problem.

Since the wrong social security number is entered, no matching data record is found. This mistake become a problem when the "Enter NEW Patient Information" option is selected. As a result, the same patient will have two data records, one with a correct social security number and one with an incorrect social security number. If an incorrect social security number has been entered, use the MOVE option to transfer the bill to the correct patient.

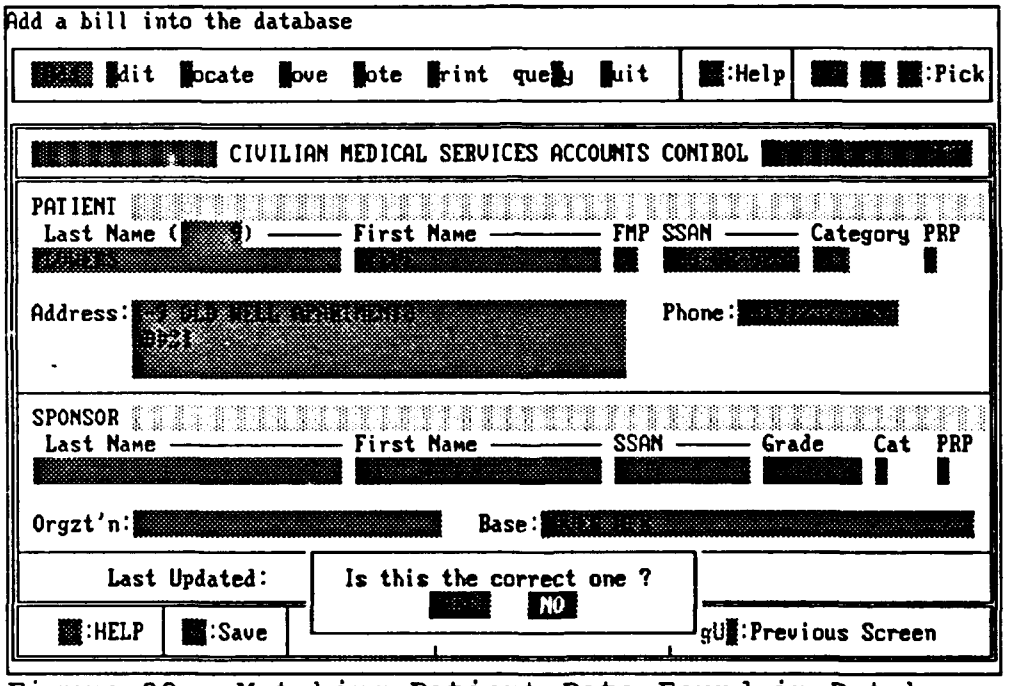

Figure 29. Matching Patient Data Found in Database

b. Second, be sure the displayed data record is the correct one. The search routine used by the Alternative Care Assistant may match a data record on any of the data fields. As a result, the record initially found may not be the one you are looking for. If bill has been associated with the wrong patient, use the MOVE option to

transfer the bill to the correct patient.

Step 16 USER. Enter the patient's tri-service beneficiary category (Figure 29).

VALID ENTRY. The following applies:

1. The first character of this data field indicates the branch of service: "A" for Army, "F" for "Air Force", "N" for Navy, "M" for Marine.

2. The second and third characters indicate the actual beneficiary category. These are numeric characters.

3. Entered values must have a matching data record in the PATCODE.dbf.

ACTION. If a value is entered for the tri-service beneficiary category does not have a matching data record in the database PATCODE.dbf, you use a lookup window. Use the arrow keys to highlight the desired value, and press <ENTER>.

NOTE. The following is provided:

1. The PATCODE.dbf is updated through the SYSTEM MAINTENANCE-TABLE MAINTENANCE option.

2. The selected family member prefix should be consistent with the selected value for the tri-service beneficiary category. For instance, the family member prefix for an active duty member is "20". All Tri-service beneficiary categories have "11" as their last two digits.

3. Use the report option to get a listing of these codes.

Step 17 USER. Indicate if the patient is in the Personnel Reliability Program (PRP) (Figure 29).

VALID ENTRY. Enter "Y" for YES or "N" for NO.

NOTE. If the patient is on active duty, the patient is the sponsor. If so, the PRP status for the sponsor and the patient is the same.

Step 18 USER. The following applies:

1. If the patient has an existing data record, the associated sponsor information is displayed after the last patient data field (phone number) is entered. Verify that the sponsor is the correct. Next, verify that all the sponsor data is accurate (Figure 30).

2. If the patient is a new referral, two possibilities exist. Either the sponsor data exists in the database for another sponsored beneficiary, or the sponsor is also new. In either case, enter the sponsor's last and first name, social security number, pay grade, beneficiary category, PRP status, and press <ENTER> (Figure 30).

VALID ENTRY. The following applies:

1. The sponsor's last and first name are mandatory entries.

2. The sponsor's social security number uses the "999-99-9999" format.

3. The sponsor's pay grade must have a matching data record in the GRADE.dbf database.

ACTION. If a matching data record is found, all the values for the sponsor data fields are displayed. Verify this is the correct sponsor, if not the correct sponsor, you have the following options (Figure 31):

1. Press the F3 key, to add the sponsor information into the database as a new sponsor.

2. Press the F7 key, to reenter the sponsor's last and first name, social security number, pay grade, beneficiary category, and PRP status.

3. Press the F9 key, to use a lookup window. When using the lookup window, use the HOME, END, and arrow

keys to highlight the desired sponsor, and press <ENTER>. You may also locate a sponsor in this lookup window by pressing the first letter of their last name. This will highlight the first sponsor with a last name beginning with this letter. This option also uses the social security number, but you must first switch the lookup window sequence by pressing the F3 key.

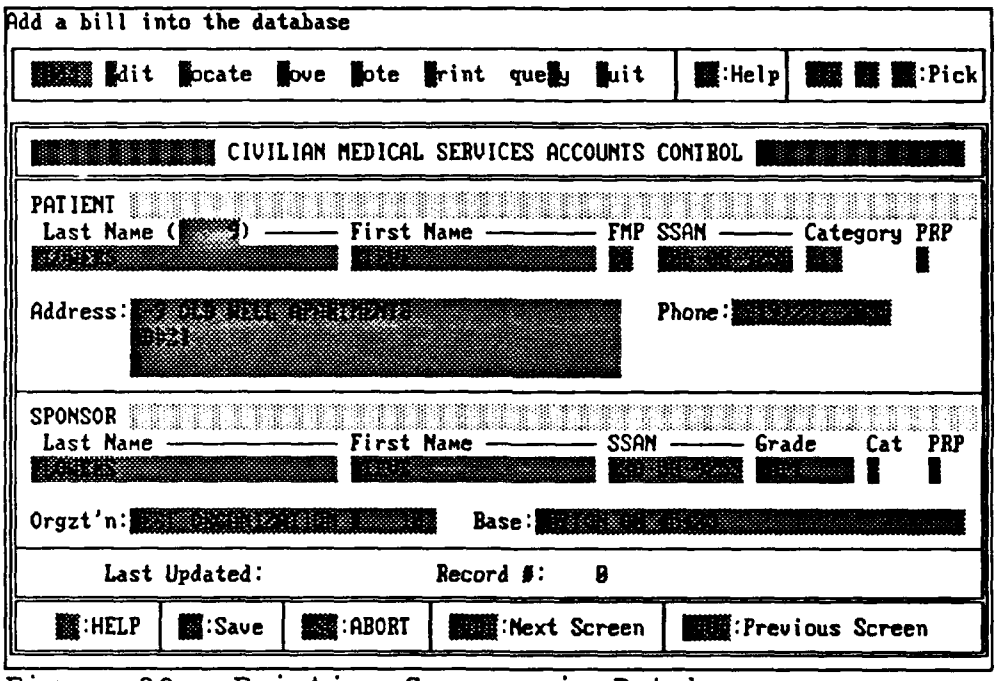

Figure 30. Existing Sponsor in Database

NOTE. The following is provided:

1. The GRADE.dbf is updated through the SYSTEM MAINTENANCE-TABLE MAINTENANCE option.

2. The sponsor's category is the same as the first character of the patient's tri-category (Step 16): "A" for Army, "F" for "Air Force", "N" for Navy, "M" for Marine.

Step 21 USER. Indicate if the sponsor is in the Personnel Reliability Program (Figure 30).

VALID ENTRY. Enter "Y" for YES or "N" for NO.

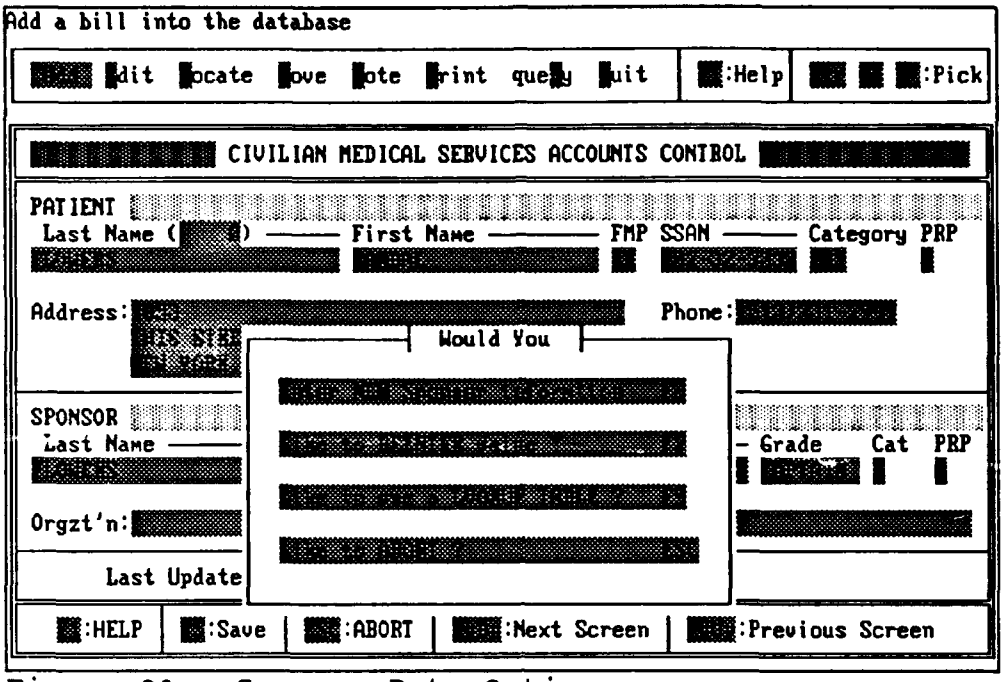

Figure 31. Sponsor Data Option

NOTE. If the patient is on active duty, the patient is the sponsor. As a result, the PRP status for the sponsor and the patient must be the same.

Step 22 USER. Enter the sponsor's duty organization.

Step 23 USER. Enter the sponsor's assigned base.

VALID ENTRY. The following applies:

1. Entered values must have a matching data record in the BASES.dbf database.

2. The general format is the base name AFB. Example: Scott AFB.

ACTION. If an entered value does not match a data record in the BASES.dbf, you use a lookup window. Use the arrow keys to highlight the desired value, and press <ENTER>. You may also locate a base in the lookup window by typing the base name. As you type, the lookup window will scroll to the base with the exact or similar spelling.

NOTE. The BASES.dbf is updated through the SYSTEM MAINTENANCE-TABLE MAINTENANCE option.

Step 24 USER. This data screen is complete. If you want to EDIT any entry on this screen, select the EDIT option. Otherwise, the next data screen is displayed.

VALID ENTRY. The following applies:

1. Press "E" for EDIT or "C" for CONTINUE

2. Or, use the arrow key to highlight the desired option, and press <ENTER> to select it.

ACTION. If EDIT is selected, you return to the first field on this data screen (Step 15). Move to the desired data field by pressing <ENTER>. If CONTINUE is selected, the next data screen is displayed.

NOTE. Once you have finished with a data screen, you can not return to it in the ADD option. You must use the EDIT option.

Step 25 USER. Enter the status of this Alternative Care Program referral. This status data is used to indicate certain management actions (Figure 32).

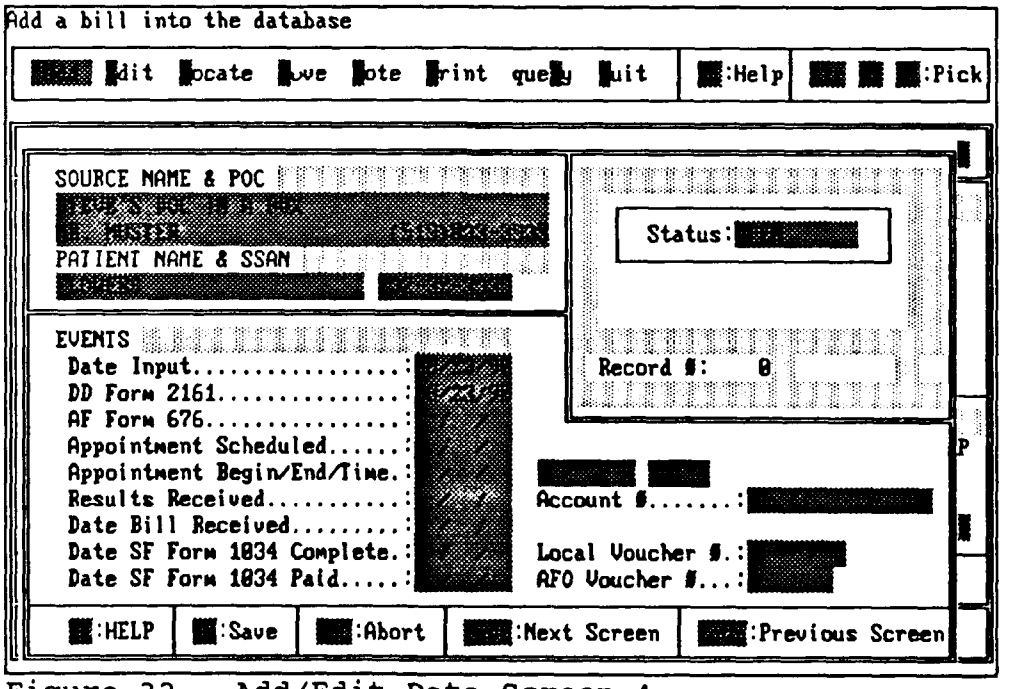

Figure 32. Add/Edit Data Screen 4.

VALID ENTRY. The following applies:

1. Entered values must have a matching data record in the REQSTAT.dbf database.

2. The initial values in the REQSTAT.dbf are:

   a. OPEN. This value is initially assigned to all entries. It indicates that the data record requires additional actions before another status values is assigned.

   b. COMPLETE. This value indicates that the bill for this data record has been paid. This status is only allowed when the voucher number or "S" number from a completed SF Form 1034 is entered. This data record is moved to the inactive file in the first End-of-Month processing when the data record has not been edited for 60 days.

   c. PENDING. This value indicates that a PAY status value was entered, and the date that the SF Form 1034 was processed.

   c. PAY. This value indicates that the bill is ready to be processed for payment. The Alternative Care Assistant allows a bill to be paid an indefinite number of times. However, after initial PAY status has been used, a message will display the number of times a request for payment has been processed against the data record. Under normal circumstances, a request for payment is processed once.

   e. CANCEL. This value indicates that the referral associated with this data record was cancelled. This data record will be moved to the inactive file during the first End-of-Month processing when the data record has not been edited for 60 days.

