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A GRADUATE MANAGEMENT PROJECT TO IMPROVE THE SUPPLEMENTAL CARE SYSTEM AT WALTER REED ARMY MEDICAL CENTER

Submitted to the Faculty of

Baylor University

In Partial Fulfillment of the

Requirements for the Degree of

Master of Health Care Administration

by

MAJ Timothy D. Williamson, MS

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This study examines the health care delivery system at Walter Reed Army Medical Center, an 850 bed tertiary care teaching hospital in Washington, D.C. The study assesses the process used to arrange for health care services to complement the in-house delivery system. The focus is on the management of the Supplemental Care program which is used primarily on an episodic basis to contract for civilian health care services. A systems analysis approach is used to develop a graphic model and flow charts which portray the program and its role as part of a broader system. Hospital staff are surveyed to determine their knowledge and use of options for providing care. Supplemental Care payments during one fiscal year are analyzed to detect patterns. A survey of alternative civilian and federal sources of care is made for prodedures which had high cost or volume. The findings indicate weaknesses in staff knowledge about the system, limitations in the method of identifying and using the most efficient alternative for providing care, and inadequate controls on the system. Recommendation are made to improve the design and develop a more efficient managerial control system for the Supplemental Care program.

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ABSTRACT

This study examines the health care delivery system at Walter Reed Army Medical Center, an 850 bed tertiary care teaching hospital in Washington D. C. The study assesses the process used to arrange for health care services to complement the in-house health care delivery system. The focus is on the management of the Supplemental Care program which is used primarily on an episodic basis to contract for civilian health care services. A systems analysis approach is used to develop a graphic model and flow charts which portray the Supplemental Care program and its role as part of a system to provide health care to the medical center's patients. Hospital staff are surveyed and interviewed to determine their knowledge and use of the options for providing care. Supplemental Care payments during one fiscal year are analyzed to detect patterns of usage. A survey of alternative civilian and federal sources of care is made for procedures which had high cost or high volume. The findings indicate weaknesses in staff knowledge about the system, limitations in the method of identifying and using the most efficient alternative for providing care, and inadequate management controls on the system. Recommendations are made to improve the design and develop a more efficient managerial control system for the Supplemental Care program.

CHAPTER I: INTRODUCTION

Conditions Which Prompted the Study

The effective delivery of health care services in a medical center is often dependent on sophisticated technology which evolves at a rapid rate. Advances in medical technology are frequently followed by significant changes in the accepted standard of care. However, economies of scale or the budgetary process often do not allow every hospital to immediately hire the specialist or purchase the expensive capital equipment which supports the new technology. Additionally, personnel or equipment which are normally used may be temporarily unavailable. In these cases, hospitals must purchase or arrange for health care services from external providers and facilities.

U.S. Army Medical Treatment Facility (MTF) commanders are authorized to contract or coordinate for required patient care which is not available at their facility. This can be accomplished through referrals or resource sharing agreements with other federal facilities, long term personal service contracts with civilian providers, or through episodic use of Supplemental Care funds. Supplemental Care is used to procure diagnostic services or clinical treatment from civilian providers on a case by case basis when the management of the patient remains with a DoD physician.

Rapid improvements in available diagnostic and treatment technologies, combined with growing numbers of beneficiaries needing care, have led to significant increases in Supplemental Care expenditures within the Army Medical Department. The growing cost, and proportionate share of the budget which is devoted to Supplemental Care expenditures, have led to more guidelines for the MTF commander's use of this discretionary authority. Concurrently, the health care marketplace has become more dynamic and complex.

Walter Reed Army Medical Center (WRAMC) uses a decentralized system to coordinate Supplemental Care purchases. The major clinical departments process Supplemental Care requests of their physicians. Approval authority has been delegated to Department chiefs for specified types of care, and to the Deputy Commander for Clinical Services for all other requests. Each department has developed a different method of routing and documenting their Supplemental Care requests. Decentralization has aided in timely responses to Supplemental Care requests, but efficient monitoring of the entire Supplemental Care program and accurate accounting of fiscal obligations have been compromised.

A recent inspection by the WRAMC Internal Audit Office reveals that the Supplemental Care System is not in compliance with the new policy guidance on management of this program.

The Chief of Staff of the Medical Center indicated that the process needs to be reviewed to determine if Supplemental Care funds are being efficiently managed as an effective complement to the direct health care system.

Statement of the Management Problem

The problem under study in this project is the management dilemma in administering a program which allows decentralized operation but must retain centralized overview of the costs and benefits of decisions which are made at the lower levels of the organization. The Supplemental Care regulations are replete with guidance which suggest or require strong central control and involvement in every referral for Supplemental Care services. Every other organization which operates under those guidelines is much smaller than Walter Reed Army Medical Center. For most, Supplemental Care is a larger portion of their operating budget. Walter Reed decentralized the system due to the size of the organization, the geographic dispersion of the organization elements involved in Supplemental Care, and the dynamics of being a tertiary care referral center for patients who come from many distant locations. The problem under study concerns the development of centralized mechanisms for oversight and control which complement the effectiveness of the decentralized operation of the system, and yet meet explicit requirements of the regulations that govern this program.

Review of the Literature

Army Regulation 40-3 (1985) authorizes commanders of Army MTF to use local operating funds to purchase Supplemental Care that is beyond the capability of their facility. Only limited restrictions are placed on the commanders' authority (i.e. "judicious use of this option is required", "care must be legitimate", and "care will be obtained from civilian sources only when it is not available from Federal sources which are reasonably near"). The discretionary power which the regulation gives to the local commanders recognizes the need for a system of augmenting care which is responsive to the needs of the individual patient, as determined by a local military physician.

As the costs of health care have escalated, the Services have been given new authority to use different programs to minimize cost. The VA/DoD Sharing Act (P.L. 97-174) became effective on May 4, 1982 and allowed resource sharing between the two giant federal medical systems. Although HSC records reflect no documented use of the program through FY 84, $551,557 was spent in FY 85 to procure services from the VA (Butler, 1986). By FY 88, the amount had risen to $929,949. However, WRAMC did not expend any funds on this source of care in FY 88, despite the proximity of a VA Medical Center. (CABS Reports, 1988).

The Military - Civilian Health Services Partnership Program allows the services to use civilian providers within the military facility to provide services which would not otherwise be available. The civilian providers are paid from CHAMPUS funds, and a savings to the government is anticipated because of reduced costs for the hospital services (Mayer, 1988). Services or procedures with high CHAMPUS costs are the primary candidates for this program, but high costs to the facility for Supplemental Care can be an added justification for improving the in-house capability of the facility through this funding mechanism.

The rising need for and use of Supplemental Care funds has caused Dod policymakers to direct more definitive managerial monitoring of the process and expenditures, with the intent of accessing less expensive means of providing care. Recent changes in Department of the Army policy (Rumbaugh, 1988) require MTF commanders to monitor the program with the following guidelines:

a. Could inter-service or VA resource sharing agreements have provided the service?

b. Could more cost effective professional service contracts for high volume services have been implemented?

c. Was confirmation of service performance made prior to payment of the bill?

d. Was the bill "reasonable"?

e. If the bill exceeds the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) prevailing charge schedules, was it justified and were efforts made to substitute a less expensive source?

f. Were sources prospectively identified for reasonably priced health care which met quality of care standards?

g. Was a management review and analysis of the program conducted on an annual basis?

An Internal Review audit conducted in FY 87 cited 15 deficiencies in the Supplemental Care program with recommendations for corrective actions (Cleven, 1987). Nine of these recommendations were related to the processing of documents. Four of the recommendations concerned improving the oversight monitoring of resource utilization and systemic coordination of alternate means of providing requested care. Two of the recommendations focused on improved quality assurance oversight of the program. A followup audit found that five of the recommedations relating to processing of documents had been implemented or were no longer of concern. One of the recommendations concerning oversight monitoring had also been addressed (Cleven and Nesbitt, 1989).

A 1986 study by Butler at USA MEDDAC, Ft. Benning, GA demonstrated that potential savings can be made in Supplemental Care expenditures by negotiating sole source contracts for high volume services. The author observed that

as Supplemental Care purchases have increased, the military can use its buying power to take advantage of a competitive civilian health care marketplace. A management initiative at USA MEDDAC, Redstone Arsenal, AL led to significant savings in the cost of Computerized Axial Tomography scans through negotiation of a sole source contract (E. Byrom, personal communication, September 11, 1989).

A case management approach to authorizing expenditures could meet the requirements of the new policies on Supplemental Care. One of the features of case management is that physicians must act as gatekeepers. Several commentators have observed the dissonance with the traditional physician role which the gatekeeper function introduces (Somers, 1983; Eisenberg, 1985). Hurley (1986) has proposed a behavorial model of the physician as case manager which theorizes that the "practice style orientation" for a physician is composed of four domains: the healer, the clinical expert, the care coordinator, and the rationer. The traditional role of physicians has been weighted toward the healer and/or clinical expert components. Case management strategies of cost containment place increased emphasis on the coordinator and rationer components. Effecting changes to physician practice style orientations is a major challenge to any management attempt to improve the efficiency of the Supplemental Care system.

Hurley argues that two types of actions will induce physicians to change their practice orientation - financial risk and administrative mechanisms. A 1983 study of a West Coast Independent Practice Association substantiated the case for administrative mechanisms, but found that it is difficult to structure a management system which can place physicians at sufficient financial risk to modify their practice orientation (Moore, Martin, and Richardson, 1983). Financial risk is not a feasible alternative within the military health care system. However, the administrative mechanisms of preauthorizations, concurrent and retrospective reviews by clinical peers, patient resource consumption data and budget reviews by administrators, and physician performance feedback are appropriate in the military system used to purchase Supplemental Care services.

One commonly cited style practiced in managing large organizations is called management by exception (Hogsett, 1982). In this type of system, the administration of many tasks in the organization is decentralized and performed in accordance with established policies. Such a system includes mechanisms for detailed managerial review only of events which are uncommon or fall beyond certain specified parameters.

A method of establishing parameters for exceptions to the routine is called the ABC analysis of inventory control (Reinfeld, 1982). Inventories can be broken into groups

based on the cost per item for each type of item within the inventory. Under ABC analysis, the A group is the 20% of line items which are most expensive per item, the B group is the next 20%, and the C group is the remaining 60%. In many cases, the A group is responsible for 80% of the cost of the inventory, while the B and C groups account for only 10% each. A management by exception system would have special rules and managerial review for the A group, while the B and C groups would be managed at a lower level of the organization in accordance with established policies. A thorough system would also have periodic review of the utilization of resources and policies guiding the management of all three groups.

Purposes and Hypotheses of the Study

This study assesses the process used to obtain and manage the use of Supplemental Care services at Walter Reed Army Medical Center to determine if the process effectively provides requested patient care services, and the management system efficiently monitors and adjusts the use of resources. Based on that analysis, improvements to the management system are proposed. The null hypothesis underlying this research effort is that the Supplemental Care system at WRAMC is functioning at an optimal level of effectiveness and efficiency. The alternate hypothesis is that the Supplemental Care system is not functioning at the optimal level of effectiveness and efficiency.

It is not the intent of this study to do a cost benefit analysis of the disparate values of qualitative outputs and quantitative inputs. "Effectiveness" is concerned with the quality of a patient care outcome; "efficiency" describes the process of patient care in quantitative terms. In the context of management of Supplemental Care funds, "effectiveness" describes the timely receipt of the necessary care from a qualified provider while "efficiency" can be a synonym for the control of expenditures. Efficiency cannot be gained at the expense of effectiveness. Any conflicts in this area must be resolved in favor of maintaining the quality of the patient care outcome.

Other hypotheses which are evaluated in this study are:

1. The failure of the Supplemental Care system to operate at optimal effectiveness and efficiency is caused by lack of adequate knowledge by the users of the system.

2. The failure of the Supplemental Care system to operate at optimal effectiveness and efficiency is caused by the lack of incentives for the users to improve the effectiveness and efficiency of the system.

3. The failure of the Supplemental Care system to operate at optimal effectiveness and efficiency is caused by design faults in the system.

CHAPTER II: METHODS AND PROCEDURES

Supporting Research Questions

The following questions are addressed to support an answer to the thesis question of this study:

1. What is the interrelationship of military health care systems and subsystems and private sector health care systems in the provision of Supplemental Care services?

2. What is the WRAMC system to use other federal facilities or to refer to private sector health care providers?

3. What do WRAMC staff know about the purpose and administration of the Supplemental Care program? What do they know about other sources of care outside WRAMC?

4. What is the record of use and expenditures for Supplemental Care by department, type of care, and cost of care?

5. How are providers identified to provide Supplemental Care services? Does a mechanism exist to review, approve, and update the network of providers for Supplemental Care?

6. Is the use of Supplemental Care services valid in terms of compliance with regulations? Are Supplemental Care services provided as requested?

Assumptions

1. Historical records have been kept accurately and will be available to analyze in support of this study.

2. A system can be accurately described through a combination of quantifiable measures and qualitative samplings and observations.

Limitations

1. Although this study is looking at the entire Supplemental Care system, available time will limit the scrutiny which less utilized services undergo. Therefore, the study will focus on the more heavily utilized services and generalize some conclusions to lower cost and volume areas. The study was also limited to the clinical departments of the hospital which refer patients directly to Supplemental Care providers.

2. The design of this research study is constrained by what physicists call the Heisenberg Uncertainty Principle and what social scientists call the Hawthorne Effect. My role as an observer who is measuring and describing the Supplemental Care system will have the simultaneous effect of making me a participant in the operation of that system and the knowledge base of the key players. This limits the veracity of any determinations of cause and effect for changes which occur in the system during the period of study.

Method

Supplemental Care is one component of the military health care system. Reisman (1979) argues that analyzing a health care system requires an understanding of the relationships

between the subsystems in the organization. It is also necessary to understand the linkage to relevant systems in the external environment. This methodology for evaluating an organization is called systems analysis.

This study takes a systems analysis approach to describing, explaining and developing a management process to coordinate Supplemental Care services at Walter Reed Army Medical Center. Both quantitative and qualitative tools were used to model the system, gather data, and test hypotheses. A systems analysis method of research can be likened to peeling an onion - inside each layer is another layer. Consequently, some of the original hypotheses and methods for conducting research were modified during the course of the management project as new insights were gained during earlier portions of the study.

During the data collection process, any person who was interviewed or surveyed was informed of the research nature of this project, and that their participation was strictly voluntary. Furthermore, every attempt was made to protect the anonymity of each participant. Questionaires were filled out anonymously, the names of people who were interviewed are used only with their permission, and patient names are restricted to the raw, unpublished database and used only to differentiate between different Supplemental Care expenditures.

Procedures

1. Interrelationship of federal and private sector health care systems. The first, and perhaps most important, step was to graphically and verbally describe the system used to provide health care at WRAMC. Here, Supplemental Care is a subsystem of the larger military health care system, and serves as one boundary spanner linking it to the Department of Veteran's Affairs and private sector health care systems. I used interviews, organization charts, procedural directives, and personal observation to understand the relationships between component parts of the systems. I then produced a graphic model and narrative description of the Supplemental Care program as it linked the medical treatment facility and other components of the military's health care system.

2. WRAMC system to use other federal facilities or refer to civilian sources of care. Interviews, observations, questionaires, and research on procedural directives were used to develop a flow chart which models the process by which Supplemental Care is authorized and coordinated at the medical center. Walter Reed is a very large organization, and many clinical decisions on transferring patients are made in an ad hoc, decentralized manner with no aggregate reporting of transfers of patients to specific facilities. Therefore, the information in the model was validated by seeking specific instances which confirmed that actions postulated in the model

had occurred in real practice. No attempt was made to tabulate the full extent of the utilization of other facilities by all the clinicians at the medical center. The intent was to establish a pattern of usage for other means of augmenting hospital care, to understand what is required to set up a mechanism for usage and how to access these systems.

3. WRAMC staff knowledge of Supplemental Care and alternatives. Administrative and clinical staff were surveyed by questionaire to assess their understanding of the Supplemental Care program and use of other federal medical facilities, and to solicit their input on the strengths and weaknesses of the system. A pilot survey was developed and disseminated to subject matter experts within the organization to assess concurrent validity of the questions. The final instrument was then distributed to a random sample of physicians and administrators. The answers to the survey were compared to other quantifiable data on Supplemental Care and the utilization of other federal facilities which were obtained from the Directorates of Resources Management and Patient Administration as a means of assessing the reliability of the survey.

The questionaire consisted of a number of Yes/No questions to assess the staff of WRAMC's knowledge and utilization of means of providing health care beyond Walter Reed. A second series of Yes/No questions focused on areas of dissatisfaction

with the current Supplemental Care system. The Yes/No questions were coded and statistically analyzed. Additional questions seeking narrative feedback about the Supplemental Care program were asked to gain unconstrained input from staff.

4. Record of use and expenditures. Supplemental Care vouchers for the most recent fiscal year were collected from each clinical department administrator. Aggregate financial figures for the year were retrieved from the Program and Budget Office and used to validate the reliability of records which were kept by the departments. A consolidated, standardized database was created to retrospectively analyze Supplemental Care usage during the previous year.

Descriptive statistics were computed. The departments and procedures which accounted for the largest expense and number of Supplemental Care referrals were noted. A separate sort of the database was run to determine the individual cases which accounted for the greatest expense. Because available records were reviewed for every clinical referral for Supplemental Care during an entire fiscal year, this part of the research also served as an indepth audit of the process of ordering and paying for Supplemental Care services. Several deficiencies were detected as a result of this records review, and were rectified.

