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A PLAN FOR THE REORGANIZATION OF THE FAMILY PRACTICE PROGRAM AT IRWIN ARMY COMMUNITY HOSPITAL USING A MANAGED CARE MODEL

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Irwin Army Community Hospital (IACH), Fort Riley, Kansas, has been selected as one of seven sites to demonstrate the "Gateway to Care", or "Gateway", program for the Department of the Army (DA). Gateway is intended to accomplish several objectives, specifically these objectives are: (a) to improve access to medical care, (b) to implement a primary care delivery base, (c) to improve the quality of care, (d) to improve customer satisfaction, and (e) contain the rapidly escalating costs of medical care. These objectives will be accomplished through the use of managed care concepts. This represents a significant departure from the existing military health care system. As one of the test sites for the Army Gateway Program, IACH will be allowed to function more like a civilian Health Maintenance Organization (HMO). Under the Gateway program, primary care providers will become individual patient health care managers and "gatekeepers" of the health care system. Since IACH has an active Family Practice program, this service will become a focal point in the Gateway program. This paper analyzes the current Family Practice program at IACH to

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determine the best method to reorganize the program at IACH in a cost effective [illegible] operationally sound manner. A managed care model for the new program and a plan for its implementation are discussed.

A PLAN FOR THE REORGANIZATION OF THE FAMILY PRACTICE PROGRAM AT IRWIN ARMY COMMUNITY HOSPITAL USING A MANAGED CARE MODEL

A Graduate Management Project

Submitted to the Faculty of

Baylor University

In Partial Fulfillment of the

Requirements for the Degree

of

Master of Health Administration

by

Major Michael L. Kimball

December 1991

RUNNING HEAD: Family Practice

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ABSTRACT

Irwin Army Community Hospital (IACH), Fort Riley, Kansas, has been selected as one of eleven sites to demonstrate the "Gateway to Care", or "Gateway", program for the Department of the Army (DA). Gateway is intended to accomplish several objectives, specifically these objectives are: (a) to improve access to medical care, (b) to implement a primary care delivery base, (c) to improve the quality of care, (d) to improve customer satisfaction, and (e) contain the rapidly escalating costs of medical care. These objectives will be accomplished through the use of managed care concepts. This represents a significant departure from the existing military health care system. As one of the test sites for the Army Gateway Program, IACH will be allowed to function more like a civilian Health Maintenance Organization (HMO). Under the Gateway program, primary care providers will become individual patient health care managers and "gatekeepers" of the health care system. Since IACH has an active Family Practice program, this service will become a focal point in the Gateway program. This paper analyzes the current Family Practice program at IACH to determine the best method to reorganize the program at IACH in a

cost effective and operationally sound manner. A managed care model for the new program and a plan for its implementation are discussed.

INTRODUCTION

Conditions which Prompted the Study

Two primary factors underlie the reasons for this project. The first was a proactive interest on the part of the command group at Irwin Army Community Hospital (IACH), Fort Riley, Kansas, to evaluate the effectiveness of the existing ambulatory care program. The command group takes pride in ensuring that high quality health care is provided to the Fort Riley community at the lowest possible cost. The staff at IACH has already made significant strides in reducing costs through examination and modification of current programs, such as an Alternate Use of Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) Funds proposal to capture 101 Same Day surgeries in 1991. The actual volume in January and February 1991, the first two months of the program, yielded 191 cases; nearly double the estimated annual program.

The second factor, and perhaps the most significant, was the designation of the Fort Riley Army Medical Department (MEDDAC) as a test site for the Department of the Army (DA) Gateway to Care (or Gateway) initiative. This initiative is largely the result of the study done by Colonel Douglas A. Braendel (1990) that proposed the military medical system restructure to more closely resemble a

civilian Health Maintenance Organization (HMO) and actively pursue managed care. By restructuring in this manner he anticipates that the military medical department could reduce the rate of increase in health care expenditures through capitated funding; and better meet the needs of the beneficiary population by expanding the primary care mission.

The Gateway program places a greater emphasis on the significance of the primary care provider (PCP). This emphasis includes the increased use of the PCP in providing care and in managing the care of assigned patients. Family Practice is a primary care specialty that is well suited to both providing primary care and managing the health care needs of the patient. These providers can handle a wide case mix since they have some additional training in other specialties such as general internal medicine, general surgery, and obstetrics and gynecology. By the nature of their specialty, they are already more skilled in the management of their patients' health care. Because of these skills, Family Practice will become a focal point in the implementation of the Gateway Program.

If the Family Practice program is to assume a larger role in the ambulatory care of the IACH beneficiary population, the program needs to be structured to meet the expanded role. This

paper examines the existing Family Practice program and makes recommendations for restructuring the program.

Statement of the Management Problem

IACH forecasts a capitated funding system in the near term and an expanded primary care mission. The use of resources for outpatient visits must be carefully managed. In particular, what is the most cost effective and operationally sound way to provide Family Practice services?

Review of the Literature

Background

The rising costs of health care in the United States is an area of considerable concern. This concern has led to the government developing and implementing the prospective payment system known as the Diagnosis Related Groups (DRGs) in an effort to contain the costs of inpatient care. Most private third party payers have also adopted the DRG system. The net result of the implementation of prospective payment has been to slow the rate of growth; however, cost increases in health care have still exceeded the rate of growth of the Gross National Product (GNP) to the point where health care expenditures represent over 12 percent of the GNP (Braendel, 1990; Coile, 1990).

Despite the limited success of the DRG system, Congress has directed the Department of Defense (DOD) to adopt the DRG system in determining the funding of military medical treatment facilities. The DRG system was to have been implemented in Fiscal Year (FY) 1989. Due to several differences between the military and civilian resource accounting mechanisms, and unique health service requirements for the military in general, DRGs have not yet been implemented. There is no definitive date when DRGs will be used in the military health care system though they are currently partially implemented; however, a DRG based model will become the yardstick for measuring the economy of other funding methods such as the capitation system to be used by the Gateway to Care program.

One of the reasons for the continuing increases in overall costs has been the shift of costs from inpatient care to outpatient care (Coile, 1990). Initiatives on the part of the health care industry to recapture revenues lost in the inpatient setting have largely been directed at increasing revenues through outpatient services where payments are still generally on a fee-for-service basis. This is evidenced through the increase in the number of independent outpatient clinics and the provision of some services (e.g. minor surgery such as diagnostic biopsies) in

an outpatient setting. At the same time, health care organizations have actively sought to increase and capture the volume of these outpatient services. An example of the dramatic increase in the volume of outpatient visits is demonstrated by Gunn (1990) where he reports that the number of outpatient visits increased 40.2 percent in Michigan from 1985 to 1988. Coile (1990) states that inpatient admissions declined from 1983 to 1988 and increased only .5-1.0 percent in 1988 and will increase 1-2 percent through the early 1990's. Ambulatory care is expected to grow from 7-15 percent, depending on the specialty. The net effect has been a lower cost per procedure, but higher expenditures for health care overall.

Congress recognized this shift in costs to the outpatient setting and directed a study to develop a prospective payment system for physician services. This study, conducted at Harvard University, led to the development of the Resource Based Relative Value Scale (RBRVS) which will be implemented in the civilian health care sector in 1992. This system will permit the Government to set a fixed rate of reimbursement for outpatient care for Medicare/Medicaid participants. It is anticipated that the use of this prospective payment system will help to reduce the rate of increase of outpatient costs as the DRG system has helped

to reduce the rate of increase of costs in the inpatient setting. The use of the RBRVS, like the DRG, as a prospective payment system will likely become the yardstick for measuring the economic use of resources in the ambulatory care setting.

Defense spending is already under close scrutiny for reductions. It is reasonable to assume that Congress will mandate the use of the RBRVS in the DOD health care system as they have required the use of DRGs. With the implementation of DRGs and the RBRVS, military medical facilities will have to adapt to decreasing funding on an individual visit basis while maintaining the same health care services for the beneficiary population. This will undoubtedly spark an evolution in the organization and management of military medical treatment facilities such as that suggested by Braendel (1990).

There are already several projects underway to test methods to reduce CHAMPUS spending in the Department of the Army. Some of these projects include: three programs under the CHAMPUS Reform Initiative (CRI): Primary Medical Care of the Uniformed Services (PRIMUS); the military/civilian Health Services Partnership Program; the Veterans Administration (VA)/DOD Sharing Agreements; and two Catchment Area Management (CAM) projects. The most recent program designed to reduce health care spending is the Gateway to

Care program that will be instituted in eleven Army Medical Treatment Facilities (MTFs). As stated earlier, Irwin Army Community Hospital, is one of those test sites. This program will cause a restructuring of the health care delivery system to more closely resemble civilian managed care models.

Managed Care

There is no single definition of "managed care." However, the basic philosophy behind the concept of managed care is to assure the appropriateness and improve the quality and cost effectiveness of health care delivery through the management of the care provided to the individual patient. Health care organizations that ascribe to managed care accomplish these goals through a variety of techniques. Braendel suggests these techniques include, but are not limited to: ". . . quality assurance, utilization management, peer review, provider selection, patient cost sharing, capitation and other provider incentive plans." (p. 19)

Quality assurance involves ensuring that the patient care provided is appropriate to the diagnosis and necessary for facilitating recovery. Managed care does not mean the cheapest care without regard to quality. Quality standards are an essential element in selecting the appropriate type and level of

care. Quality assurance is well implemented in the inpatient setting and is expanding into the outpatient setting. Coile (1990) maintains that the quality of health care delivered by an organization or provider is a key element to the success of attracting and keeping customers. Within the military, programs are in place for evaluating the quality of care within the MTF, but there is little done to evaluate the quality of care provided by civilian sources (Braendel, 1990).

Utilization management is a sub-function of quality assurance. Through utilization management, the provider has a tool to evaluate the use of resources to ensure their cost effectiveness and appropriateness. Utilization management can involve prospective techniques; such as precertification before care is obtained; concurrent review, to determine if resources that are being used are necessary; or retrospective review, evaluating if resources were used appropriately after the fact. Through the development of standards of care, a benchmark can be applied to a specific case to determine if the care given to a patient over or under utilizes resources. Coile (1990) advocates the development and use of national standards.

Provider selection allows the managed care organization to control which health care providers the individual patient sees

for treatment. In many managed care organizations, the patient is permitted to choose a PCP who is responsible for providing primary care and referring the patient for specialty care to specific providers already affiliated with the organization. In this manner, fees to the providers can be negotiated before patients are referred and the most competitive pricing is obtained. Bender, Geoghegan, Lundquist, Cantone, and Krasnick (1990) suggest that hospitals develop their own primary care referral networks as a method of increasing their market share of admissions.