ACTION. If a value is entered for the duration which does not match the data in the REQSTAT.dbf, a lookup window is used.

NOTE. The REQSTAT.dbf database is updated through the SYSTEM MAINTENANCE-TABLE MAINTENANCE option.

Step 26 USER. Verify the date of the DD Form 2161. This was entered on the first screen (Figure 32).

VALID ENTRY. The date format is MM/DD/YY.

Step 27 USER. Enter the date that the AF Form 676 was approved (Figure 32).

VALID ENTRY. The following applies:

1. The date format is MM/DD/YY.

2. The date of the AF Form 676 should not be earlier than the DD Form 2161 date.

Step 28 USER. Enter the date that the appointment was scheduled. For Centrally Managed Allotment services, enter the beginning date for the service (Figure 32).

VALID ENTRY. The following applies:

1. The date format is MM/DD/YY.

2. The date the appointment was scheduled should not be earlier than the AF Form 676 date.

Step 29 USER. Enter the beginning date for the appointment (Figure 32).

VALID ENTRY. The following applies:

1. The date format is MM/DD/YY.

2. The beginning date of the appointment should not be earlier than the date the appointment was scheduled.

Step 30 USER. Enter the ending date for the appointment (Figure 32).

VALID ENTRY. The following applies:

1. The date format is MM/DD/YY.

2. The ending date of the appointment should not be earlier than the beginning date of the appointment.

NOTE. Normally, the beginning and ending dates will be the same. However, CMA inpatient services will have different dates.

Step 31 USER. Enter the date that medical results were received (Figure 32).

VALID ENTRY. The following applies:

1. The date format is MM/DD/YY.

2. The date that the medical results are received should not be earlier than the ending date of the appointment.

NOTE. Both the medical results and the bill must be received before payment is made to the health care provider.

Step 32 USER. Enter the bill's account number from the service provider billing system. The format is different for every service provider (Figure 32).

NOTE. This may be useful information when dealing with the health care provider.

Step 33 USER. Enter the date that an acceptable bill for the services was received (Figure 32).

VALID ENTRY. The following applies:

1. The date format is MM/DD/YY.

2. The date that an acceptable bill was received should not be earlier than the ending date of the appointment.

NOTE. A bill must be itemized and identify the patient.

Step 34 USER. Enter the date that the SF Form 1034 was completed (Figure 32).

VALID ENTRY. The following applies:

1. The date format is MM/DD/YY.

2. The date that the SF Form 1034 was completed should be later than the

date that medical results were received or an acceptable bill was received which ever is later (Figure 32).

Step 35 USER. Enter the local voucher number for the SF Form 1034 (Figure 32).

NOTE. This amount is used to control and follow the SF Form 1034 until the payment is processed.

Step 36 USER. Enter the date that the SF Form 1034 was paid by the Accounting and Finance Office.

VALID ENTRY. The following applies:

1. The date format is MM/DD/YY.

2. The date that the SF Form 1034 was paid should not be earlier than the date that the SF Form 1034 was prepared.

NOTE. The SF Form 1034 must be paid within 30 days by the Accounting and Finance Office.

Step 37 USER. Enter the voucher number of the SF Form 1034 returned from the Accounting and Finance Office.

VALID ENTRY. The data format is "S-99999" where the first two digits after the "S-" represent the fiscal year, and the remaining digits are a serial sequence for the fiscal year.

NOTE. For obvious reasons, this voucher number is often referred to as the "S" number.

Step 38 USER. This data screen is complete. If you want to EDIT any entry on this screen, select the EDIT option. Otherwise, the next data screen is displayed.

VALID ENTRY. The following applies:

1. Press "E" for EDIT or "C" for CONTINUE

2. Or, use the arrow key to highlight the desired option, and press <ENTER> to select it.

ACTION. If EDIT is selected, you return to the first field on this data screen (Step 25). Move to the desired data field by pressing <ENTER> at any preceding data field. If CONTINUE is selected, the next data screen is displayed.

NOTE. Once you have finished with a data screen, you can not return to it in the ADD option. You must use the EDIT option.

Step 39 USER. Verify the estimated cost for this Alternative Care Program referral. This was entered on the first screen (Figure 33).

VALID ENTRY. The estimated cost must be greater than zero.

NOTE. The estimated cost should be less than the CHAMPUS allowable cost. If not, DOCUMENT WHY!

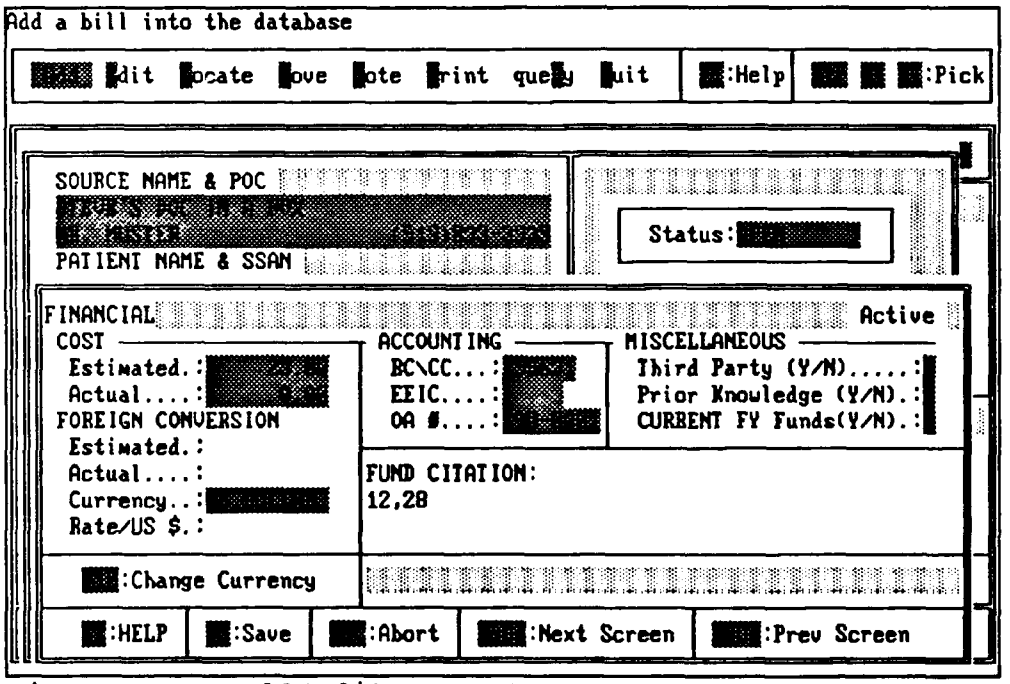

Figure 33. Add/Edit Data Screen 5

Step 40 USER. Enter the actual cost for this Alternative Care Program referral when the itemized bill is received (Figure 33).

ACTION. The actual cost must be zero or greater.

NOTE. This is taken from the bill.

Step 41 USER. Enter the responsibility center/cost center (RC/CC) code to be used in the fund citation (Figure 33).

VALID ENTRY. The following applies:

1. Entered value must have a matching data record in the RCCC.dbf database.

2. The default RC/CC is taken from the RC/CC for the referring clinic.

ACTION. If no value is entered or if a matching value is not found in the RCCC.dbf database, you must either reenter a value, use a lookup window, or abort this function. If you use the lookup window, use the HOME, END, and arrow keys to the highlight the desired value, and press <ENTER>. Whenever a matching value is found in the RCCC.dbf, the associated RC/CC code is displayed.

NOTE. The following applies:

1. This RC/CC code does not have to be for the referring clinic. This RC/CC is controlled by the financial RC/CC data field from the RCCC.dbf. If no entry is assigned to the financial RC/CC data field in the RCCC.dbf database, the referring clinic RC/CC code is used by default.

2. The default RC/CC codes are established in the RCCC.dbf which is updated through the SYSTEM MAINTENANCE-TABLE MAINTENANCE option.

Step 42 USER. Enter the Expense Element Investment Code (EEIC) for the fund citation (Figure 33).

VALID ENTRY. The following applies:

1. Entered values must have a matching data record in the EEIC.dbf database.

2. The data format is "99999".

3. The first two digits will always be "57" and the third digit will always be a "2" or a "3". If EEIC shreadouts are used, the last two digits vary by major command. If EEIC shreadouts are not used, the last two digits will be blank.

ACTION. If a value is entered which does not match a data record in the EEIC.dbf, you use a lookup window. Use the arrow keys to highlight the desired value, and press <ENTER>. While using the lookup window, type the digits of the EEIC. The lookup window will scroll to the matching EEIC.

NOTE. The following is provided:

1. The EEIC.dbf is updated through the SYSTEM MAINTENANCE-TABLE MAINTENANCE option.

2. The EEIC shreadouts vary by major command.

Step 43 USER. Verify the obligation authority number (OA #) from the current AF Form 616 (Figure 33).

NOTE. This is taken from the AF Form 616.

Step 44 USER. Indicate if this referral has potential third-party liability (Figure 33).

VALID ENTRY. Enter "Y" for YES or "N" for NO.

NOTE. Reference AFR 168-2.

Step 45 USER. Indicate if the military medical treatment facility had PRIOR KNOWLEDGE about the medical services received AND the patient is ACTIVE DUTY (Figure 33).

VALID ENTRY. Enter "Y" for YES or "N" for NO.

NOTE. This identifies charges which must be assigned to Program Element Code (PEC) 87713 IAW AFR 168-10, paragraph 1i.

Step 46 USER. Indicates if current year fiscal year funds are used to pay for this Alternative Care Program bill (Figure 33). If prior fiscal year funds are used, be sure to coordinate with the Accounting and Finance Office first.

VALID ENTRY. Either "Y" for YES or "N" for NO.

NOTE. This primarily pertains to supplemental care and cooperative care services.

Step 47 USER. Enter the national currency used to pay the bill for the Alternative Care Program referral (Figure 33).

VALID ENTRY. Entered value must have a matching data record in the FOREIGN.dbf database.

ACTION. If a value is entered which does not match the data in the FOREIGN.dbf, you use a lookup window. Use the arrow keys to highlight the desired value, and press <ENTER> to select the value.

NOTE. The following applies

1. Generally, the US DOLLAR currency value is used in CONUS locations.

2. The FOREIGN.dbf database is updated through the SYSTEM MAINTENANCE-TABLE MAINTENANCE option.

Step 48 USER. This data screen is complete. If you want to EDIT any entry on this screen, select the EDIT option. Otherwise, the next data screen is displayed (Figure 33).

VALID ENTRY. The following applies:

1. Press "E" for EDIT or "C" for CONTINUE

2. Or, use the arrow key to highlight the desired option, and press <ENTER> to select it.

ACTION. If EDIT is selected, you return to the first field on this data screen (Step 39). Move to the desired data field by pressing <ENTER> at any preceding data field.

NOTE. Once you have finished with a data screen, you can not return to it in the ADD option. You must use the EDIT option.

Step 49 USER. That's all! Control is returned to the menu bar at the top of the screen.

Locate. This option locates a data record and displays it on the screen. The LOCATE option is essential in retrieving data records for using the EDIT option. LOCATE has seven options available : FIRST, GOTO, LAST, NEXT, PREVIOUS, QUERY, and SCROLL. All of these options are accessible by pressing the highlighted letter in their menu title, or highlight the desired option and pressing <ENTER>. The following briefly describes each option.

First. Displays the first record in the database sequence. Since the database sequence is determined by the sequence of the key field, the first record entered is not necessarily the first record in the database sequence. This is the opposite of the LAST option described below.

Goto. Locates a data record by using the associated record number. The record number can not be greater than the total number of records in the database.

Last. Displays the last record in the database sequence. Since the database sequence is determined by the sequence of the key field, the last record entered is not necessarily the last record in the database sequence. This is the opposite of the FIRST option described above.

Next. Displays the next record in the database sequence. Since the database sequence is determined by the sequence of the key field, the next record's key field is lower in the database sequence than the data record displayed on the screen. This is the opposite of the PREVIOUS option described below.

Previous. Displays the previous record in the database sequence. Since the database sequence is determined by the key field sequence, the previous record's key field is higher in the database sequence than the data record displayed on the screen. This is the opposite of the NEXT option described above.

Query. Like the LOCATE option, the purpose of this option is to locate a data record. However, instead of moving in an incremental fashion through the database, this option searches for data records with matching values. Three categories of data fields are used: bill-related data, patient-related data, or sponsor-related data.

Bill-Related Data. Enter any or all of the following five data fields to locate a database record: authorization number, referring clinic, referring physician, appointment date, and civilian account number. If a match is found, these data field values are displayed. The search continues with each match being displayed and verified until the end of the database is reached.

Patient-Related Data. Enter any or all of the following three data fields to locate a database record: patient first name, patient last name, or patient social security number. When a match is found, the values of these data fields are displayed. A verification prompt is used to determine if this is the correct database record. The search continues with each match being displayed and verified until a match is accepted, or the end of the

database is reached. Whenever a data record is selected, a query is built which lists all the matching bills in another lookup window for the patient selected in the previous lookup window. The appropriate bill is selected by highlighting the desired record and pressing <ENTER>.

Sponsor Related Data. Enter any or all of the following three data fields used to locate a database record: sponsor first name, sponsor last name, or sponsor social security number. When a match is found, the values of these three data fields are displayed. A verification prompt is used to determine if this is the correct database record. The search continues with each match being displayed and verified until a match is accepted, or the end of the database is reached. Whenever a data record is selected, a query is built which lists all patients sponsored for the selected sponsor in a lookup window. To select a patient, use the arrow keys to highlight the desired patient and press <ENTER>. Next, all the bills for the selected patient are displayed in a lookup window. To select a bill, use the HOME, END, and arrow keys to move to the desired data record, and press <ENTER>. The selected data record is displayed on the main screen.

Scroll. This option displays all the bills in a scrolling lookup window. Like the bill-related data QUERY described above, use the HOME, END, or arrow keys to select the appropriate record by moving the scroll bar to the desired record, and pressing <ENTER>. You may also locate a

patient by typing the social security number. As you type, the highlight bar will move to the data record matching the value you are typing. The same type of search is possible for the patient's last name. However, you must first press the F3 key to switch the order of the database sequence. Upon exiting the lookup window, the selected data record is displayed.

Move. This option is not implemented in the prototype. This will allow correction of erroneous social security numbers for either the sponsor or patient. The EDIT option does not allow editing of these social security number data fields to prevent compromising the integrity of the key data field relationships.

Note. This option is not implemented in the prototype. This will allow for text notes to be added and edited to any data record. This will also be used to annotate management actions taken to resolve problem bills.

Print. This option displays instructions for printing the existing screen.