The focus of this quantitative part of the study was the cost and pattern of Supplemental Care usage. The analysis of the database delineated areas of high cost cases or heavily utilizated procedures. High cost cases and procedures which generated large expenditures through heavy volume of referrals were the focus of further study. This led to some proposals for adjustments in the allocation of resources within different areas of the health care delivery system which is managed by Walter Reed.

5. Identification of Supplemental Care providers. A case study approach was used to identify the way in which current Supplemental Care providers were initially chosen to provide services and why referrals are currently made to them. Interviews and document searches were used to gather data. Additionally, local providers who do not currently provide Supplemental Care services were contacted to assess their willingness to provide care. Possible advantages to the government in terms of access, convenience, or cost savings are postulated.

6. Compliance with regulatory guidelines. A checklist was created listing regulatory requirements concerning Supplemental Care usage. Records were reviewed and key personnel interviewed to determine the congruence of the current system with the regulatory guidelines. Followup questions were made on areas or procedures which are not in

compliance. These discussions served as an input to redesign a management system which effectively meets the clinical need for responsiveness, and is in compliance with the regulations.

CHAPTER III: FINDINGS AND ANALYSIS

An Integrated Health Care System

One of the advantages of the systems analysis approach is that it forces consideration of the larger environmental context of any subject being studied. Using this methodology, the Supplemental Care program at Walter Reed Army Medical Center must be evaluated with respect to the rest of the health care system. The usefulness of the recommendations and conclusions of this study are based on an understanding and acceptance of the interrelationship of the different components and linkages of the total health care system at WRAMC.

To portray the health care system which is controlled or accessed through WRAMC, a model was developed to graphically depict the relationship between the components and linkages of the system. During the data gathering phase of this project, it became apparent that many people are not aware of the other elements of the system, how to access them, or how they fit into the "big picture". Development of this model, shown at Figure 1, actually came after most of the data gathering was completed, but it is presented at the very start of the findings to lay out the blueprint of a total health care system, and to emphasize the point that Supplemental Care will be discussed as both a linkage and a cybernetic mechanism for monitoring the total system.

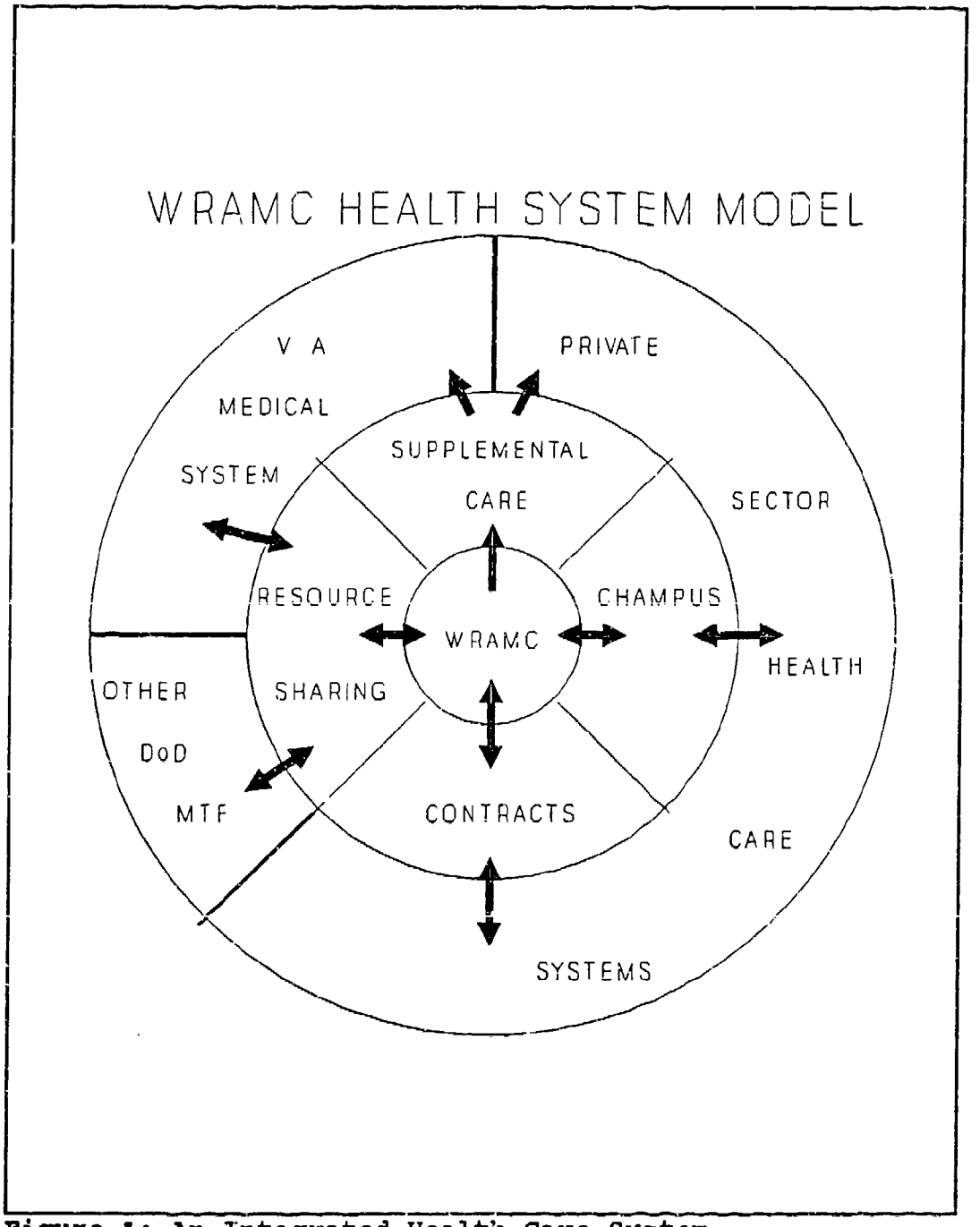

Figure 1: An Integrated Health Care System

Components of the System

Walter Reed Army Medical Center. As is graphically displayed in the model at Figure 1, WRAMC is one component of a system which includes other military MTF, the health care facilities of the Department of Veteran's Affairs and the entire private sector health care system. WRAMC accepts tertiary care referrals from 12 Army MTF within its Health Services Region which extends from Ft. Bragg, North Carolina to Ft. Drum N.Y., and from Europe. WRAMC also routinely receives patients from the other military MTF in the Washington D.C. area. For certain specialty care, WRAMC accepts referrals from all military MTF throughout the world.

Other federal facilities in the WRAMC geographical area. There are five other federal hospitals in the National Capital Area. The two small community hospitals (Ft. Belvoir MEDDAC and FT. Meade MEDDAC) provide outpatient primary care and basic inpatient secondary care. The small Air Force medical center (Malcolm Grow) provides outpatient primary care, extensive inpatient secondary care and some subspecialty tertiary care. The MEDDAC at Ft. Belvoir and the Malcolm Grow Air Force Medical Center sponsor Family Practice graduate medical education programs. The fourth facility is the VA Hospital in Washington which provides a full range of primary, secondary and many tertiary care services. The VA hospital is a recipient and a source of patient referrals. The fifth

is the National Naval Medical Center at Bethesda which provides extensive primary, secondary and tertiary health care services, and like Walter Reed, operates a broad range of graduate medical education teaching programs. Table 1 displays FY 89 figures which provide an indication of the relative size of these facilities.

Table 1

Local Federal Hospitals

FY 89 Size and Workload

Facility	Beds	Admissions
WRAMC	856	24,899
Bethesda Naval Hospital	427	16,656
Washington VA	590	9,183
Malcolm Grow AF MEDCEN	255	10,445
Ft. Belvoir MEDDAC	105	8,867
Ft. Meade MEDDAC	58	4,728

Private sector systems. Health care available from the private sector in the Washington D. C. area can provide almost any kind of care not available at WRAMC. There are four major university teaching hospitals within 40 miles, and hundreds of very sophisticated and equipped group practices. In fact, one of the uses for Supplemental Care at WRAMC is to hire a consultant for an expert second opinion on a case.

Linkages between Components

Boundary spanning. Supplemental Care, referrals, resource sharing agreements, numerous contract arrangements, and the CHAMPUS program form the linkages between the components of this integrated health care system.

Supplemental Care. Supplemental Care serves as a one way conduit to channel patient referrals and funds to providers in the private sector and the Department of Veteran's Affairs. As a linking conduit, WRAMC purchased $969,631 of diagnostic and treatment services with Supplemental Care funds in FY 89.

Referrals. The MTF of all military Services are the core of the military health care system. The military clinics and hospitals operate with regular referrals of patients from smaller facilities to larger ones. Referrals often stay within the same service, but geographic proximity and need for specialized care frequently account for inter-Service referrals. Regulations are promulgated by the Services to govern this referral system. Funds are transferred between Service accounts, but not between individual facilities, based on aggregate care provided to beneficiaries who belonged to each Service. In this two way referral system, WRAMC is usually the recipient of referrals from other MTF which do not have the range of services which are available at the medical center. Walter Reed received 3,344 inpatient and 969 outpatient referrals through the Air Force Medevac system in

FY 89, and thousands of other referrals from local and regional facilities by patients who chose to drive or arrange their own transportion (D. Janiskee, personal communication, June 25, 1990).

Resource sharing agreements. Resource sharing agreements are two way conduits between specific federal health care facilities who share expensive capital equipment or specially trained personnel to exchange the provision of health care services for their beneficiaries. Individual written agreements are made between particular DoD and VA facilities to govern the sharing of resources or transfer of patients between them. Agreements between DoD facilities involve no direct transfer of funds. Some agreements with VA facilities transfer funds directly between the facilities at an agreed upon per diem or per service rate (which is usually below a comparable private sector rate). WRAMC currently has three formal written agreements for patient care services with Ft. Meade MEDDAC, one with Ft. Belvoir MEDDAC, three with Bethesda Naval Medical Center, none with Malcolm Grow, and seven with the Washington VA hospital (See Appendix A for detailed information on these agreements).

Contract arrangements. Contracts are another linkage between the direct care system and the external private sector health care systems. They are used to bring providers, ancillary support staff, and sometimes a package of staff and

equipment into the military MTF. Contracts are usually more expensive than directly hiring the people or purchasing the equipment, but are generally less expensive than Supplemental Care or CHAMPUS. Most of the contracts for personnel are paid for under the Direct Health Care Provider Program (DHCPP) with funds provided by a central source (i.e. Health Services Command) or with local operating budgets. With the advent of the Military - Civilian Health Services Partnership Program, CHAMPUS also became a source of payments for clinicians who provided health care services in the military MTF. At the start of FY 90, WRAMC was approved to spend $5,151,610 under DHCPP (Taylor, 1989). Walter Reed does not currently have any CHAMPUS Partnership Agreements in effect.

CHAMPUS. CHAMPUS is predominantly a one way conduit which pays for certain categories of patients who are referred to, or who self select care delivered by private sector providers. Throughout the DoD health care system, this program has grown from $1.4 billion in FY 85 to $2.7 billion in FY 89 with estimates for the total in FY 90 to exceed $3.1 billion (Maze, 1990). This rapid inflation in the expense of the CHAMPUS program led to the recent initiatives which allowed CHAMPUS funds to be used to develop partnership agreements for care provided within the military MTF by private sector providers, if a savings to the government could be realized.

Arranging for Supplemental Care

The logical bias. The Supplemental Care program is expected to function as part of a rational, orderly sytem which delivers the health care outputs required by the users, but allows the system managers to maintain control over the process. The dilemma of providing responsiveness to many users but maintaining central control is not resolved to the complete satisfaction of either requirement. In the vast majority of cases, the care is provided, although not as expeditiously as preferred. On the other hand, control of the process is predicated on the assumption that the designated process is always used, and everyone understands and agrees to the rules.

The prescribed process for arranging Supplemental Care can be depicted in a linear, algorithmic model. Supplemental Care managers at Brooke Army Medical Center and USA MEDDAC, Redstone Arsenal use flow charts to describe their process which indicates the prevalence of this logical model. A flow chart which shows the way supplemental care requests at WRAMC are supposed to be routed is shown on the following pages at Figures 2 thru 6. Parallelograms indicate inputs/outputs, diamonds are decision steps, and hexagons show value added preparation steps. This model has 25 decision or preparation points, and 8 outcomes of which 5 provide the requested care.

