

Running head: TRICARE Mid-Atlantic Region Appointment System

Appointment System in TRICARE Mid-Atlantic Region:

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Army-Baylor Health Care Administration Program

20000113 060

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204 Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE MAY 1998	3. REPORT TYPE AND DATES COVERED FINAL REPORT (07-97 TO 07-98)	
4. TITLE AND SUBTITLE Appointment System in TRICARE Mid-Atlantic Region			5. FUNDING NUMBERS	
6. AUTHOR(S) LT, Robert E. Styron, USCG				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) TRICARE Mid-Atlantic Region 5425 Robin Hood Rd., Suite 203 Norfolk, VA 235132441			8. PERFORMING ORGANIZATION REPORT NUMBER 35-98	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) US ARMY MEDICAL DEPARTMENT CENTER AND SCHOOL BLDG 2841 MCCS-HRA US ARMY-BAYLOR PROGRAM IN HCA -3151 SCOTT RD SUITE 1412 FORT SAM HOUST TEXAS 78234-6135			10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) The purpose of this paper is to discuss the implementation of a new TRICARE Mid-Atlantic (TMAR) region-wide appointment system to meet the military's managed care health plan (TRICARE) access standards and to meet the Managed Care Support Contract (MCSC) requirements. Issues concerning access to health care under TRICARE including primary care referral options, Military Treatment Facilities (MTF) specialty care availability, and the simplification of the appointment process are discussed. This paper's focus is to discuss TMAR's challenges and solutions for simplifying appointment types. Included are an analysis of the simplified appointment types test site and a synopsis of recommendations for meeting TRICARE Prime access standards. It presents three key strategies that emerged concerning access in the military managed care environment.				
14. SUBJECT TERMS Standardized Appointment Systems, Managed Care Appointments			15. NUMBER OF PAGES 34	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT N/A	18. SECURITY CLASSIFICATION OF THIS PAGE N/A	19. SECURITY CLASSIFICATION OF ABSTRACT N/A	20. LIMITATION OF ABSTRACT UL	

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ABSTRACT

The purpose of this paper is to discuss the implementation of a new TRICARE Mid-Atlantic (TMAR) region-wide appointment system to meet the military's managed care health plan (TRICARE) access standards and to meet the Managed Care Support Contract (MCSC) requirements. Issues concerning access to health care under TRICARE including primary care referral options, Military Treatment Facilities (MTF) specialty care availability, and the simplification of the appointment process are discussed. This paper's focus is to discuss TMAR's challenges and solutions for simplifying appointment types. Included are an analysis of the simplified appointment types test site and a synopsis of recommendations for meeting TRICARE Prime access standards. It presents three key strategies that emerged concerning access in the military managed care environment.

"TRICARE is a joint and collaborative effort, which relies on lead agents, capitation funding and competitive managed care support contracts."

Dr. Stephen C. Joseph,
Statement before the Civil Service Subcommittee, House Government Reform and Oversight
Committee, September 12, 1995

Introduction

Dr. Joseph's statement was in response to the proposed wholesale conversion of the military health care system to the Federal Employees Health Benefit Plan. During the presentation to this committee Dr. Joseph indicated that TRICARE standardizes access to care across the entire system. This benefit is expounded upon in the Health Affairs pamphlet, "Your Military Health Plan". Explaining the features of TRICARE Prime, it states "chief among the many features of TRICARE Prime is guaranteed access to care in a timely manner at Military Treatment Facilities (MTF) or in our civilian provider networks." The pamphlet further defines the access benefit to include priority for treatment in MTFs for all Prime enrollees and establishment of strict time standards to meet when providing care. The time standards include access to a Primary Care Manager (PCM) for acute care within one day, for routine care within one week, and for specialty care within four weeks. Another factor in PCM accessibility is that PCM must be within a 30-minute drive from the enrollee's home. Specialty care referrals for Prime enrollees must be met within a 30-day window and one hour travel time.

In developing the contract requirements for TMAR's MCSC, these access time standards were incorporated into the contractor's proposal for the civilian provider network (Anthem Alliance for Health, Inc. 1997). The contractor's civilian provider network was designed to provide access when MTF capability cannot meet the access time standards. The contractor utilized historical MTF and

CHAMPUS data to predict network access requirements. However, as Anctil and Winters (1996) indicate, access may mean different things to different people at different times. Anctil and Winters (1996) suggest that failure to recognize the differences in access definitions has resulted in timely and expensive efforts that yield disappointing results. They believe using patient satisfaction surveys linked to process data to direct and measure improvement efforts will yield satisfactory results.

Access to care is a key quality characteristic for consumers of health care services, but access in the TMAR MTFs needed improvement. According to the July 1997 Military Health System Performance Report Card (MHS Report Card) which measured beneficiary satisfaction, none of the MTFs in TMAR reached 45 percent satisfaction with access to appointments. Only one MTF reached 70 percent patient satisfaction with access to system resources (a measure of time and location convenience to any health care resource, including emergency rooms and pharmacy). The goal for each of these measures is 95 percent.