Query. This option allows for ad hoc queries like the MANAGEMENT-AD HOC QUERY. The only difference is that the SERVICES.dbf database is the only database accessible from this menu option. Refer to the MANAGEMENT-AD HOC QUERY section for specific instructions.

Quit. Returns to the Alternative Care Assistant main menu.

EOM

Presently, the EOM or End-of-Month option is not implemented in the prototype. However, this will perform necessary database management functions such as indexing.

MANAGEMENT

The MANAGEMENT option has four functions: AD HOC QUERY, BREAKEVEN ANALYSIS, FUNDS MANAGEMENT, and RANDOM SELECTOR. See Figure 34.

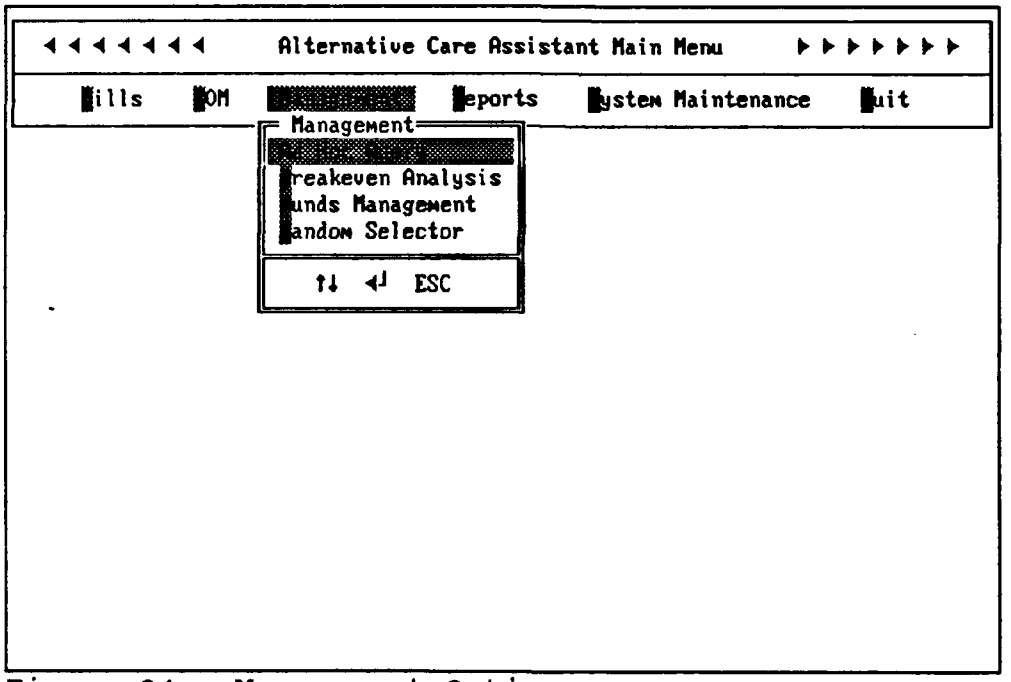

Figure 34. Management Options

Ad Hoc Query. This option provides the capability to develop and save database queries for any of the Alternative Care Assistant databases. Ideally, this is useful for obtaining special study data or evaluating "what if" situations.

First, you must decide which database to query. Next, if the Ad Hoc Query option has never been used before, the database will be initialized, and the query table displayed (Figure 35).

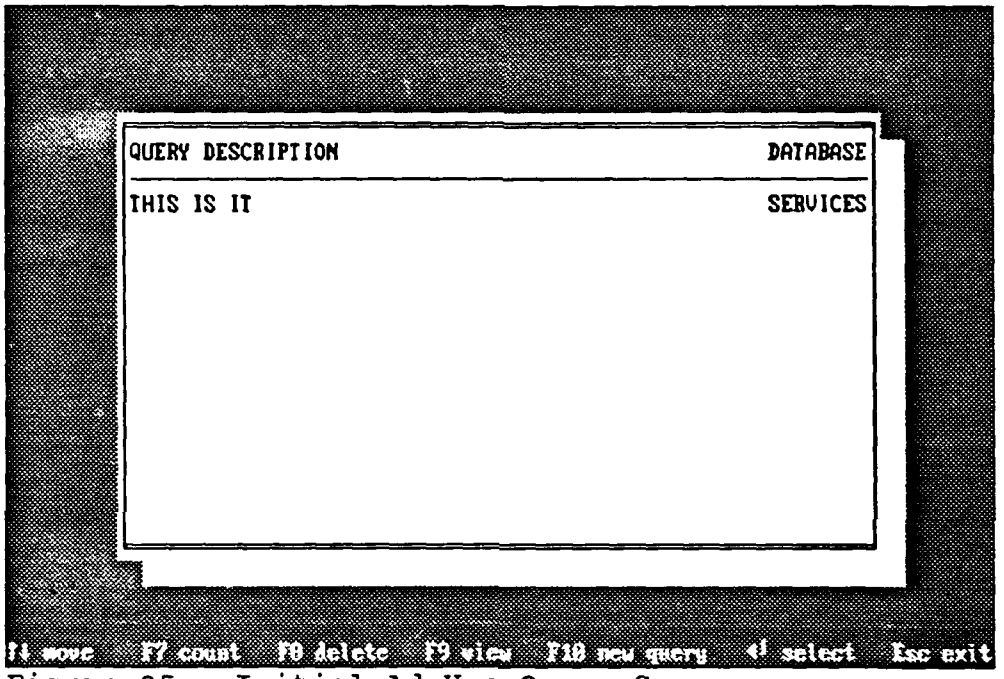

Figure 35. Initial Ad Hoc Query Screen

Creating a Query. The screen in Figure 36 will be displayed whenever you press F10 to create a new query. Notice that the key options are listed at the bottom of the screen. These are listed in Table 25.

Step 1 Select a database field by using the arrow keys to highlight the desired database field. Typing the first letter of the field name will also highlight the desired field name. It may be helpful to consult the data dictionary for the field definitions Press <Enter> to select a field.

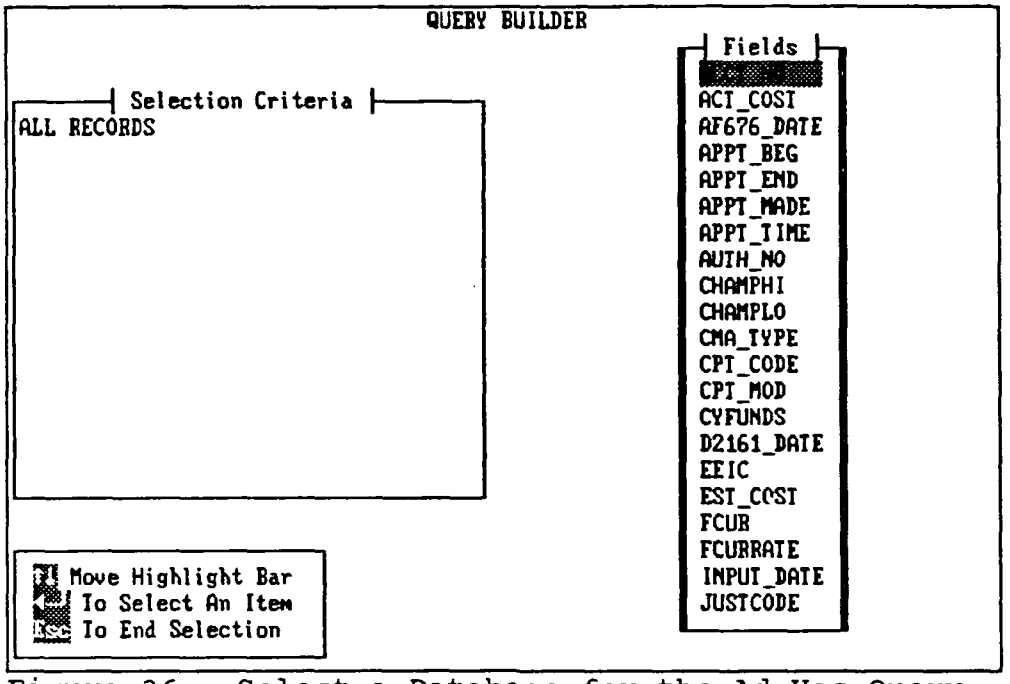

Figure 36. Select a Database for the Ad Hoc Query

Step 2 Select a relation operator (Figure 37). Highlight your selection and press <ENTER>.

Step 3 Select a database field value which will be queried. If you are unsure of the value to enter, press <ALT>-<V>. This displays all the field values in the database. Use the arrow keys to select a desired value, and press <ENTER> (Figure 38).

Step 4 Select a Boolean operator. (It is assumed that you understand Boolean logic!) If you want to add another field to the query, select any option but DISCARD or <<done>>, and repeat steps 1-4. If you made a mistake, select DISCARD and start again. If you are finished, select <<done>>. See Figure 39.

Step 5 Enter a description of the query (Figure 40).

Step 6 The query is displayed for future use (Figure 41).

TABLE 25

KEY OPTIONS FOR AD HOC QUERY

KEYS	ACTION
Arrow keys	Moves the highlight bar.
F7	Counts the database records matching the selected query.
F8	Deletes the highlighted query.
F9	Displays the criteria for current query.
F10	Creates a new query.
<Enter>	Activates the highlighted query.
Esc	Quit.