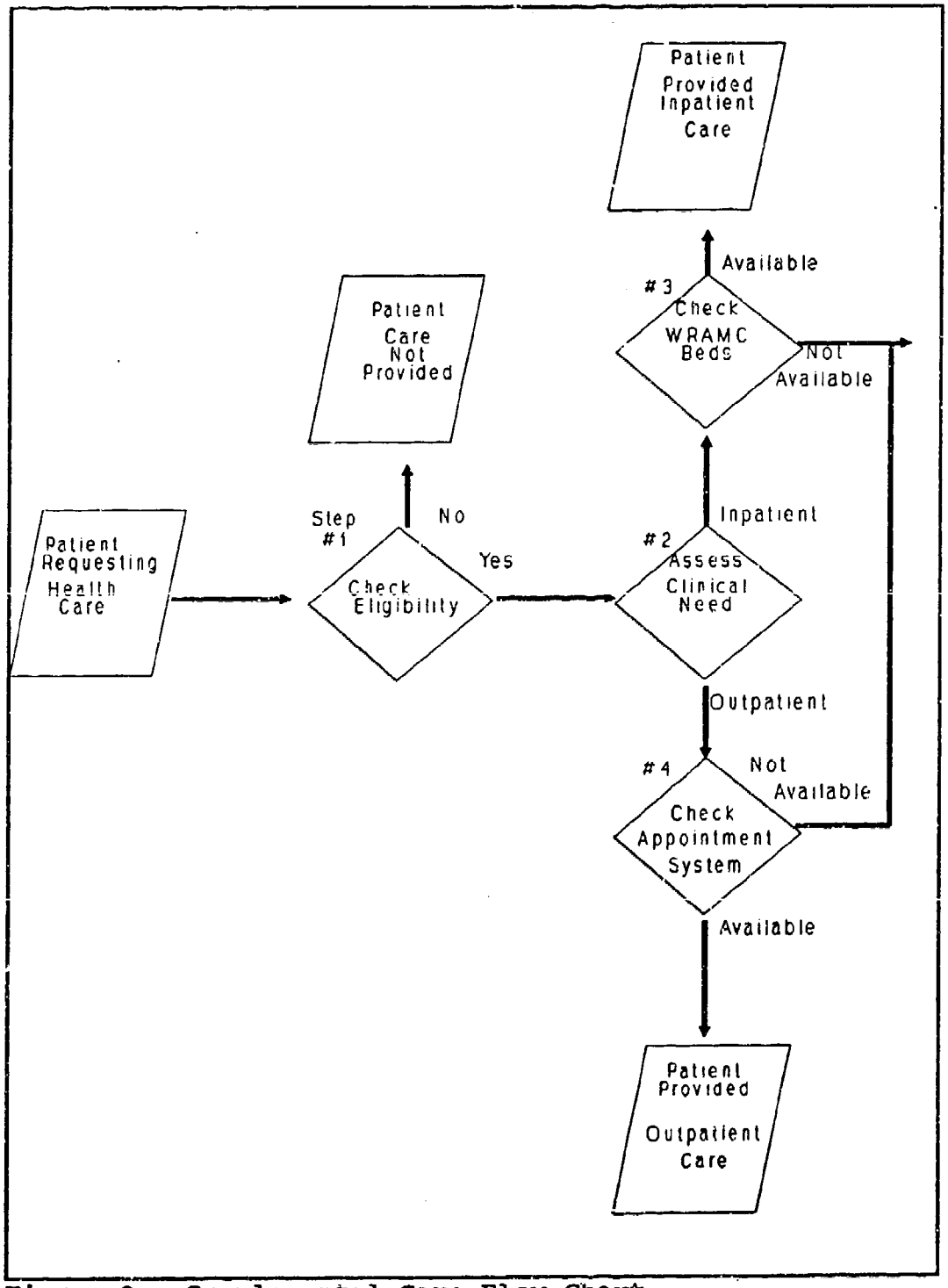

Figure 2. Supplemental Care Flow Chart

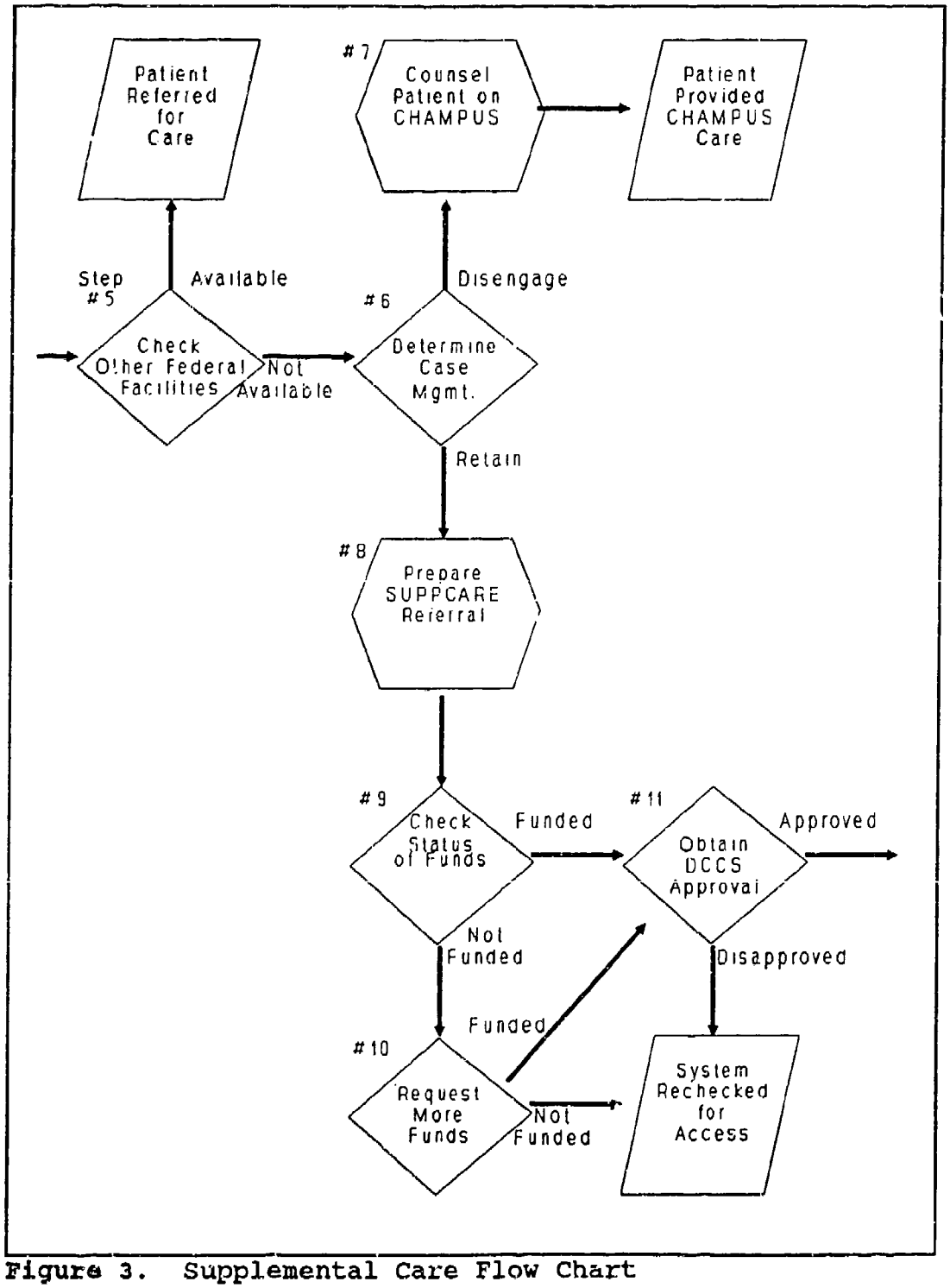

Figure 3. Supplemental Care Flow Chart

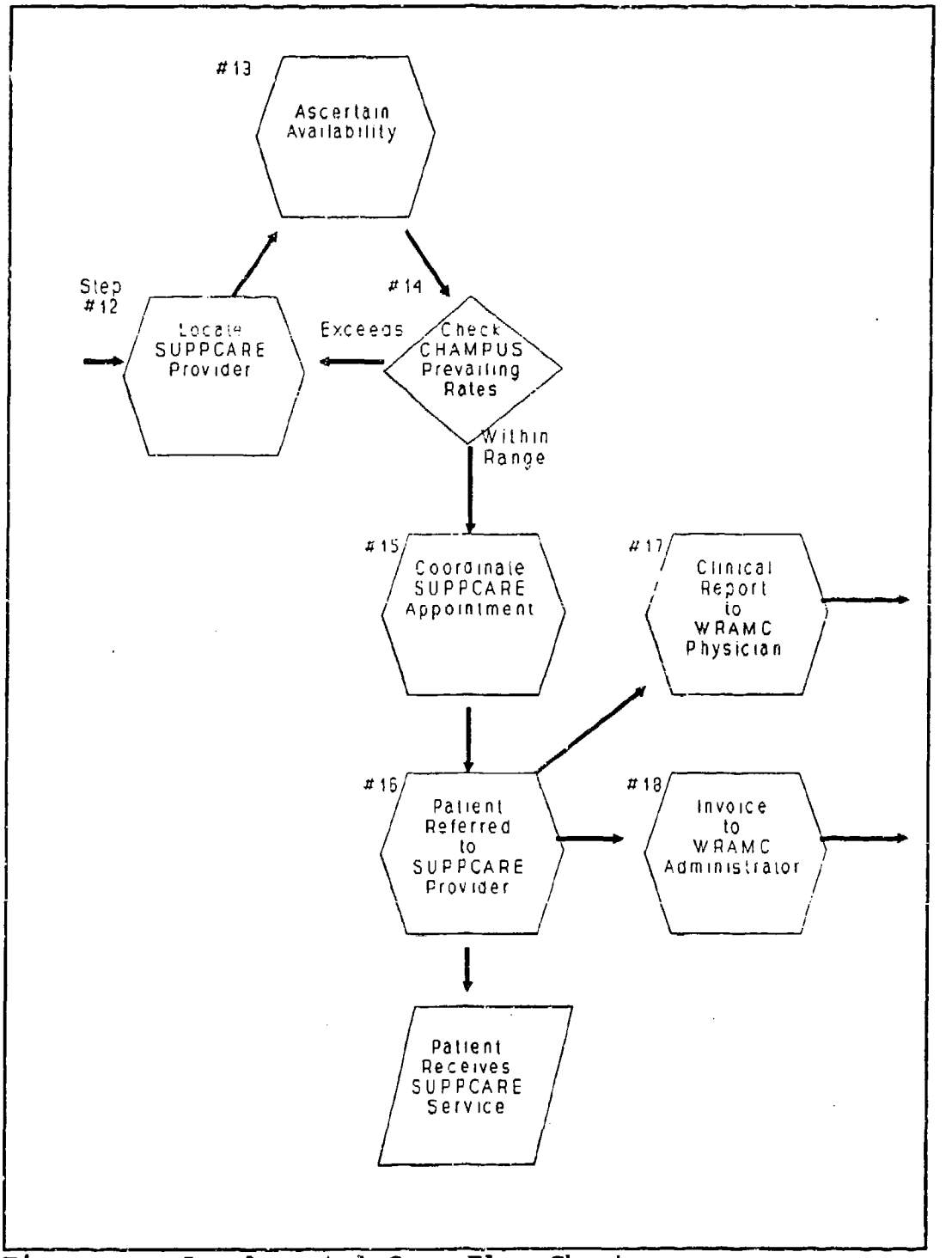

Figure 4. Supplemental Care Flow Chart

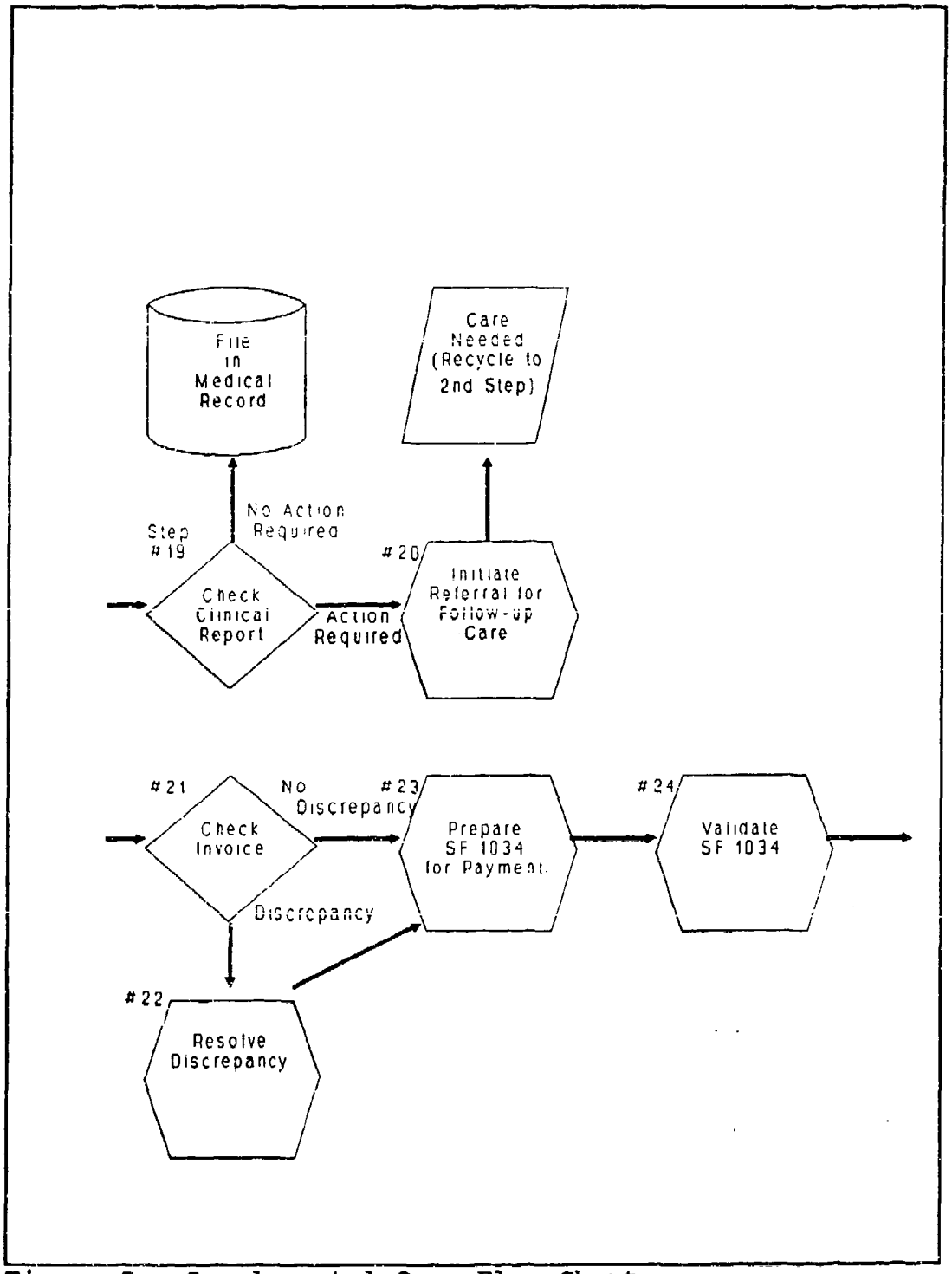

Figure 5. Supplemental Care Flow Chart

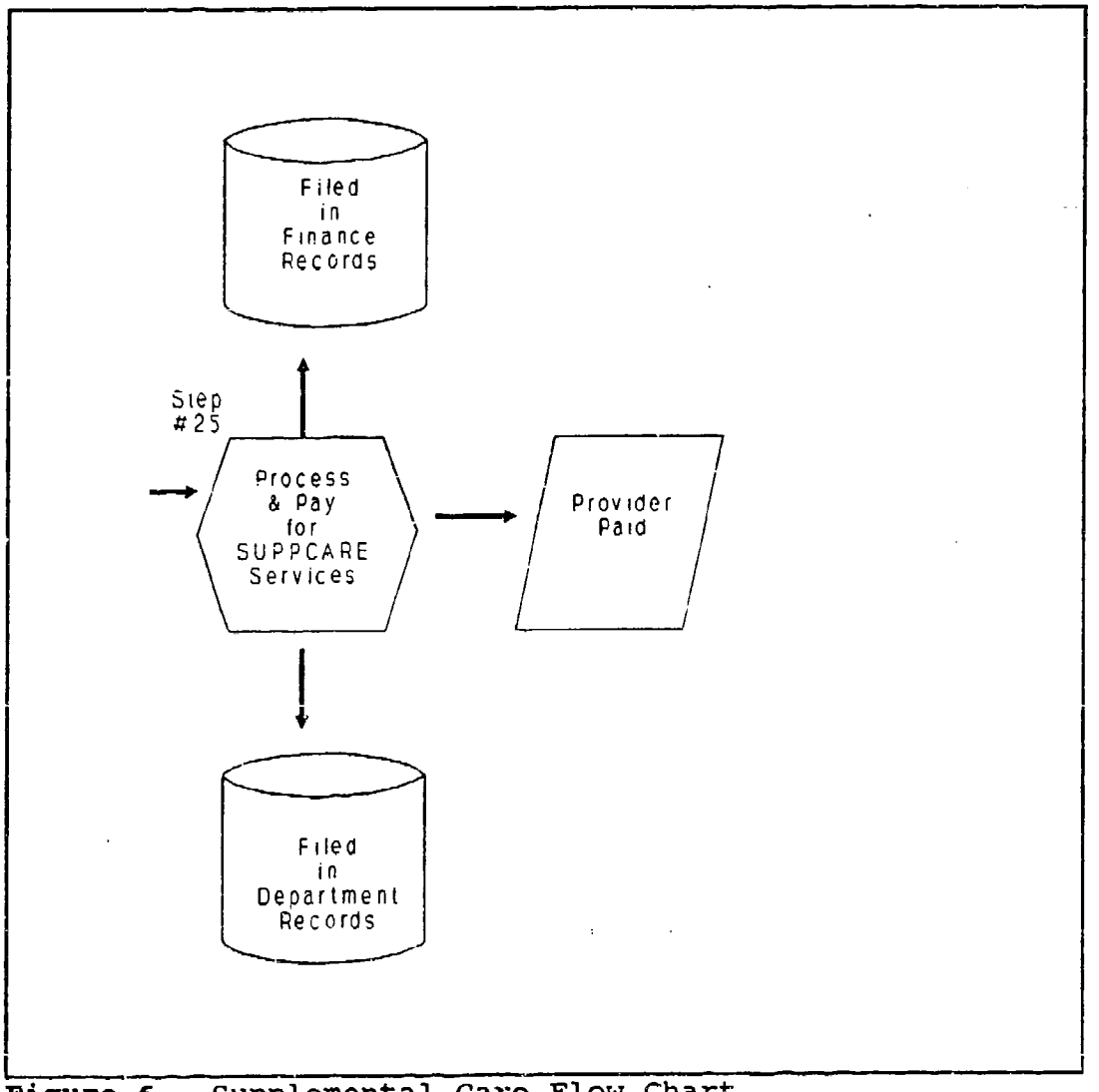

Figure 6. Supplemental Care Flow Chart

Understanding the Process

Breakdowns and modifications. Most Supplemental Care referrals are handled in accordance with this model. However, as is true with most systems involving humans, the process is occasionally affected by mistakes, manipulation, or complete

abrogation. The most common of these unprogrammed modifications are discussed in the following paragraphs.

Different rationale. The underlying basis for the process laid out in the flow chart is to provide the necessary health care service in the most cost effective manner. Several interviews with users of the system revealed that some have a different agenda or place a much higher priority on responsiveness or maximizing the quality of care, and will deliberately "end run" the system. A most illuminating comment came from one physician who stated that he did not want to consolidate purchase requests to save money, but wanted to spend as much as possible to send a message to the Headquarters that a new and expensive piece of equipment should be purchased for his Service (anonymous personal communication, April 11, 1990).

Process interrupted or abrogated. It is a common, though not frequent event when an invoice for Supplemental Care services arrives and no written DD Form 2161 is on file to validate the referral. If the service was indeed rendered to an eligible beneficiary and there is any indication that a WRAMC clinician considered use of Supplemental Care, the bill is paid. Lost paperwork, misunderstood directions, and ignorance have all accounted for these "after the fact" approvals for Supplemental Care.

Multiple responsible agents. Physicians, department administrative personnel, Nursing, Patient Administration Directorate (PAD), Directorate of Resources Management (DRM), and the patient all have a role to play in the Supplemental Care process. More than one of these agents has a simultaneous or supporting role on a number of the decision or preparation steps. This diffusion of responsibility sometimes leads to an erroneous assumption that an action has been accomplished, especially after the paperwork and the patient are tracked separately. As noted above, missing one or several steps will not necessarily preclude the provision of care under the program.

Recurring problematic steps. For various reasons, several steps are often missed, ignored, or troublesome. The most noteworthy breaks occur in the following areas:

* Step 5, "Check Other Federal Facilities". Although other federal facilities are used, this step is often overlooked. It is a known fact that all federal facilities are operating under limited budgets and WRAMC is the most comprehensive of the area's treatment facilities. There is no formalized mechanism in place to coordinate information about availability at other facilities, and outdated information or assumptions are occasionally substituted for a specific check. This oversight is also compounded by feelings about interservice rivalries dealing with the ability

to take care of one's own, and perceptions about quality of care.

* Steps 9 and 10, "Check Status of Funds" and "Request More Funds". If the Supplemental Care program were run in strict adherence with financial accounting and contracting regulations, every request for service would first process thru the DRM for an individual fund cite. To counter the cumbersome sluggishness of such a procedure, WRAMC instituted the use of a Miscellaneous Obligation Document to front load each departments' budget with available funds to cover expected purchases.

Although Department Administrators diligently look at the "checkbook balance", requests are never denied due to an immediate lack of funds - DRM has always been able to provide additional funding upon request. Ironically, while this provision of placing control of the budget at the department level has not resulted in a specific request being denied, it probably has had a greater effect at dampening the overall demand for Supplemental Care services than any other control measure.