The December 1997 MHS Report Card indicated figures were dramatically improved. According to that report the MTFs in TMAR ranged from 67 percent to 81 percent satisfaction with appointments and from 71 percent to 87 percent patient satisfaction with access to system resources. Since there were no region-wide initiatives to improve access implemented during this timeframe, the dramatic change between the July 1997 and the December 1997 MHS Report Card results may have been caused by the use of different data samples.

The December 1997 MHS includes data collected from MTF users obtained from a sampling of beneficiaries actually having appointments within the MTF. The July 1997 MHS reported data collected from all eligible beneficiaries responding to a mail out, regardless of user status. Hence, in the December 1997 MHS report some of the beneficiaries are known users of the MTF and may be reporting on access that has already been obtained. Regardless of the reason for the dramatic change,

the fact remains the MTFs still have work to do to meet access expectations of their beneficiaries and Health Affairs' goal of 95% for these data elements. The MHS Report Cards findings are reinforced by an independent study by Morrow, Rosenthal, Lakkis, Bowers, Butterfoss, Crews, and Sirotkin (1998) concerning access to immunizations among Virginia children. Morrow, et al (1998) found that respondents utilizing military facilities had the highest incident of difficulty in obtaining a timely appointment, ranging from 18% to 24%, compared to 4% to 6% among those using other providers. They conclude frequency and type of barriers differed significantly by provider types, however, access problems were reported most often by respondents utilizing military and military contract clinics.

TMAR's first challenge is how to utilize the patient satisfaction information gleaned from the MHS Report Cards in conjunction with information concerning various processes already established in the MTFs and the proposed MCSC's appointment system to create a system that will provide better consumer access. Especially important in this challenge was the realization that, with the exception of one MTF, all TMAR's MTFs had requested the MCSC perform all appointing responsibilities. The one MTF exception requested only specialty care appointing not opting for primary care appointing.

The second challenge for TMAR is the MCSC's proposed centralized regional service center to handle after hour calls and excess capacity calls routed from the local service center to the regional center. Scholz (1990) indicated there were two situations in which to use a computerized scheduler: first, when more than one person needs access at the same time, and second, when the scheduler must be accessed from more than one location. The MCSC proposal met both situations. Although there was no debate about computerizing the appointment system, the debate was how. This regional service center had to be able to make appointments for TMAR and for TRICARE Heartland (TH). TMAR's and TH's contracts have been combined and they have the same MCSC. The challenge became how to standardize and simplify the appointment types in the Composite Health Care System (CHCS) for all

of TMAR and TH. The appointment type is a field in CHCS used to identify the parameters like appointment length and time associated with the appointment's purpose. Appointment type is used to build the appointment schedule template so the appointment can be booked. In the Tidewater area of Virginia, the CHCS platform is located at Portsmouth Naval Medical Center (PNMC) and includes over 10,000 appointment types.

Initially, CHCS appointment types were developed to assist in the structuring of clinic schedules and appointment templates. Clinic management could create specific appointment templates to meet each clinic's appointment needs for any day of the week. Each template could be adjusted to better represent changing resources and schedules or to capture supply and demand information. Using CHCS appointment types to structure health care delivery within clinical areas was the intended purpose. From the original purpose, the system has evolved into a mechanism utilized by providers and administrators to account for workload and justify resources. This was most significant in nursing services and ambulatory care. Currently, other automation systems have been employed to provide workload data and there is no longer a need to use CHCS appointment types to capture workload data.

CHCS allowed anyone with the access to appointment template design the ability to create appointment types. Each clinic therefore had the ability to create its own appointment type. This resulted in multiple redundant appointment types. For example, depending on how one abbreviated a follow-up appointment, it could be designated as fol, f/u, imfol, folu, ppdfu, fol10, fol15, fol20, fol30, fol40, audfu, efol, or adfol. This was just a few of the follow-up appointment types in the Tidewater area.

Simplifying the appointment types was monumental considering Tidewater had over 10,000 appointment types on CHCS. However, other CHCS platforms in TMAR were using significantly fewer appointment types and one TMAR MTF had already reduced its appointment types to 12.

Simplifying appointment types was still a major challenge because it would require concurrence from all MTF Commanders in both regions and it would require a change in corporate culture throughout both regions. As it ended up, two closely related standardized appointment systems were established, one for TMAR and one for TH.

Reducing the number of appointment types allows the service centers to provide appointments in a more timely fashion. Without the simplification the service center would require volumes of appointment type definitions specific for each MTF. TMAR provided nine basic appointment types valid in every MTF. As a result the service center's appointment process was streamlined and this should result in a more effective and efficient appointment process. The overall total of 89 possible appointment type combinations is less than one percent of the previous Tidewater total.

The third and final challenge to be discussed in this paper is the balancing Graduate Medical Education (GME) requirements of the MTF teaching facilities with the TRICARE access standards. Solit and Nash (1996) indicate for academic health centers to be successful in the managed care arena they must meet the challenges of managed care by reconciling the academic mission with the demands of the marketplace.