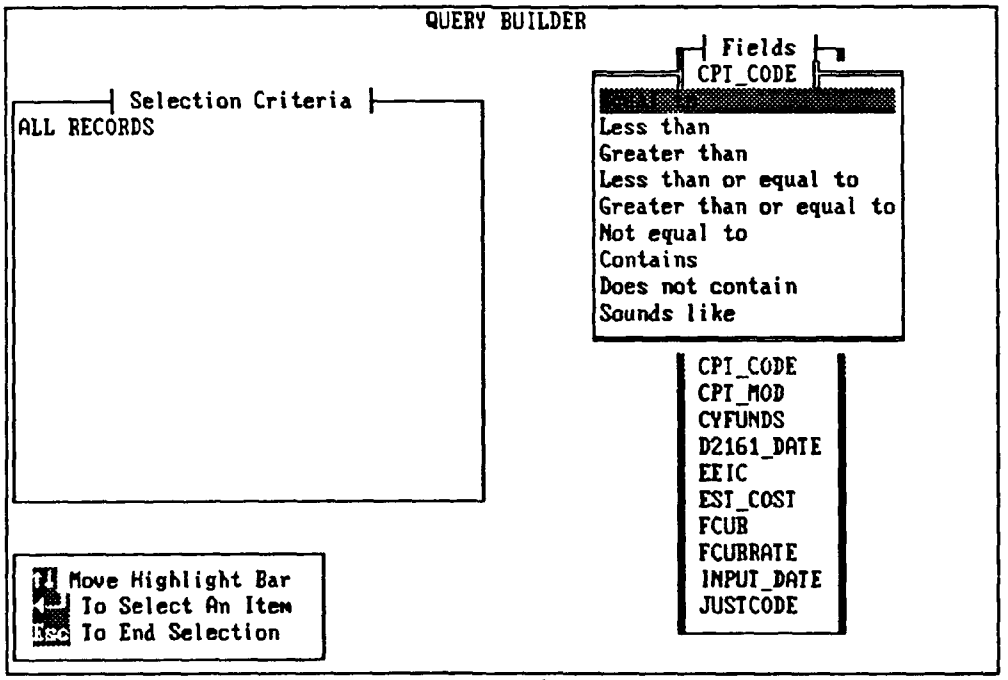

Figure 37. Select a Relation Operator for Ad Hoc Query

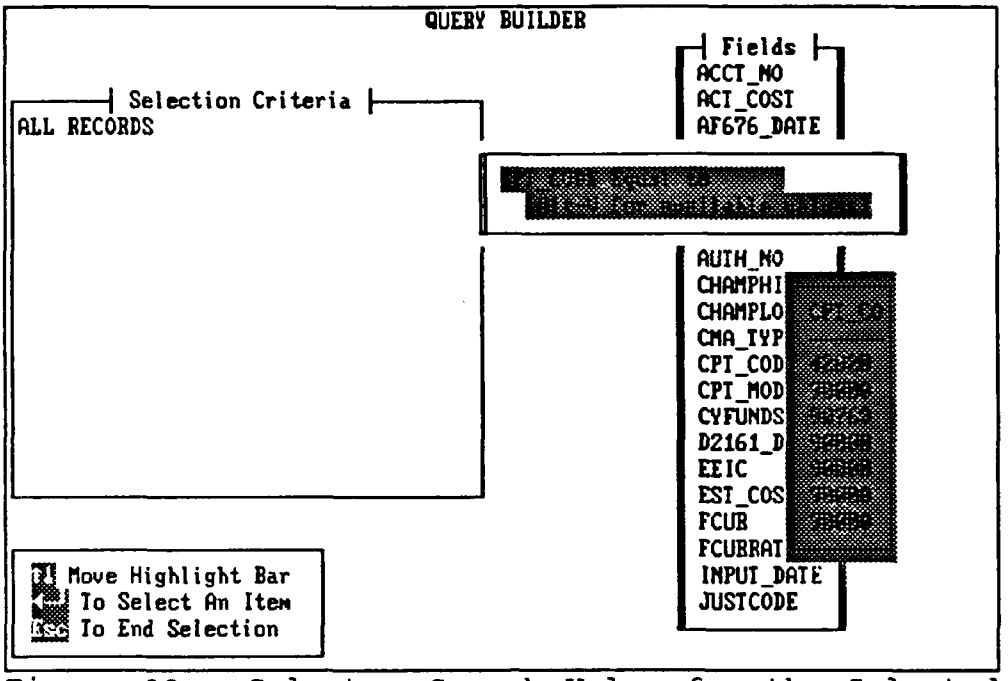

Figure 38. Select a Search Value for the Selected Database Field

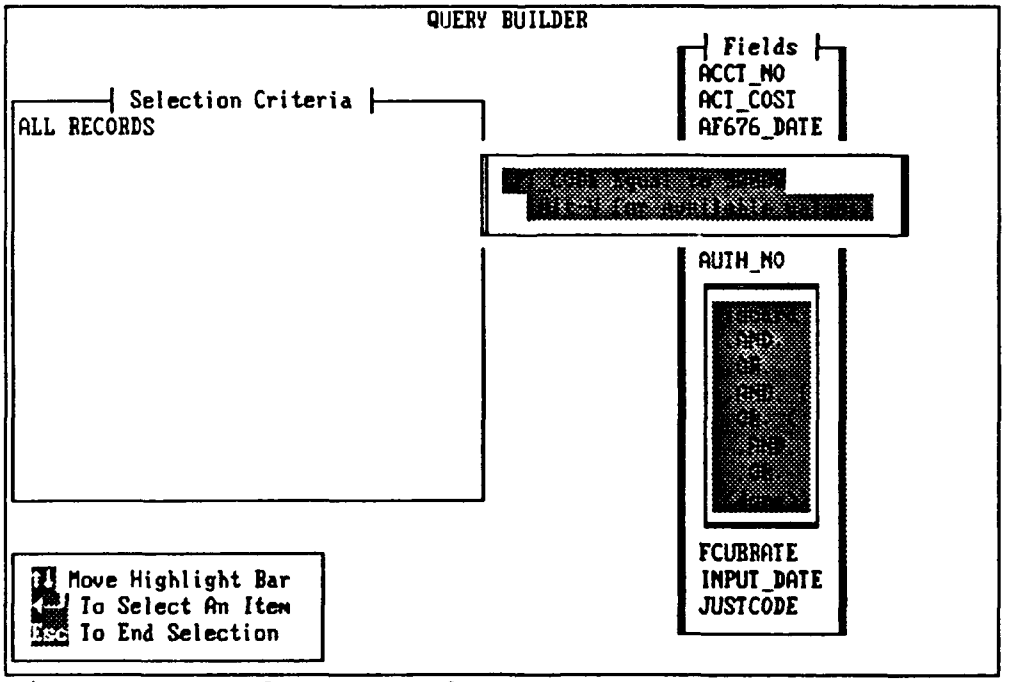

Figure 39. Select a Boolean Operator for Ad Hoc Query

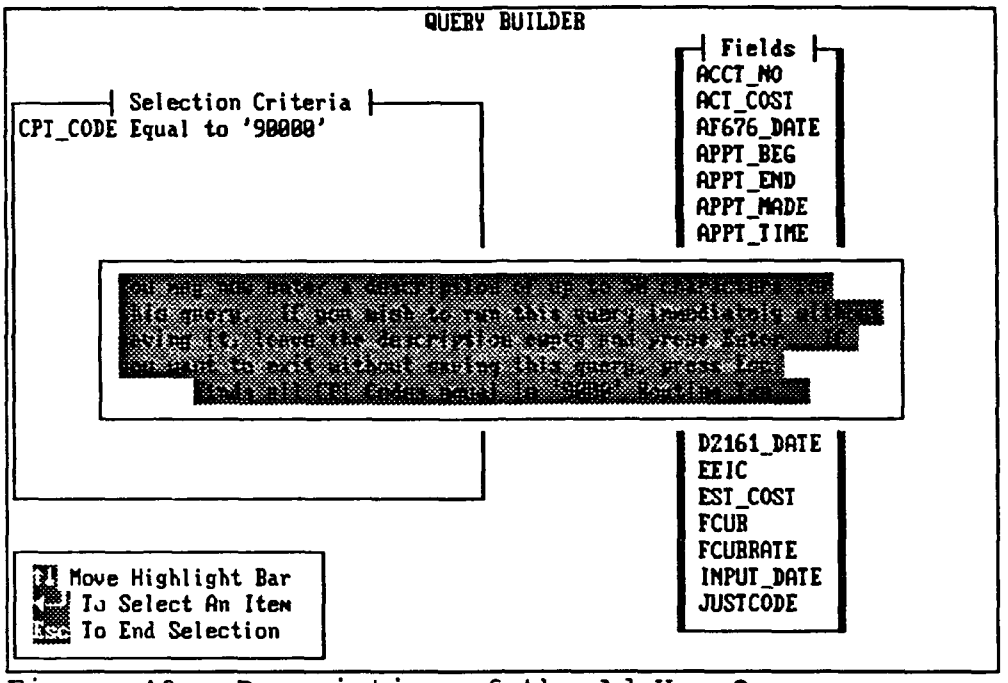

Figure 40. Description of the Ad Hoc Query

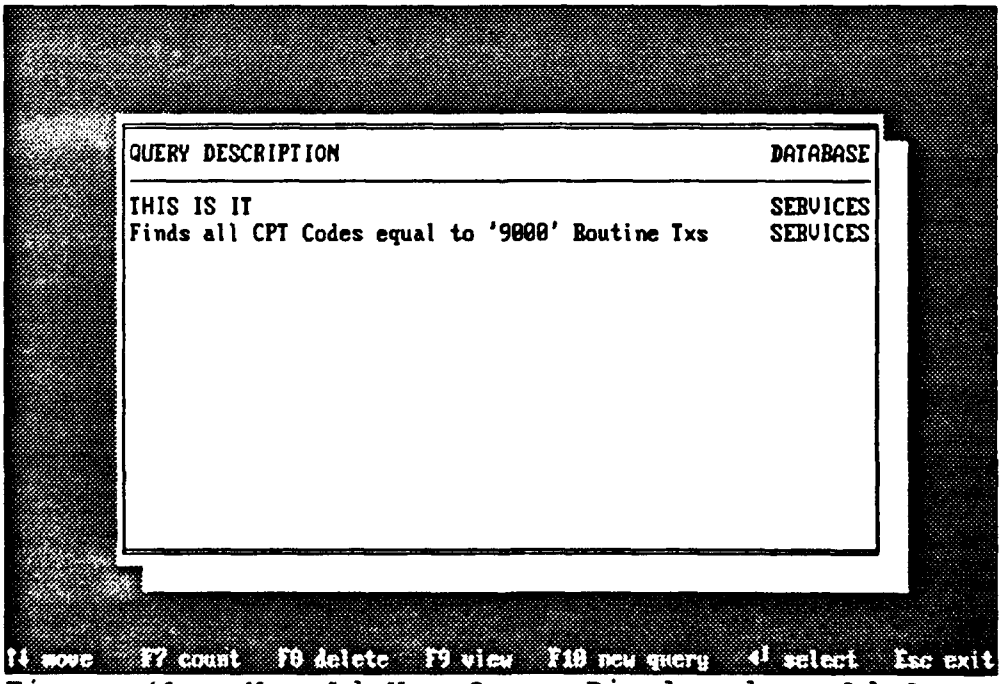

Figure 41. New Ad Hoc Query Displayed on Ad Query List

Breakeven Analysis. This option is used to compare the cost effectiveness of purchasing a service versus providing the service through in-house capability (Figure 43). In this option, there are five options: COSTS, GO, OUTPUT, PROCEDURE, QUIT. Each is described below. See Figure 42.

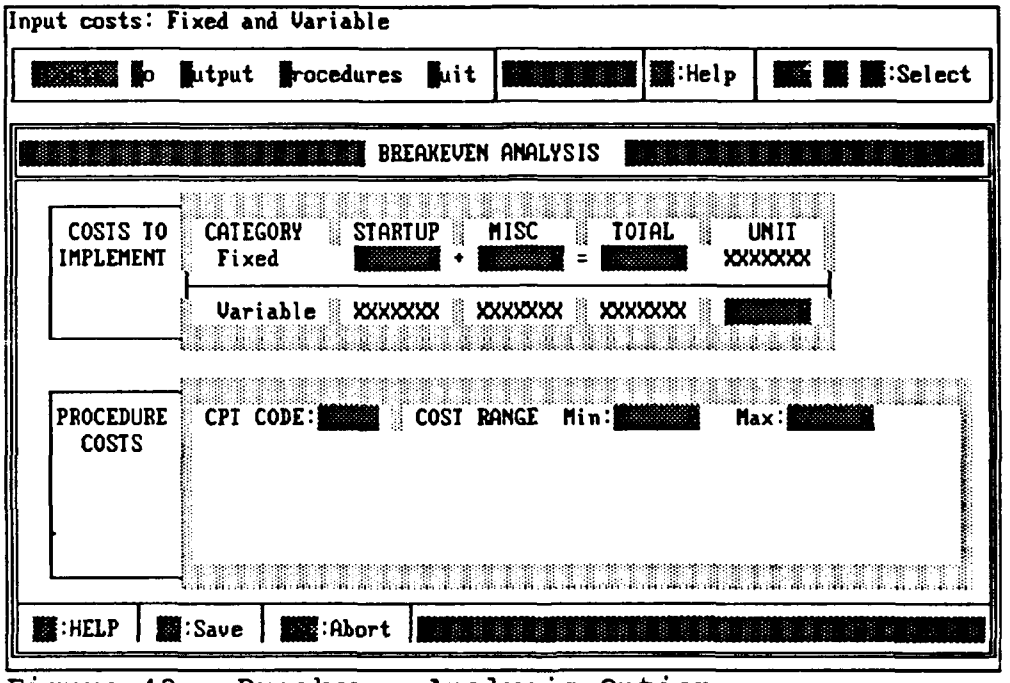

Figure 42. Breakeven Analysis Option

Costs. This option accepts input of the FIXED and VARIABLE costs required to implement the in-house capability. Fixed costs are subcategorized into STARTUP and MISCellaneous. Variable costs are costs which will are incurred every time the procedure is performed in-house. If the VARIABLE COST is less than the MINIMUM COST, the Alternative Care Assistant will ask you to verify all of the costs.

Go. This option executes the breakeven analysis and displays the results. Although the breakeven analysis will operate without complete information, input all the cost parameters before you select this option.

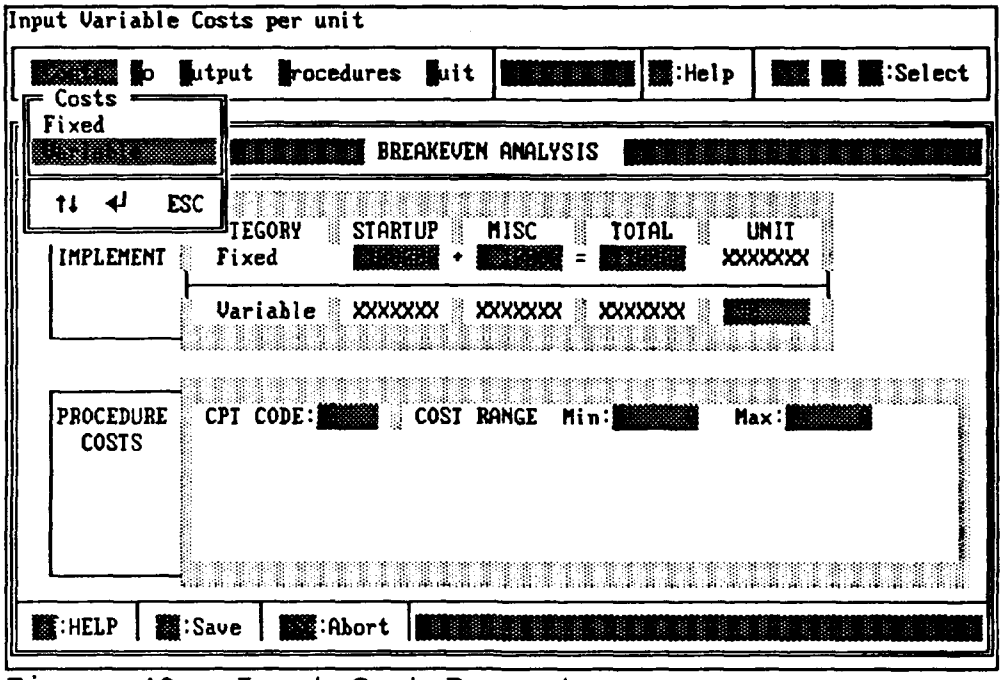

Figure 43. Input Cost Parameters

Output. The breakeven analysis may be output to a file, the printer, or the screen. If sent to a file, the file is output to the same subdirectory as the Alternative Care Assistant. Furthermore, it will overwrite any existing file by the same name.

Procedures. This option allows the input of the PROCEDURE COSTS to purchase the service. There are two options: INPUT, and DATABASE. These are described below.

Input. Allows keyboard input of the CPT CODE, the minimum cost, and maximum cost for the service being purchased. See Figure 44.

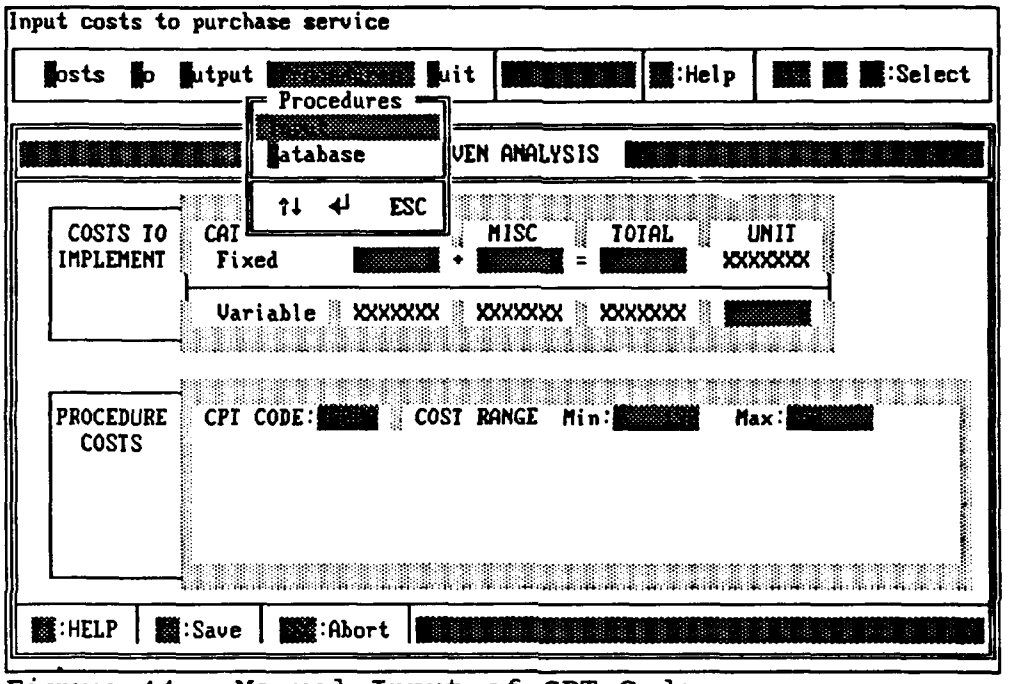

Figure 44. Manual Input of CPT Code

Database. Allows keyboard input of the CPT CODE. See Figure 45. Based on the input, the CHAMPUS allowable database is queried. If the CPT CODE is not found in the CHAMPUS allowable database, a lookup window is used. Once a CPT CODE is located in the database, the minimum and maximum CHAMPUS allowable costs are extracted.

Quit. Return to the main menu.

Example breakeven analysis. The following simplified example illustrates the use of the breakeven analysis module.

Presently, you purchase Magnetic Resonance Imaging (MRI) procedures from the local civilian hospital. You're not sure about the exact cost, but you know the Common Procedure Terminology (CPT) code for an MRI is 70551. You also know the purchase of MRI equipment costs $100,000 with installation, the annual maintenance contract for this equipment costs $10,000, and the necessary supplies to perform a MRI procedure costs approximately $250 per procedure. Given this information, the FIXED COSTS are $110,000 and the VARIABLE COSTS are $250. See Figure 43. Given the CPT code of 70551, the CHAMPUS allowable cost ranges from $485 to $808 (Figure 45). Finally, your hospital purchases approximately 500 MRI procedures each year (Figure 46).