Patient cost sharing is one way to discourage the patient from overusing health care resources. All managed care plans require the patient to share the costs of health care through deductibles and/or copayments. (Braendel, 1990) These deductibles and copayments vary from plan to plan in terms of how much, and for what services, the patient must provide some "out of pocket" expense. This provides a financial incentive for the individual to minimize the use of the health care system.

The use of capitation as a prospective funding method is one way to encourage the economic use of health care resources by providers. Capitation is a method of paying a provider or organization a set rate each month on a per capita basis to provide for the health care needs of a defined patient population.

This places the provider at some financial risk if the costs of the health care provided exceed the rate of capitation since the excess funds needed must come from the provider's own assets. Alternately, the provider can make money if the costs of the health care provided are less than the rate of capitation. Some managed care plans use capitation as a method of encouraging the provider to make the most effective use of resources. Other plans may use some other financial incentive, such as profit sharing, to encourage cost effectiveness.

Coile (1990) presents an excellent summary of the three basic organizational models of managed care. These models are the Health Maintenance Organizations, the Preferred Provider Organizations (PPO), and the Exclusive Provider Arrangements (EPA). While the basic purpose is relatively the same, i.e., managing patient care, each model has some unique features.

An HMO system provides a defined scope of services for enrollees for a prospectively set premium. HMOs have been in existence since the 1940's and were originally established centered around major medical groups. Some HMOs now own their own hospitals, but the current trend is to act as service brokers and contract with provider groups, such as Individual Provider Associations (IPA) and hospitals. According to Coile (1990) this

trend will continue in the future and HMOs and PPOs will blend into managed care plans that have "...multiple buyer options, shared control systems, and interlocking provider networks." (p. 134)

PPOs also provide a network of providers and hospitals, but they do not contract for full responsibility for a defined scope of services. They negotiate preset prices at a discount with providers and hospitals and broker these services to insurance companies, employers, the government, and other major buyers. The incentive for the patient is to seek care from the providers associated with the PPO in order to have all of the services paid for by the plan. If an enrollee seeks care from a provider that is not in the PPO network, the patient will usually have to pay a copayment as a penalty. Coile (1990) states that PPOs have acquired an equal number of enrollees as HMOs and that the trend is for PPOs to grow at a faster rate than HMOs in the 1990s.

EPAs are similar to PPOs, but they have generally been associated with very large businesses that are self insured. These companies contract on their own within the health care industry. In this manner they can tailor the services they contract for based on the experience of their employees. The contracts are also "experience based" rather than "community

based" in order to get the best prices for the services they need. The incentive to the employees to stay with the providers within the provider network of the EPA is to have access to a broader range of covered benefits and services.

Military Health Care

Braendel (1990) states that the military direct health care system has many resemblances to a staff model HMO, an HMO that owns its own facilities and salaries its staff. The military direct care system is very much like a staff model HMO for the service member. All care is provided through the direct care system. If care is not reasonably available in the direct care system, care is provided through the civilian sector at no cost to the service member.

However, with the inclusion of dependents and retirees as eligible beneficiaries, the direct care system could not meet the demands of the beneficiary population. As a result, since the 1950's the government has provided insurance coverage through the CHAMPUS for care provided to dependents and retirees from the civilian sector if medical care is not available to them from the direct care system. The CHAMPUS option makes the military health care system more of an "open-ended" HMO for these beneficiary groups. An open-ended HMO allows the beneficiary to leave the

network of HMO providers and still pays a large part of the costs. While there are some restrictions on the civilian care these beneficiaries can use with CHAMPUS reimbursement, most ambulatory services are available to them if they are willing to pay some "out of pocket" costs.

Figure 1 depicts the current methods a military medical beneficiary may obtain health care services. As can be seen in

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Insert Figure 1 about here

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the diagram, a beneficiary can freely access either the direct care system or civilian care system (straight arrows). Referrals to other providers once the patient is in the system can be made with few restrictions (curved arrows).

The CHAMPUS eligible beneficiary pays a small penalty (deductible and copayments) for accessing the civilian system regardless of whether or not the beneficiary was referred by a direct care system provider. There is a possibility for a much higher penalty (the beneficiary must pay for all care) if the care was for inpatient services and the patient had not obtained a non-availability statement. For ambulatory care there are very few restrictions on the type of care that the patient can obtain.

In addition, there are generally no requirements for non-availability statements before seeking ambulatory care. CHAMPUS will cost share all allowable charges for ambulatory care regardless of who determined the need for care.

The service member does have a requirement to seek care from the direct care system if the military system is expected to cover the costs of the care received. This is true for both inpatient and outpatient care, except in the case of bona fide emergencies. If a service member obtains medical care without being referred by a provider from the direct care system then the service member could be held responsible for the entire amount of the bill. If the service member is referred to a civilian source due to unavailability of the service in the direct care system then the costs are paid for by special operating funds called Supplemental Care Funds.

By providing civilian health insurance, dependents and retirees can option out of the direct care system and seek care directly from civilian sources. The patient pays a penalty in the form of a yearly deductible and a percentage share of costs (about 20 percent of subsequent costs) after the deductible has been reached. There is also a "catastrophic care" clause that limits individual family "out of pocket" costs to $1,000. The deductible

is now $150 per individual or $300 per family. This is a significant increase from the $50/$150 deductible in effect during Braendel's study, but not as high, in some cases, as the increase he suggested was necessary to act as a financial disincentive. He suggests that .5 percent of the service member's base pay per individual or 1 percent per family. For example, an E5 with over six years of service would have to pay $76.08 per individual or $152.16 per family as an annual deductible ($15,216 annual base pay times .5 and 1.0 percent respectively). An O4 with over 14 years pay would have an annual deductible of $200.70 per individual or $401.40 per family. Despite current efforts to provide a financial disincentive, many dependent and retiree beneficiaries use the CHAMPUS option to seek civilian care in order to avoid the perceived long waiting times to be seen for care on a "space available" basis in the direct care system.

With an increasing dependent and retiree beneficiary population, and insufficient resources to accommodate them in the direct care system, CHAMPUS costs increased to over $543 million for outpatient visits in 1987 (Hudak, 1990). The overall costs for CHAMPUS have prompted the military departments to look for ways to reduce, or at least contain, CHAMPUS spending. Most of these initiatives have been aimed at returning CHAMPUS eligible

beneficiaries to the direct care system. Some have been directed at lowering the cost of care obtained from the civilian sector through special contracted rates. In addition, in 1988 CHAMPUS payments for inpatient care changed from a fee-for-service basis to a DRG basis.

Few of the CHAMPUS cost containment strategies have used managed care as their basis. Until the announcement of the Gateway program, none of the initiatives placed the emphasis of managed care in the primary care arena. Gateway represents a significant departure from the traditional model of military medical care as explained below.

Gateway to Care Program

Details on the specific implementation of the Army Gateway to Care program are somewhat limited since the implementation is dependent on the needs and capabilities of each individual Gateway site. The primary distinctions between Gateway and other DOD or DA cost containment programs lie in the method of health care delivery and the mechanism for funding Army MTFs. This program structures the Army health care delivery system to more closely resemble civilian HMO managed care models.

Gateway is intended to accomplish several objectives, specifically these objectives are: (a) to improve access to

medical care, (b) to implement a primary care delivery base, (c) to improve the quality of care, (d) to improve customer satisfaction, and (e) contain the rapidly escalating costs of medical care. The Gateway program will accomplish these objectives through several key changes to the current Army health care system.

First, Gateway will enroll beneficiaries in the program. The enrollment will essentially be a contract between the beneficiary and the Gateway site. The enrollee will agree to abide by the rules of the system and remain with the program. The Gateway site will agree to take care of the health care needs of the enrollee. This will permit the Gateway site to form a better demographic database of the needs of the beneficiary population and provide the population base for negotiation with civilian providers for special rates.

The Army has not yet directed mandatory enrollment in the Gateway program at the test sites. Since enrollment will not be mandatory, beneficiaries may chose not to enroll. Those CHAMPUS eligible beneficiaries who are not enrolled will continue to use the existing delivery system as explained earlier. Special "benefits packages" will be developed at each site to encourage enrollment.

One of the principle benefits that will be common at all sites will be a guarantee of easier access to care. This will be accomplished by establishing a network with specialty care providers near the local site. These providers will be contracted by the Gateway site to provide care to enrollees. Special direct care staff members titled "Health Care Finders" will be used to locate the most immediately available appointment for Gateway enrollees. Another common benefit will be the use of "Advice Nurses" that can be contacted 24 hours a day to answer questions an enrollee has concerning his or her health care. The use of Health Care Finders, Advice Nurses, and a network of providers should significantly improve access to care for the enrollee.

In addition to providing advice to patient queries, the Advice Nurse acts in a triage capacity. When a patient calls with a health care problem the Advice Nurse will assess the patient's stated symptoms and make a determination whether or not the patient needs to see the designated PCP. The Advice Nurse will use a set of protocols that have been developed to direct the patient in self-care, if appropriate, or will schedule an appointment with the PCP. Braendel (1990) states that this is a technique commonly used by HMOs to help reduce the number of unnecessary appointments thereby saving provider time and costs.

Enrollees will select a PCP who acts as the patient's principal point of entry into the health care system. This provider may be a family practitioner, a general medicine specialist, a general internal medicine specialist, a pediatrician, or possibly an obstetrician. Smith and Buesching (1986) argue that primary care should be a matter of functional definition rather than medical specialty. Using this approach, primary care characteristics include ready access to care, continuity over time, comprehensiveness, coordination, and personalized care. This the same approach used in Army MTFs for Family Practice and the Gateway to Care program. The use of a designated PCP should enhance quality of care since there will be better continuity of care with one provider more closely monitoring a patient (Parsons, Barnes and Higley, 1989; Shortell, Wickizer, Urban, Williams, & Dowling, 1982).

There is support in the literature that having a designated PCP can improve customer satisfaction because of a closer patient/physician relationship. For example, in a study done of a pilot program in Kansas that established primary care providers for Medicaid recipients, Levy (1985) found that 46 percent of the recipients were more satisfied with the health care they received after they had a designated PCP; another 42 percent said that they

were as satisfied as before the change. Parsons, et al., (1989), state: "This strengthening of the physician/enrollee relationship improves the image and marketability of the HMO and of the health centers within the HMO" (p. 130).