* Step 14, "Check CHAMPUS Prevailing Rates". This has never been done at WRAMC, and no copy of the local prevailing rates was even available within the facility. The decentralized operation of the system makes this more

difficult to effect because the rate schedules are complex and require extensive training to interpret.

* Steps 17 and 18, "Clinical Report to WRAMC Physician" and "Invoice to WRAMC Administrator". The clinical report and the invoice are handled as separate transactions. Sometimes the physician receives a mailed copy of the diagnosis or treatment or the patient brings a copy on a followup visit. However, there is no control measure to insure that the referring physician sees the return clinical report or has it filed in the medical record.

* Steps 23, 24, and 25, "Preparation of SF 1034", "Validation of SF 1034", and "Process and Pay for SUPPCARE Services". These three steps occur, sequentially, at the Department Administrator's office, the Program and Budget Division of DRM, and the Finance and Accounting Division of DRM. Times lags in payment have resulted in missed opportunities for discounts, redundant billing and payment for delinquent invoices, and interest penalties. These problems exist in many other aspects of the medical center's accounts payable process.

A noteworthy example of a missed discount occurred when Georgetown University Hospital offered a 5% discount if the invoice were paid within 30 days, and an itemized charge audit was not demanded (S. Bryda, personal communication, March 7, 1990) Charge audits are a growing practice in the civilian

insurance industry but WRAMC does not have the ability to perform them. WRAMC could have taken $3,176.75 in discounts on three separate plasmapheresis cases totaling $63,535 in billed charges, if a streamlined or prioritized payment procedure existed. Lengthy delays in processing payments also contributed to three cases of duplicate billing and preparation of a second voucher for payment totaling $1,142.91 in the Department of Surgery. The second vouchers were rescinded when the errors were detected.

Results and Analysis of the Staff Survey

The questionnaire. Questionaires were distributed to 25 physicians in clinical departments with a history of supplemental care use in FY 89. Department administrators disseminated and collected the questionaires with the guidance that one questionaire be given to the Department chief, one or two be given to Service chiefs, and the rest be randomly distributed to staff physicians and residents. Interns were not polled.

Administrators in clinical departments with supplemental care expenditures in FY 89 were also given a questionaire. The Departments of Surgery and Medicine each had two people involved in the program for a total of ten questionaires distributed to administrative personnel. The questionaire for administrators had several additional questions on training which made it distinguishable from those returned by

physicians. Physicians turned in 14 questionaires, and administrators turned in 6 for an overall response rate of 54%. A copy of the survey with a tabulation of the responses is included at Appendix B.

Utilization of Local Federal Facilities. Specific questions were asked concerning use of the VA, Bethesda Naval Hospital, and the Malcolm Grow Air Force Medical Center. Table 2 shows that the local network of federal facilities is accessed by a sizable minority of the staff.

Table 2

Use of Local Federal Medical Centers

Question	# Yes	# No	% Yes
Have you ever referred or arranged for patient care at the VA Medical Center?	4	16	20%
Have you ever referred or arranged for patient care at Bethesda Naval Hosp.?	9	11	45%
Have you ever referred or arranged for patient care at Malcolm Grow AF Hosp.?	5	15	25%

Further statistical analysis of this data yielded an interesting and unexpected insight. Only physicians responded yes to any of the questions dealing with use of other federal facilities. Ten of the fourteen physicians had referred patients to other facilities. Several physicians had used two or all three of the other federal medical centers. No

Department administrator had been involved in arranging for any patient care at other federal facilities, or establishing an ongoing relationship for care. There was a statistically significant difference between the groups when analyzed with a chi-square test (X^2 (1, N = 20) = 5.952, p < .05).

Use of Supplemental Care Program. While only ten (50%) of the respondents had used other federal medical centers, eighteen (90%), including all of the administrators, had used the Supplemental Care Program. There were no statistically significant differences between physicians and administrators on problems with the program or use of Supplemental Care.

A Total Quality Management approach advises, "listen to your customer, and always strive for continuous incremental improvement". From this standpoint then, any yes answer to a question about a problem area should be noted, and if possible, corrected. Every problem area offered on the survey had some yes answers, except one. Although administrators should always note any area of dissatisfaction or concern, in the applied science of management, it is appropriate to evaluate problems according to the number of people who are experiencing that problem and the degree to which it affects the functionality of the organization. Surveying for problem areas through use of a yes/no question to suggested problem areas almost certainly invites some yes answers.

A statistical analysis of the questions on potential problem areas is presented in Table 3. It uses a calculation of the average number of yes answers for all suggested problem areas. The number of yes answers for each question are compared to the grand mean to determine if the set of answers for that question is significantly different than the general level of complaining about the system. This is analogous to a policeman who becomes used to a normal noise level in a crowd, but reacts to sudden shouting, or an unnatural quiet.

Table 3

Questions on Potential Problem Areas

Question	# Yes	# No	% Yes	t
Limited information about civilian services	10	7	59%	1.993 *
Guidelines are confusing	10	7	59%	1.993 *
Takes too long to coordinate	8	9	47%	1.022
Unreasonable costs	7	11	41%	.558
Too many signatures required	6	11	35%	.083
Difficulty in coordinating appointment for the patient	5	12	30%	- .429
Treatment exceeds request	1	16	6%	-4.831 **
Supplemental Care denied	0	17	0%	-5830.0 **
Grand Mean	47	90	34%	

*$p < .05$ **$p < .001$

Four questions had response rates close to the grand mean, indicating management could address other more pressing areas first. Approximately one-third responded affirmatively to these questions, but their narrative remarks did not highlight this as an area of intense concern, which is congruent with the statistical finding. Three of the questions dealt with possible administrative barriers of the program - the difficulty, the length of time to arrange for care, and the number of signatures required.

Two items dealing with information issues were answered "yes" significantly more often: "Limited information about civilian services" and "guidelines are confusing" (both items had $t = 1.993$, d.f. 16, $p < .05$). There was no statistically significant correlation of people who responded the same to both questions, thus indicating that the questions address different aspects of managerial information available concerning the Supplemental Care program. Whereas respondents noted only mild concern with the administrative mechanics of the program, they voiced considerable displeasure about centralized guidance on the program, and inadequate information about sources of care which exist outside of WRAMC's internal health delivery system. This information could be centrally collected and disseminated.

The two items which had the largest deviation from the mean dealt with aspects of the program which can be

interpreted as being clinical, and not administrative. Not a single respondent reported a case of "Supplemental Care denied" (t = -5830, d.f. = 16, p < .001). Thus, in no instance was the clinical judgement of a physician requesting a referral to a civilian source overruled in any part of the signature gathering process. Only 1 respondent indicated knowledge of a case where "treatment exceeds request" (t = -4.831, d.f. = 16, p < .001). One interpretation of this indicates a deference to the clinical judgement of the civilian practitioner who provides the care, especially when referral documents and invoices are evaluated. The narrative on most referral requests is approximately two sentences long. The same narrative on different requests has resulted in different treatments and bills for different amounts, reflecting the clinical judgement of the provider. Interviews with several administrators indicated that WRAMC will pay whatever invoice is sent by the civilian practitioner.

These two indicators of deference to the judgement of the individual practitioner are in consonance with the entire structure and governance of the military health care system. Each patient is different, and the treatment protocol is determined by the practitioner who evaluated the patient. One physician at WRAMC said that when put in the position of gatekeeping for an expensive diagnostic test, he would always say "yes", because he didn't want to confront a legal or moral

dilemma of second guessing another physician who was actually more familiar with the case (anonymous personal communication, April 24, 1990).

Administrative questions. The questionaire for administrators included several additional questions on training and Standard Operating Procedures they followed in handling Supplemental Care requests within their departments. Five of the six respondents stated they had no orientation training when they first began the program. Two of those five also had no explicit feedback or OJT since they began. The other three reported limited OJT of one to eight hours in the six months to two years they had worked with the program.

Five of the six administrators responded "no" to the question "Do you routinely check local military hospitals or the VA Medical Center before sending patients out on Supplemental Care?". This indicates that WRAMC's Supplemental Care program is not functioning as a regulating mechanism which appropriately channels demands for health care.

There are three regulations which provide guidance on Supplemental Care: AR 40-3, HSC Supplement 1 to AR 40-3, and WRAMC Regulation 40-46. Three of the respondents had none of the documents, one had AR 40-3, and two had WRAMC Regulation 40-46. This shortcoming may be one reason so many respondents to the entire survey noted that the program guidelines are confusing.

Supplemental Care Expenditures

In proportion to total budgets. Health Services Command spent $102,597,769 on Supplemental Care in FY 87 and $138,172,192 in FY 88. In FY 88, approximately 10% of the total HSC operating budget was spent on Supplemental Care funding (H. Miles, personal communication, May 8, 1989). However, approximately two-thirds of the HSC expenditures were for three unique system wide expenses. The first covers beneficiary care at the ten United States Treatment Facilities. These are the old Public Health Service hospitals which operate under special legislative provisions as civilian institutions which treated as part of the military's direct care system. However, they are reimbursed directly from each military Services' health care budget. The second was medical expenses for active duty members outside of an MTF catchment area, and the third was a reserve for catastrophic expenses at any single MTF. Expenditures for Supplemental Care at most MTF in HSC are approximately 4% - 5% of the operating budget for the facility (Butler, 1986, CABS Reports, 1988).

WRAMC's historical experience. As a tertiary care center, Walter Reed has a much greater capability than the average MTF to directly handle most health care needs. Consequently, over the last three years, Supplemental Care has consistently been less than 1% of the operating budget at WRAMC. Yet because of the volume and variety of care provided

at the medical center, Supplemental Care purchases have amounted to approximately one million dollars each year as shown in Figure 7. A similiar level of expenditure is projected for FY 90, although the types of service being purchased have changed.

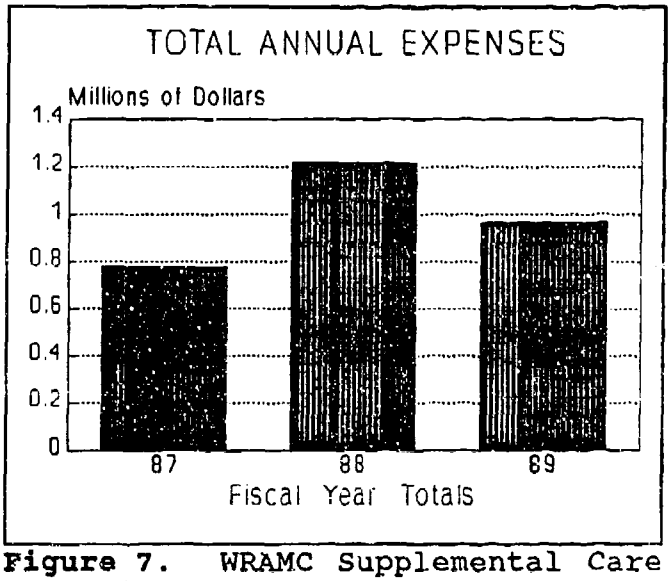

Figure 7. WRAMC Supplemental Care Expenditures.

Emerging technologies. At Walter Reed, one of the main uses for Supplemental Care is to utilize new equipment and treatments until management can decide if the new technology should be included in the armamentarium of the hospital. The ballooning of expenditures for a specific type of diagnostic or therapeutic treatment can be a signal to the command that a new technology has become established, accepted, and indeed may signal a new community standard of care. It is essential that a new trend in utilization of an emerging technology be detected early, because the lead time for procurement of major capital equipement is often measured in years. In FY 87 and FY 88, WRAMC spent over $220,000 for Magnetic Resonance Imaging while their machine was being upgraded. Yet in May 1990, when that one machine was working three shifts a day,

a MEDCASE request for a second machine had still not been completed by the Department of Radiology.

FY 89 total expenditures. This study included a focused analysis of the Supplemental Care expenditures for FY 89. During the fiscal year, WRAMC spent a grand total of $969,631 on Supplemental Care. The Department of Pathology spent $383,924 or forty percent of the grand total as a source of contract money to pay for lab tests to be processed elsewhere. Because only the specimen is sent out (a patient is not referred for care), all purchases are already aggregated, and there is no individual case by case approval process, this department was not included in the scope of this study. An aggregate breakdown of expenditures by the departments who referred patients for care is shown at Figure 8. These figures are fairly congruent with other measures of department size. Expenditures for the Department of Surgery and Neurology

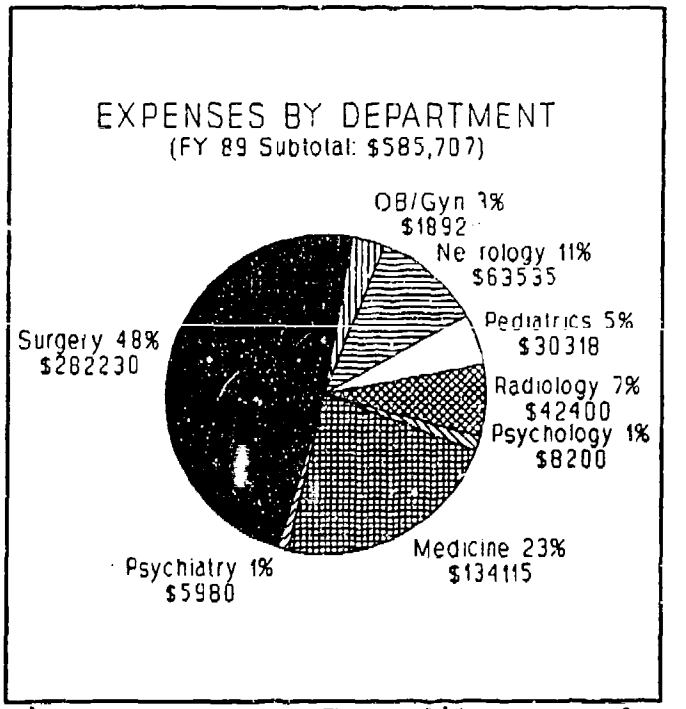

Figure 8. Expenditures by Department

Service are disproportionately large, but further analysis showed that several individual high cost cases explained the disparity.

Of the $585,707 spent by these departments for Supplemental Care, $184,899 was already rolled into aggregate Blanket Purchase Agreements for frequently used services. A total of 683 referrals were handled in this manner. In these cases, department clinical or administrative personnel identified preferred providers for the service and patients were sent to them for diagnosis or treatment. The provider then billed WRAMC on one consolidated monthly bill for all patients. The selection procedures for several of these agreements are discussed in a later section of this study.

This winnowing process left $400,808 for further explanation. $24,098 which was spent by the Department of Pediatrics could not be analyzed in detail as no records could be located in the Department to document the episode of care. The remaining $376,710 was first broken down into expense categories based on the total cost of care for each referral. This covered care for 156 different patient episodes of care. While the vast majority of the referrals for Supplemental Care resulted in costs of less than $1,000, the greatest aggregate expense was overwhelmingly incurred by the nine cases which each cost more than $10,000. This contrast is graphically illustrated by comparing Figure 9 and Figure 10.

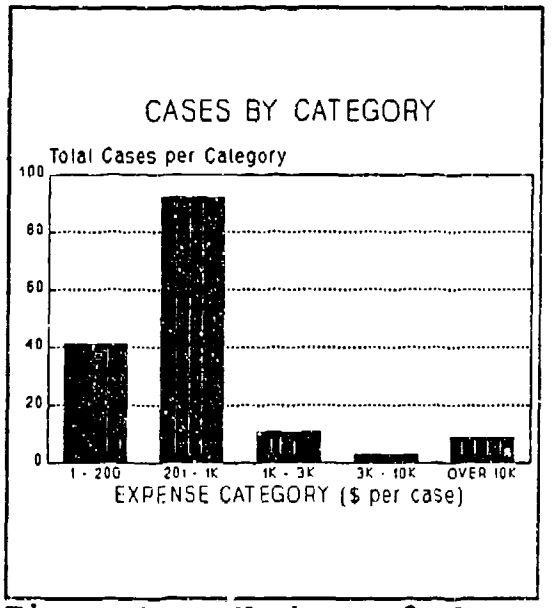

Figure 9. Number of Cases Separated by Cost per Case.

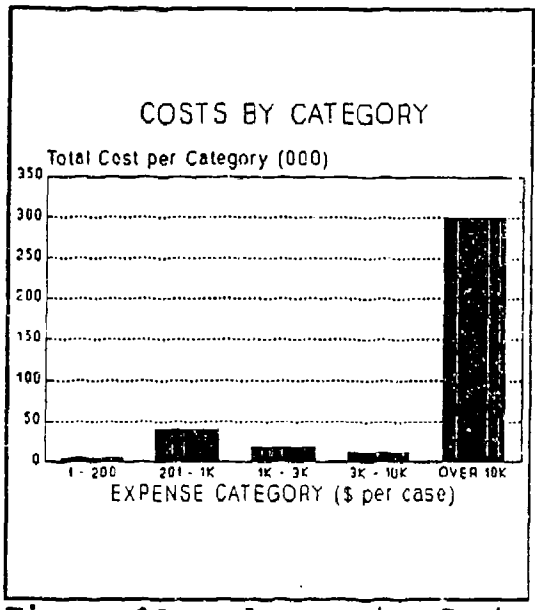

Figure 10. Aggregate Costs Separated by Cost per Case.