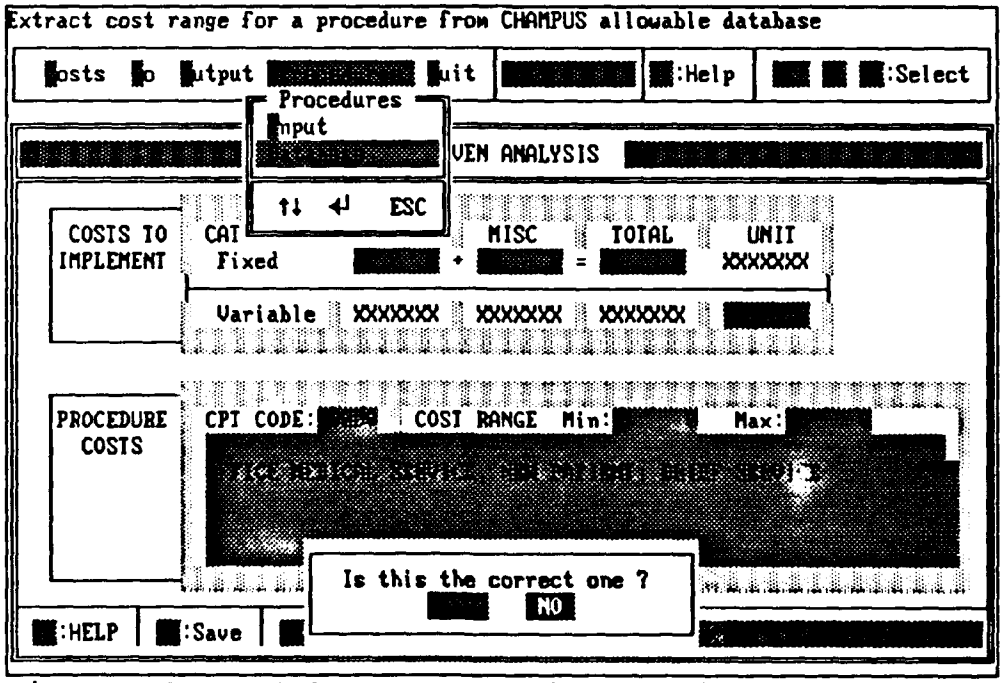

Figure 45. Database Query of CPT Code for Breakeven Analysis

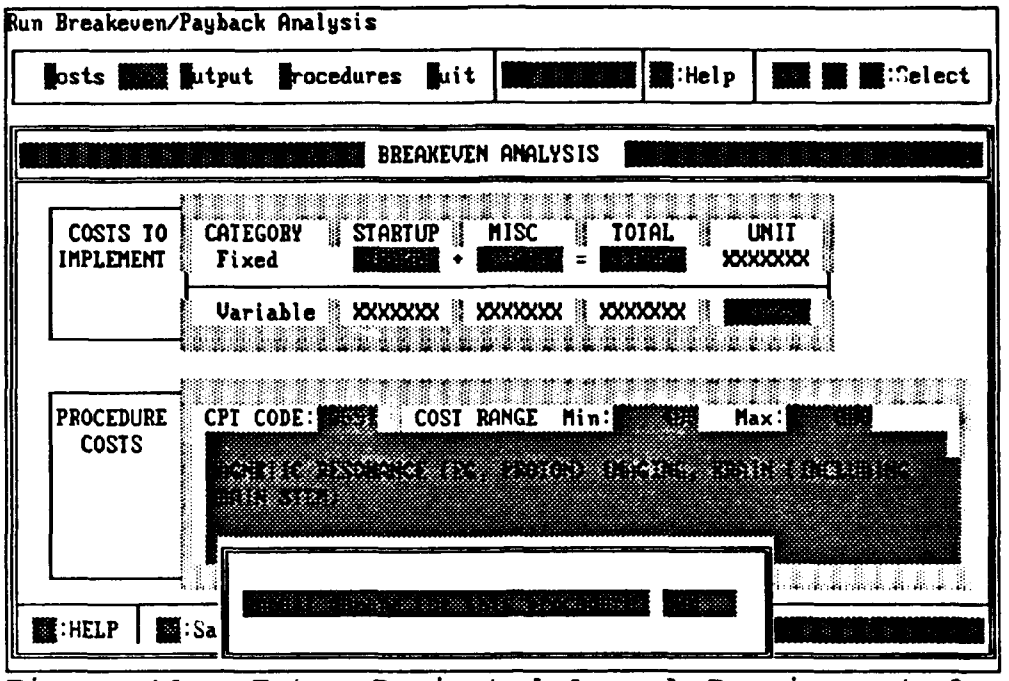

Figure 46. Enter Projected Annual Requirement for Procedure

Given these parameters, it is cost-effective to purchase MRI equipment if you purchase at least 469 MRI procedures at the minimum cost or 198 MRI procedures at the maximum cost. Assuming the 500 MRI procedures will be performed uniformly throughout the year, the equipment will pay for itself or "breakeven" in .4 to .9 years (Figure 47). Although this example uses an annual time period, any time unit may be entered, just remember that the PAYBACK is expressed in that unit. For example, if you enter the weekly demand for this procedure, then the PAYBACK TIME would also be weekly.

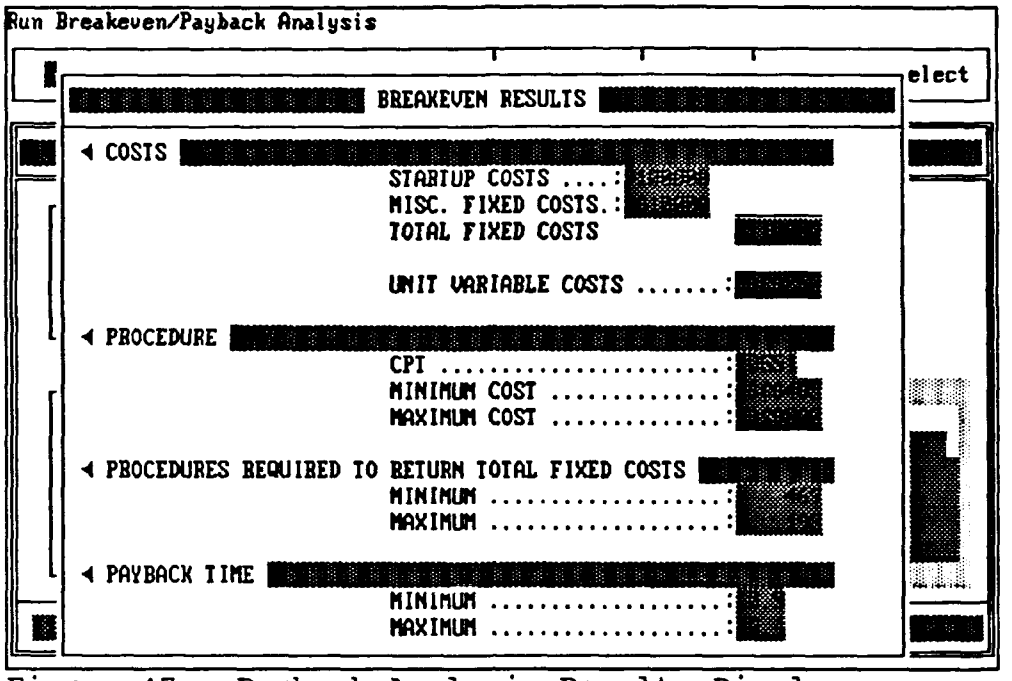

Figure 47. Payback Analysis Results Display

Funds Management. This option maintains an on-line balance for operations and maintenance (O&M) funds used by supplemental care and cooperative care services rendered through the Alternative Care Program. Seven options are available: BALANCE, NEW OA, INCREASE $, DECREASE $, VIEW, PRINT, QUIT. See Figure 48. Each of these options may be selected by pressing the highlighted letter of their menu title, or by using the arrow keys to highlight the option and by pressing <ENTER>. The following description is provided for these options.

Balance. Provides the current fund target and balance for Alternative Care Program O&M funds (Figure 49).

New OA. This option is not implemented yet. However, this will initialize the new obligation authority

for the Alternative Care Program O&M funds. Since O&M obligation authority expires, it must be established for a specific time period. This coincides with establishing the AF Form 616 for a specific time period.

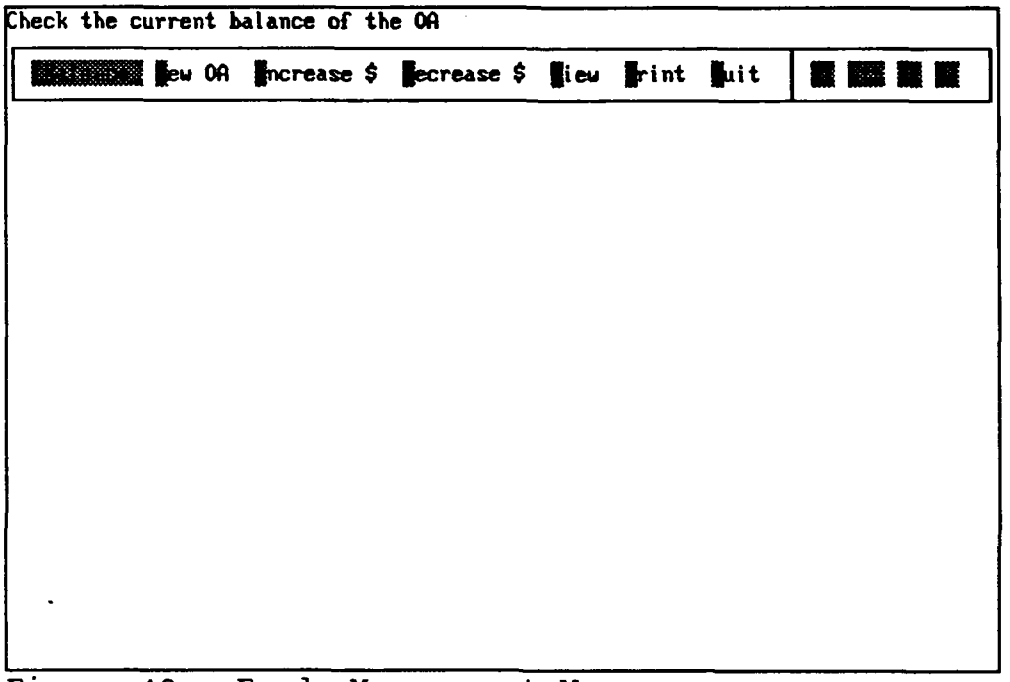

Figure 48. Funds Management Menu

Decrease $. Decreases the Alternative Care Program's obligation authority for O&M funds by decreasing the O&M fund target. Enter a positive dollar amount to the nearest dollar. The Alternative Care Assistant will not allow a decrease greater than the current fund target. See Figure 50. Although this is the same display screen as used for the INCREASE $ option, these options do perform opposite transactions.

Increase $. Increases the Alternative Care Program's obligation authority for O&M funds by increasing

the O&M fund target. This is synonymous with an increase to the existing AF Form 616. Enter a positive dollar amount to the nearest dollar. See Figure 50.

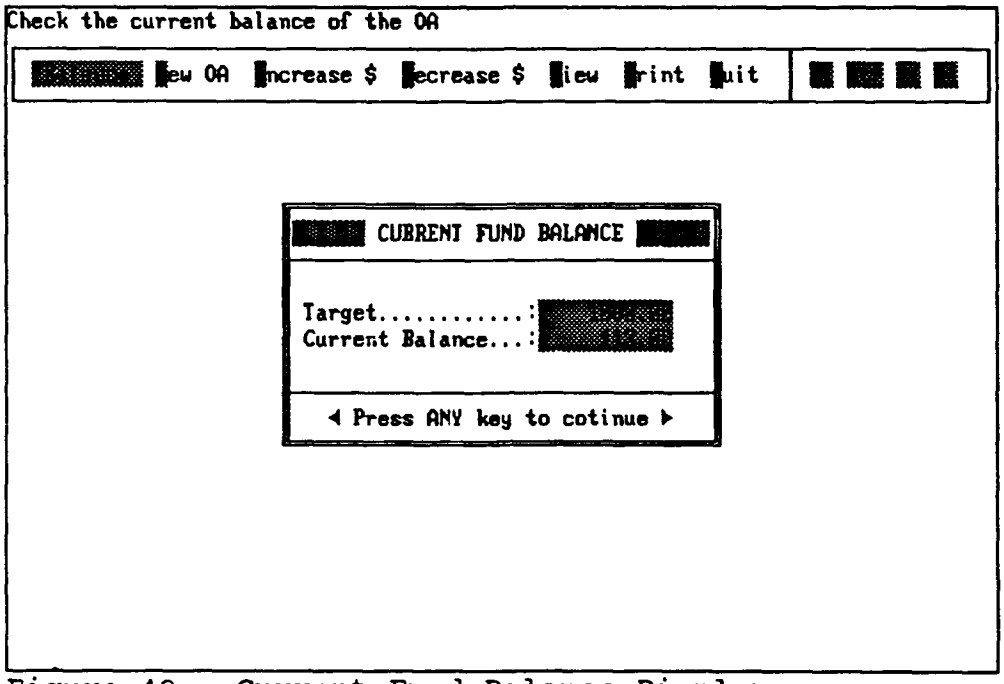

Figure 49. Current Fund Balance Display

View. Lists on the screen all the transactions which have affected the obligation of funds since the obligation authority was established. This is the AF Form 616 facsimile.

Print. Prints all the transactions which have affected the obligation of funds since the obligation authority was established. This is the AF Form 616 facsimile.

Quit. Returns to the main menu.

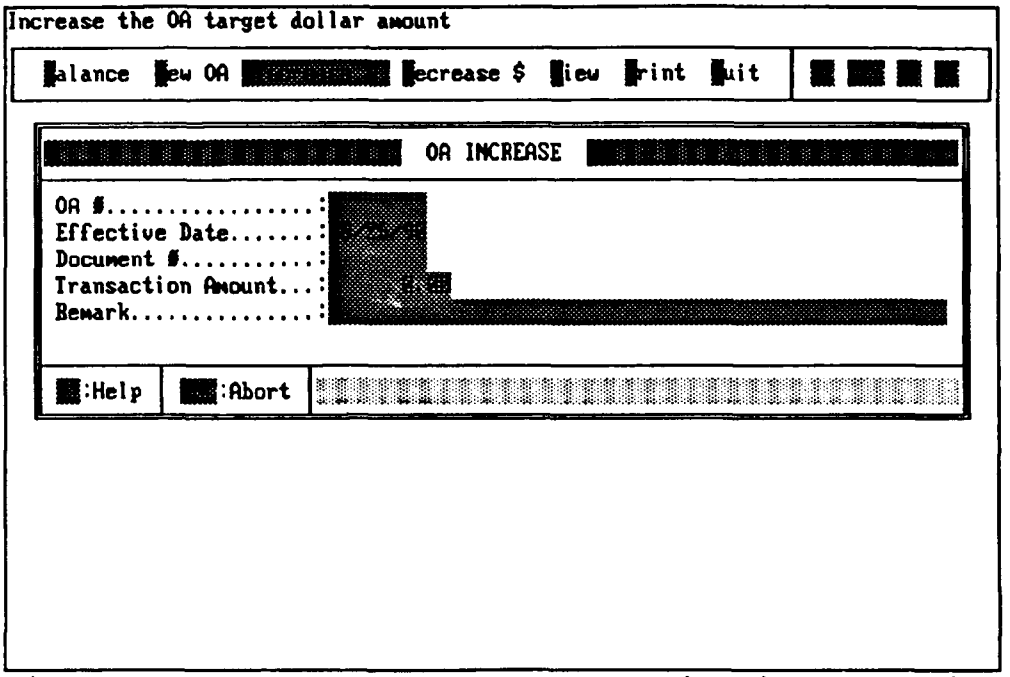

Figure 50. Increase/Decrease to Obligation Authority

Random Selector. This option is used to randomly select data records from the SERVICES.dbf database. Primarily, this option was designed to support the annual Alternative Care Program evaluation. This option has two options: AUTOMATIC and MANUAL. See Figure 51.