They identify four keys for civilian academic health centers to become successful in the managed care environment: fostering innovation and leadership, maintaining a patient base, transforming the traditional culture, and reinventing education and research with new stakeholders. The following four keys are also essential for academic MTFs. First, academic MTFs under TRICARE must shift the focus of specialty care to primary care in innovative ways. Second, leaders of academic MTFs must balance access provided to the highly complicated teaching patient with access that could have been provided to several simple Prime enrolled patients with limited teaching value. Third, with the enrollment based capitation-funding model, academic MTFs need to encourage

enrollment of a healthy primary care patient base. Solit and Nash (1996) recommend increasing well baby care, sports medicine, and general obstetrics and gynecology specialties to attract a younger and healthier enrollee. Several of these recommendations are outside the realm of the MTF's readiness mission and further discussion is beyond the scope of this project. And forth, offering primary care educational programs in family practice or general medicine and expanding the MTF's primary care capabilities. The transformation of the traditional culture and the reinvention of education and research will require innovative leadership as the focus shifts from highly specialized care to a more primary care emphasis.

TMAR has one specialty teaching facility - PNMC and one Family Practice teaching facility - Fort Bragg Army Medical Center. PNMC has three branch medical clinics and one annex containing specialty care. As of October 1997, PNMC's 76 branch medical specialty clinics had 13 clinics (17%) available only for active duty members and 25 clinics (33%) with "limited" availability for Prime enrollees. "Limited" was defined as an availability of 20-50% within 60 days. This means 50% (38 of 76) of PNMC and branch medical clinics were unable to meet the TRICARE access standards.

Meeting Health Affairs' access standards seems elementary at first glance. However, the strategic, cultural, and process changes required to meet these standards are intertwined in a myriad of complicated factors and will be beyond the scope of this paper. This paper highlights TMAR's effort to be 'joint and collaborative' in three strategic decisions impacting the MTFs and the MCSC. The three decisions involve these challenges: (1) satisfying consumer demands for access and MCSC requirements while meeting or surpassing the TRICARE access standards, (2) simplifying over 10,000 appointment types into 89, and (3) balancing GME requirements with access standards.

Discussion

Access Issues

Anctil and Winters (1996) report on a "primary care initiative" that took place at Henry Ford Medical Group (a large, fully integrated medical group in Southeast Michigan) which found that issues surrounding access were too complex to be addressed with short-term, single focus strategies. Five issues were reported to be of utmost importance when redesigning primary care in the group. The first issue was quantifying the scope and root cause of the access problem. Secondly, there was the need to align medical management leaders around the issue of access. Then came the challenge of clearly communicating the implications of shifting from fee-for-service to managed care. The fourth issue involved the challenge of changing the culture and developing accountability mechanisms. Lastly, there was the importance of establishing timetables and regular communications.

Issues two, three, four, and five were implemented for TMAR on a corporate level by Congress and Health Affairs when they established TRICARE as the future for military medicine. Congress and Health Affairs provided timetables and the impetus to change to a managed care environment. How clearly these issues were communicated is debatable. However, TMAR's MTF leaders were aware of the TRICARE access standards issue and the priority of care issue since Health Affairs policy was published. The change from business as usual to managed care involves a cultural change. The cultural change involved with moving to TRICARE occurs at the individual MTF, on a regional level, and corporately throughout the Department of Defense. TMAR had one of the original TRICARE test sites in the Tidewater area. That experience helped Tidewater MTFs to become familiar with TRICARE's impact on the local MTF culture and business processes. However, with the MCSC and revised financing the environment at Tidewater has changed again. The regional impact of this new environment was not fully realized at the completion of this paper.

The first issue (quantifying the scope and root cause of the access problem) was more difficult to address on a regional basis. The July 1997 MHS Report Card showed an average 36% satisfaction and the December 1997 MHS Report Card showed an average of 75% rating for appointment access in TMAR's MTFs. What the MHS Report Cards did not show was that there were many different appointment systems in the nine MTFs and many different reasons for dissatisfaction. Some MTFs had a centralized appointment system, while others had a decentralized. There were a few MTFs with a combination of centralized and decentralized. Some MTF clinics had sole proprietorship of their appointments; other clinics had appointments made for them from a central desk; and some clinics used a combination of both.

TMAR did have a historical relationship with the Tidewater TRICARE Service Center to help quantify the scope and root cause of the access problem. In discussing this appointment system, two key issues were raised. First, in order for the MCSC to make appointments on a timely basis, the clinics' templates, criteria, and parameters needed to be as simple and well-defined as possible. The ability to translate a patient's appointment need into an appointment type in the CHCS template, verify the criteria, and meet the parameters for that appointment type were crucial in the service center's ability to positively impact the service center's internal (clinic, physician, staff) and external (patient) customers.

Second, the appointment process needed to be a "one-stop shopping" system for external customers. In the current system, there are some instances when making an appointment requires a patient call several different phone numbers with an appointment request. Some specialty clinics at PNMCC would 'cherry pick' referrals to acquire satisfactory teaching cases. This meant a copy of the referral form would be sent to the clinic before the clinic would decide when, or if, to schedule the patient. Another circumstance involved the service center verifying an appointment with a clinic via

telephone. Upon verification the service center would have to call the patient back notifying the patient of the appointment being approved. In other MTF clinics, appointment templates would only open for appointments on certain days of the month and then would only have a limited time period available. The patients would have to call the service center several times trying to hit the appointment book release time to acquire an appointment.