<u>Individual high cost cases in FY 89.</u> The individual high cost cases are certainly outliers from the majority of cases and warrant additional attention according to the management by exception philosophy and the ABC analysis of inventory (and just plain common sense to use a plebeian term). Several common traits were found in reviewing the nine cases.

First, each of the treatments were for unique procedures not commonly performed at Walter Reed. Each of the patients was sent to a noted practitioner at a premier medical facility. Each of the referrals was appropriately reviewed prior to treatment, to include checking Wilford Hall Air Force Medical Center for availability for the bone marrow transplant

(it didn't meet their protocol). A list of the nine cases is shown at Table 4.

Table 4

Individual High Cost Cases

Procedure	Total Cost	Location
Bone Marrow Trans.	$68,895	Univ of Washington Hosp.
Plasmapheresis (x 3)	$63,535	Georgetown Univ Hosp.
Heart Surgery	$58,339	Barnes Hospital, St. Louis
Proton Beam Therapy	$40,704	Massachusetts Gen Hosp.
Liver Surgery	$40,401	Johns Hopkins Univ Hosp.
Opthalmic Surgery	$15,630	Washington Hospital Ctr.
Opthalmic Radiation	$12,987	Will's Eye Hosp. Baltimore

In several cases, WRAMC's lack of sophistication at dealing with medicine provided by the private sector led to anomalies in processing the referrals or payments. The heart surgery patient was referred with a ballpark estimate of $20,000 for the cost of care. After an uncomplicated surgery and recovery, the final bill came back at almost three times that amount. Furthermore, WRAMC's lack of institutional expertise in judging the appropriate cost of any of these procedures forces the military payor to completely trust the cost accounting of the private sector provider. A different aspect of inefficiency was revealed by the three

plasmapheresis cases which, as was discussed earlier, could have cost five percent less if the payment had been fast-tracked.

High volume procedures. The majority of costs have been accounted for in examining consolidated Blanket Purchase referrals and the individual high cost cases. But while rudimentary procedures to monitor the aggregate cost of Supplemental Care were already utilized by the medical center's Directorate of Resources Management, there was no centralized reporting or even decentralized tabulation of what was being purchased. This limits management's ability to use the Supplemental Care program as part of a regulating mechanism to assess the internal subsytems at WRAMC and to appropriately channel patients to the different components of the total health care delivery system.

Using source documents from each department, an analysis was made of every patient referral based on the type of treatment or diagnosis. A complete listing of all departmental Supplemental Care purchases is included at Appendix C. Arbitrarily limiting "high volume procedures" to those with five or more referrals, a refined listing was made of frequent patient referrals. These are listed at Table 5, and each will be discussed in relation to what they reveal about the availability of services at WRAMC, and the management of the Supplemental Care program.

Table 5

High Volume Procedures.

Procedure	Number of Cases	Total Cost
Bone Scans	212	$42,400
Mastectomy Prosthesis	38	$9,857
Color Flow Doppler Ultrasound	21	$12,017
Standard Ultrasound	6	$1,281

Bone scans. In the first quarter of the fiscal year, the Nuclear Medicine Service experienced an inability to provide all requested bone scans due to a short term equipment deficiency. The actions taken by the Service Chief to fill the gap are an example of creative decentralized decision making at its best. Diagnostic imaging centers in the area were informally polled and negotiations were held to obtain the best price to provide just the bone scan (WRAMC professional staff interpreted the scan). Because the services were paid for through use of Supplemental Care funds, informal negotiations were held without going through the time consuming and very formal contract provisions of the Federal Acquisition Regulations. Two centers were chosen to provide scans, but one was soon disqualified due to poor quality results. The other continued under a Blanket Purchase

Agreement for about six months until the equipment problem was resolved.

Mastectomy prosthesis. Women who had mastectomies could purchase their first breast prosthesis from any civilian vendor and send the bill to WRAMC. The 38 invoices during the year came from 13 different boutiques or medical supply stores. Costs ranged from $144 to $332, with an average of $259. However, this very individualized and unconstrained method of referral and payment seems justified from a cost analysis and quality of care standpoint. If WRAMC brought the service in house, and provided it for the same amount as the cheapest private sector vendor, only $4370 would be "saved" as opposed to the average charges. However, WRAMC would encounter tremendous diseconomies of scale by trying to provide such a service only 38 times in a year. Additionally, WRAMC would probably not be able to economically stock adequate inventory to match each patient's individual need. Furthermore, many patients traveled back to their home area, and established a long term relationship with the boutique which would be supplying them in the years to come. Consequently, the current procedure to meet this health care need appears to be the most feasible alternative.

Ultrasound. Ultrasound procedures purchased through Supplemental Care appeared under several different names in three different departments. Tracking down the extent of

external purchase of these diagnostic procedures revealed considerable dissatisfaction with the ability of the medical center's Department of Radiology to provide this, and other diagnostic services. Clinicians are frustrated that some state of the art procedures can't be done and at the long wait for more established imaging procedures. Administrators are frustrated that the Department of Radiology will not coordinate or fund the external purchases.

The six referrals for standard ultrasounds occurred because clinicians in other departments did not feel these patients could wait for in-house ultrasound appointments. Further investigation indicated the predominant problem here was staffing imbalances and workload scheduling in the Department of Radiology. The twenty-one referrals for color flow doppler ultrasounds reflected an equipment problem, as this emergent technology requires a new machine costing approximately $175,000. In both instances, there was no budgetary pressure on the Department of Radiology to find a solution to these shortcomings.

FY 90 developments. Two developments in FY 90 are pertinent to the findings which are presented and discussed in the final parts of this study. First, the purchases of color flow doppler ultrasound services exploded to 72 cases for $46,225 in the first six months of FY 90. This increase in utilization was quickly identified only because this study

had begun a process of tracking individual referrals, and not just aggregate costs.

The second development stemmed from an action taken to reduce the waiting time for Magnetic Resonance Imaging. The Deputy Commander for Clinical Services removed most administrative controls on the Neurology Service for MRI referrals, if the waiting time for use of the WRAMC MRI exceeded six weeks. A staff physician in Neurology was designated to approve and sign all referrals. The staff physician decided to streamline the process even more, and xeroxed a stack of blank signed referrals. On the first day of this new approval process, one referral was made, on the second day, three referrals were made, and on the third day, ten referrals were made. At this point, other departments heard about the elimination of administrative hurdles and clamored to be given similar authority. Because this method of delegating signature authority was in contravention of HSC Supplement 1 to AR 40-3, and the budget could not support the unbridled use of Supplemental Care, the DCCS returned to a cases by case approval process for MRI purchases. The salient point in this episode concerns the effect administrative review procedures have on regulating the demand for Supplemental Care expenditures. Prior to the removal of all administrative barriers, physicians who had concern that a patient could not wait for an appointment at WRAMC would use

an informal network to get an appointment, or request and receive a Supplemental Care referral. When administrative barriers were removed, quality of care and convenience outweighed any cost considerations. To use Hurley's analysis (1986), in the absence of administrative reviews, the role of physician as "caregiver" overrode any role as "rationer".

Supplemental Care Providers

Identifying providers. Determining the availability of potential Supplemental Care providers is largely based on the knowledge and networks of the clinical staff. When WRAMC physicians were queried about what they consider when choosing a Supplemental Care provider, four answers predominated: the ability to provide highly specialized care, personal knowledge of the civilian program and service, capability to quickly arrange for service, and the geographic location of the provider. Frequently, a referral will be made to the same practitioner who received previous referrals.

Choosing providers. One hundred and four (104) practitioners and facilities provided Supplemental Care services on a patient referral basis in FY 89. After interviews with WRAMC physicians and administrators, and extensive records review, seven catetories were devised to explain the original reason for a referral to a provider. Each of the providers was placed in one of seven categories based on an intepretation of the interviews and records review.

Three categories accounted for 73 of the 104 providers. "Preeminence in the field" (27 providers) was used to describe the undisputed reputation of the facility or provider, or their market monopoly on a very specialized test or procedure. "Geographic location" (26 providers) occurred in many routine referrals based on proximity to Walter Reed or the patient's home. Twenty (20) providers were assigned to the category "secondary services" because their invoice for services rendered was actually incident to a referral to a preeminent facility (the high cost cases each had several discrete secondary service charges).

Eleven (11) of the providers could not be categorized and thus were classified as "unknown". With what was admittedly the weakest hard evidence, seven (7) of the providers were categorized as "connections" indicating that the referral was based more on knowing someone than any of the other categories. Another seven (7) providers were classified as "emergent" because their services were incident to an emergency treatment. Only six (6) of the providers were chosen based on "cost competition or comparision" which is a reflection of the limited role cost concerns play in the systemic management of the Supplemental Care program. WRAMC has no initial or followup procedure to review the selection of Supplemental Care providers.

Testing the market. Color flow doppler ultrasound and MRI were selected as procedures to test the willingness of local providers to negotiate. Indeed, these were the only two Supplemental Care referrals in the FY 89 - FY 90 window which were routine and had sufficient volume to be attractive as candidates for volume discounts. At the time of the market survey, WRAMC was paying $650 per test for color flow doppler ultrasound, and $450 for an MRI scan.

Four imaging centers were contacted and asked what they would charge for the ultrasound with an expectation, but not a committment, of five to ten procedures a month. All four were interested and gave price quotes of $310, $335, $450, and $544. Surprisingly, the facility that was charging WRAMC $650 per ultrasound provided the $450 quote (in writing). One can surmise that competition or the threat of losing business led to the discount.

Three imaging centers were contacted and asked what they would charge per MRI procedure with an expectation, but not a committment, of one to twenty procedures a month. The provider who was charging $450 was the lowest bidder with a proposal to continue with the same rate. That bid was not seriously challenged by the $650 or the $750 estimates provided by two centers which are, incidentally, located at a greater distance from WRAMC.

Compliance with Official Guidelines

Although regulations and policy guidance from higher headquarters were studied at the beginning of the literature review for this project, a synopsis of the official guidance and an assessment of WRAMC's compliance is presented at Table 6 as a summary review of major parameters for managing the Supplemental Care program. A specific requirement is only cited once and credited to the highest level of authority which promulgated it.

Table 6

Regulations and Policy Guidance

Requirement	Compliance
AR 40-3	
"Care must be legitimate and based on demonstrable requirements.	Yes
"Supplemental care will be obtained from civilian sources only when it is not available from Federal sources which are resonably near.	No[a]
"Supplemental care on an inpatient basis is authorized for a period not to exceed 2 days. Requests for exception will be directed to the MTF's major medical command."	Yes
HSC Supplement 1 to AR 40-3	
"MEDCEN Commanders may delegate approval authority for purchasing supplemental care no further than the DCCS. Requests for exception will be submitted to HQ, HSC."	Yes[b]

DoD Policy Letter (2 Feb 88)

"Could inter-service or VA resource sharing agreements have provided the service?	No[a]
"Could more cost effective professional service contracts for high volume services have been implemented?	Yes
"Was confirmation of service performance made prior to payment of the bill?	Sometimes
"Was the bill "reasonable"?	No
"If the bill exceeds the Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) prevailing charge schedules, was it justified and were efforts made to substitute a less expensive source?	No
"Were sources prospectively identified for reasonably priced health care which met quality of care standards?	Sometimes
"Was a management review and analysis of the program conducted on an annual basis?"	FY 89: No FY 90: Yes

HSC Implementing Instructions (22 Feb 88)

"MTFs will maintain data by CPT4 procedure code by civilian provider"	No

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[a]WRAMC has no comprehensive system to evaluate these options.

[b]WRAMC generally compliant with one exception.

CHAPTER IV: DISCUSSION

Strengths of the Current Supplemental Care Program

The role of Supplemental Care. The preceeding chapters have described how the Supplemental Care program functions or fails to perform as part of a broader system to provide health care services for eligible beneficiaries. Supplemental Care plays several different roles within the total system. First, it acts as a mechanism of choice to coordinate and pay for certain low density or highly specialized services which are not otherwise available. Second, it functions as a pressure valve to provide relief when the capacity of a service usually offered in the direct care system is overwhelmed. Finally, because the Supplemental Care program acts as a boundary spanner for the direct care system, it can provide invaluable data about the internal and external environments of the health care system for managers at the MTF.

What works well. The Supplemental Care program effectively provides the requested services and often does so using premier medical facilities and providers. In this respect, the program fulfills the first two roles of coordinating for services, and acting as a pressure relief for the direct care system.

The Supplemental Care program has also maintained overall expenditures at an appropriate level. Using less than 1% of the hospital's operating budget to have the flexibility

provided by the program is an acceptable cost of doing business. The local policy of liberally interpreting accounting regulations and using the Miscellaneous Obligation Document to front load the budget for each Department has had two very beneficial effects. First, each referral can be processed in a much faster manner because there is no need to obtain a gratuitous signature. Second, it places a hard number in front of users of the system at the Department level, and has probably been advantageous in keeping overall expenditures in check.

Deficiencies of the Current System

Missed opportunity. The most significant failing of the current Supplemental Care program is a lack of system-wide procedures which enable it to function as part of a regulating network to measure the pulse of the health care system, and make adjustments in the inputs and processes of the system. Furthermore, the regulating network itself is an impoverished shadow of what it can and should be. In many respects, these shortcomings are reflective of the fact that Walter Reed is fairly self sufficient, and somewhat insular.

Proponency. Management proponency for the Supplemental Care program is vested in the Program and Budget section of the Directorate of Resources Management. Program and Budget is, appropriately, charged with properly accounting for all of the committments and obligations of funds in operating the

medical center and the installation. Their mission is to keep track of the budget and make sure sufficient money is available to get through the fiscal year (and in the furious final days of the fiscal year, to make sure it all gets spent). It stands to reason that the centralized oversight of the program focuses not on what is being purchased or who we are obtaining care from, but on how the funds are accounted for.

Compliance with regulatory guidance. In recent years, the regulatory and policy guidance on the Supplemental Care program has become more definitive and required greater oversight on how funds are expended. In many cases, Walter Reed has not adapted its managerial controls to comply with these requirements. This shortcoming is particularly evident with regards to the cybernetic functions of checking other federal facilities, and surveying the private sector using cost as one of the considerations for selecting providers. Although there is a financial rationale to perform these checks, they require a managerial emphasis on the operational administration of a health care system, and not on financial accounting for a health care program.

Information issues. Three problems relating to information about the Supplemental Care program can be identified. First, because the program is so inwardly focused, there is a dearth of information about private sector

providers and other federal facilities. Related to this is a lack of explicit, written guidance on how to use the program, and how it differs from CHAMPUS and Cooperative Care. Finally, training for administrators is deficient in several ways. There is no formal orientation for new administrative personnel in the decentralized clinical departments, OJT feedback occurs only after documents were improperly handled, and no training is provided which teaches administrators how to use Supplemental Care as a tool in managing the health care operations of the total health care system.

Why the Status Quo Evolved

The current method of managing Supplemental Care at WRAMC is largely a carryover from "the good old days" when the scale of expenditures was smaller, and the interrelationships between different components of the system were simpler. The fiscal accounting orientation to monitoring the program was solidly in place long before VA - DoD resource sharing was legislatively authorized, or before CHAMPUS funds could be used to pay for Partnership agreements. Furthermore, even though the smaller facilities in the military health care system began to experience rapid inflation in the cost of the program, Walter Reed is still able to provide the vast majority of patient care services in-house, and did not experience the same degree of inflation in the program as other MTF.

In deference to the considerable size of the organization, Walter Reed decentralized the mechanics of coordinating for Supplemental Care to a far greater degree than other facilities. Obviously, this simplifies the process of procuring patient care services. A more subtle benefit is the tool it provides for Department chiefs to occasionally mollify frustrated physicians who are upset with resource shortages or system shortcomings in other areas. Supplemental Care is useful as a pressure relief valve for both logical and emotional demands on the health care system.

The recent mandates to tighten the monitoring controls on the program are difficult to effect because operation of the program has been decentralized and no centralized part of the organization is staffed to fully gather in the reins. The small Program and Budget office of DRM is staffed with experts in financial management, not health care operations. The Patient Administration Directorate has only one Health Benefits Advisor, who is fully occupied assisting patients with CHAMPUS claims and procedures.

At the local level, the process is not broken (especially from a strictly fiscal viewpoint). Marginal benefits in costs avoided require a sizeable investment of organizational resources. Because cost overruns are not a problem, a conscious decision was made to keep the process of coordinating services simple and not institute a rigid review

using CHAMPUS prevailing rates. Concerns about physician retention problems due to disparities in pay led the previous DCCS to direct that CHAMPUS Partnership program not be used to augment the in-house delivery system.

Arguments for Improving the System

Impending changes to CHAMPUS program. Supplemental Care expenditures at Walter Reed may appear reasonable, but they are just one visible indicator of the overall process of providing health care. Supplemental Care has not been the main pressure valve for the direct health care system - CHAMPUS has been the most viable alternative for patients who cannot access the system. The explosion in the cost of the CHAMPUS program will probably bring changes to that entitlement which will force more beneficiaries to return to the direct health care system.

Federal legislators and executive policymakers have also recognized that management of CHAMPUS funds cannot be accomplished in a vacuum which ignores the direct health care system. Three years ago, the responsibility to pay for CHAMPUS charges was taken from a separate DoD office and given to the Service's major medical commands. Two years ago, Catchment Area Management experiments began to transfer the authority to manage the funds to purchase all health care services within an MTF's service area to the facility commander. This trend will continue, and facilities which are

not formally in control of CHAMPUS funds today will be foresighted if they begin to develop greater sophistication and maturity of the infrastructure and process they use to coordinate external purchases of health care services.