Automatic. This option uses a 99 percent confidence interval to determine how many data records to select.

Manual. This option allows the user to choose the number of data records to select. See Figure 52.

Regardless of the option selected, a listing is output to a disk file or to the printer after the data records are randomly selected.

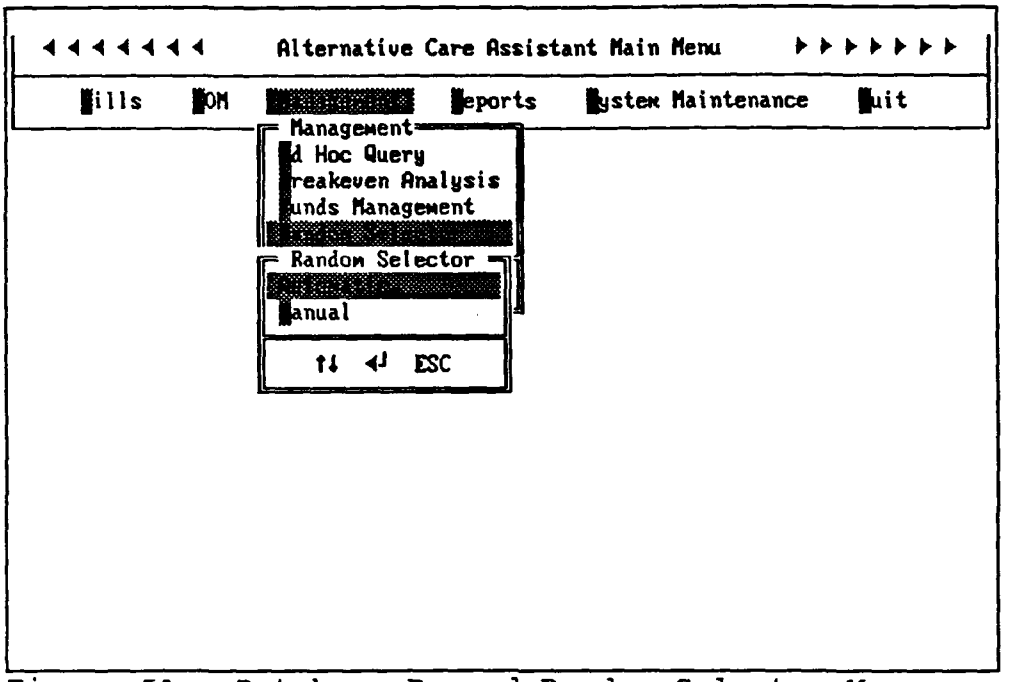

Figure 51. Database Record Random Selector Menu

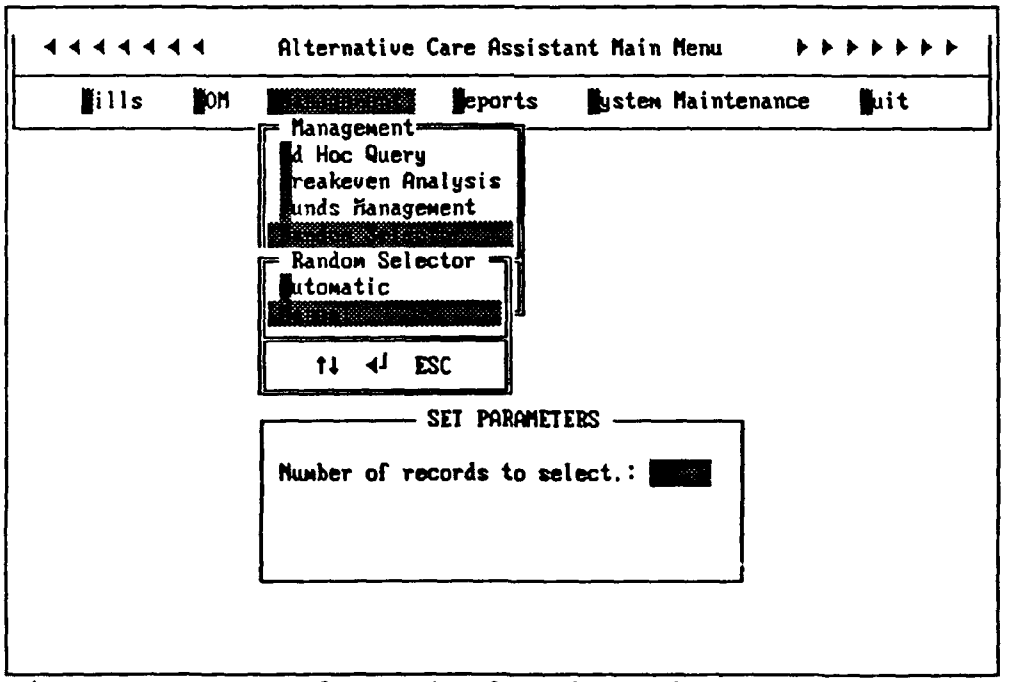

Figure 52. Manual Input of Number of Database Records to Randomly Select

REPORTS

The REPORTS option has seven options: BATCH, LETTERS, MGMT, OTHER, REQUIRED, SYSTEM, and QUIT. Each of these options may be selected by pressing the highlighted letter in the menu title, or using the arrow keys to highlight the desired option, and pressing <ENTER>. The following descriptions of these options are provided.

Batch. This option is not implemented in the prototype. This option will allow batch printing of several reports.

Defaults. This sets the output destination to file, screen, or printer. Unless specified the default is screen.

Letters. This option is not implemented yet.

Mgmt. All the output listed for this option are categorized as management type reports.

Other. This option is reserved for future use.

Required. All the output for this option is presently required by Air Force guidance.

System. This option provides reports to serve as hard copy data backup for the databases accessible through the SYSTEM MAINTENANCE-TABLE MAINTENANCE option.

Quit. Returns control back to the Alternative Care Assistant main menu.

SYSTEM MAINTENANCE

The SYSTEM MAINTENANCE option has six options: BACKUP FILES, DEFAULTS, QUICK FILE MAINTENANCE, RECALL ARCHIVE DATA, TABLE MAINTENANCE, UPLOAD CHAMPUS COSTS. All of these

options are accessible by pressing the highlighted letter in their menu title, or highlighting the desired option and pressing <ENTER> (Figure 53). The following descriptions of these options are provided.

Backup Files. This option is not implemented in the prototype. This option will use the MS-DOS BACKUP.EXE program to backup all the database files to the disk drive location selected in the DEFAULTS-CONFIGURE option.

Defaults. This option has four options: CONFIGURE, LOCAL DEFAULTS, FORM DEFAULTS, QUIT. Each is described below.

Configure. This option allows the user to select the disk drive where the Alternative Care Assistant and its backup files will be physically located (Figure 54). It is recommended that floppy diskettes or the "A:" drive be used for the backup copies.

Local Defaults. This option has five data screens for defaults applicable to the specific using location. Use the PgDn and PgUp keys to move to the previous or next data screen respectively. See Figures 55-59.

Form Defaults. This option has data screens for the default signature blocks for the AF Form 676, AF Form 616, and the SF Form 1034. See Figures 60-62.

Quit. Returns to the main menu. Quick file maintenance is automatically performed if a change has been made to the data field labeled "First 3 of RC/CC."