The July 1997 MHS Report Card showed a significant gap in the telephone appointment process efficiency between TMAR's military facilities and the civilian providers in the region. This information was not reported in the December 1997 MHS Report Card. Overall, patients using predominantly MTF resources could access an appointment in one or two phone calls less than 40% of the time. In contrast, patients using predominantly civilian resources could access an appointment in one or two phone calls approximately 75% of the time. The range was such that the highest rated MTF was almost 20% less than the lowest rated civilian service. Despite these problems, TMAR expected the MCSC's proposal for a centralized appointment system during certain hours (when the local service center was busy or closed) to provide a much better appointment service.

With one exception, all TMAR's MTFs wanted the MCSC to provide primary care appointment responsibilities. The MTFs were willing to cooperate to make the appointment process happen. However, some MTF clinics were extremely hesitant to "lose control" of their appointment system. Some clinics maintained control of their appointments by not switching to the standard appointment types or by providing only a partial list of appointments available for TRICARE Service Center (TSC) booking. The drawback to this decision is the possible negative financial impact on the MTF. The TSC will look to book patients to the MTF first, but if there are no appointments available the patient will be booked to the civilian network. Clinic appointment template management is crucial to proper utilization of the MTF and improved access for beneficiaries. The MTF commander's priority should

be to maximize the level of effort and cooperation required to manage the standard appointment types and to utilize the MCSC's appointment system.

After reviewing the MCSC's proposal for a centralized appointment system, it became apparent to TMAR that one way to improve the regional appointment system was to insist on a seamless (to the patient) combination (centralized and decentralized) appointment system. To accomplish this, the MCSC and the individual clinics would have to cooperate and coordinate appointment responsibilities transparent to the patient. The switch from the local service centers to the regional service center would also have to be transparent to the patient. In other words, the patient would receive the same service regardless of which site was handling his or her phone call.

Patient Satisfaction with Access

As stated earlier, access to care is a key quality characteristic for consumers of health care services. But access can mean many things to many different people. Anctil and Winters (1996) found four areas that were closely correlated to overall satisfaction with access. These four areas were 1) ease of arranging appointments with your regular doctor, 2) ability to see a specialist when needed, 3) length of time between making appointment and day of appointment, and 4) ability to receive medical information or advice by phone. Areas one and four were considered telephone issues because of the MCSC's service center plan. Areas two and three were considered access standard issues since Health Affairs had already set the maximum time periods for obtaining those appointments.

Health Affairs access standards delineate access to acute care appointments within 24 hours. Smith and Yawn (1994) researched factors associated with patient's keeping appointments. They found same day appointments were most likely to be kept (86% of appointments were kept). Although Smith and Yawn did not address patient satisfaction in their study, their patient's behavior in keeping same day appointments indicated the value associated with same day appointments from the patient's

viewpoint. TMAR believes the Health Affairs access standards, if adhered to, will help improve MTF patient's access satisfaction.

The telephone issues were considered to be areas that TMAR could use to directly impact patient satisfaction. TMAR is pursuing the use of one phone number for all TMAR patients to dial when in need of an appointment or medical advice. The MCSC health care information line is currently a separate phone number with the ability to transfer to the appointment line when needed. By using data required in the MCSC, TMAR has the ability to monitor many aspects of the telephone appointment system. However, Anctil and Winters (1996) caution that telephone service and appointment availability are so interdependent that one could not be improved without addressing the other. TMAR, MCSC, and the MTF Commanders should continuously monitor the telephone service and the appointment availability to improve patient satisfaction with access.

Simplifying Appointment Types

The overwhelming problem of consolidating appointment types was how to reduce the types to a reasonable number and maintain operations. William Beaumont Army Medical Center (WBAMC), El Paso, Texas was contacted because they had recently initiated a plan to reduce their appointment types and they were already using consolidated appointment types. Dr. Lounsbery and Mr. Napier of WBAMC's Coordinated Care Division provided a copy of their policy for allocating patient appointments. WBAMC incorporated the use of 12 appointment types, down from over 300 types. They were also very beneficial in providing historical details and anecdotal information concerning their efforts to consolidate appointment types.

Several other health care resources were polled to determine how they performed the appointment function. The Veteran's Affairs Medical Center in Richmond, VA used less than ten appointment types, the Health Insurance Plan of New Jersey (a Medicaid Health Maintenance

Organization) used three, and the number of appointment types identified in Current Procedural Terminology (CPT'97) was 20.

Balancing GME with Access Standards

In this section the challenge of balancing GME with the TRICARE access standards will be discussed. As previously stated, PNMC is the only specialty academic health care center in the TMAR. TH has one specialty academic health center - Wright-Patterson Air Force Medical Center. In the specialty academic MTFs, balancing GME and access standards is an additional key to the four keys Solit and Nash (1996) identified for civilian academic health centers.