Growing demands on the health care system. The direct health care system will experience increased demand on its capacity even if CHAMPUS rules are not changed. The retiree population is growing, and aging, and requires increasingly sophisticated acute care interventions. Additionally, many patients including the elderly, psychotic, and HIV infected, have needs for chronic health care treatment modalities. Meeting these needs will require increased home care, discharge planning, and coordination of ancillary services at the MTF and in the private sector.

Resource shortages. At a time when demands on the system will be rising, resources will be increasingly scarce in two critical areas. First, federal deficit problems and reductions in overall military budgets ensure that military medical budgets will be constrained. Reductions in funds to pay for health care services will occur when the overall inflation in health care costs throughout the country continues to rise significantly. Second, the rapid introduction of new technologies and the allure of healthy salaries for physicians and technicians to operate those technologies has led to serious staffing shortages at military

MTFs in certain specialities. Unfortunately, due to salary caps, an archaic and rigid civilian personnel system, and the continued proliferation of constantly changing technology, this problem will probably get worse. Management of the Supplemental Care program must be structured to deal with quickly changing internal and external conditions. The program must become part of a system which operates from the broad perspective of all of the health care options which are available.

Evaluation of Research Hypotheses

The Supplemental Care process effectively provides requested patient care services. The main goal in decentralizing the operation of the Supplemental Care program was to effectively provide the services requested by the physicians. Several different measures indicate that the process has been successful in that mission. The program is strongly oriented to defer to the clinical judgement of the practitioner, and no one could recount a case where care was denied. Preeminent medical facilities and practitioners and geographic location (usually for the convenience of the patient) were the most common reasons a referral was made to a specific provider. Administrative hurdles were acknowledged by many respondents to a survey, but statistical analysis, narrative comments and interviews indicated these were not viewed as limiting the effectiveness of the program and no one

could recall an episode which affected the quality of care received by a patient.

The management system does not efficiently monitor the program and adjust use of resources. The feedback system to monitor Supplemental Care is fairly unsophisticated. It has focused mainly on aggregate financial totals with little context of what the dollar figures indicate except with regards to a budget target. The rapid escalation in referrals for color flow doppler scans was not properly recognized or responded to because no process was in place to systematically review Supplemental Care utilization at a level below the level of expenditures for the entire medical center. There is no systematic mechanism in place to query the availability of services at other federal facilities, nor to prospectively identify civilian providers based on cost comparisons. Administrators at the department level have not been involved in referrals to other federal facilities and are not well versed in the health care options which exist outside of the walls of Walter Reed.

Notwithstanding an overall finding that a deficiency exists in this area, there have been instances of efficient managerial interventions in the allocation of resources based on review of the Supplemental Care program. The Command used Supplemental Care data to gain approval and funds to purchase the first lithotripter in DoD in FY 88. The formal cost

comparisons which occurred for MRI and bone scans are several examples of instances where the program has functioned as a regulating mechanism and not just a conduit for funds. In these individual cases, the program has been in compliance with the new regulations which are geared to a goal of efficient use of resources. But these episodes cannot be mistaken for an institutionalized process which regularly evaluates all referrals and is practiced by all departments.

Shortcomings in the Supplemental Care system are caused by lack of adequate knowledge by users of the system. A statistically significant number of respondents to a survey identified information inadequacies as a problem of the program. Regulations and written guidance were missing in most offices which coordinate Supplemental Care services. One of the weaknesses of a decentralized system is the difficulty of getting the correct information to all of the players in a timely manner. During FY 90, five of the ten departmental administrative personnel will have a new incumbent in the position, and yet no formal training program exists to establish a uniform standard for how the system should operate, or to share knowledge on new developments in the external environment.

Shortcomings in the Supplemental Care system are not caused by lack of incentives for the users of the system. Although there are no obvious reward or punitive mechanisms

that would encourage more efficient use or management of the Supplemental Care program, it is not possible, or even appropriate to identify this as a cause of weaknesses in the current system. The users of the Supplemental Care system are part of the larger military system where overall good performance is rewarded in the long run, but where professionalism is the main incentive for doing a good job in day to day operations. Furthermore, the users of the system are beset with numerous other challenges in providing quality patient care and must prioritize their time to attend to larger problems than the relatively minor inefficiencies which plague the Supplemental Care program.

Shortcomings in the Supplemental Care system are caused by design faults. Actually, WRAMC's current Supplemental Care system does exactly what it was designed to do. It effectively delivers the requested patient care service and detects large financial trends. The Supplemental Care program was not designed to be a regulating mechanism which checked other federal facilities or rigorously surveyed the private sector. Thus, the system is not in compliance with recent changes in the policy guidance for this program. These policy changes are in response to trends in the larger health care environment which require the development and maturation of sophisticated internal control systems. Sophistication is required in the internal control systems because physicians

and administrators in military MTF will no longer be just operating health care facilities, but must be managing a multifaceted health care system. Ways to refine and improve the design of the current Supplemental Care system will be offered in the final chapter of this study.

CHAPTER VI: RECOMMENDATIONS AND CONCLUSION

Recommendations

Overview. The Supplemental Care program at Walter Reed Army Medical Center is used as an uncomplicated means of quickly augmenting the capabilities of the direct care system. It functions effectively in performing that mission. However, the program must be refined and refocused to become a mature part of a regulating mechanism which meets the recent changes of the 1980s and the impending challenges of the 1990s. The development of the Supplemental Care program as part of a sophisticated management system should be guided by the following recommendations:

* Identify and keep the aspects of the program which are effective.

* Place responsibility for coordinating diagnostic services with the WRAMC department which provides that service.

* Strengthen centralized review mechanisms.

* Increase coordination and improve the linkages between local federal facilities.

* Create an administrative element within the management structure with overall responsibility for Supplemental Care and other programs which interface with parts of the total health care system which are external to Walter Reed.

Identify and keep the aspects of the program which are effective. The program should continue to be operated as a decentralized means to procure health care services from the private sector. The clinical departments should keep their decentralized budget authority over the expenditures for their providers. To facilitate this, DRM should continue to use the Miscellaneous Obligation Document to front load each department's budget and to technically insure that funds are available prior to procurement. Physicians should be encouraged to continue, and increase, their use of other federal facilities. The input of staff physicians should remain a key part of the process of choosing private sector providers and recognizing the new technologies which should be available for their patients.

* Place responsiblity for coordinating diagnostic services with the WRAMC department which provides that service. The illogical duplicity in the processing of laboratory tests versus radiology tests should be eliminated. Most Supplemental Care purchases for laboratory tests are appropriately coordinated and controlled by the Department of Pathology, which should be most knowledgeable about the local market. Only specialized tests which are used soley by one department are coordinated by that department.

On the other hand, most radiology diagnostic procedures are inappropriately coordinated by the referring department

because the Department of Radiology refuses to be involved. The drawback to this arrangement is that the demand is fractioned back to the different clinical departments and the allocation of resources cannot be evaluated and balanced across the entire system. This fractioning of the referrals for diagnostic radiology procedures masked the backlog and need for increases in the medical center's MRI and ultrasound capabilities. Clinical criteria for acceptable waiting times for diagnostic imaging must be established and the responsibility to provide the service placed fully on the Department of Radiology. Like the Department of Pathology, if they cannot provide the service within the time established, they will use Supplemental Care to purchase the service. Aggregating the referrals will allow a discounted price to be negotiated, and it will make the extent of any in-house shortfall readily apparent.

Strengthen centralized review procedures. Mechanisms for centralized oversight of the nature and extent of Supplemental Care use must be improved. The depth of the review should include assessments of what is being purchased and not just how much it cost. The breadth of the financial review should track expenditures to the department level, and not just an aggregate total. Formal reviews should occur quarterly rather than semi-annually, and monitoring should be an ongoing function.

A standardized means of tracking Supplemental Care referrals must be implemented to make centralized review possible. An outcome of this project has been the development of an automated program for department administrators to use in tracking utilization of Supplemental Care, and the document processing of each referral. The program includes data fields for essential elements which will assist in centralized review and nonessential fields to aid in administrative processing of each referral. A more complete description of the program is included at Appendix D. The program was developed in consultation with the administrators of the two largest clinical departments, and has been offered to all departments for their use.

A second outcome of this project has been a proposal to the medical center's standing Utilization Review (UR) Committee for an increased role in performing centralized review of the use of Supplemental Care. The committee accepted this mission and received a presentation on the analysis of FY 89 expdenditures at their next meeting. A formal report was then forwarded to the Executive Committee on the need to assess resource consumption for color flow doppler scans. The review process was institutionalized as the committee promulgated a requirement for a quarterly report from the clinical department's on five essential elements of Supplemental Care utilization (total referrals, year to date

costs, year to date committments not yet paid, high cost procedures, and high volume procedures).

Shortly after the acceptance by the UR Committee of a larger role in centralized review, the format for a quarterly Review and Analysis (R & A) program for the entire medical center was completed. Review of Supplemental Care expenditures is one aspect of that program. Accordingly, the quarterly reports by the clinical departments were designed to provide detailed information for review by the UR Committee that can be easily transferred to summary charts for review by the Commanding General at the quarterly R & A. These changes in oversight of the Supplemental Care program should be instrumental in improving the information flow to allow better management of the Supplemental Care program in the context of total hospital operations.

Increase coordination and improve linkages between local federal facilities. The types of services which are shared and the number of patients who are referred between the federal facilities in the local area can and should be increased. Although some sharing between local facilities was evident during the research for this project, the magnitude of actual referrals was quite limited, and the procedures to check for availability do not comply with the recent policy guidance on sharing between federal facilities. It is essential that decentralized mechanisms be developed, and

used, which allow clinicians or administrative personnel at the department level to check for the availability of services at other facilities, and to easily effect the transfer of patients.

The physicians in the departments should be encouraged to contact their counterparts at the local federal facilities to brainstorm on ways to provide better care for patients and to present ideas and requests to a central office for particular services which could be shared. Administrators in the departments should be tasked to consolidate potential areas for sharing and to participate in discussions between officials from all of the facilities on effecting increased sharing. Linkages with external organizations should be codified through written agreements as a means of formally designating what is available and how to share costs and transfer patients. The process of developing new areas to share should be consolidated at one organizational element apart from the clinical departments. WRAMC personnel must brainstorm and develop ideas at multiple interfaces, but should formally speak to other facilities with one official voice.

The Washington D. C. metropolitan area has always been a prime candidate for some form of joint services medical organization with a mission to increase sharing. If mandated by higher headquarters, this organization could follow the

Joint Military Medical Command models of San Antonio or San Francisco, or the Health Services System model of the Delaware Valley. The current recommendation, based on the research of this project, supports an assertion that increased sharing is possible. A recommendation about the formal structure of a tri-service relationship is beyond the scope of this project.

Create a new administrative element with overall responsibility for Supplemental Care and other interfaces with health care providers external to Walter Reed. A centralized administrative element should be created to promulgate policies guiding the operation of Supplemental Care and to perform external surveys and negotiations with private sector providers as well as other federal facilities. The creation of a new office could not be justified if correcting the inefficiencies in the Supplemental Care program were its sole justification. However, the potential role of the Supplemental Care program as part of the regulating mechanism for the health care system brings several other linkages into the picture. The increased complexity and magnitude of the interrelationships between components of the health care system makes the creation of an office which focuses on managing these interfaces an appropriate adjustment of the management structure.

Currently, external relationships are managed through a number of different elements of the organization. DRM has

proponency for Supplemental Care in one office, and formalizes resource sharing agreements in another. The Health Benefits Advisor in PAD is the main overseer for CHAMPUS, but only to assist patients, not interpret the information available from OCHAMPUS. Each clinical department is responsible for their own DHCPP contract efforts, but require considerable assistance from Directorate of Contracting. Yet actions taken in each of these areas have an impact on capabilities or needs in others. A central office should be charged with responsibility to coordinate the external liaisons for the total health care system.

In the Supplemental Care area, the centralized office would assume responsibility for ensuring that data on utilization of Supplemental Care was collated for review on a quarterly basis. The office would be the proponent of the WRAMC regulation governing Supplemental Care. This would take proponency for Supplemental Care away from fiscal managers, and place it on the administrators more directly involved in hospital operations. The centralized proponent for Supplemental Care would then be responsible for a number of areas which cannot be accomplished by decentralized users of the system such as surveying private sector providers, monitoring invoices for potential discounts, checking the CHAMPUS prevailing charges guidelines, and providing a training seminar for new administrators. They would also be

Walter Reed's official point of contact for developing new resource sharing agreements with other federal facilities, and keep up to the date assessments on their availability.

In September 1989, HSC sent a directive to all MTF which directed the establishment of a Military-Civilian Health Systems Branch, and provided two new civilian positions (Munley, 1989). The research and recommendations of this study are validation of the need for a distinct organizational element to manage the military and civilian interface. At WRAMC, substantial groundwork has been done, by the author of this study and others, to restructure the organization and processes of providing administrative support to clinical departments and services. One aspect of the reorganization is the development of a Managed Care Division, which would expand the Military-Civilian Health Systems Branch to include managing most external interfaces which involve the transfer of patients or purchase of health care services from other parts of the total health care system.

Utility of Research Results

Further research suggested. This graduate management project has looked at the Supplemental Care program at WRAMC and found it is a window into several closely related elements of the military's health care system. Each of these has several areas where research could provide insight relevant to the research hypotheses and questions posed in this study.

The Supplemental Care programs at local federal MTF could be aggregated for a broader perspective on areas where the federal sector is missing out on economies of scale. This larger database could also be compared to the services available at each of the facilities. A comparison of the use and benefits of CHAMPUS Partnership Agreements, and the mechanisms for establishing resource sharing agreements at other local facilities would also be instructive. Finally, Blanket Purchase Agreements which were already in effect at WRAMC (particulary in the Department of Pathology) were not intensively analyzed in this study. Although these contract purchases have already been aggregated leading one to expect an increased discount, the magnitude of expenditures under these agreements makes them a worthwhile focus for further managerial investigation.

Applicability to other sites. All DoD hospitals have a Supplemental Care program and are subject to similar guidance on the use of the program. Although WRAMC is a large tertiary care referral and teaching center with unique capabilities and needs, the discussion and recommendations of this study should be relevant to other federal facilities. The findings should also be pertinent, though not directly transferable, to large, private sector HMOs, particularly those which operate on the staff model.

Conclusion

The Supplemental Care program at Walter Reed Army Medical Center is an effective conduit to coordinate the purchase of health care services from the private sector. The program is not efficient in regulating the flow of patients to alternate sources of care, or using feedback information from the Supplemental Care program to aid in decisionmaking to adjust the allocation of resources at WRAMC. Specific recommendations have been offered to keep the decentralized portions of the Supplemental Care program which have aided in making it responsive to requests for Supplemental Care referrals. The recommendations have further argued for strengthening the centralized review of the program, consolidating responsibility for diagnostic imaging referrals in the Department of Radiology, increasing organizational efforts to develop substantive sharing agreements with other local federal facilities, and creating an office in the administrative structure to monitor and oversee relations between components of the total health care system.

This study leads to a conclusion that military health care managers are still naive and inexperienced in dealing with private sector providers and the health care industry. They are also inexperienced at moving across organizational boundaries in the federal sector. Military health care administrators must move rapidly to the forefront in learning

to navigate in this area. While physicians have been predominantly trained to take care of the health of a patient, administrators are trained to nurture the health of an entire system. As generalists with a mission to tend to the entire system, administrators can also balance competing parochial needs in the best interests of the organization as a whole. This study of the Supplemental Care program has revealed a need for increased sophistication in knowing what is occurring in all of the subsystems, and the advantage of managing based on that knowledge and understanding.

REFERENCES

Butler, J. W. (1985). A study to determine the feasibility of establishing a preferred provider or sole source arrangement with a local hospital for services being obtained with supplemental care funds from Martin Army Community Hospital. Unpublished Graduate Research Project, Baylor University, Waco, TX.

CABS Reports (1987). CABS Budget data staff working reports, FY 87. p. 918-936. San Antonio, TX: Health Services Command.

CABS Reports (1988). CABS Budget data staff working reports, FY 88. p. 1092-1123. San Antonio, TX: Health Services Command.

Clemens, J. D. (1987). Report of Audit, Supplemental Care Payments. (Audit Report No. IR 28-86). Washington D.C.: Walter Reed Army Medical Center.

Clemens, J. D. and Nesbitt M. J. (1989). Audit of Supplemental Care Payments. (Audit Report No. Fol 4-88). Washington D. C.: Walter Reed Army Medical Center.

Department of the Army (1985). Medical, Dental and Veterinary care. Army Regulation 40-3. 15 Feb 85.

Eisenberg, J. (1985). The internist as gatekeeper. Annals of Internal Medicine, 102, 543-548.

Hogsett, R. N. (1982). Management by exception. In Hegel, C. (Ed.). The Encyclopedia of Management. New York: Van Nostrand Rheinhold Co.

Hurley, R. E. (1986). Toward a behavorial model of the physician as case manager. Social Science and Medicine, 23(1), 75-82.

Mayer, W. (September 29, 1988). Containment of CHAMPUS costs by restoring medical services in military hospitals. Policy letter from Office of Assistant Secretary of Defense (Health Affairs), Washington, D. C.