Once the patient initially seeks care, the PCP then makes the determination if other care from a specialist is required for the patient. The PCP acts as a "gatekeeper" to additional care; the enrollee must agree to accept the limitations to "freedom of choice" in seeking care. Family practice will provide over one third of the PCPs for the Gateway program at IACH. This substantially changes the method of access to the health care system as depicted in Figure 2.

Insert Figure 2 about here

The diagram shows that the beneficiary must enter the health care system through the PCP (single arrow). The PCP decides if there is need for care beyond the PCPs scope of practice and coordinates for the additional services with a specialist that is within the plan (multiple arrows). This may be a specialist that is a part of the direct care system, or a civilian provider that has been contracted to provide special rates. Aymond and Doty

(1990) point out that a PCP initiating a referral is not really a new phenomenon. The PCP has always been a major origin point of referrals. However, the focus of the PCP in an HMO is to critically examine the need for additional care and try to eliminate unnecessary duplication of effort if specialty care is not truly needed. This role is enhanced in the Gateway model since the specialist must coordinate additional care (such as costly diagnostic tests and procedures) for the patient with the PCP rather than assuming full responsibility for the care.

By eliminating unnecessary referrals to specialty care providers there is a possibility for some cost savings. Levy (1985) found in his study that the Medicaid enrollees who selected a PCP did show a small cost savings and had fewer specialty referrals than those who did not select a PCP. Hurley, Freund, and Gage (1991) reviewed several studies where gatekeepers were used and found that savings ranged from 0 to 15 percent. In some of the studies they reviewed, the savings from specialty visits were offset in additional primary care visits. However, primary care visits offset specialty visits only in those cases where the PCP was paid on a fee-for-service basis. Therefore, if capitation is the funding of choice, there should not be an offset increase in primary care visits.

Having an assigned PCP has also been shown to substantially decrease the number of emergency room visits by patients (Hurley, et al., 1991). Burger and Wolcott (1977) stated, "The common denominator for the enormous increase in Emergency Room visits for non-emergency medical problems has been the decline of the primary care physician" (p. 357). Gunn (1990) reaffirms that belief by stating that about 80 percent emergency room visits are essentially outpatient visits provided on a twenty four hour basis. Reductions in health care costs by reducing emergency room visits are apparent when the higher costs of emergency room visits are considered (e.g., Chesteen, Warren, & Woolley, 1986).

Another method to encourage Gateway sites to make the most effective use of resources will be to use capitation based funding. Each Gateway site will receive a set rate per month per Gateway enrollee. The overall capitation rate per beneficiary may include CHAMPUS as well as regular Operations and Maintenance, Army (OMA) funds. The objective is to stop, or reduce, the rate of increase of health care spending for all types of funds. The local MTF Commander will be given more latitude to determine how the health care needs of the beneficiary population can best be met and apply funds accordingly. This will be accomplished through the careful management of the care provided to the

individual patient, and tailoring the health care delivery mechanism to the needs of the designated beneficiary population.

Health Care at IACH

IACH has a normal operating capacity of 124 beds; however, occupancy rates for FY90 averaged only 67 percent, or 83 beds. Outpatient capabilities at IACH includes Internal Medicine, Primary Care (General Medical Outpatient Clinic and Troop Medical Clinics), Family Practice, Flight Medicine, Pediatrics, Allergy, Dermatology, Emergency Medicine, General Surgery Clinic, Orthopedics, Opthalmology, Otolaryngology, Gynecology, Obstetrics, Psychiatry, and Optometry. In FY90 there were nearly 416,000 combined clinic visits with over 28 percent of these visits coming from Family Practice and Primary Care. The outpatient direct care costs exceeded $20 million with the average cost of an outpatient visit of approximately $47.80. When narrowing the focus, in family practice and primary care the average outpatient visit cost was approximately $50.30. The average cost of an emergency room visit was about $80.90.

In a study by Chesteen, et al. (1986), outpatient care costs were compared for six clinics (two family practice clinics and four emergency clinics) in the Salt Lake City, Utah, metropolitan area. Among the results, the researchers found the average cost

for a visit in the family practice clinics was $27 and $45 for the emergency clinics. The higher costs experienced by IACH at first appear alarming. After a closer examination of the methods of computation, the actual comparable costs at IACH for a family practice visit were $26.46 (direct expenses plus apportioned support costs, or "overhead") and $53.44 for an emergency room visit.

With the low occupancy rates and the advent of DRGs as the funding mechanism for military medical treatment facilities, there is a likelihood that funding at military MTFs will decrease. Further, it is quite possible that funding for ambulatory care will not be adequate to meet the demand of beneficiaries as the overall funding for hospitals declines. This decrease will be further compounded when Congress directs the use of the RBRVS for outpatient funding. An ambulatory care delivery mechanism will have to be developed to continue to meet the health care needs of the IACH beneficiary population under a capitated funding system. The Gateway program offers the opportunity to meet these challenges before they are mandated.

Health Care Planning

Anticipating the future is the essential element of planning. "Planning offers distinct advantages to administrators who wish to

enhance their facility in a time of constrained resources and increased competition" (Syre & Higgins, 1988, p. 15). While the military health care system has not had to directly compete with private sector in the past, IACH will have to compete for the dollars of the "Gateway HMO." The projected use of DRGs for funding Army hospitals, as well as general cutbacks in defense spending will constrain resources. Planning for these budget reductions is essential to the continued mission accomplishment of providing ambulatory care at IACH. The Gateway to Care program will offer the opportunity improve the primary care delivery base and save money through careful patient management.

In their model for health care planning, Syre and Higgins offer a seven step process. This process involves: 1) development of a mission statement, 2) a situational analysis of the internal strengths and weaknesses and external threats and opportunities, 3) development of assumptions for the future and organizational planning objectives, 4) analysis of organization and economic trends, 5) presentation of strategies through which the objectives will be realized, 6) development of implementation plans, and 7) procedures for feedback and evaluation. (Adapted from Syre & Higgins, 1988).

Kaluzny (1986) discusses several organizational perspectives relevant to the provision of ambulatory care services. These are structural, human resource, political and symbolic. Structural perspectives that require particular attention in the ambulatory care setting include the nature of technology used, the environment in which services are provided, and accountability for resources used. The human resources perspective focuses on building a high-performing organization based on strong team efforts and a recognition of the importance of the individual. Included in this perspective is the role of participatory decision making and the organizational climate. The political perspective views an organization from the standpoint of an analysis of shifting coalitions and interest groups from within the organization. Finally, the symbolic perspective views the organization from those activities that may not directly impact on the measure of productivity, but provide symbols to those in the organization that can act as an integrating device. That is to say, how the organization appears may be more important than what it does. For example, the patients' view of how well the Army MTF responds to their needs is as important as the technical quality of the care they actually receive. If the beneficiaries in the IACH catchment area do not view the care at Irwin to be of

sufficient quality, then they will seek other avenues of care. Kaluzny states that an integration of these perspectives is essential in any systematic research or management effort.

The community-oriented primary care (COPC) model has been the basis for health programs in underserved areas for the past 20 years (Nutting and Connor, 1986). This model has three elements: a practice or service program actively engaged in primary care, a defined community for which the practice has assumed responsibility for providing health care, and a process by which the practice, with the participation of the community, identifies and addresses the major health problems of the community. Each of these elements is found in Army MTFs. An Army MTF provides a number of primary care clinics for its beneficiaries; the community served is defined by regulation; and community needs are addressed in community health care forums or councils. This philosophy appears to be expressed in the very name of Army community hospitals. The process of addressing the health care needs of the community has four functional steps: 1) defining and characterizing the community, 2) identification of community health problems, 3) modification of the health care program, and 4) monitoring the effectiveness of the program modifications. This process should not be static; rather, as the program is

monitored the process should return to the first step and follow each successive step in a continuing cycle. As the process continues the data source for evaluations will evolve from subjective opinion to comprehensive databases for the community.

Nutting (1987) further argues that adaptation of the COPC model for a population-based family practice is the next logical step in primary care. He argues that the general model of COPC, with the successive reliance on more complete databases, offers a method to control unnecessary costs by focusing on the high-priority health care needs of the population served. This general model serves as the basis for the design of the plan to revise the Family Practice program at IACH.

At the heart of the community is the individual. Concern with and for the individual patient must be the focal point of any health care program. This concern for the patient has prompted Coile (1987) to suggest that ambulatory care programs should be developed as a "designed experience", a popular marketing program used extensively by elite commercial enterprises and even in more common businesses such as McDonald's restaurants. The core idea of the designed experience is to tailor the service as closely as possible to the needs and wants of the individuals in the community being served. To the extent of funding availability,

Army MTFs must meet the needs of the client, or patient, to ensure the success of any program. This is exemplified in the study conducted by Chesteen, et al., (1986) where the satisfaction variables scores increase as the service more closely caters to the needs of the clientele.

Purpose Statement

The purpose of this Graduate Management Project (GMP) was to determine the best method to reorganize the Family Practice program at IACH in a cost effective, and operationally sound manner in support of the Gateway to Care program. The objectives of the GMP were: 1) review existing documentation and practices of the Family Practice program, 2) analyze the various perceptions of staff members and patients of the problems with the existing program and approaches to resolve those problems, 3) determine the goals and objectives to be achieved by reorganizing the program, 4) continue exploration of current literature for information applicable to the project, and 5) develop a plan for reorganization.

METHODS AND PROCEDURES

Members of the Command Group were interviewed to gain an understanding of their perspectives and concerns. This served as the starting point for further analysis.

Patient complaint sheets for a one year period, April 1990 through March 1991, were examined to determine the concerns of the overall IACH beneficiary population[1]. Only complaints against primary care clinics (Emergency Room, General Medical Outpatient Clinic, Internal Medicine Clinic, Obstetrics and Gynecology Clinic, Pediatric Clinic, and Family Practice Clinic) were considered for comparison with Family Practice since it is a primary care clinic[2]. While the specifics of each complaint varied, they could be grouped into five categories. These categories were:

1) Inadequate access. These were complaints that involved issues on: waiting lists for scheduled appointments; waiting times for scheduled appointments from the time the appointment was made; waiting times in the clinic before being seen; difficulty making appointments, such as busy phone lines to the appointments clerks; and, in the case of Family Practice, the waiting list to be assigned a provider panel.

2) Inadequate care. These complaints involved the patient's perception that the care received was not adequate or appropriate for the complaint.