An apparent choke point in the system was that some specialty clinics required a referral request be screened prior to appointing. Criteria varied. However, one consistent criterion in the GME clinics was the case's impact to the teaching mission of the clinic. TRICARE's appointment criteria do not address case mix or teaching relevance of cases. The main emphasis of TRICARE is a patient's enrollment status and meeting the access standards.

GME standards for referrals and the TRICARE access standards are not diametrically opposed. However, there are different purposes driving each system. The purpose of the GME referral is to capture that quality teaching case. The patient usually presents with complications and conditions that serve to teach residents and/or interns how to identify and manage such cases. In other words, GME referrals are used to teach future providers. In the past good GME referrals have focused on complicated issues involving a variety of different health care needs.

TRICARE access standards do not differentiate between good teaching cases and bad teaching cases. The purpose of the access standards is to get the patient seen within a designated timeframe. The patient presents with a referral requiring prompt attention. Timeliness is the motivating factor behind the access standards. Conditions requiring simple treatment receive as much merit as the

complicated conditions. If the MTF GME clinic does not have an appointment available during the specified timeframe on the referral, the patient will be referred to the MCSC network regardless of how valuable the referral is as a teaching case.

Two issues must be considered when balancing MTF GME and access standards. The issues are preparing the health care professional to practice in an environment where the emphasis is on primary care and prevention under managed care and meeting the financial needs of the academic MTF. The health care environment has changed and is changing. Managed care is evolving, maturing, and capturing larger portions of market share in some regions of the nation. TRICARE is managed care for the military. TRICARE is here, and like managed care, TRICARE will evolve and mature. Military health care providers (current and future) need to learn to thrive in the TRICARE environment and the education should begin in the academic MTFs.

Second, the financial incentives have changed. Revised financing and enrollment based capitation provide financial incentives relative to managing the MTF's enrollment. Funding cuts and downsizing in DOD will require MTFs to pay close attention to the bottom-line. Alternative funding sources for academic MTFs may not be available. The ability of the MCSC to appoint Prime enrollees to the network for care not available at the MTF can significantly impact the queue for specialty care. The impact of a significantly shorter queue for specialty care on GME case mix is uncertain at this time. However, the financial impact is certain since the MTF will be fiscally at risk for care provided to the MTF's enrollees outside the MTF.

In both issues academic MTFs seem doomed to failure if things continue status quo. According to Solit and Nash (1996) the greatest impediment to change may be the academic health center's organizational and cultural structure. "The traditional culture, based in physician autonomy, presents the strongest barrier to collaboration," Solit and Nash (1996). They continue by indicating this culture

fosters biases against primary care, population-focused medicine, outcome-based decision-making, and sound business practices.

There are other complicating factors impeding change, such as a market in transition (moving target) and an inadequate information structure (several stand-alone systems that do not communicate and are not compatible). However, the most difficult challenge will be changing the culture. To make the necessary changes in the culture, the academic MTF must have more effective leadership than traditional corporate management. This leadership must address three arenas of cultural change. First, the academic MTFs will need to create a clear mission and vision that is relevant to today's health care environment and is embodied by every member of the organization. Second, the academic MTF must foster cooperation, communication, and collaboration between specialist and primary care providers, and between the business process and healing process of the organization. Third, there must be a significant change in the requirements for physician education to incorporate the changes in the health care environment. Without good leadership academic MTFs will not make the transitions needed to compete in the changing health care environment.

Statement of the Problem

The three challenges facing TMAR were identified as keys to successfully meeting the access standards. The three keys are separate and distinct challenges which each have many variables. Yet, many of the variables are related or dependent and change in one key area impacts another. Discovering those variables and their relationship is beyond the scope of this research. However, one key, the standardized appointment process, would have the greatest impact on access in TMAR. Before the standardized appointment system could be implemented region-wide, several test sites were used to verify its practicality and effectiveness. The data gathered in this study is from one of those

test sites. Besides the practical issues of implementing standard appointment types, there were two general issues identified as concerns: how well the standard appointment type could mirror actual appointment needs and how well the standardized appointment types could meet internal and external customer needs. This study was designed to address four aspects of these general issues.

The four aspects of the standardized appointment types addressed by this study include: (a) A comparison of the actual appointment length to the booked appointment length, (b) A comparison of the booked appointment length for each tested appointment type, (c) A comparison of patient satisfaction between the appointment processes, and (d) An analysis of clinic satisfaction with the standardized appointment process.

To evaluate these four aspects, the following four hypotheses and the alternative hypotheses are proposed:

1. H_0 = There is no difference in the booked appointment length and the actual length of the appointment.
 H_1 = There is a difference in the booked appointment lengths and the actual length of the appointment.
2. H_0 = The booked appointment length will be longer than the actual appointment length for all appointment types tested.
 H_1 = The booked appointment length will be as long as or shorter than the actual appointment length for all appointment types tested.
3. H_0 = There is no difference between patient satisfaction with the appointment process using the old and new appointment types process.
 H_1 = There is a difference between patient satisfaction with the appointment process using the old and new appointment types process.