Maze, R. (1990, May 28). Wrangling jeopardizes CHAMPUS bailout. Army Times. p. 6.

Moore, S. H., Martin, D. P., and Richardson, W. C. (1983) Does the primary-care gatekeeper control the costs of health care? New England Journal of Medicine, 309(22), 1400-1404.

Munley, T. H. (September 12, 1989). Military-Civilian Health Systems Branch. Directive letter from Health Services Command, San Antonio, TX.

Reinfeld, N. V. (1982). Production planning and inventory management. In Hegel, C. (Ed.). The Encyclopedia of Management. New York: Van Nostrand Reinhold Co.

Reisman, A. (1979). Systems Analysis in Health-Care Delivery. Lexington, MA: D. C. Heath and Company.

Rumbaugh, J. H. (February 2, 1988). DoD Policy on

Supplemental Care. Policy letter from Department of the Army, Office of the Surgeon General, Falls Church, VA.

Somers, A. (1983) And who shall be the gatekeeper... Inquiry, 20, 301-313.

Taylor, C. T. (August 25, 1989). Approval to Contract Under the Direct Health Care Provider Program for FY 90. Headquarters, United States Army Health Services Command, Ft. Sam Houston, TX.

Walter Reed Army Medical Center (1987). Supplemental health care services. WRAMC Regulation 40-46. 11 Mar 87.

APPENDIX A. WRAMC Resource Sharing Agreements

Facility	Services or Procedures	Remuneration
DeWitt Army Comm. Hospital - Ft. Belvoir	Central venous catheter placed at WRAMC, patient transferred to DeWitt	None
Kimbrough Army Comm. Hospital Ft. Meade	Central venous catheter placed at WRAMC, patient transferred to Kimbrough	None
	Post operative hip joint replacements. Patient transferred to Kimbrough after operation	None
	Low acuity pediatric patients, evaluated at WRAMC, transferred to Kimbrough	None
National Naval Medical Center Bethesda, MD	3 Research Protocols - Adolescent Measles Sperm Motility MRI for Lung Cancer	None
Washington VA Medical Center	Cardiac Pacemaker Surveillance Program at VA	WRAMC provides physician backup during non duty hours; WRAMC gets 30 slots in VA program
	Electronystagmography at VA	WRAMC pays VA $175 per test
	Thoracic surgery: Wolfe-Parkinson-White Syndrome a' WRAMC	VA pays WRAMC $4,730 per patient.

Facility	Services or Procedures	Remuneration
Washington VA Medical Center	Peritoneal dialysis at WRAMC	VA pays WRAMC established per diem rate
	Angioplasty at WRAMC	VA pays WRAMC $2,350 per patient (extra per diem for long LOS)
	Neurosurgery (sterotaxic intervention) at WRAMC	VA pays WRAMC $3,012 per case
	Peripheral Vascular diagnostic procedures at WRAMC	VA pays WRAMC established per diem rate

APPENDIX B: QUESTIONAIRE

The following questions are being asked to assess and improve the delivery of supplemental health care services. Please feel free to pen additional comments after any question or at the end, or call MAJ Tim Williamson at 6-3955. Your answers will be treated confidentially, and you may remain anonymous. Thank You. **(Answers and cumulative totals are provided in boldface type. Some respondants gave multiple or no answer to some questions.)**

1. Have you ever referred or arranged for patient care at the VA Medical Center?

Yes	No
(4)	**(16)**

2. If yes, please list the general diagnosis, or the tests and treatments for the most recent referrals.

Follow up for seizure disorder	**(1)**
Pulmonary service	**(1)**
Squamous cell cancer treatment	**(1)**
Alzheimer's disease	**(1)**

3. Have you ever referred or arranged for patient care at Bethesda Naval Hospital?

Yes	No
(9)	**(11)**

4. If yes, please list the general diagnosis, or the tests and treatments for the most recent referrals.

Women in labor	**(2)**
Opthalmic surgery as backup when WRAMC staff on leave	**(1)**
Outpatient orthopaedics	**(1)**
Radiology services	**(3)**
Inflammatory arthritis	**(1)**
Depression	**(1)**
Internal Medicine inpatient	**(1)**
Specialized lab tests	**(1)**

5. Have you ever referred, or arranged for patient care at Malcolm Grow Air Force Hospital?

Yes	No
(5)	**(15)**

6. If yes, please list the general diagnosis, or the tests and treatments for the most recent referrals.

Low back pain therapy	**(1)**
Outpatient podiatry	**(1)**
Rheumatic disease	**(1)**
Psychosis	**(1)**
Internal Medicine inpatient	**(1)**

7. Do you understand the differences between CHAMPUS care, Cooperative Care, and Supplemental Care?

	Yes	No
	(15)	(5)

8. Have you ever referred, or arranged for patient care services under the Supplemental Care program? (If No, then skip the remainder of the questionaire)

	Yes	No
	(18)	(2)

9. How do you decide where to send a patient for Supplemental Care services?

Availability of specialized care	(7)
Knowledge of civilian program and service	(3)
Ability to quickly arrange care	(3)
Geographic location of civilian provider	(2)
As directed by Department chief	(1)

11. Listed below are potential problems in arranging for Supplemental Care services. Is this area a problem to you?

	Yes	No
Limited information about services available from civilian providers	(9)	(11)
Program guidelines are confusing	(11)	(6)
Difficulty in coordinating an appointment for the patient	(5)	(12)
Delays in getting clinical feedback from civilian provider	(5)	(9)
Takes too long to coordinate	(7)	(9)
Treatment given by civilian provider exceeds that requested on referral	(1)	(14)
Unreasonable costs	(6)	(10)
Too many signatures required to arrange	(5)	(11)
Requests for Supplemental Care denied	(0)	(17)

12. Please describe any other problems you have had with the Supplemental Care program.

Slow payments to providers	**(1)**
Double billing	**(1)**
Invoice sent to patient	**(1)**
Getting approved 2161 to patient	**(1)**
Departments do paperwork for radiology referrals	**(1)**

13. What are your suggestions on how to improve the Supplemental Care program?

Make the support service at WRAMC (e.g. Radiology) which won't provide the service do the work to coordinate SuppCare	**(5)**
Clearing center to coordinate care with contracts	**(3)**
Don't improve it -- make WRAMC support services function (specifically Radiology)	**(2)**
Provide more money to expand the program	**(2)**
Provide alternative contracts more quickly	**(1)**
Speed up the payment process	**(1)**
Provide training for staff	**(1)**

Additional questions to administrative personnel:

14. How much orientation training did you receive in Supplemental Care when you first began working with the program?

none	**(5)**
less than 1 hour	**(0)**
1 - 4 hours	**(1)**
4 - 8 hours	**(0)**
more than 8 hours	**(0)**

15. How much additional training or feedback have you received in Supplemental Care?

none	**(2)**
less than 1 hour	**(1)**
1 - 4 hours	**(1)**
4 - 8 hours	**(1)**
more than 8 hours	**(0)**

16. What written regulations, SOPs or guidelines do you have on hand which cover Supplemental Care?

AR 40-3	**(1)**
WRAMC Reg 40-46	**(2)**
Department SOP	**(1)**
None	**(3)**

APPENDIX C. Supplemental Care Use by Procedure

PROCEDURE	DEPT	EXPENSE	PROVIDER
** 2ND SURGERY			
2ND SURGERY	DOS	12830	JOHNS HOPKINS
** Subtotal **		12830	
** AIR TRANSPORT			
AIR TRANSPORT	DOS	1948	US JET AVIATION
** Subtotal **		1948	
** AMBULANCE TRANSPORT			
AMBULANCE TRANSPORT	DOS	190	COUNTY MEDICAL TRANS
** Subtotal **		190	
** ANESTHESIA SVC			
ANESTHESIA SVC	DOS	1200	ASS. ANESTH. SVC
** Subtotal **		1200	
** ANGIODYNOGRAPHY			
ANGIODYNOGRAPHY	DOS	400	VASCULAR ASSOCIATES
ANGIODYNOGRAPHY	DOS	650	VASCULAR ASSOC
ANGIODYNOGRAPHY	DOS	650	VASCULAR ASSOCIATES
ANGIODYNOGRAPHY	DOS	650	VASCULAR ASSOCIATES
ANGIODYNOGRAPHY	DOS	650	VASCULAR ASSOCIATES
ANGIODYNOGRAPHY	DOS	650	VASCULAR ASSOCIATES
ANGIODYNOGRAPHY	DOS	650	VASCULAR ASSOCIATES
ANGIODYNOGRAPHY	DOS	650	VASCULAR ASSOCIATES
ANGIODYNOGRAPHY	DOS	325	VASCULAR ASSOCIATES
ANGIODYNOGRAPHY	DOS	650	VASCULAR ASSOCIATES
ANGIODYNOGRAPHY	DOS	650	VASCULAR ASSOCIATES
ANGIODYNOGRAPHY	DOS	650	VASCULAR ASSOCIATES
ANGIODYNOGRAPHY	DOS	650	VASCULAR ASSOCIATES
ANGIODYNOGRAPHY	DOS	975	VASCULAR ASSOCIATES
ANGIODYNOGRAPHY	DOS	650	VASCULAR ASSOCIATES
** Subtotal **		9500	
** ANOSTMIA TREATMENT			
ANOSTMIA TREATMENT	DOM	748	TASTE/SMELL CLINIC
** Subtotal **		748	
** ARTERIAL EVAL, NON I			
ARTERIAL EVAL, NON I	DOS	250	VASCULAR ASSOCIATES

** Subtotal **		250	
** BILIARY SHUNT SURG			
BILIARY SHUNT SURG	DOS	9701	JOHNS HOPKINS
** Subtotal **		9701	
** BILIARY TUBE EXCHANG			
BILIARY TUBE EXCHANG	DOS	501	JOHNS HOPKINS
BILIARY TUBE EXCHANG	DOS	522	JOHNS HOPKINS
BILIARY TUBE EXCHANG	DOS	522	JOHNS HOPKINS
** Subtotal **		1545	
** BONE MARROW TRANS			
BONE MARROW TRANS	DOM	36817	UNIV HOSP SEATTLE
BONE MARROW TRANS	DOM	2725	UNIV HOSP SEATTLE
BONE MARROW TRANS	DOM	23	DR BARON
BONE MARROW TRANS	DOM	16141	UNIV WASH HOSP
BONE MARROW TRANS	DOM	23	DR KENNEDY
BONE MARROW TRANS	DOM	6940	UNIV WASH HOSP
BONE MARROW TRANS	DOM	1746	DR ADAMSON
BONE MARROW TRANS	DOM	422	DR QUARTARARO
BONE MARROW TRANS	DOM	23	DR MARGLIN
BONE MARROW TRANS	DOM	23	DR GODWIN
BONE MARROW TRANS	DOM	23	DR BLACKMON
BONE MARROW TRANS	DOM	47	DR MARGLIN
BONE MARROW TRANS	DOM	124	DR FEFER
BONE MARROW TRANS	DOM	102	DR LIVINGSTON
BONE MARROW TRANS	DOM	759	DR ADAMSON
BONE MARROW TRANS	DOM	459	DR MORTIMER
BONE MARROW TRANS	DOM	74	DR ABKOWITZ
BONE MARROW TRANS	DOM	780	DR HICKMAN
BONE MARROW TRANS	DOM	124	DR SAUNDERS
BONE MARROW TRANS	DOM	1479	DR KLARNET
BONE MARROW TRANS	DOM	41	UNIV WASH HOSP
** Subtotal **		68895	
** BONE SCANS			
BONE SCANS	RAD	2400	SHADY GROVE RAD CONS
BONE SCANS	RAD	3400	SHADY GROVE RAD CONS
BONE SCANS	RAD	3400	SHADY GROVE RAD CONS
BONE SCANS	RAD	3600	SHADY GROVE RAD CONS
BONE SCANS	RAD	3400	SHADY GROVE RAD CONS
BONE SCANS	RAD	2600	SHADY GROVE RAD CONS
BONE SCANS	RAD	3600	SHADY GROVE RAD CONS
BONE SCANS	RAD	3600	SHADY GROVE RAD CONS
BONE SCANS	RAD	3800	SHADY GROVE RAD CONS
BONE SCANS	RAD	1600	SHADY GROVE RAD CONS
BONE SCANS	RAD	2800	SHADY GROVE RAD CONS

BONE SCANS	RAD	1800	SHADY GROVE RAD CONS
BONE SCANS	RAD	2200	SHADY GROVE RAD CONS
BONE SCANS	RAD	1400	SHADY GROVE RAD CONS
BONE SCANS	RAD	2800	SHADY GROVE RAD CONS
** Subtotal **			
		42400	
** BRA			
BRA	DOS	33	WHEATLEY'S, N.J.
** Subtotal **			
		33	
** BRA & PROSTEHSIS			
BRA & PROSTEHSIS	DOS	300	ROGERS BOUTIQUE
** Subtotal **			
		300	
** BRA & PROSTHESIS			
BRA & PROSTHESIS	DOS	269	ABC ORTHOPEDIC AND H
BRA & PROSTHESIS	DOS	209	MONACACY MEDICAL SUP
BRA & PROSTHESIS	DOS	260	GARFINCKELS
BRA & PROSTHESIS	DOS	470	GARFINCKELS
BRA & PROSTHESIS	DOS	267	HARRISBURG HEALTH
BRA & PROSTHESIS	DOS	210	MEDICAL EQUIPMENT CO
BRA & PROSTHESIS	DOS	247	ACCREDITED SURG CO
BRA & PROSTHESIS	DOS	243	ACCREDITED SURGICAL
BRA & PROSTHESIS	DOS	304	GREENBELT PHARMACY
BRA & PROSTHESIS	DOS	177	DELLS BOUTIQUE
BRA & PROSTHESIS	DOS	285	DELLS BOUTIQUE
BRA & PROSTHESIS	DOS	243	ACCREDITED SURG CO
BRA & PROSTHESIS	DOS	213	SY LENE OF WASH.
BRA & PROSTHESIS	DOS	301	ABC ORTHOPEDIC & HOM
BRA & PROSTHESIS	DOS	282	DELLS BOUTIQUE
BRA & PROSTHESIS	DOS	273	ACCREDITED SURG CO
BRA & PROSTHESIS	DOS	243	ABC ORTHOPEDIC
BRA & PROSTHESIS	DOS	229	SY LENE OF WASH.
BRA & PROSTHESIS	DOS	188	ACCREDITED SURGICAL
BRA & PROSTHESIS	DOS	254	ABC ORTHOPEDIC & HOM
BRA & PROSTHESIS	DOS	271	SYLENE OF WASH
BRA & PROSTHESIS	DOS	300	ROGERS BOUTIQUE
BRA & PROSTHESIS	DOS	293	DELLS BOUTIQUE
BRA & PROSTHESIS	DOS	144	CENTER PHARMACY
BRA & PROSTHESIS	DOS	541	ROGERS BOUTIQUE
BRA & PROSTHESIS	DOS	315	FRANS NU IMAGE
BRA & PROSTHESIS	DOS	332	DELLS BOUTIQUE
BRA & PROSTHESIS	DOS	292	FRANS NU IMAGE
BRA & PROSTHESIS	DOS	218	ABC ORTHOPEDIC AND H
BRA & PROSTHESIS	DOS	260	DELLS BOUTIQUE
BRA & PROSTHESIS	DOS	259	FRANS NU IMAGE
BRA & PROSTHESIS	DOS	265	GARFINCKELS

** Subtotal **			
		8666	
** CANCER WORKUP			
CANCER WORKUP	DOS	1312	SHENANGO VALLEY HOSP
** Subtotal **			
		1312	
** CATHETER CLEANING			
CATHETER CLEANING	DOS	145	JOHNS HOPKINS
** Subtotal **			
		145	
** CATHETER EXCHANGE			
CATHETER EXCHANGE	DOS	660	JOHNS HOPKINS
CATHETER EXCHANGE	DOS	330	JOHNS HOPKINS
CATHETER EXCHANGE	DOS	500	JOHNS HOPKINS
CATHETER EXCHANGE	DOS	446	JOHNS HOPKINS
CATHETER EXCHANGE	DOS	500	JOHNS HOPKINS
** Subtotal **			
		2436	
** CHANGE PERCUTANEOUS			
CHANGE PERCUTANEOUS	DOS	500	JOHNS HOPKINS
CHANGE PERCUTANEOUS	DOS	500	JOHNS HOPKINS
CHANGE PERCUTANEOUS	DOS	500	JOHNS HOPKINS
** Subtotal **			
		1500	
** CONSULT			
CONSULT	DOS	300	DR GOLDNER
CONSULT	DOS	230	DR GINSBERG
CONSULT	DOS	100	WELCH
CONSULT	DOS	100	UROLOGY ASS. GUMC
CONSULT	DOS	100	DR WELCH
CONSULT	OBGYN	50	DR COBEY
CONSULT	PEDS	205	GEORGETOWN PED ASS
CONSULT	DOS	150	ASSOCIATES IN SURG
** Subtotal **			
		1235	
** COUNSELING			
COUNSELING	DOP	80	JOAN CLARK
COUNSELING	DOP	80	JOAN CLARK
COUNSELING	DOP	80	JOAN CLARK
COUNSELING	DOP	80	JOAN CLARK
COUNSELING	DOP	80	JOAN CLARK
COUNSELING	DOP	80	JOAN CLARK
** Subtotal **			
		480	