3) Rude or indifferent treatment. These were complaints made that concerned the patient's perception that staff members

within the clinic had failed to show the proper regard for the patient, or concern for his or her medical condition.

4) Inadequate follow-up. These complaints concerned issues where the patient felt the clinic staff should have contacted them to report test results or the results of consults.

5) Inadequate assistance. These complaints varied widely, but concerned issues where the patient felt the staff should have been of more assistance. These were issues such as; not providing prescriptions for additional refills without being examined; not writing notes to school or work for illnesses after the fact; not assisting with civilian insurance claims; the length of processing times for medical boards; and explanations of clinic or administrative procedures.

The number of complaints for each month were tallied by category and examined using descriptive statistics and two tailed t-tests to determine if there were differences in the concerns of the overall IACH beneficiary population by clinic and complaint category. The Enable software package was used to develop the descriptive statistics, and the Microstat software package was used to compute the t-tests.

The functions and procedures of the Family Practice clinic were then examined by interviewing staff members, observing clinic

operations, and reviewing documentation. The documentation reviewed includes: (a) the Table of Distribution and Allowances (TDA) and manpower surveys to determine staffing levels; (b) data from the FY90 Medical Expense and Performance Reporting System (MEPRS) to determine budgeting; (c) job descriptions of staff members to determine duty requirements; (d) results of the Joint Commission on the Accreditation of Health Care Organizations (JCAHO) survey to see if there were problems within the clinic noted by an external evaluating agency; (e) Standing Operating Procedures (SOPs) for information on patient scheduling and clinic operations; (f) the Health Services Command (HSC) Regulation 10-1, Organization and Functions Manual to determine the mission of the Family Practice Service; and, (g) patient sign up sheets for the Family Practice program were analyzed to determine the size of the waiting list and how long individuals had been waiting to get into the family practice program, as well as to get an approximate family size. Clinic operations were observed for a two week period.

Finally, using data obtained from the Resource Management Division and HSC, a spreadsheet was created using Enable software to determine the personnel costs that would be associated with any reorganization scheme. Only personnel costs were considered in

this analysis since providing health care is a labor-intensive function (Budd, 1988) and represents the greatest single cost in the delivery of Family Practice services. Further, this reorganization deals only with personnel staffing and organization structure.

Ethical Considerations

In order to ensure candid comments from staff members, specific comments from individuals to the researcher were kept confidential. No record was kept of personal identifiers (names, Social Security Account Numbers, etc.) for interview subjects; or of individual patients when reviewing patient complaints or the waiting list for the Family Practice service.

Reliability and Validity

The greatest weakness of this study centers around the issues of reliability and validity. Since the preponderance of the information gathered for the study relies on the subjective opinion of the persons interviewed, as well as that of the researcher, other researchers could study similar Family Practice services and develop different findings and conclusions. The reader cannot assume that this study is directly applicable to other locations.

In an effort to control for subjective opinion, individual comments were not considered in the general findings; only the issues the comments related to were considered. It is felt that the large sample size and period of time for the patient complaints provides a control for statistical fluctuations due to the time of year or peculiar influences of individuals or events.

RESULTS

Command Group Interviews

Three main concerns were expressed in the interviews with the Command Group with respect to the Family Practice service. These concerns can be expressed as:

1. There is a need to increase access to the Family Practice service as one of the primary care services in order to establish the primary care base called for by the Gateway to Care program.

2. There is a need to reduce the cost per visit in the Family Practice service.

3. There is a need to improve the productivity of the Family Practice service. Productivity is defined here as the number of visits per provider.

Patient Complaints

The results of the analysis of patient complaint data are presented in Tables 1 through 3. Table 1 shows the total number of complaints for each clinic by complaint category, and the percentage of each category. Table 2 shows the average number of complaints by clinic and complaint category rounded to two significant digits. Table 3 shows the results of the t-tests comparing the complaints made against the Family Practice clinic with complaints of the same type in the other clinics.

Insert Tables 1 through 3 about here

In general, the Family Practice clinic (FPC) had a significantly higher rate of complaints concerning access than did the Emergency Treatment Clinic (ETC) and the Troop Medical Clinics (TMC). Most (17) of the complaints of access in FPC were in reference to the time families were spending on the waiting lists to be enrolled. Complaints of access were significantly lower than for Obstetrics and Gynecology (OB/GYN) and Pediatrics (PED). There were no significant differences in the mean number of complaints about access between FPC and Internal Medicine (IN MED) or the average for all clinics (ALL). Family Practice had

significantly fewer complaints of inadequate care than any other clinic except IN MED. There were also fewer complaints of rude treatment except in comparison with IN MED, OB/GYN, and TMC. Complaints of inadequate follow-up were significantly lower in FPC compared to OB/GYN, PEDS, and ALL. Finally, there were no significant differences in the complaints of assistance except between FPC and ALL where FPC showed a higher mean.

Family Practice Service Observations

Results of the interviews with the Family Practice Staff are considered by general occupational category; physicians, nurses and administrative staff. Results of observations and evidence gathered from the review of documents are included with the group being discussed.

Physicians

Physicians indicated that generally they felt there were no significant problems in the clinic except in the number of supporting nursing staff. Staffing levels under the current TDA are indicated in Table 4. An organization chart depicting the current organization is at Figure 3. The dotted lines and boxes

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Insert Table 4 and Figure 3 about here

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show the technical and rating supervision of the Department of Nursing, Patient Administration Division, and Clinical Support Division. Because of the relatively few number of nurses, many times physicians would have to perform tasks that would normally be done by nurses. These tasks include things tracking down missing lab reports or consult forms, obtaining examination or treatment supplies, and calling waiting patients to examination rooms. The researcher also noted that the physicians prepared their own lab slips and x-ray requests to give to the patients.

There was also concern expressed on the part of the physicians that the personnel assets were not really controlled within the clinic. The staff was stable in that the personnel assigned generally worked in the clinic; but since the Department of Nursing supervised the nurses then the Family Practice nursing staff could and would occasionally be pulled to staff other clinics. No personnel were pulled from the service during the observation period. This may have been due to the lower workload experienced throughout the hospital.

Nurses

The nursing personnel also expressed a concern with a shortage of staff. All nursing staff were Licensed Practical Nurses (LPNs), with the exception of the Head Nurse who was a

Registered Nurse (RN). Nursing duties were not unusual for an ambulatory care clinic. It was noted that there were housekeeping chores included in the daily workload for the LPNs.

As seen in Table 1, the staffing level of nurses is just over one nurse per physician. Because of the low ratio of nurses to physicians, the nurses worked as a group. There is not sufficient staff to assign one nurse to a physician on a full time basis.

The problems with short staffing levels of nurses is compounded when a nurse must remain with a physician during an examination to act as a chaperone (during appointments where a female patient must disrobe) or assist with a procedure (this can take 30 minutes to over an hour depending on the procedure). Time away from nursing duties also occurs when there is a need to escort a patient to another service, such as the laboratory or radiology. Approximately 20 percent of each nurse's time is taken up by these duties.

Administrative Personnel

The Non-Commissioned Officer In Charge (NCOIC) is a 91B, Medical Specialist. She also commented that the level of nursing staff was frequently insufficient to meet requirements and

appointments would run behind schedule as a result. She would assist the nursing staff whenever possible if her other duties could be postponed.

The receptionists and file clerk felt there was sufficient staff to cover the clinic. During peak traffic times the workload could get hectic, but manageable. One appointment clerk had been assigned to work in the clinic but had recently been pulled to work in a centralized appointments area. The Chief of the Clinical Support Division was planning to add appointing duties to receptionists to provide each clinic the capability of appointing patients.

General Clinic Functioning

Clinic hours were from 07:30 through 16:30 hours, Monday through Friday. Appointments were scheduled from 07:45 to 11:15 and from 12:45 to 15:15 daily. A lunch break was scheduled for between 11:30 and 12:30. Lunches were staggered to permit coverage of the clinic during the lunch hour. The first fifteen minutes in the morning, and after lunch, were used to ensure the clinic was ready for patients and to take care of administrative matters.

Patients were not scheduled after 15:15 to allow time for patient backlog and clean up of the clinic. Approximately 26

appointment slots were available per physician, except for the clinic Chief who was allowed 50 percent of his time for clinic administration. Roughly 30 to 100 percent of available appointments are unscheduled to permit same-day appointments. There were no precise rules for the number of unscheduled appointment times each day, but varied based on the number of available physicians and guidance provided by the Chief based on his experience.

Only patients who were enrolled in the Family Practice program were appointed. Each physician had a panel limit of 500 families; 400 Active Duty families and 100 retiree families. The clinic Chief had a panel limit of 250 families; 200 Active Duty and 50 retiree. The physicians felt the panel sizes were adequate. Guidance from the Consultant at the Office of the Surgeon General (OTSG) indicates that the panels should range from 400 families, if obstetric services are provided, to 600 if there are no obstetric services. Our Family Practice service does provide obstetric services to approximately 40 patients in any given month.

A review of data on actual panel size revealed that the four active panels were actually filled to about 81 percent capacity. Active duty families are placed in panels that are aligned with

specific units on the installation. Retirees are placed in panels as vacancies exist.

A review of the waiting list revealed there were a total of 891 families waiting to be assigned to a panel; 672 Active Duty and 219 retiree families. The average size of an Active Duty family was 3.59 individuals. Retiree families had an average size of 2.55 individuals. Overall the average family size was 3.33 and there were a total of 2969 patients waiting to be assigned to a panel. The waiting list had individuals that had requested entry into the Family Practice program since June of 1989. Panels are filled with the oldest requests first after telephonic verification is made that the sponsor still wishes to enroll his or her family.

The clinic layout is shown in Figure 4. As a patient arrives

Insert Figure 4 about here

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for an appointment, he or she reports to the receptionist's desk to be logged in and then is seated in the waiting area. A nurse will periodically check the receptionist's desk for records and takes the patient to the triage area to check vital signs and obtain a brief history of the symptoms. The patient is then moved

to an examination room (there are two designated rooms for each physician), or to the treatment room for a procedure, to wait for the physician. If both exam rooms are full, the patient is returned to the waiting area. The physician examines the patient in the examination room and prepares any necessary lab slips or other consult requests. A nurse is present, if necessary, for chaperone duty or to assist with a procedure. Following the examination, any lab slips, x-ray requests, or consults are given to the patient and the patient is released. The patient then returns to the receptionist's desk to have lab slips or consults stamped and to make a follow-up appointment, if required.