4. H_0 = The clinic's satisfaction with the standardized appointment system will be as good or better than the old.

H_1 = The clinic's satisfaction with the standardized appointment system will not be as good or better than the old.

Appointment times were used as a measure of appropriateness for two reasons. First, it was readily collectable and quantifiable; and, secondly, it was determined to be a good indicator of the standardized appointment types ability to meet various appointment needs. The standard appointment types could be various lengths depending on clinic template. The actual appointment lengths will be compared against that clinic's specified-booked length.

Method and Procedures

This analysis was completed utilizing the standardized appointment types test sites at Langley Air Force Base, Virginia using the Red and Blue Clinics. Participants were patients who had appointments in these clinics before converting to the standardized appointment types and patients who had appointments in the same clinics after conversion to the standardized types. Observation and query were used to collect this data. The data collection tool was a researcher stationed at an observation point in the clinic. The data collected concurrently is appendix B.

Patient satisfaction, by nature, is subjective. It was quantified for this study by using the following statement and scale. "Regarding the appointment process, on a scale of one to five, one being very dissatisfied and five being very satisfied, rate your experience getting today's appointment." Emphasis was placed on the appointment process used to get "today's appointment" and when asked about any part of the question the researcher would restate the original question so as to avoid influencing the patient in anyway. Construct validity of the patient satisfaction question was

determined because satisfaction scales of this type are familiar to the patients. None of the patients questioned had any difficulty understanding or answering the question. Limiting the satisfaction question to the current appointment process was meant to avoid historical bias, although bias was still possible.

Other data were collected using a CHCS printout and researcher observation. The observed data includes time in and out for the actual appointment rounded to the nearest minute. This data were collected by observing the actual times a patient went into and came out of the provider's office or when the provider went into or came out of the patient exam room. The reliability of the observational data is considered very high. One researcher collected all the data using one timepiece and, therefore, there was little variance in observational data gathering. The observed data were deemed valid in content due to its objective nature.

To obtain the clinical satisfaction data, the PNMC Point of Contact (POC) meeting via the PNMC Managed Care Department was used to distribute two satisfaction questions. The POC attendees have direct supervision of clinics and the TSC. The clinic satisfaction questions were posed after the implementation of the standardized appointment types. Two subjective statements are rated on a scale of one to five, one being totally disagreed and to five being totally agreed. The first statement is as follows: "The standard appointment types meet our appointment scheduling needs." The second statement was: "The appointment process works better now than before the appointment types were changed."

SPSS for Windows version 7.5.1 and Microsoft Excel were used to analyze the data. The data were segregated into two separate groups. Group one was data gathered prior to the implementation of the standardized appointment types and group two was data gathered after the implementation. The independent samples t Test or z Test when appropriate were used to analyze data. The data were

gathered in the same clinics, but different patients were present before and after implementation of the standard appointment types. The means were compared between the two groups for patient satisfaction, booked appointment length, and actual appointment length. Means comparison was done for each appointment type for booked appointment length versus actual appointment lengths. Descriptive statistics were used for all data relevant to this study.

Findings and Results

Booked Compared to Actual Appointment Lengths

Booked appointment length in the first group (group a) ranged from 10 to 60 minutes with a mean of 19.96 and a standard deviation of 6.38 and for the second group (group b) ranged from 5 to 60 minutes with a mean of 21.48 and a standard deviation of 6.81. The actual appointment length ranged from 2 to 56 minutes with a mean of 13.46 and a standard deviation of 7.72 for group a, and for group b ranged from 2 to 55 minutes with a mean of 16.64 and a standard deviation of 9.62.

Overall there is a difference in the booked appointment length and the actual length of the appointment. The z-test rejection region was + or - 1.96 at a .05 level of significance and the Test Ratio was -9.42. Therefore, reject the first hypothesis and accept the null. Eighty-four percent of all appointments in this study were completed within the booked appointment length. The mean difference between booked appointment length and actual length was 5.67, with a standard deviation of 8.02 and a range of -30 to 32. Since each clinic has the ability to determine the length of the standard appointment types, the clinic's booked length may vary in time required to see a certain appointment type. The clinics in this study include administrative time (time to complete the record, enter the prescription, complete other paperwork as necessary, etc.) for the provider during the appointment. During the administrative time the patient may or may not be present with the provider. This means

the provider may or may not have finished the patient's paperwork when the patient was dismissed.

Further study is recommended to determine the frequency, duration, and productivity of administrative time.

The utility of these results can help clinics decide what level of risk avoidance is acceptable for them. Risk avoidance is the level of avoidance used to prevent an appointment from taking longer than the booked appointment length. Although the findings of this study should only be used to draw conclusions for the test clinics during this testing timeframe, other clinics could duplicate these results in their clinics to discuss a risk avoidance comfort level. Hypothetically, if a clinic has decided it wants 99% of its appointment lengths to be under the booked length, depending on its data, it could meet that risk avoidance by scheduling 20-minute appointments. Another clinic may decide 80% risk avoidance is preferred and 10-minute appointments meet its criteria. The use of hard data to build a clinic template can provide greater efficiency in scheduling. The results could lead to greater access when risk avoidance is adjusted to a reasonable level to meet clinic and provider experience.