** CRITICAL CARE			
CRITICAL CARE	DOS	350	JOHNS HOPKINS
** Subtotal **			
		350	
** DELIVERY			
DELIVERY	OBGYN	2200	SHADY GROVE HOSP
** Subtotal **			
		2200	
** DNA ANALYSIS			
DNA ANALYSIS	OBGYN	500	JOHNS HOPKINS HOSP
DNA ANALYSIS	OBGYN	500	JOHNS HOPKINS HOSP
** Subtotal **			
		1000	
** DOPPLER SCAN			
DOPPLER SCAN	DOS	415	ALEXANDRIA HOSP
DOPPLER SCAN	DOS	871	WASHINGTON HOSP CTR
DOPPLER SCAN	DOS	327	WASHINGTON HOSP CTR
DOPPLER SCAN	DOS	327	WASHINGTON HOSP CTR
DOPPLER SCAN	DOS	327	WASHINGTON HOSP CTR
** Subtotal **			
		2267	
** ECHO ABD B-SCAN LTD			
ECHO ABD B-SCAN LTD	DOS	55	ASSOC ALEX RADIOLOG
** Subtotal **			
		55	
** ECHOCARDIOGRAM			
ECHOCARDIOGRAM	DOM	226	CLINICAL RADIOLOGIST
** Subtotal **			
		226	
** EKG (SURGERY)			
EKG (SURGERY)	DOS	30	JOHNS HOPKINS
** Subtotal **			
		30	
** ENDOCRINE LAB TEST			
ENDOCRINE LAB TEST	PEDS	347	ENDOCRINE SCIENCES
** Subtotal **			
		347	
** ENDOCRINE LAB TESTS			
ENDOCRINE LAB TESTS	PEDS	570	ENDOCRINE SCIENCE
ENDOCRINE LAB TESTS	PEDS	2388	ENDOCRINE SCIENCE
** Subtotal **			
		2958	

** ENDOSCOPY			
ENDOSCOPY	DOS	1312	JOHNS HOPKINS
** Subtotal **			
		1312	
** ER VISIT			
ER VISIT	DOS	130	EMERGENCY SERVICE SY
** Subtotal **			
		130	
** FERTILITY			
FERTILITY	OBGYN	620	SS FERTILITY CLINIC
FERTILITY	OBGYN	545	SS FERTILITY CLINIC
FERTILITY	OBGYN	395	SS FERTILITY CLINIC
FERTILITY	OBGYN	375	SS FERTILITY CLINIC
FERTILITY	OBGYN	225	SS FERTILITY CLINIC
FERTILITY	OBGYN	685	SS FERTILITY CLINIC
FERTILITY	OBGYN	975	SS FERTILITY CLINIC
FERTILITY	OBGYN	235	SS FERTILITY CLINIC
FERTILITY	OBGYN	150	SS FERTILITY CLINIC
FERTILITY	OBGYN	225	SS FERTILITY CLINIC
FERTILITY	OBGYN	520	SS FERTILITY CLINIC
** Subtotal **			
		4950	
** FERTILTIY			
FERTILTIY	OBGYN	320	SS FERTILITY CLINIC
** Subtotal **			
		320	
** FETAL DIAGNOSIS			
FETAL DIAGNOSIS	OBGYN	556	FETAL DIAG. LAB
FETAL DIAGNOSIS	OBGYN	1112	FETAL DIAG. LAB
FETAL DIAGNOSIS	OBGYN	278	FETAL DIAG. LAB
FETAL DIAGNOSIS	OBGYN	695	FETAL DIAG. LAB
FETAL DIAGNOSIS	OBGYN	600	FETAL DIAG. LAB
FETAL DIAGNOSIS	OBGYN	1000	FETAL DIAG. LAB
FETAL DIAGNOSIS	OBGYN	600	FETAL DIAG. LAB
FETAL DIAGNOSIS	OBGYN	600	FETAL DIAG. LAB
FETAL DIAGNOSIS	OBGYN	1200	FETAL DIAG. LAB
FETAL DIAGNOSIS	OBGYN	1000	FETAL DIAG. LAB
FETAL DIAGNOSIS	OBGYN	800	FETAL DIAG. LAB
FETAL DIAGNOSIS	OBGYN	400	FETAL DIAG. LAB
** Subtotal **			
		8841	
** FETAL ECHO			
FETAL ECHO	OBGYN	250	PATRICIA OSGOOD
FETAL ECHO	OBGYN	255	CHILDRENS CARDIOLOGY
** Subtotal **			
		505	

** FETAL ECHOGRAM			
FETAL ECHOGRAM	OBGYN	225	CHILDREN'S CARDIOLOG
** Subtotal **			
		225	
** FINE NEEDLE ASPIRATI			
FINE NEEDLE ASPIRATI	PEDS	2310	CHILDRENS HOSP
** Subtotal **			
		2310	
** FINGER SURGERY			
FINGER SURGERY	DOS	3500	GREATER CHESAPEAKE H
FINGER SURGERY	DOS	3537	UNION MEMORIAL HOSP
** Subtotal **			
		7037	
** GALL BLADDER LITHO			
GALL BLADDER LITHO	DOM	69	GEORGETOWN RAD ASS
** Subtotal **			
		69	
** HEART SURGERY			
HEART SURGERY	DOM	2736	DR POND
HEART SURGERY	DOM	321	DR EVENS
HEART SURGERY	DOM	7950	DR COX
HEART SURGERY	DOM	47332	BARNES HOSPITAL
** Subtotal **			
		58339	
** INPATIENT EKG			
INPATIENT EKG	DOS	60	JOHNS HOPKINS
** Subtotal **			
		60	
** INPATIENT RADIOLOGY			
INPATIENT RADIOLOGY	DOS	1037	JOHNS HOPKINS
** Subtotal **			
		1037	
** LAB CULTURE			
LAB CULTURE	DOS	42	JOHNS HOPKINS HOSP
LAB CULTURE	DOS	21	JOHNS HOPKINS HOSP
** Subtotal **			
		63	
** LAB TEST			
LAB TEST	PEDS	88	CHILDRENS HOSP
LAB TEST	DOS	24	JOHNS HOPKINS
LAB TEST	PEDS	88	CHILDREN'S HOSP
LAB TEST	PEDS	46	MAYO CLINIC
LAB TEST	PEDS	96	CHILDRENS HOSP
LAB TEST	PEDS	82	PALO ALTO MED FOUND

** Subtotal **		424	
** LAB TESTS			
LAB TESTS	DOM	530	
** Subtotal **		530	
** LASER SURGERY			
LASER SURGERY	DOS	750	JOHNS HOPKINS PLASTI
LASER SURGERY	DOS	367	CHILDRENS HOSP BALT
** Subtotal **		1117	
** MRI - HEAD			
MRI - HEAD	DOS	450	MAGNETIC IMAGING OF
** Subtotal **		450	
** NEUROPSYCHOLOGY TEST			
NEUROPSYCHOLOGY TEST	PSYSV	600	DR FISHBURNE
NEUROPSYCHOLOGY TEST	PSYSV	600	DR BECKER
NEUROPSYCHOLOGY TEST	PSYSV	600	DR FISHBURNE
NEUROPSYCHOLOGY TEST	PSYSV	700	DR BECKER
NEUROPSYCHOLOGY TEST	PSYSV	600	DR BECKER
NEUROPSYCHOLOGY TEST	PSYSV	700	DR FISHBURNE
NEUROPSYCHOLOGY TEST	PSYSV	600	DR BECKER
NEUROPSYCHOLOGY TEST	PSYSV	600	DR BECKER
NEUROPSYCHOLOGY TEST	PSYSV	700	DR FISHBURNE
NEUROPSYCHOLOGY TEST	PSYSV	600	UNKNOWN
NEUROPSYCHOLOGY TEST	PSYSV	600	UNKNOWN
NEUROPSYCHOLOGY TEST	PSYSV	600	UNKNOWN
NEUROPSYCHOLOGY TEST	PSYSV	700	UNKNOWN
** Subtotal **		8200	
** NURSING HOME CARE			
NURSING HOME CARE	DOS	5630	VNA OF NO. VA
** Subtotal **		5630	
** OFFICE VISIT			
OFFICE VISIT	DOS	60	JOHNS HOPKINS PLASTI
** Subtotal **		60	
** OPTHALMIC SURGERY			
OPTHALMIC SURGERY	DOS	8360	WASHINGTON HOSP CTR
OPTHALMIC SURGERY	DOS	5715	RETINA CONSULTANTS
** Subtotal **		14075	

** OUTPATIENT CARE			
OUTPATIENT CARE	OBGYN	426	DR ROTHMAN
** Subtotal **			
		426	
** OUTPATIENT HOSP			
OUTPATIENT HOSP	DOS	133	GEORGETOWN U HOSP
** Subtotal **			
		133	
** PATHOLOGY EXAM			
PATHOLOGY EXAM	DOS	80	JOHNS HOPKINS
** Subtotal **			
		80	
** PELVIC SCAN			
PELVIC SCAN	OBGYN	103	HOLY CROSS HOSP
** Subtotal **			
		103	
** PHYSICAL THERAPY			
PHYSICAL THERAPY	DOS	622	EASTER SEAL SOCIETY
PHYSICAL THERAPY	DOS	251	EASTER SEAL SOCIETY
** Subtotal **			
		873	
** PLASMAPHERESIS			
PLASMAPHERESIS	NEURO	17612	GOERGETOWN HOSP
PLASMAPHERESIS	NEURO	21041	GEORGETOWN HOSP
PLASMAPHERESIS	NEURO	18927	GEORGETOWN HOSP
** Subtotal **			
		57580	
** PLASMAPHERESIS PRO F			
PLASMAPHERESIS PRO F	NEURO	2055	GEORGETOWN HOSP
PLASMAPHERESIS PRO F	NEURO	2700	GEORGETOWN HOSP
PLASMAPHERESIS PRO F	NEURO	1200	GEORGETOWN HOSP
** Subtotal **			
		5955	
** PRIVATE ROOM			
PRIVATE ROOM	DOS	50	WASHINGTON HOSP CTR
PRIVATE ROOM	DOS	10	JOHNS HOPKINS
** Subtotal **			
		60	
** PROSTHESIS			
PROSTHESIS	DOS	250	DELLS BOUTIQUE
PROSTHESIS	DOS	58	B&B CO INC
PROSTHESIS	DOS	250	DELLS BOUTIQUE
PROSTHESIS	DOS	300	DELLS BOUTIQUE
PROSTHESIS	DOS	2411	ORTHOPEDICS SVC INC

** Subtotal **		3279	
** PROSTHESIS - EYE			
PROSTHESIS - EYE	DOS	937	CUSTOM PROSTHESIS
** Subtotal **		937	
** PROSTHETIC			
PROSTHETIC	OBGYN	103	LL HAIR SERVICE
** Subtotal **		103	
** PROTON BEAM - AUDIO			
PROTON BEAM - AUDIO	DOS	74	MASS EYE AND EAR
** Subtotal **		74	
** PROTON BEAM - PATH			
PROTON BEAM - PATH	DOS	103	MASS GEN HOSP PROF S
** Subtotal **		103	
** PROTON BEAM THERAPY			
PROTON BEAM THERAPY	DOS	40527	MASS GEN HOSP AMBCAR
** Subtotal **		40527	
** PSYCHOANALYSIS			
PSYCHOANALYSIS	DOP	900	DR GILLMAN
PSYCHOANALYSIS	DOP	1700	DR GILLMAN
PSYCHOANALYSIS	DOP	1500	DR GILLMAN
PSYCHOANALYSIS	DOP	1400	DR GILLMAN
** Subtotal **		5500	
** PT TESTS			
PT TESTS	DOM	88	VA
** Subtotal **		88	
** RAD PLQ - ANESTH			
RAD PLQ - ANESTH	DOS	680	WILL EYE ANESTH
RAD PLQ - ANESTH	DOS	440	WILLS EYE ANESTH
** Subtotal **		1120	
** RAD PLQ - HOSP CHG			
RAD PLQ - HOSP CHG	DOS	7024	WILLS EYE HOSP
** Subtotal **		7024	

```
**  RAD PLQ - PHOTOS
 RAD PLQ - PHOTOS      DOS          220 WILLS EYE HOSP
** Subtotal **
                                    220

**  RAD PLQ - PROF SVC
 RAD PLQ - PROF SVC    DOS         3050 WILLS EYE - ONC SVC
** Subtotal **
                                   3050

**  RAD PLQ - RAD PLQ
 RAD PLQ - RAD PLQ     DOS         1000 LW BRADY ASSOC
** Subtotal **
                                   1000

**  RAD PLQ - ULTRASOUND
 RAD PLQ - ULTRASOUND DOS           573 WILLS EYE HOSP
** Subtotal **
                                    573

**  RADIOLOGY X 350
 RADIOLOGY X 350       DOS       126000 PEVSNER
** Subtotal **
                                 126000

**  RETINA EXAM
 RETINA EXAM           DOS          125 WILLS EYE HOSP
 RETINA EXAM           DOS           75 WILLS EYE HOSP
** Subtotal **
                                    200

**  SECOND OPINION
 SECOND OPINION        DOM          203
 SECOND OPINION        DOM          363
** Subtotal **
                                    566

**  SURGERY
 SURGERY               DOS         1757 JOHNS HOPKINS
 SURGERY               DOS         2531 JOHNS HOPKINS
 SURGERY               DOS         1350 JOHNS HOPKINS
 SURGERY               DOS         3150 JOHNS HOPKINS
** Subtotal **
                                   8788

**  SURGERY FOLLOWUP
 SURGERY FOLLOWUP      DOS          553 JOHNS HOPKINS
** Subtotal **
                                    553

**  SURGERY SUPPLIES
 SURGERY SUPPLIES      DOS           48 WASHINGTON HOSP CTR
```

SURGERY SUPPLIES	DOS	253	CHILDRENS HOSP BALT
** Subtotal **			
		301	
** PROCEDURE ULTRASOUND			
ULTRASOUND	DOS	120	ALEXANDRIA HOSPITAL
ULTRASOUND	OBGYN	17	SUBURBAN HOSP
ULTRASOUND	OBGYN	50	SUBURBAN HOSP
ULTRASOUND	OBGYN	139	HOLY CROSS HOSP
ULTRASOUND	DOS	177	GEORGETOWN U HOSP
** Subtotal **			
		503	
** PROCEDURE ULTRASOUND & PHOTOS			
ULTRASOUND & PHOTOS	DOS	573	WILLS EYE HOSP
** Subtotal **			
		573	
** PROCEDURE ULTRASOUND PROF FEE			
ULTRASOUND PROF FEE	DOS	85	ASSOC OF ALEX RAD
ULTRASOUND PROF FEE	DOS	120	GEORGETOWN RAD ASSOC
** Subtotal **			
		205	
** PROCEDURE UNKNOWN			
UNKNOWN	PEDS	24098	UNKNOWN
UNKNOWN	DOM	79	
UNKNOWN	DOM	123	
UNKNOWN	DOM	70	
UNKNOWN	DOM	2454	
UNKNOWN	DOM	20	DR GROOVER
UNKNOWN	DOM	78	
UNKNOWN	DOM	600	
UNKNOWN	DOM	1125	DR MILES
** Subtotal **			
		28647	
** PROCEDURE WIG			
WIG	DOM	105	
** Subtotal **			
		105	
** PROCEDURE X-RAY			
X-RAY	DOS	27	GROOVER, CHRISTIE &
** Subtotal **			
		27	
*** Total ***			
		585707	

APPENDIX D: SUPPLEMENTAL CARE DATABASE PROGRAM

FIELD	DESCRIPTION
Date 2161	Numeric date the Supplemental Care referral was requested listed as mm/dd/yy.
Requestor	Depending on Department preference, the physician <u>or</u> service which requested referral.
Doc Number	A unique number to track referrals. DRM has suggested a 3 letter Department id, 4 number Julian date, 2 number sequence: DOS016902 would be Surgery's second referral on 18 Jun 90. Explicit format will be dictated in new WRAMC Reg 40-46.
Est Cost	An estimate of the total cost for this care.
Patient	Patient id - last name, first initial would be adequate. Patient SSN could be used.
Procedure	Explicit description of the service being purchased. This is an important data field in efforts to rationalize and manage the delivery of health care at WRAMC. A report can be generated with the database sorted by this field which will aid in quarterly reporting requirements, however the same procedure must be identified with the same words in all referrals for this to be useful.
CPT Code	<u>C</u>urrent <u>P</u>rocedural <u>T</u>erminology. A more precise coded description of the service being purchased. Should be on the invoice from the provider, and can be added to the database when the bill is received.
Provider	Name and address of the person or institution who provided and is being paid for the service.
Actual Cost	The actual cost for the service as billed.
Date 1034	The date the SF 1034 is prepared and sent to Finance for payment of the invoice (mm/dd/yy).

FIELD	DESCRIPTION
Completion	Date that comeback copy of 1034 is received, other confirmation that bill has been paid.
Voucher No.	Voucher number of final payment.
Adjusted Cost	Estimated minus actual. To be used if program is to function as a spreadsheet for budget purposes. Close out each file (referral) after final payment. The total of estimated costs for all files is then subtracted from the initial budget allocation, and the total of the adjusted cost fields is added back to give a current "checkbook balance". (Referrals which have not had final payment are still carried with their estimated cost, automatically).
Memo	Memo field which allows any other pertinent to be carried in the database.