There are color coded tabs on the upper right corner of each exam room door to indicate if: (a) the room is empty, (b) there is a patient in the room waiting to be seen, (c) an examination is taking place, or (d) if a nurse is needed to assist. This has helped reduce the time it takes a nurse to check on the room status. As can be seen in the layout, the central core of rooms blocks the view of six of the ten exam rooms.

Data from MEPRS indicates that $484,108 were spent for salaries in Family Practice in FY90. This represents nearly 74 percent of all direct and support costs for the service. This means that $19.51 of the $26.46 cost per visit for the 24,814

visits were for labor. During the same time, a total of 49.86 Full Time Equivalents (FTEs) of provider time were used. This calculates to about 498 visits per FTE which is short of the manpower staffing standard estimate of 522.

There were no findings against the Family Practice service on the 1989 JCAHO Survey. This would tend to suggest that there are no significant problems in the quality of care provided by the clinic.

Health Services Command has promised to fill all of the vacant physician positions to facilitate the Gateway program at IACH. This will bring the physician staffing level up to the current TDA authorizations. The current TDA was used as a starting to develop the spreadsheet used in calculating personnel costs. A sample run of the spreadsheet is included as Table 5

Insert Table 5 about here

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using current staffing levels and productivity rates. Information from the HSC Resource Management office was obtained showing the computations for calculating staffing levels under the Gateway program. Their model assumes each physician will see 522 patients per month. Half of this number was used to reflect the reduced

clinic time for the Service Chief. Annual salary figures were obtained from the IACH Resource Management office for salary estimates. These estimates are fairly crude since bonus pay for physicians is not included in the Army composite rate for officers. Estimates for the bonus pay were made as $12,000 for the O5 position, $8,000 for the O4 position, and $5,000 for the O3 positions. Also, salary figures for General Schedule (GS) employees were estimated at the "step five" level for each rating.

DISCUSSION OF FINDINGS

The concerns of the Command Group about a need to increase access are supported by the patient complaint data and the MEPRS data. The same is true of the issue of productivity since FY90 productivity, as measured in visits per FTE, was below expected levels. One note of caution is important when considering both access and productivity. The last quarter of FY90 had between 10 and 20 percent fewer clinic visits than did the previous three quarters.

To lower the cost per visit, either inputs (resources) need to be reduced, or outputs (visits) need to be increased, or both (Budd, 1988). The Gateway model of managed care should facilitate

an increase of visits if the PCP can treat patients that would once have been referred to a specialist. This assumes there is adequate staff to see the patients.

Too much time of our physicians' time is taken up in tasks that could and should be done by support personnel. The current ratio of 1.28 nurses per provider does not appear adequate to facilitate the volume of visits. The shortage of support personnel is one of the major reasons why physicians are leaving the service at high rates ("Study shows", 1990). Braendel (1990) suggests that the usual staffing ratio in HMOs is 1.5 per provider. This level may even be low since a shortage of support personnel is a complaint expressed by physicians employed by civilian HMOs (Sheingold, 1990). However, a problem arises when trying to increase staff while reducing costs.

Staffing

A spreadsheet model run of the full staffing under the HSC guidelines using the Kaiser HMO staffing ratio and productivity levels, and current LACH staffing patterns, is shown at Table 6.

Insert Table 6 about here

The Kaiser model for Gateway enrollees allows 4.4 FTEs per 1566 CHAMPUS eligible enrollees or 1253 Active Duty Members. The break out of positions includes 1 provider FTE, 1.1 "Advice Nurse" (RNs, or Nurse Clinicians) FTEs, .8 administrative FTEs, and 1.5 "other" (technician) FTEs. Using this model shows an increase in labor costs of $2.56 per visit over the current level. The Kaiser model actually increases the staff by nine positions. It is assumed that about one half (four) of these position would go to supporting services such as the pathology or radiology. This model would allow a ratio of 2:1, nursing staff to physician.

One of the problems in the Kaiser model is the heavy reliance on RNs as Advice Nurses. Salaries for RNs in the local area are much higher than rates for GS registered nurses. IACH would have difficulty filling the Advice Nurse positions with RNs.

An alternative staffing model is shown at Table 7. This

Insert Table 7 about here

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would increase costs by $0.36 and would still provide a 2:1, nursing staff to physician ratio by using nurse's aides. The use of nurse's aides is not a new idea. The Army used medical specialists as screeners in the late 1970's (Burger and Wolcott,

1977; Shields, Moore, Seabury, and Stout, 1977). Other studies done in the civilian sector advocate the use of the nurse's aide in the ambulatory care setting (e.g., Joseph, 1990). In a study by Begley, Dowd, and McCandless (1989), the researchers found that primary health care projects for the poor tended to show lower costs per visit with higher ratios of non-physician providers (RN, LPN, NA).

Another staffing model is presented in Table 8. This would

Insert Table 8 about here

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reduce the number of nurse's aides, but would still allow a staffing ratio of 1.5:1, nursing staff to physicians; the level suggested by Braendel (1990). A cost savings of $0.63 per visit would also be realized.

The use of nurse's aides would free the nurses from tasks such as housekeeping, chaperoning, stocking supplies in exam rooms, tracking down lab slips, etc. They could also be used in the capacity of screeners for vital signs, perform some treatments, and assist in some minor procedures. Time that is made available to the nurses could be used to take some of the administrative burden off of physicians, such as preparing lab

slips for routine requests, calling patients back with lab or x-ray results, administrative tasks, etc. This would give the physician the extra time needed to more closely manage the health care needs of the patients.

Another possible method of reducing the cost per visit is through the use of Physician's Assistants (PAs) and Nurse Practitioners (NPs). Both of these provider groups have a lower salary rate than any physician. Estimated productivity for either PAs or NPs is about one half that of a physician. Using the spreadsheet staffing model, the cost per visit does decrease when using PAs or NPs unless additional nursing staff are added to support them. With nursing staff added to support the PAs or NPs the cost per visit increases. This contradicts studies showing a lower labor cost per visit when using PAs or NPs. For example, Brodie, Bancroft, Rowell and Wolf (1982) found that NPs cost per visit was only $7.03 compared to physicians who had an $18.25 cost per visit when salaries, laboratory and medication costs were compared. The contradiction is likely due to the use of straight salary rates in the studies when compared to the Army composite rates used for the spreadsheet.

Organization of Family Practice

Family Practice should be organized into three family practice teams as a starting point. An organization chart for the revised organization is shown at Figure 5. Each team would have two physicians assigned to the team who could provide coverage for

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Insert Figure 5 about here

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each other in the event of leaves, temporary duty, or other conflicts. As new providers were assigned to the Family Practice service, they could be integrated into one of the teams. If the teams grew larger than three providers each, new teams could be formed by halving the former team.

Families assigned to individual providers would belong to the provider's team concurrently. This would help to ameliorate concerns of continuity of care for the individual patient considering the high rate of physician turnover due to separations and permanent changes of station. Access to care would also be enhanced by having a team of providers available rather than one physician (Brook, et al., 1987).

Two nurses and one nurse's aide would be assigned to work directly with each team. A nurse would be assigned in each team

to work primarily for a particular physician, but would also provide coverage for absent nursing staff within the team. By working directly with a particular provider, a physician/nursing team would be facilitated. Each member could learn the practice habits of the other to capitalize on individual strengths. Development of highly motivated and well coordinated health care teams could improve productivity by minimizing duplication of effort.

Nurses from all teams would rotate through the position as the Advice Nurse to screen patient calls. Rotations would be based on the patient load for the team on that particular day. This would provide a method to implement the Advice Nurse concept without immediately having to dedicate resources solely to that purpose.

Mobley, Freeman and Jacques (1977) found that by aligning a Family Practice Clinic with a Troop Medical Clinic and the units assigned to the TMC that the providers in the TMC could serve as the initial contact point for Family Practice Services. Soldiers would be seen in the TMC and referred to a designated family practice provider as required. This arrangement permitted the

utilization of the TMC PAs to improve productivity, improved relationships between the Family Practice Clinic and the installation line officers, and improved patient satisfaction.

The Family Practice teams in this reorganization could be similarly aligned with units and TMCs on the installation. Unit affiliation is already the method for determining the assignment of Active Duty families to physician panels. Alignment of specific teams with particular units would allow the IACH Family Practice service to test the productivity and cost effectiveness of using PAs.

Another benefit of organizing by teams is the ability to locate teams in other areas. The physical facilities currently available for Family Practice will not readily accommodate seven physicians. As the service expands through the addition of providers and support staff, teams could be broken out of the central clinic and placed in areas that are too small to accommodate the entire service. If the teams are aligned with a particular TMC, it may be possible to use space in the TMC for the team.

In order to give full control of the clinic to the Chief, the nursing and administrative personnel should be under the Chief's rating control. This could be accomplished simply by having the

Chief of the service rate the Head Nurse. Concerns by the Department of Nursing of losing technical supervision can be answered by having the Head Nurse senior rated by the Assistant Chief Nurse (or another nurse senior to the Clinic chief, possibly the Chief of Ambulatory Nursing). The Head Nurse would rate all of the subordinate nursing staff. Senior ratings could be done by the Department of Nursing.

This matrix type of supervisory function (having supervisors from more than one division) is well suited for organizations that are composed of combined elements of different divisions (Daft, 1986) and is common in product line management. In the case of the Family Practice service there are essentially elements from the medical staff, Department of Nursing, Clinical Support Division, and Patient Administration. The product line being managed is family health care.

CONCLUSIONS AND RECOMMENDATIONS

The Gateway to Care program at IACH will represent a significant change in the management of patient care. There will be more reliance on the role of the primary care provider to treat illnesses they may have referred to a specialist before. The Family Practice service is well suited to meet the challenges of the expanded primary care role.

Capitation funding will require better management of resources. Physicians will need additional nursing support so they will have more time to devote to patient care and management. By utilizing NAs rather than LPNs, additional nursing staff can be added to provide this additional support at a potentially lower cost per visit.

The additional free time for physicians generated by nursing personnel handling more of the routine clinic tasks will also permit the physicians to pay more attention to aspects of the quality of care provided and management of the Family Practice program. As discussed in the introduction, the quality of care provided, particularly the patient's perception of the quality of care, is one of the most significant factors that will influence the patient's choice in where care is obtained. The physician must have the time to devote to assessing the technical quality of care and ensuring that the patient believes that the care is of high quality. Acceptance of the program by the beneficiary population will determine its success or failure.