Booked Compared to Actual Length by Appointment Type

The booked appointment length was generally longer (mean of 20.71) than the actual appointment length (mean of 15.04) for all appointment types tested. Seven appointment types were recorded during this test, !AC, !EB, !ED, !HM, !PA, !PR, and !WB, see appendix A for definitions. For the second hypothesis, the actual appointment length was compared to the booked appointment length for each appointment type. The z-test rejection region was + 1.645 at a .05 level of significance and the Test Ratio ranged from a high of 10.69 for !AC appointment type to a -0.21 for !HM appointment type. Of the seven appointment types tested, six had statistically significant short actual length compared to booked length. However, as noted above, the !HM appointment type Test Ratio

was not outside the rejection region. In fact, the booked average was 24.55 and the actual length mean was 25.36. Therefore, reject the second hypothesis.

Twenty-five percent of the booked appointment lengths were 15 minutes or less, but 63% of the actual appointment lengths were 15 minutes or less. The mean difference between the booked appointment length and the actual appointment length was 5.67 with a standard deviation of 8.02 and a range of -30 to 32 minutes.

Again, this relates to the question of risk avoidance. The utility of this result could help clinics determine how to better standardize appointment types for time management. One way to do this may be to standardize appointment types by time, i.e., 6, 10, 12, 15, or 20-minute appointments. If data showed 95% of a certain appointment type is seen within 12 minutes, use a template to define the appointment as 12 minutes. Also, depending on the strengths and experience of providers, some providers are consistently outside the norm for appointment lengths. The current procedure for template building relies on experience and intuition of the clinic manager and the provider to determine appointment lengths. Given the variances found in this study between booked length and actual length, using data to build templates would be more effective.

Patient Satisfaction Compared

Patient satisfaction with the appointment process using the old and new appointment types process did not significantly change. In the first group (group a), 247 patients were surveyed. The mean for patient satisfaction was 4.39 with a standard deviation of 0.99. In the second group (group b) 244 patients were surveyed with a patient satisfaction mean of 4.32 and a standard deviation of 1.05. The z-test rejection region was + or - 1.96 at a .05 level of significance and the Test Ratio was 0.77. Therefore, the third hypothesis was accepted. In this study, 83% of all patients were delighted with the appointment process, being either satisfied or very satisfied. This high satisfaction should not be

considered indicative of the overall population. Bias was expected because this study sampled only those patients who had received appointments. The MHS Report Card is a better measure of population satisfaction with access.

The change to the appointment types was seamless to the patient and, therefore, had little impact on the patient's satisfaction. Also, these findings are limited to patients that obtained appointments so the satisfaction rates were already considered high. When the new appointment process is implemented in May 1998, the patient should make only one call to obtain an appointment. An interesting aspect of this study was the higher mean satisfaction (4.43) among patients who only used the TSC to make an appointment. Compared to the mean satisfaction (4.23) for those who needed the clinic or some other source (usually more than one phone call) to make the appointment, there was a statistically significant difference. The rejection region was - 1.645 at a .05 significance level and the Test Ratio was - 2.03. This was a significant finding although not originally considered when this research project was conceived.

Another factor that might impact the population satisfaction mean will be the access standards. Under the TRICARE access standards it is expected that overall beneficiary satisfaction will rise throughout the region. This could be the subject of future research since it cannot be addressed during the timeframe of this project. The utility of these results could be used to counter claims that a standardized appointment process harms patient satisfaction.

Clinic Satisfaction

The clinic's satisfaction with the standardized appointment system was not as good as or better than the old system. Seventy-four personnel from various clinics at Langley Air Force Base and PNMC responded to survey. The mean response for the first statement was 2.90 and for the second was 2.18 with a standard deviation of 1.27 and .99 respectively. Therefore, the third hypothesis was

rejected. Although the clinics felt the standard appointment types met their scheduling needs, they did not believe the overall process worked better. It was expected the TSC would be able to provide better service using the standardized appointment types. However, there were other factors that impacted the TSC's ability to provide appointment services. During the survey, the TSC's role was transitioning to the MCSC and there was a loss of more than a third of the TSC's personnel with a resulting loss of service. Also, the timeframe of the survey corresponded with the MCSC startup. Further study of the satisfaction of the clinics and TSC with the appointment process is recommended.

It is expected better service will be realized throughout the region once the standardized appointment types are implemented by the MCSC TSCs. To facilitate that expectation good communications should be established between the clinic managers and the TSC management. Information and challenges can be shared with solutions resolved at the most appropriate level. The standardized appointment types will assist in a successful implementation of a TMAR-wide appointment system to meet the needs of beneficiaries and internal customers, but coordination and communication is still required to satisfy all customers.

Literature Review

There was little information found on the standardized appointment systems subject during the literature review. None of the references used in this project addressed the process required to standardize a group's or organization's appointment types or compared booked appointment lengths to actual appointment lengths. However, two articles, Harrison (1988) and Lowenthal and Bingham (1987) did study a flexible consultation appointment system in a primary care environment based solely on time. Both studies asked patients to determine the length of time an appointment would take (5, 10, or 15 minutes) and then compared the patient's estimated time to the actual appointment length. Both studies found patients were good predictors of the length of their appointments with no

significant difference between the actual and estimated times. These studies were not considered addressing a standardized appointment system since both studies dealt only with consultation appointments.