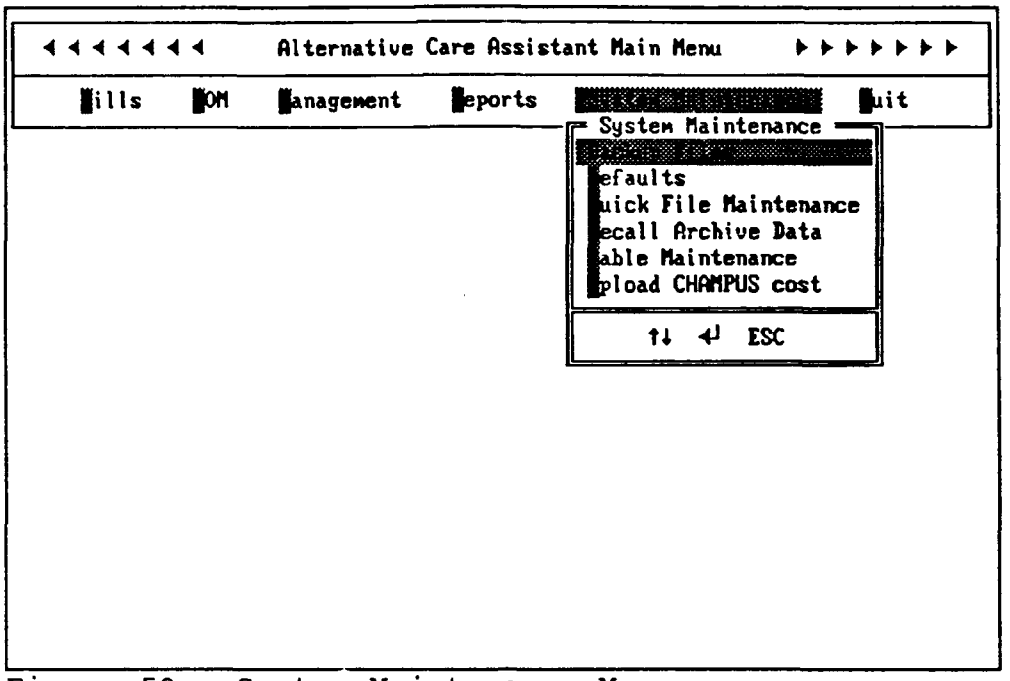

Figure 53. System Maintenance Menu

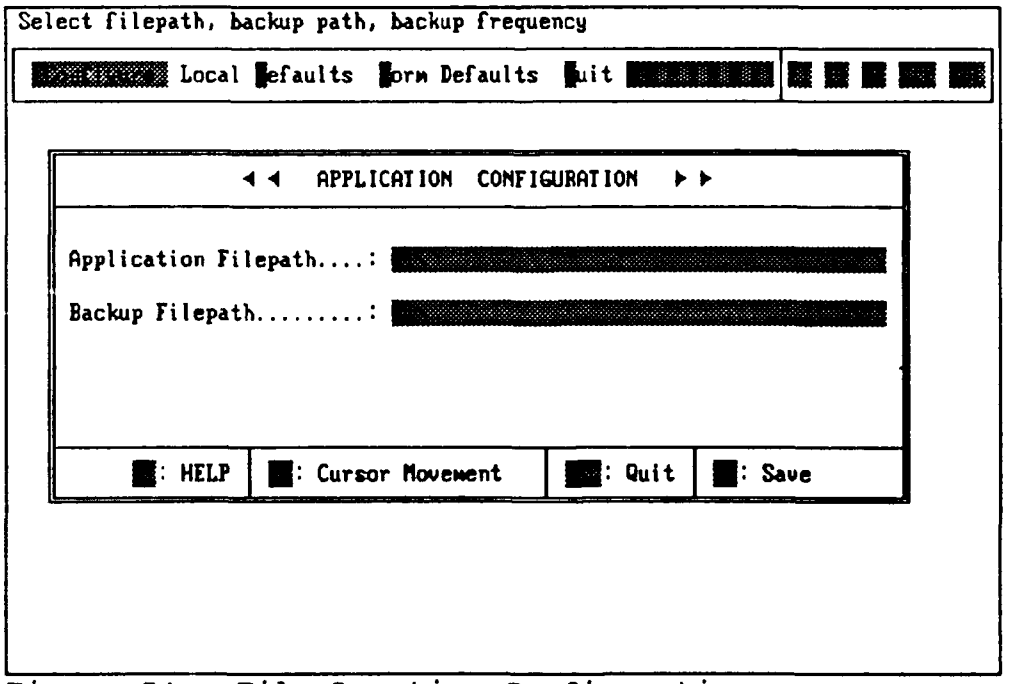

Figure 54. File Location Configuration

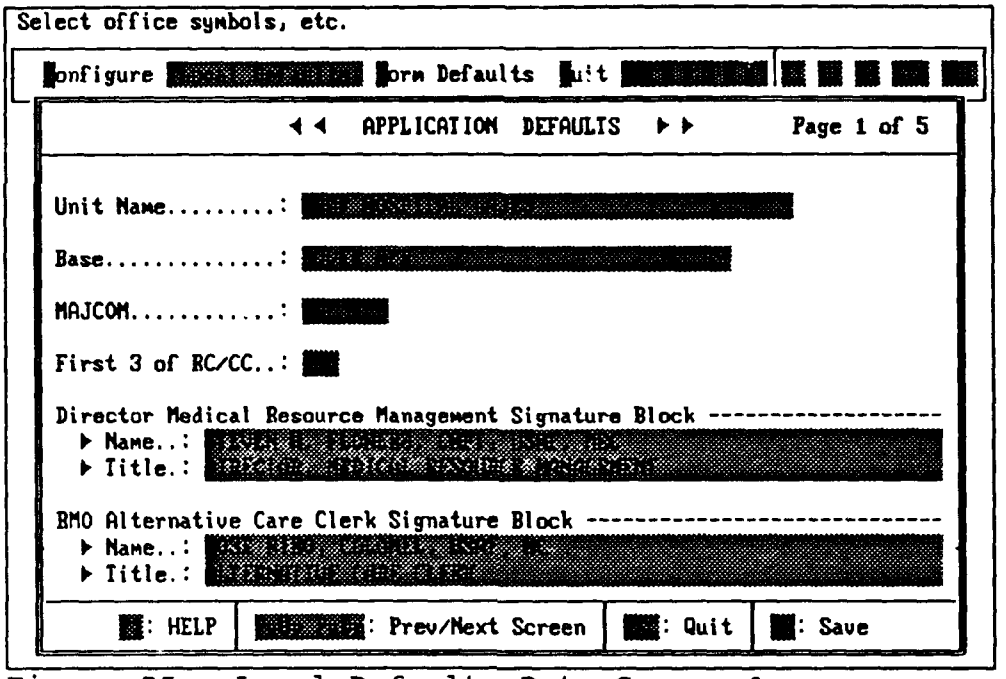

Figure 55. Local Defaults Data Screen 1

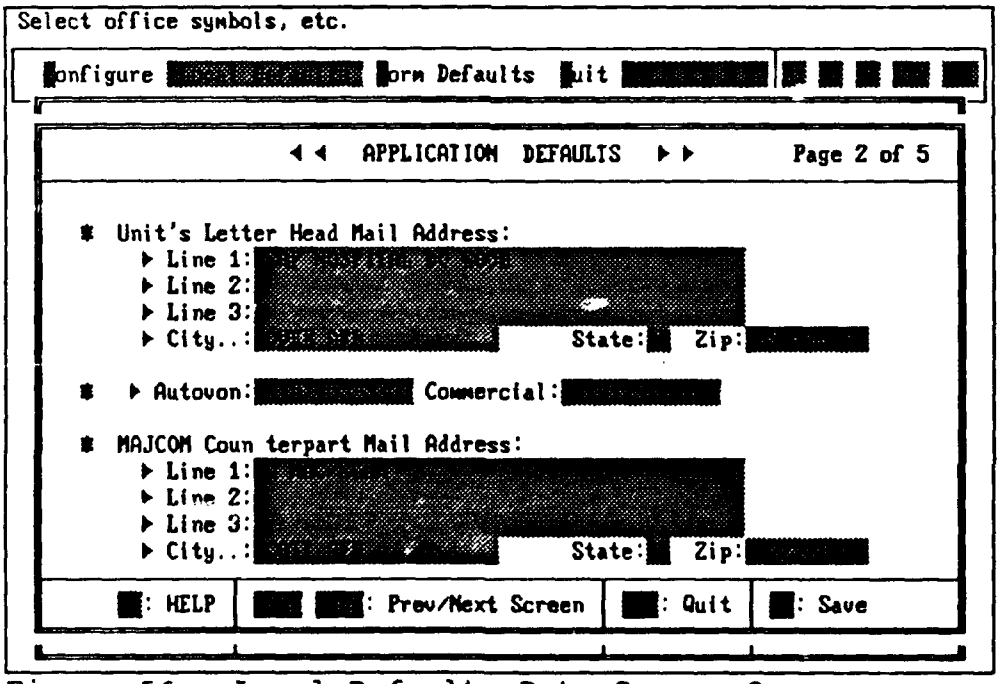

Figure 56. Local Defaults Data Screen 2

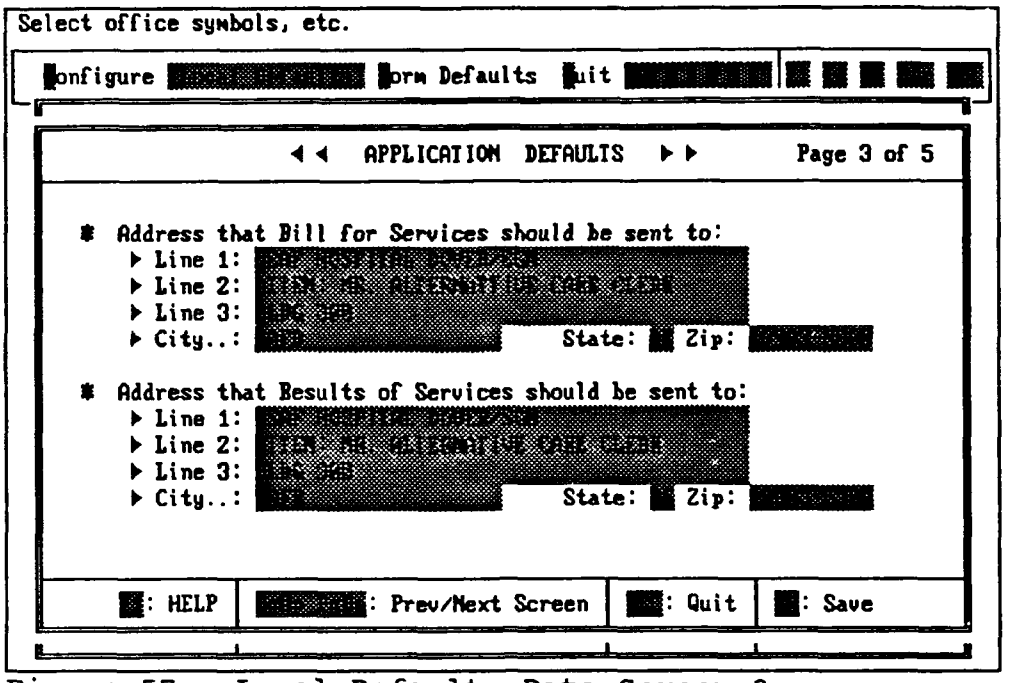

Figure 57. Local Defaults Data Screen 3

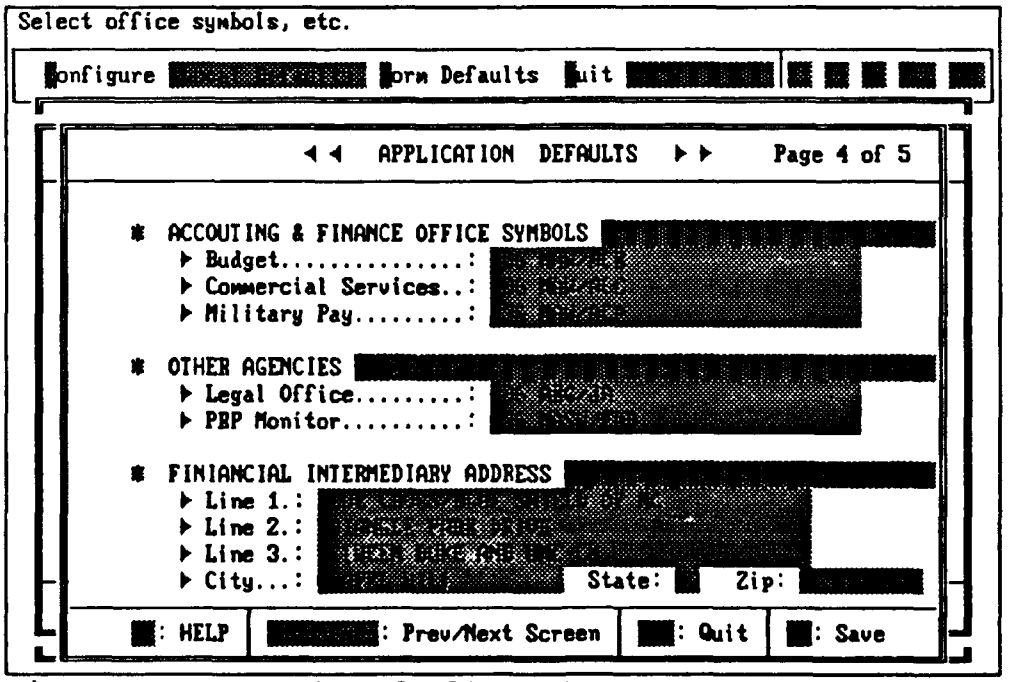

Figure 58. Local Defaults Data Screen 4

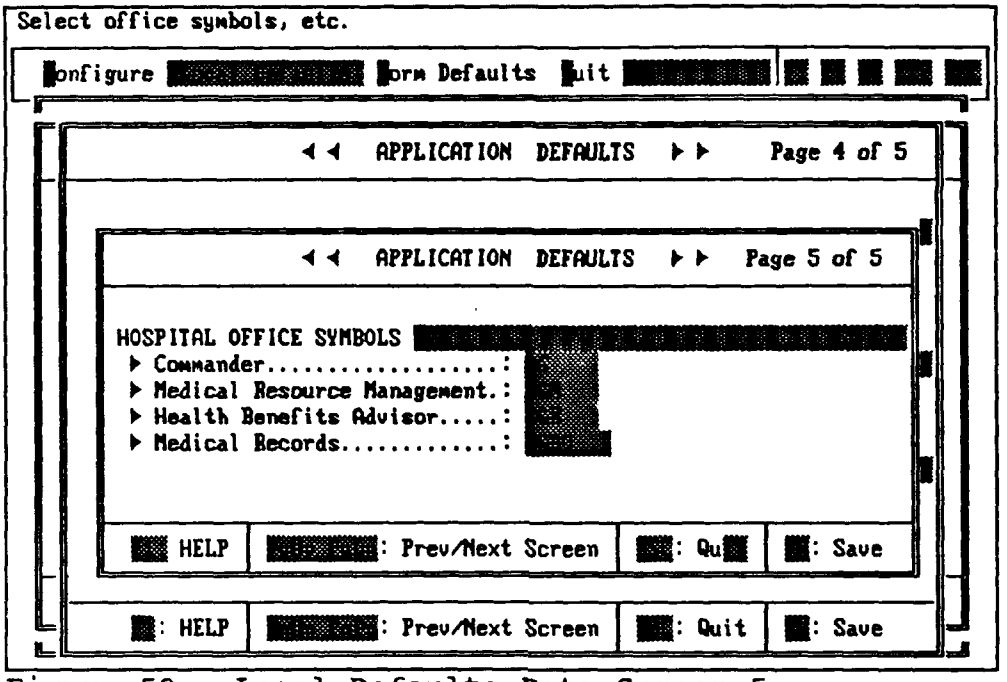

Figure 59. Local Defaults Data Screen 5

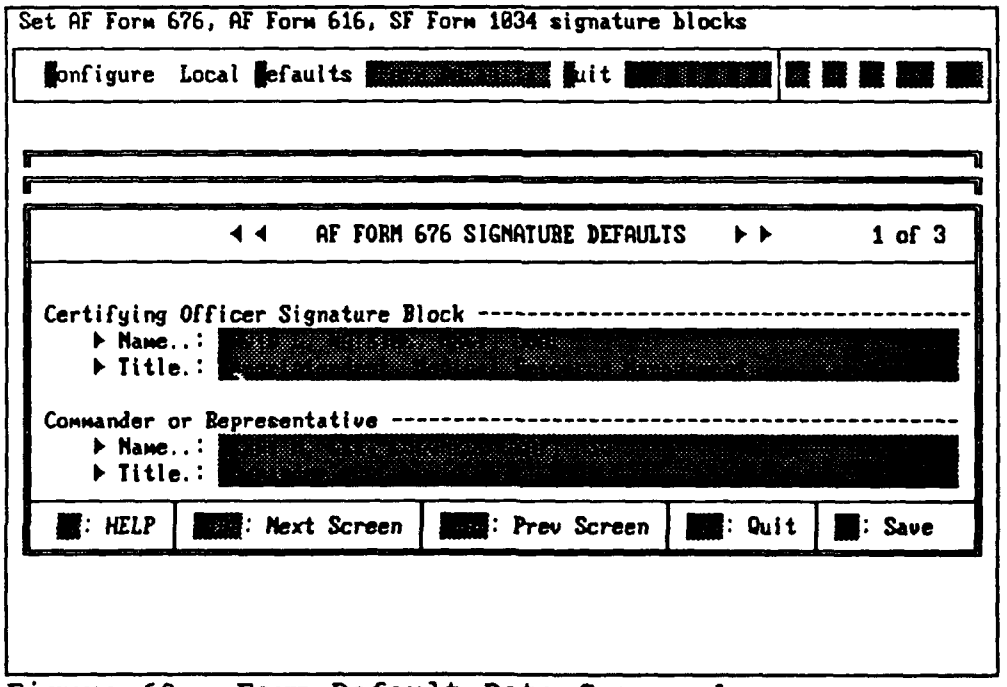

Figure 60. Form Default Data Screen 1

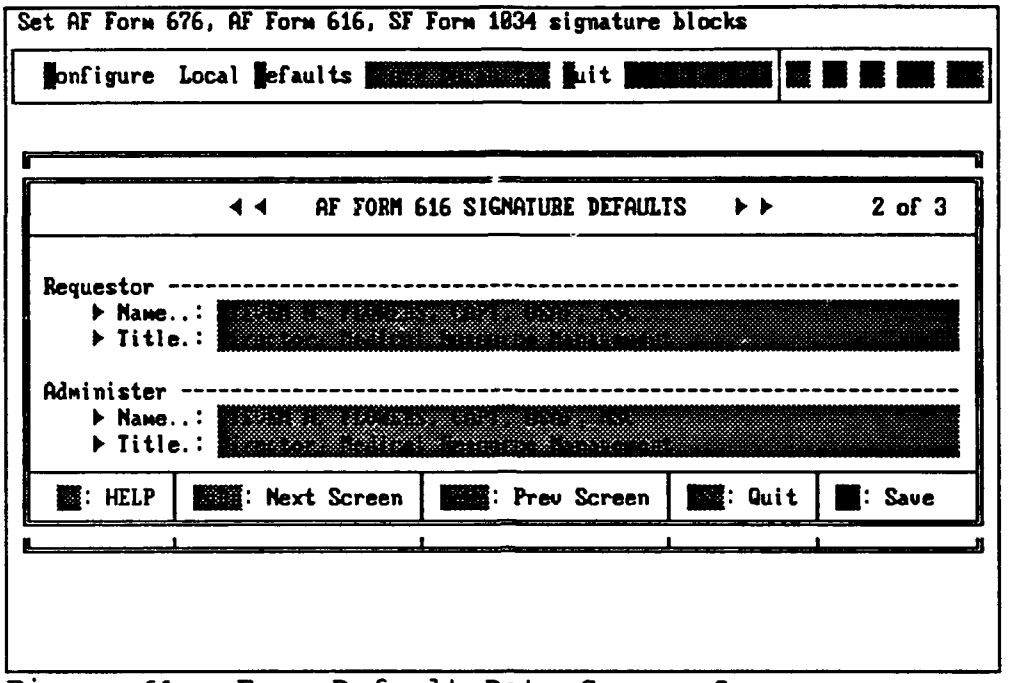

Figure 61. Form Default Data Screen 2

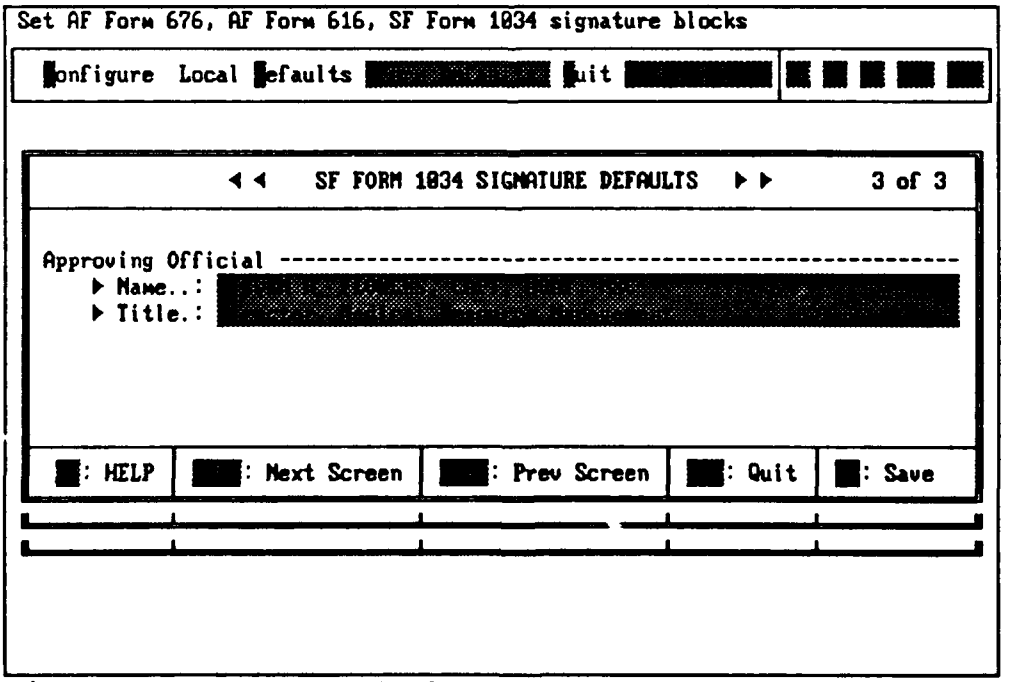

Figure 62. Form Default Data Screen 3

Quick File Maintenance. This option performs an abbreviated version of the End-of-Month (EOM) option by reindexing all the database files. Database sorting and deletions are not performed by this option.