The use of organized medical teams offers the potential of increased patient access, greater continuity of care, more effective utilization of personnel assets, and reduced costs. Teams have more flexibility and greater adaptability to changing

conditions. The Family Practice service needs to have full control over the personnel assets assigned to operate the clinic and implement the team approach. This need for greater control can be accomplished through the use of a product line management organization. A plan to reorganize the program is offered at the Appendix.

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FOOTNOTES

[1]Complaints for the month of February 1991 were eliminated from the study. This was the month the ground war in Iraq occurred and there where coincidental telephone problems with the Pediatric Advice Line. This combination of events more than quadrupled the number of complaints registered against the Pediatric clinic.

[2]Complaints on all clinics were tallied during the study but were not examined for the specialty clinics. Interestingly, the highest number of complaints for the year for any of the specialty clinics was 14 for the Surgical Clinic. All of the complaints dealt with the waiting time to get an appointment from the time of request.

TABLES

Table 1

Numbers and percentages of patient complaints by clinic and complaint category

\ CLINIC	ETC	FPC	GHOC	IN MED	OB/GYN	PEDS	THCS	TOTAL
COMPLAINT \	ANNUAL	ANNUAL	ANNUAL	ANNUAL	ANNUAL	ANNUAL	ANNUAL	ANNUAL
Inadequate access	17	30	24	23	79	79	19	271
Inadequate care	21	4	29	7	18	30	23	132
Rude/indifferent treatment	17	1	9	2	4	41	2	76
Inadequate follow-up	2	1	4	0	7	10	0	24
Insufficient assistance	1	12	11	8	10	7	7	56
Total complaints	58	48	77	40	118	167	51	559
Percent access	29.31%	62.50%	31.17%	57.50%	66.95%	47.31%	37.25%	48.48%
Percent care	36.21%	8.33%	37.66%	17.50%	15.25%	17.96%	45.10%	23.61%
Percent treatment	29.31%	2.08%	11.69%	5.00%	3.39%	24.55%	3.92%	13.60%
Percent follow-up	3.45%	2.08%	5.19%		5.93%	5.99%		4.29%
Percent assistance	1.72%	25.00%	14.29%	20.00%	8.47%	4.19%	13.73%	10.02%

Table 2

Average number complaints by clinic and category per month

CLINIC / COMPLAINT	ETC AVG	FPC AVG	GMOC AVG	IN MED AVG	OB/GYN AVG	PEDS AVG	TMCS AVG	TOTAL AVG	EACH CLINIC
Inadequate access	1.55	2.73	2.18	2.09	7.18	7.18	1.73	24.64	3.52
Inadequate care	1.91	0.36	2.64	0.64	1.64	2.73	2.09	12	1.71
Rude/indifferent treatment	1.55	0.09	0.82	0.18	0.36	3.73	0.18	6.91	0.99
Inadequate follow-up	0.18	0.09	0.36	0	0.64	0.91	0	2.18	0.31
Inadequate assistance	0.09	1.09	1	0.73	0.91	0.64	0.64	5.09	0.73
Total complaints	5.28	4.36	7	3.64	10.73	15.19	4.64	50.82	7.26

Table 3

Results of t-tests comparing complaints against Family Practice with other Primary Care Clinics

CLINIC	ETC	GMOC	IM MED	OB/GYN	PEDS	THCS	ALL
Family Practice (FPC)							
Inadequate access	2.0402	ns	ns	-5.2961	-5.2961	1.9034	ns
Inadequate care	-3.6749	-2.7881	ns	-2.6649	-3.3510	-2.9601	-5.1500
Rude/indifferent treatment	-4.1312	-2.3489	ns	ns	-8.7287	ns	-6.8054
Inadequate follow-up	ns	ns	ns	-2.4495	-2.7386	ns	-1.8571
Inadequate assistance	3.3472	ns	ns	ns	ns	ns	ns

(All results reported are significant at or below the $p < .05$ level, df=20.)

Table 4

Current Staffing of Family Practice

Position	Grade	Req	Auth	Asgd	Avail
Chief, Family Practice Service	05	1	1	1	1
Family Physician	04	1	1	2	2
Family Physician	03	5	5	1	1
Clinic NCOIC	E6	1	1	1	1
Clinic Head Nurse	GS9	1	1	1	1
Clinic Nurse (RN)	GS9	2	2	1	0
Practical Nurse (LPN)	GS5	6	6	4	4
Secretary	GS5	1	1	1	1
Medical Clerk (Receptionist)	GS4	2	2	2	2
File Clerk (Medical Records)	GS3	2	2	2	2
Total		22	22	16	15

Table 5

Personnel costs using the current TDA and productivity

	QTY	Annual Salary	Annual Total costs	Annual Visits Per Provider
Clinic Chief (O5)	1	$105,556.00	$105,556.00	2988
Staff Physician (O4)	1	$86,853.00	$86,853.00	5976
Staff Physician (O3)	5	$69,665.00	$348,325.00	29880
Staff Physician (GS14 step 5)	0	$69,603.00	$0.00	
Physician's Assistant (WO3)	0	$60,269.00	$0.00	
Nurse Practitioner (O3)	0	$64,665.00	$0.00	
Clinic NCOIC (E6 over 12)	1	$35,327.00	$35,327.00	
Clinic Head Nurse (GS9 step 5)	1	$29,145.00	$29,145.00	
Advice Nurse (GS9 step 5)	2	$29,145.00	$58,290.00	
Clinic Nurse, RN (GS9 step 5)	0	$29,145.00	$0.00	
Practical Nurse (GS5 step 5)	6	$19,237.00	$115,422.00	
Nurse's Aid (GS2 step 5)	0	$13,539.00	$0.00	
Secretary Typing (GS5 step 5)	1	$19,237.00	$19,237.00	
Medical Clerk (GS4 step 5)	2	$17,195.00	$34,390.00	
File Clerk (GS3 step 5)	2	$15,319.00	$30,638.00	
Total Staff	22		$863,183.00	38844

Cost per visit $22.22

Table 6

Personnel costs using the HSC "Kaiser Model"

	QTY	Annual Salary	Annual Total costs	Annual Visits Per Provider
Clinic Chief (O5)	1	$105,556.00	$105,556.00	3132
Staff Physician (O4)	1	$86,853.00	$86,853.00	6264
Staff Physician (O3)	5	$69,665.00	$348,325.00	31320
Staff Physician (GS14 step 5)	0	$69,603.00	$0.00	
Physician's Assistant (WO3)	0	$60,269.00	$0.00	
Nurse Practitioner (O3)	0	$64,665.00	$0.00	
Clinic NCOIC (E6 over 12)	1	$35,327.00	$35,327.00	
Clinic Head Nurse (GS9 step 5)	1	$29,145.00	$29,145.00	
Advice Nurse (GS9 step 5)	7	$29,145.00	$204,015.00	
Clinic Nurse, RN (GS9 step 5)	0	$29,145.00	$0.00	
Practical Nurse (GS5 step 5)	6	$19,237.00	$115,422.00	
Nurse's Aid (GS2 step 5)	0	$13,539.00	$0.00	
Secretary Typing (GS5 step 5)	1	$19,237.00	$19,237.00	
Medical Clerk (GS4 step 5)	2	$17,195.00	$34,390.00	
File Clerk (GS3 step 5)	2	$15,319.00	$30,638.00	
Total Staff	27		$1,008,908.00	40716

Cost per visit $24.78

Table 7

Proposed staffing model, Alternative 1

	QTY	Annual Salary	Annual Total costs	Annual Visits Per Provider
Clinic Chief (O5)	1	$105,556.00	$105,556.00	3132
Staff Physician (O4)	1	$86,853.00	$86,853.00	6264
Staff Physician (O3)	5	$69,665.00	$348,325.00	31320
Staff Physician (GS14 ste 5)	0	$69,603.00	$0.00	
Physician's Assistant (O3)	0	$60,269.00	$0.00	
Nurse Practitioner (O3)	0	$64,665.00	$0.00	
Clinic NCOIC (E6 over 12)	1	$35,327.00	$35,327.00	
Clinic Head Nurse (GS9 step 5)	1	$29,145.00	$29,145.00	
Advice Nurse (GS9 step 5)	2	$29,145.00	$58,290.00	
Clinic Nurse, RN (GS9 step 5)	0	$29,145.00	$0.00	
Practical Nurse (GS5 step 5)	4	$19,237.00	$76,948.00	
Nurse's Aid (GS2 step 5)	7	$13,539.00	$94,773.00	
Secretary Typing (GS5 step 5)	1	$19,237.00	$19,237.00	
Medical Clerk (G34 step 5)	2	$17,195.00	$34,390.00	
File Clerk (GS3 step 5)	2	$15,319.00	$30,638.00	
	***		**********	**********
Total Staff	27		$919,482.00	40716

Cost per visit $22.58

Table 8

Proposed staffing model, Alternative 2

	QTY	Annual Salary	Annual Total costs	Annual Visits Per Provider
Clinic Chief (O5)	1	$105,556.00	$105,556.00	3132
Staff Physician (O4)	1	$86,853.00	$86,853.00	6264
Staff Physician (O3)	5	$69,665.00	$348,325.00	31320
Staff Physician (GS14 step 5)	0	$69,603.00	$0.00	
Physician's Assistant (WO3)	0	$60,269.00	$0.00	
Nurse Practitioner (O3)	0	$64,665.00	$0.00	
Clinic NCOIC (E6 over 12)	1	$35,327.00	$35,327.00	
Clinic Head Nurse (GS9 step 5)	1	$29,145.00	$29,145.00	
Advice Nurse (GS9 step 5)	2	$29,145.00	$58,290.00	
Clinic Nurse, RN (GS9 step 5)	0	$29,145.00	$0.00	
Practical Nurse (GS5 step 5)	4	$19,237.00	$76,948.00	
Nurse's Aid (GS2 step 5)	4	$13,539.00	$54,156.00	
Secretary Typing (GS5 step 5)	1	$19,237.00	$19,237.00	
Medical Clerk (GS4 step 5)	2	$17,195.00	$34,390.00	
File Clerk (GS3 step 5)	2	$15,319.00	$30,638.00	
Total Staff	24		$878,865.00	40[illegible]

Cost per visit $21.59

FIGURES

FIGURE CAPTIONS

Figure 1. Current model of access to health care.

Figure 2. Gateway to Care health care access model.

Figure 3. Current organization chart.

Figure 4. Family Practice clinic layout.
Guide to number numbering scheme:
1 - Laundry supply room
2, 21, 26, 28, 30 - Physician offices
3 - Isolation/exam room
4, 12, 13, 16, 20, 22, 23, 27, 29, 31 - Exam Rooms
5 - Treatment/procedure room
6 - Mechanical room
7 - Triage area
8 - Supply Room
9, 10 - Restrooms
11 - Waiting area
14 - Housekeeping
15 - Administrative Supplies
17 - Secretary
18 - Immunizations
19 - Conference Room
25 - Laboratory
32 - Head Nurse
33 - Records
34 - Reception Desk

Figure 5. Proposed organization of Family Practice

Current Access Model

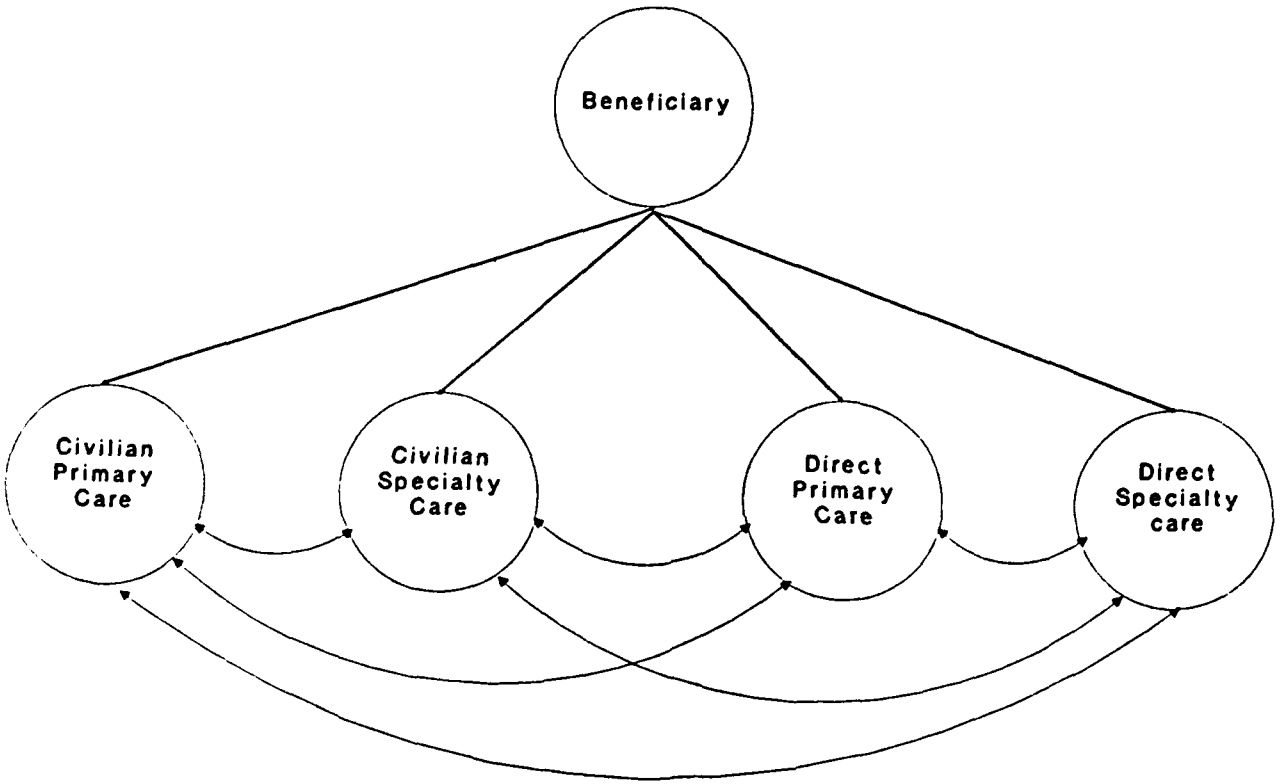


Figure 1

Gateway Access Model

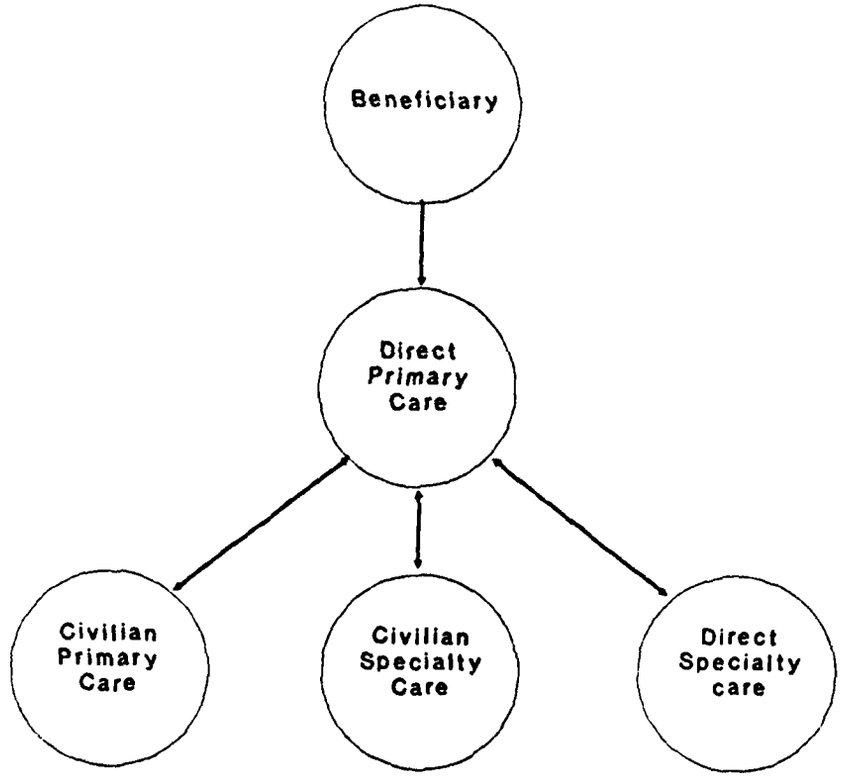
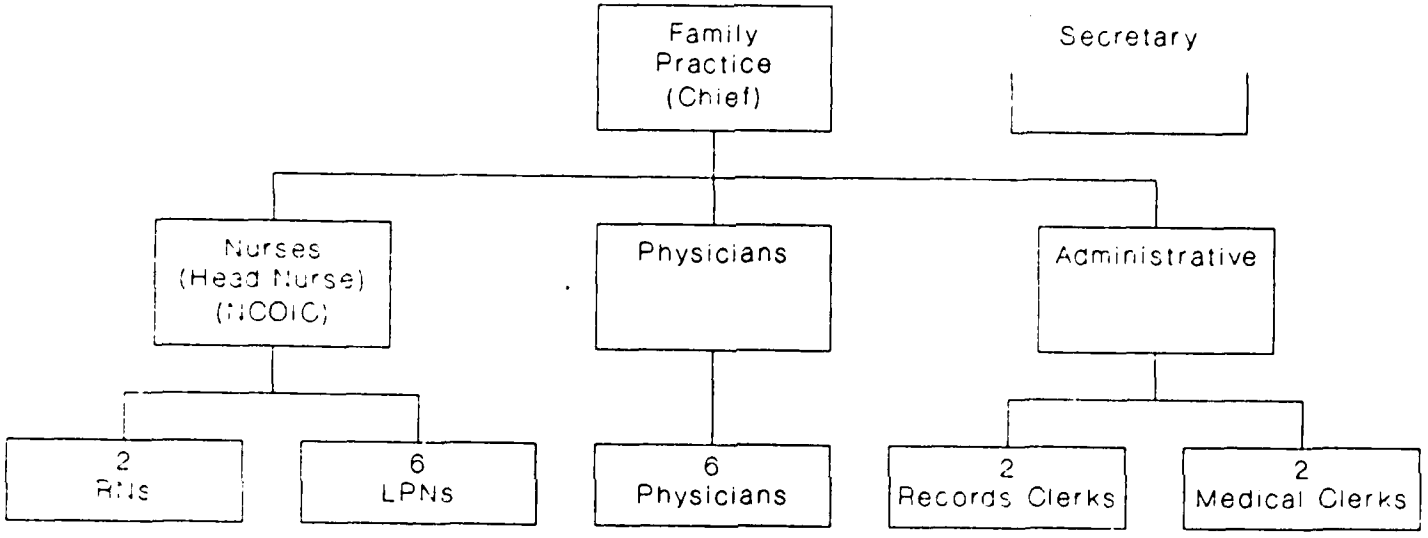


Figure 2

Family Practice Service
(Current Organization)