Recall Archive Data. This option is not implemented in the prototype. This option will recall data which has been purged into the inactive database file. Only data directly relevant to the Alternative Care Program referrals (SERVICES.DBF, SPONSOR.DBF, PATIENT.DBF) is archived by the End-of-Month (EOM) option.

Table Maintenance. This option is important to the flexibility of the Alternative Care Assistant. Sixteen databases are accessible for modification. Data may be added, edited, and deleted from these databases. The only difference between the TABLE MAINTENANCE options is that different databases are used for each.

Upload CHAMPUS Cost. Before this option is used, the CHAMPUS allowable database diskettes must be installed as outlined in the INSTALLING CHAMPUS DISKETTES section.

After the CHAMPUS databases are installed, the UPLOAD CHAMPUS COST option must be used to convert these databases for use by the Alternative Care Assistant. If this operation is not performed, the Alternative Care Assistant will not function.

QUIT

As expected, this option exits the Alternative Care Assistant and returns you to the DOS prompt.

Bibliography

Air Force Computer Acquisition Center, Air Force Communications Command. Contract F19630-86-D-0002 with Zenith Data Systems. Hanscom AFB MA, 22 February 1986.

Allen, Mary Kay and Margaret A. Emmelhainz. "Decision Support Systems: An Innovative Aid to Managers," Journal of Business Logistics, 5: 128-142 (1984).

----- and Omar Keith Helferich. Putting Expert Systems to Work in Logistics. Oak Brook IL: Council of Logistics Management, 1990.

Anderson, Gerald G. Personal interview. Office of the Air Force Surgeon General, Bolling AFB DC, 15 August 1989 through 1 April 1990.

Asteroff, Janet F. "On Technical Writing and Technical Reading," Information Technology & Libraries, 4: 3-8 (March 1985).

Beard, Phillip H. A Database Management System Application for the Graduate Programs Office of the School of Systems and Logistics Volume I. Masters Thesis. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, September 1988 (AD-A201-557).

Blanding-Clark, Theresa and Thomas B. Cross. "Designing Effective User Interfaces and Documentation," Journal of Information and Image Management, 17: 45-48 (November 1984).

Boehm, Barry W. and others. Characteristics of Software Quality. Amsterdam Netherlands: North-Holland Publishing Company, 1978.

Bullingerser, H. J. and R. Gunzenhauser. Software Ergonomics: Advances and Applications. Chichester, England: Horwood Limited, 1988.

Carter, Austin. "Air Force Tops Services in DOD Medical Survey," Skywrighter, 31:, March 23, 1990.

Chapman, David. "Follow-on Zenith Z-248: This Is the Most Incredible Deal of All Time," Chips Ahoy, 5: 3-9 (April 1986).

Chi, Chin-Kuei. Quality Programming: Developing and Testing Software with Statistical Quality Control. New York: John Wiley & Sons, Inc., 1987.

Christie, Bruce. Human Factors of Information in the Office. New York: John Wiley & Sons, Inc., 1985.

Colter, Mel A. "A Comparative Examination of System Analysis Techniques," MIS Quarterly, 8: 51-66 (March 1984).

Collender, Stanely E. The Guide to the Federal Budget. Washington DC: The Urband Institute Press, 1990.

Concentric Data Systems. R & R Relational Report Writer. Westborough MA: Concentric Data Systems, 1988.

-----. R & R Relational Report Writer Code Generator. Westborough MA: Concentric Data Systems, 1990.

D'Angelo, Anthony P. Class lecture in AMGT 602, Federal Financial Management. School of Systems and Logisitcs, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, January, 1990.

Davies, Donald, Chief, Financial Management Division. Telephone interview. Office of Command Surgeon General, Pacific Air Forces, Hickam AFB HI, 5 April 1990.

Davis, Gordon B. and Margrethe H. Olson. Information Systems: Conceptual Foundations, Structures, and Development (Second Edition). New York: McGraw-Hill, 1985.

Davis, Michael W. Applied Decision Support. Englewood Cliffs NJ: Prentice-Hall, 1988.

Day, Peggy, Medical Resource Management Programs Manager. Telephone interview. Office of Command Surgeon General, Tatical Air Command, Langley AFB VA, 5 April 1990.

Department of the Air Force. Accounting and Finance: Commercial Transactions at Base Level. AFR 177-102. Washington: HQ USAF, 4 April 1989.

-----. Accounting and Finance: General Accounting and Finance Systems at Base Level. AFR 177-101. Washington: HQ USAF, 15 June 1988.

-----. Comptroller Activities: Responsibility Center/Cost Center Codes. AFR 170-5. Washington: HQ USAF, 12 February 1989.

-----. Medical Administration: Medical Care Third Party Liability Notification. AFR 168-2. Washington: HQ USAF, 24 March 1989.

-----. Medical Administration: Obtaining Medical and Dental Care from Civilian Sources. AFR 168-10. Washington: HQ USAF, 14 April 1989.

-----. Medical Administration: Persons Authorized Health Care, Health Care Benefits, Charges and Billing Procedures. AFR 168-6. Washington: HQ USAF, 22 August 1988.

-----. Records Management: Air Force Privacy Act Programs. AFR 12-35. Washington: HQ USAF, 3 June 1985.

-----. Military Personnel: Nuclear Weapons Personnel Reliability Program. AFR 35-99. Washington: HQ USAF, 1 May 1987.

Dudney, Robert S. "The Budget Heads Downhill," Air Force Magazine, 73: 68-77, (April 1990).

Elder, Timothy. Chief, Resource Management and Biostatistics Division. Telephone interview. Office of the Command Surgeon General, Air Force Systems Command, Andrews AFB MD, 9 April 1990.

Elkerton, Jay. "Online Aiding for Human-Computer Interfaces," Handbook of Human-Computer Interaction," edited by Martin Helander. Amsterdam Netherlands: Elgevier Science Publishers, 1988.

Emmelhainz, Larry W. Class lecture in LOGM 615, Logistics Decision Support Systems. School of Systems and Logisitcs, Air Force Institute of Technology (AU), Wright-Patterson AFB OH, April, 1990.

Emory, William C. Business Research Methods (Third Edition). Homewood IL: Irwin, 1985.

Erickson, Gary, Deputy Chief, Operations, Financial Management Division. "Medical Resource Management Office Initiatives - FY 90." Address to FY 90 Medical Resource Management Symposium. Denver CO, 7 November 1989.

-----. Telephone Interview. Office of the Air Force Surgeon General, Bolling AFB DC, 10 January through 1 April 1990.

Fowler, Susan and David Roeger. "Programmer and Writer Collaboration: Making User Manuals That Work, " IEEE Transactions on Professional Communications, 29: 21-25 (December 1986).

French, Patricia, Chief, Resource Management Division. Telephone interview. San Antonio Joint Military Medical Command, Randolph AFB TX, 7 April 1990.

Geiger, James. Chief, Medical Financial Plans Division. Telephone interview. Office of the Command Surgeon General, Air Training Command, Randolph AFB TX, 7 April 1990.

Griffith, John R. The Well-Managed Community Hospital. Ann Arbor MI: Health Administration Press, 1987.

Harrison, Ralph. "Prototyping and the Systems Development Life Cycle," Journal of Systems Management, 36: 22-25 (August 1985).

Hosman, James, Chief, Resource Management Division. Telephone interview. Office of Command Surgeon General, Strategic Air Command, Offutt AFB NE, 9 April 1990.

Howard, Trevor. "User friendly systems - worth the effort: Easy Systems Last the Longest," Computing Canada, 13: 30-31 (June 25, 1987).

Inmon, William. "Does User-friendly Mean User Happy?," Computerworld 18: 49-61 (July 16, 1984).

Ledin Jr., George and Victor Ledin. The Programmer's Book of Rules. Belmont CA: Lifetime Learning Publications, 1978.

Liffick, Blaise W. The Software Developer's Sourcebook: From Concept to Completion - The Essential Reference. Reading MA: Addison-Wesly Publishing Co., Inc, 1985.

Littleton, Thomas, Director, Command Medical Resource Management. Telephone interview. United States Air Force Academy CO, 5 April 1990.

Magee, Joe T. Director, Command Medical Resource Management. Telephone interview. Office of the Command Surgeon General, Alaskan Air Command, Elmendorf AK, 6 April 1990.

McDaniel, Nancy. Deputy, Medical Resource Management. Telephone interview. Office of the Command Surgeon General, Air Force Logistics Command, Wright-Patterson AFB OH, 7 April 1990.

Modell, Martin E. A Professional Guide to Structured Systems Design. Englewood Cliffs NJ: Prentice-Hall Inc., 1980.

Newhall III, David, Assistant Secretary of Defense (Health Affairs). "Reforming the Delivery and Financing of the Defense Department Health Care Services." Statement before the Subcommittee on Military Personnel and Compensation Committee on Armed Services, U. S. House of Representatives, 101st Congress 1st Session, 18 April 1989. Washington: Government Printing Office, 1989.

Oaks, Terry, Director, Command Medical Resource Management. Telephone interview. Maxwell AFB AL, 7 April 1990.

Oborne, David J. Computers at Work: A Behavioral Approach. New York: John Wiley & Sons, Inc., 1985.

Office of the Air Force Surgeon General. AFMED 95 Plus. Washington: HQ USAF, undated.

Omotayo, O. R. "Designing User-Friendly Software Systems," Data Processing, 26: 16-18 (June 1984).

Ostle, Judson R. Information System Analysis and Design. Minneapolis MN: Burgess Communications, 1985.

Page-Jones, Meilir. The Practical Guide to Structured Systems Design. Englewood Cliffs NJ: Prentice-Hall, Inc., 1980.

Perry, Ted, Superintendent Medical Resource Management. Telephone interview. Office of Command Surgeon General, Space Command, Peterson AFB CO, 10 April 1990.

Podolsky, Joseph. "The Quest for Quality," Datamation, 31: 119-126 (March 1, 1985).

Raval, Vascant. "Do User Friendly Systems Enhance Control Objectives?," Journal of Accounting and EDP, 5: 24-27 (Spring 1989).

Rubens, Brenda. "Personality in Computer Documentation: A Preference Study," IEEE Transactions on Professional Communications, 29: 56-60 (December 1986).

Safire, Heather. "How to Avoid the Bruised-Knee Effect," Data Based Advisor, 6 or 7: 171 (November 1988).

Schwartz, Alan. "Five Against IV," PC World, 7: 98-106 (May 1989).

Thomas, Robert S. A Computer Based Management System for Air Force War Reserve Materiel (WRM) Vehicle Management. School of Systems and Logistics, Air Force Institute of Technology (AU), Wright-Patterson AFB OH. September 1988 (AD-A201-573).

Tiley, W. Edward. Using Clipper. Carmel CA: QUE Corporation, 1988.

Tullis, Timothy S. "Screen Design," Handbook of Human-Computer Interaction," edited by Martin Helander. Amsterdam Netherlands: Elgevier Science Publishers, 1988.

Wallsoft Systems. UI Programmer Version Two: The Developers' Release. New York: Wallsoft Systems, 1989.

White, Thomas, Inspector, Health Services Management. Telephone Interview. Air Force Inspector General, Norton AFB CA, 3 October 1989.

Wildman, Ronald, Chief, Financial Plans and Programs. Telephone interview. Office of Command Surgeon General, Military Airlift Command, Scott AFB IL, 5 April 1990.

Willauer, Glenn, Chief, Resource Management Division. Telephone interview. Office of the Command Surgeon General, United States Air Forces Europe, Ramstein AFB West Germany, 6 April 1990.

Willis, Grant. "6.5% Rise in Medical Funding Ok'd," Air Force Times, 2: 8 (14 August 1988).

Wilkinson, Melissa and David Leonard. "Software: the User's Manual is the Key, " Credit Union Executive, 24: 20-21 (Winter 1984).

Yau, Stephen S. and Jeffery J. P. Tsai. "A Survey of Software Design Techniques," IEEE Transactions On Software Engineering, SE-12: 713-721 (June 1986).

Vita

Captain Steven H. Flowers [redacted] graduated from Rock Ridge High School in Wilson, North Carolina in 1978. He received a Bachelor of Science in Public Health from the University of North Carolina at Chapel Hill in 1982, and was subsequently employed by the North Carolina Memorial Hospital in Chapel Hill, North Carolina. In October 1982, he received a commission into the United States Air Force Medical Service Corps, and entered active duty on 3 January 1983. His first assignment was as a Medical Logistics Intern at USAF Regional Hospital Eglin, Eglin AFB, Florida. In September 1984, he was assigned to USAF Hospital Lajes, Lajes Air Base, Azores, Portugal as the Director of Medical Logistics. In October 1986, he attended Squadron Officer School enroute to his next assignment at USAF Hospital Dover, Dover AFB, Delaware where he served as the Director of Medical Logistics, and later as the Director of Medical Resource Management. He was selected as the MAC Medical Service Corps' Officer of the Year in 1986. In 1989, he achieved membership status in the American College of Health Care Executives. He entered the School of Systems and Logistics at the Air Force Institute of Technology in May 1989.

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13. ABSTRACT *(Maximum 200 words)*

Demonstrated the feasibility of developing a decision support system (DSS) for managing the Air Force Alternative Care Program (ACP). A prototype DSS, Alternative Care Assistant, was developed to demonstrate the potential for automating the current manual systems. First, the ACP process was thoroughly examined through the analysis of several data sources. Next, a flow diagram with a supporting narrative was prepared as an information requirements analysis. Accuracy was verified by 11 representatives from different USAF MAJCOMs. Finally, the Alternative Care Assistant was developed using Clipper, and was field tested at USAF Medical Center Scott, Scott AFB, Illinois. The prototype DSS has a user-friendly interface and the capability to perform all the ACP's clerical tasks and some managerial tasks such as breakeven analysis. Databases for Common Procedure Terminology (CPT) codes and allowable costs are included in the prototype. These databases were extracted from the Office of Civilian Health and Medical Programs of the Uniformed Services. This prototype operates on any IBM compatible microcomputer with a hard disk drive and MS-DOS Version 3.2 or above.

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