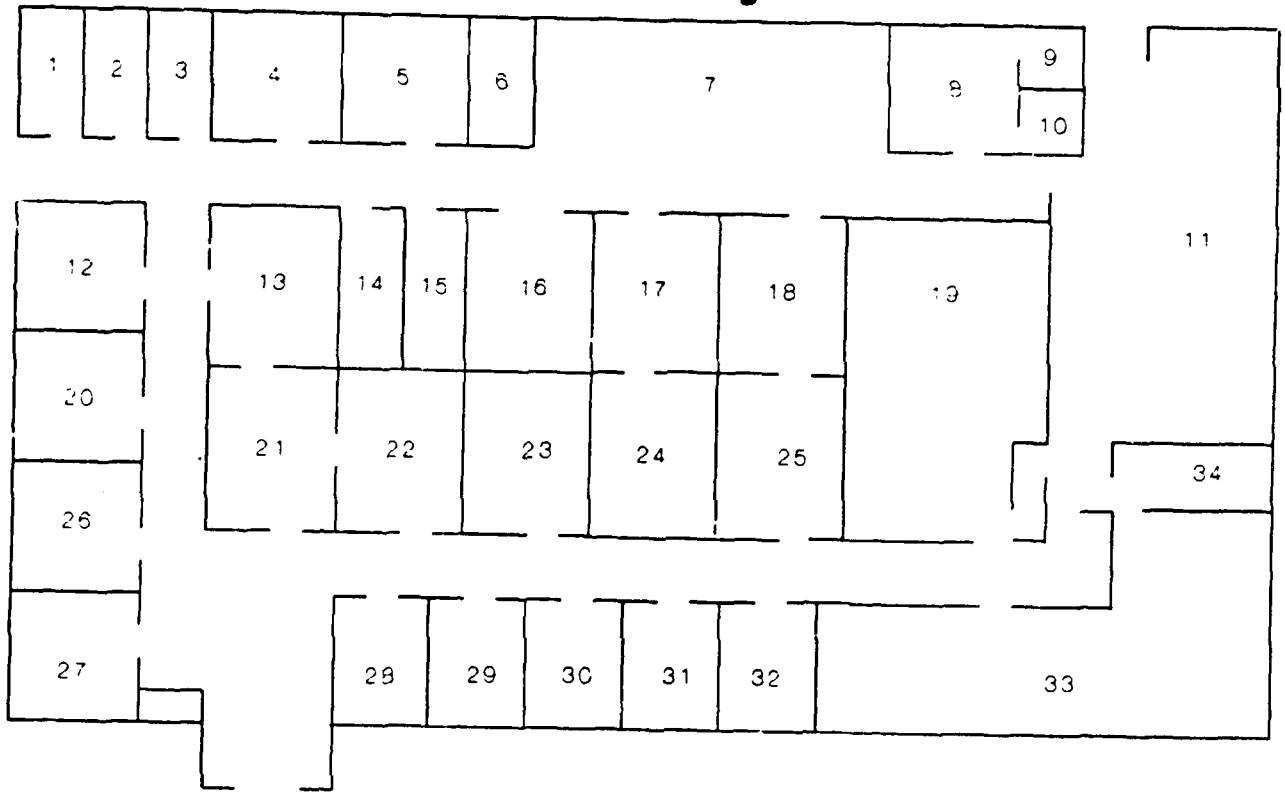
Department of Nursing

Patient Admin Division

Clinical Support Division

Figure 3

Clinic Layout



(NOTE Not to Scale)

Figure 4

Family Practice Service

(Proposed Organi[illegible]

Figure 5

APPENDIX

Family Practice Reorganization Plan

1. PURPOSE: This plan discusses the reorganization of the Family Practice program to support the Gateway to Care initiative.

2. MISSION STATEMENT: In accordance with HSC Regulation 10-1, to provide diagnoses, care, and treatment of all patients commensurate with the highest standards of quality patient care. In addition: to support the goals of the Gateway to Care program through the establishment of a primary care base and the careful management of individual patient health care.

3. NEEDS ASSESSMENT:

a. The goals of the Gateway to Care initiative are
(1) to improve access to medical care
(2) to implement a primary care delivery base
(3) to improve the quality of care
(4) to improve customer satisfaction
(5) to contain the rapidly escalating costs of medical care

b. Characteristics of the beneficiary population
(1) According to the Directorate for Resource Management, Health Services Command, the beneficiary population can be summarized as follows:
(a) Total beneficiaries: 50,131
(b) Population break out:

Age Group	Active Duty	Dependents of Active Duty	Retired	Dependents of Retired	Survivors & Other	Total
0-17	0	15,471	0	1,418	314	17,203
18-64	15,952	10,876	1,961	2,607	406	31,802
65+	0	28	555	327	216	1,126
Total	15,952	26,375	2,516	4,352	936	50,131
% of Total	31.82%	52.61%	5.02%	8.68%	1.87%	100%

Sex	Active Duty	Dep. Active Duty	Ret.	Dep. of Ret.	Surv. and Other	Total	% of Total
Male	14,724	8,438	2,498	1,041	192	26,893	53.65%
Female	1,228	17,937	18	3,311	744	23,238	46.35%

c. Needs of the beneficiary population
(1) expanded primary care delivery base
(2) ready access to specialty care; particularly in the areas of (based on FY90 CHAMPUS non-availability statements (NAS) issued):
(a) Obstetrics (159 NAS)
(b) Psychiatry, Group 1 (144 NAS)
(c) Internal medicine (36 NAS)
(d) General surgery (33 NAS)
(e) Gynecology (16 NAS)
(f) Orthopedics (11 NAS)

4. SITUATION ANALYSIS:

a. Internal Strengths
(1) Dedicated Family Practice staff
(2) Responsive ancillary support staff
(3) Demonstrated fiscal responsibility
(4) Authority to use health care funds as determined by the commander
(5) Authority to adjust staff to requirements

b. Internal Weaknesses
(1) Little experience in managed care
(2) Lower compensation rates for nursing
(3) Low provider to nursing staff ratio

c. External Opportunities
(1) Promise of physician staffing to full authorizations
(2) Opportunity to negotiate directly with local providers
(3) Excess capacity in local hospitals
(4) "High volume" market potential

d. External Threats
(1) Possible Congressional actions to limit/stop Gateway
(2) Possible local resistance to participate in HMO plans
(3) Possible local resistance to loss of normal CHAMPUS rates
(4) No requirement for mandatory enrollment in Gateway

5. ASSUMPTIONS:

a. Family Practice will receive additional physicians to bring provider strength up to the authorized seven positions.

b. Gateway will provide authorization to modify the TDA to meet mission requirements.

c. Required nursing staff can be obtained through the civilian personnel system.

d. Each physician, except the Chief of the Family Practice Clinic, will have a panel of 500 families (approximately 1650 patients). The Chief will have a panel of 250 families. The total estimated population to be enrolled in Family Practice is approximately 10,725.

e. Additional physicians will be added if Gateway enrollees request assignment to Family Practice.

f. Funding will be available for the additional personnel.

g. The proposed organization will be sufficient to handle approximately 522 visits per physician per month.

h. Savings generated by closer management of patient care will exceed the additional costs in Family Practice.

Implementation Plan

Guiding principals of implementation
Achieve and maintain command support
Build and maintain consensus and flexible attitudes
Expect confusion, maintain flexibility, tolerate faults
Use excessive positive reinforcement for successes

Implementation Steps

D-75 1. Identify personnel requirements to round out existing providers with teams. Each team will be composed of two physicians, two

nurses, and one nurse's aid. Nurses will be assigned to work with particular physicians. The nurse's aid will assist the nurses in the team.

ACTION: Admin Resident

D-70 2. Present the concept to the Command Group to generate decision maker support. The use of teams will require additional personnel; primarily nurse's aids. Rating control of all Family Practice personnel must be transferred to the service.

ACTION: Admin Resident

D-68 3. Educate family practice leadership. Discuss the proposed reorganization with the physician and nursing staff. Explain the concept of teams aligned with installation units and composition of the teams. Discuss the impact of the additional patient care management responsibilities, and clinic management responsibilities.

ACTION: Admin Resident

D-65 4. Recruit an experimental team. The initial team will require one nurse and one nurse's aid. Personnel Division will release and monitor the request for hiring action.

ACTION: Chief, Personnel Division

D-35 5. Select the experimental team. The Chief, Department of Primary Care and Community Medicine will assign the team members, physician and nursing personnel, to the team. This action may be delegated to the Chief, Family Practice.

ACTION: Chief, Department of Primary Care and Community Medicine (DPCCM)

D-7 6. Train new employees. New employees will be given the standard orientation to the clinic functions and procedures. Members of the experimental team will have the team concept explained.

ACTION: Chief, Family Practice

D-Day 7. Form an experimental team. Assignments to the initial experimental team will be finalized and the team will be formed.

ACTION: Chief, Family Practice

D-Day 8. Test the team concept. An initial one month test of the team approach will be conducted to evaluate the concept.

D+1 - a. Document benefits of the team approach:
1) Access: monitor a) panel size, b) time from the date of request to the date of appointment for routine, urgent, and follow up appointments, and, c) waiting time in the clinic from the time of sign-in to the time the patient is seen by a team member.
2) Patient satisfaction: monitor, a) patient complaints, and, b) commendatory comments by patients.
3) Staff satisfaction: obtain the comments of the team staff on the functioning of the team.
4) Work flow: monitor the availability of nursing staff on the team to take some of the administrative burden off of the physician. Indicate tasks that nursing staff can do that were being done by a physician.
5) Cost savings: track cases that would have been referred to a specialty clinic under the old system but were kept in Family Practice.
6) Quality of care: record any improvements in the ability to provide high quality patient care and problems associated with patient monitoring.

ACTION: Team Leader

D+31 b. Evaluate the results of the test period.

ACTION: Chief, Family Practice

D+38 9. Assuming the team approach is beneficial, gain approval for continuation from command group. Coordinate a Command introduction to a Family Practice seminar to discuss the outcome of the test period. This will permit the positive reinforcement for the use of the team approach.

ACTION: Chief, DPCCM

D+45 10. Conduct a seminar with the personnel from Family Practice to discuss the results of the test. A representative from the Command Group should be present to make introductory remarks and praise the personnel involved.

a. Discuss the new medical delivery system. Delineate benefits and problems encountered during the test period. Discuss suggestions for refining the system.

ACTION: Chief, Family Practice

b. Educate physicians and nurses on civilian personnel procedures for managers. With the new rating scheme, all personnel need to be familiar with their individual responsibilities.

ACTION: Chief, Personnel Division

D+52 11. Prioritize hiring actions for additional personnel needed to complete the reorganization.

ACTION: Chief, Family Practice

D+53 12. Recruit the remaining team members.

ACTION: Chief, Personnel Division

D+83 13. Select the remaining team members.

ACTION: Team Leaders

D+90 14. Train new employees as in step 6.

ACTION: Team Leaders

D+97 15. Form teams with all remaining personnel to complete the reorganization.

ACTION: Chief, Family Practice

D+98 16. Test the integrated team concept. This test will be conducted for a six month period using the fully reorganized model.

D+98 - a. Document benefits: Use the same procedures as step 8.

ACTION: Team Leaders

D+178 b. Evaluate the results of the test period.

ACTION: Chief, Family Practice

D+192 17. Assuming the full team reorganization has proven to be beneficial, gain approval for continuation from command group. Coordinate a Command introduction to a Family Practice seminar to discuss the outcome of the test period. This will permit the positive reinforcement for the use of the team approach and successful reorganization of Family practice.

ACTION: Chief, DPCCM

D+197 20. Conduct a seminar with the personnel from Family Practice to discuss the results of the test. A representative from the Command Group should be present to make introductory remarks and praise the personnel involved. Discuss the new medical delivery system. Delineate benefits and problems encountered during the test period. Discuss suggestions for refining the system.

ACTION: Chief, Family Practice

Annually 21. Evaluate the system. As was done in steps 8 and 16, the monitoring and evaluation of the Family Practice Clinic should be an ongoing program. A formal evaluation should be conducted at least annually to determine if additional modifications are needed.

ACTION: Chief, Family Practice and Chief, Department of Primary Care and Community Medicine