Recommendations

Simplified Appointment Types

Consolidation of the appointment types used throughout the region was required to obtain satisfactory appointment services from the MCSC for the MTFs and MTF beneficiaries. The appointment types will be uniform throughout TMAR and TH since the central regional TRICARE Service Center will appoint for both regions. Use of these appointment types in all CHCS clinic templates is required for any appointment that the MCSC will arrange.

TMAR communicated the need for the consolidated appointment types to the MTF Commanders on several occasions. After discussion and review of WBAMC's appointment types, TMAR proposed the region-wide approved appointment types at a MTF Commanders' meeting during the MCSC transition specifications meeting. The standard appointment types are defined in Appendix A.

To validate the ability of TMAR's appointment system to meet the internal and external customer's needs, a test site was proposed. Two primary care clinics at Langley Air Force Base and two specialty clinics in PNMC were selected. TMAR initiated the above appointment criteria on December 01, 1997 after reviewing the results of the test sites. Monitoring internal and external customer satisfaction and trouble-shooting obstacles during the test period is vital to the success of the MCSC's initial appointment system throughout both regions.

Not all appointment types had to be used at every MTF. Some MTFs only use a few of the appointment types, but the goal of providing a standardized appointment list is to be consistent

throughout the region with the appointment types used to book appointments by the TSC. When the MTF's local TSC closes, beneficiary calls will automatically roll to a seven-day a week, 24 hours a day, service center located in Hampton, VA. The standardization of appointment types will help assure appointments are accurately made for all TMAR's MTFs and are conveniently made for our beneficiaries.

Some appointments will be made by the MTF clinic and are not appropriate for TSC scheduling. However, considering the MCSC provides appointing for the regions by the contractor, the objective is to minimize MTF appointing. Since appointing services were purchased with the contract any duplication of appointment services is a duplication of costs and should be avoided.

Cultural Change

The health care environment has significantly changed for all MTFs, but especially for the academic MTF. In response to that change, the MTF Commander must provide the leadership necessary to change. One of PNMC's challenges was intensified by the identified inability of 50 percent of PNMC's clinics to meet the access standards prior to any appointment system changes according to Loomis (1997). When tasked with converting to the new appointment types, 89% of the clinics had converted to the new types by January 1998. However, only 9% of the clinics had met the required five-week availability of new appointments for active duty or Prime enrollees by January 1998. Other MTFs have just opted to wait until the self-imposed deadline date of May 1, 1998 to introduce standardized appointments. A cultural resistance to change was the apparent reason for the difference in performance.

As stated earlier, the MTF commander's most difficult challenge will be changing the culture. To make the necessary changes in the culture, the MTF must have more effective leadership than traditional corporate management since the MTF's culture of autonomy will be an additional hurdle to

overcome. The MTF leadership must address three arenas of cultural change. The first two pertain to all MTFs, the third only to academic MTFs. First, create a clear mission and vision that is relevant to today's health care environment and is embodied by every member of the organization. Second, foster cooperation, communication, and collaboration between specialist and primary care providers and between the business process and healing process of the organization. Third, there must be a significant change in the requirements for physician education to incorporate the changes in the health care environment.

Appointment Flexibility

To balance requirements with managed care access standards, an appointment system must be developed that is flexible to meet both GME and non-GME needs. However, MTFs must realize managed care changes the health care environment. New financial (Revised Financing and Enrollment Based Capitation), political (evolving managed care legislation), and cultural (DoD initiatives and leadership) incentives will have a serious impact on the MTF that fails to balance the appointment system requirements. MTFs have a responsibility to train providers to be able to perform and compete in this new environment.

Further studies are needed to show the best method of balancing GME requirements with managed care access. One method worth mentioning, not incorporated at the time of this study, was the use of the Electronic Referral System to allow specialists to review referrals within 24 hours of referral generation. Disposition by the specialist is limited to appoint, consult, or defer. The default would be set at blank (not filled in) and would automatically change to appoint after 24 hours if not reviewed. If the patient called the TSC before the specialist could disposition the appointment, the referral would be considered appoint. Critical to the referral process will be the communication and coordination effort between the specialist and the primary care managers.

Conclusions: Making Access Work

Meng, Jatulis, McDonald, Legorreta (1997) reported that a strong predictor of Medicare HMO patient satisfaction with access ($R^2 = 0.63$) was satisfaction with the arrangements for making the appointment. Although the focus of their survey was Medicare beneficiaries, they indicate that their findings could be good predictors for other HMO beneficiaries. They found that any improvement in the arrangement for appointments could increase overall beneficiary satisfaction with access. This was consistent with the findings in this study indicating satisfaction using only the TSC was statistically better compared to using other methods of access. The implementation of the standardized appointment types was to improve patient and internal customer satisfaction with the appointment process.

Although the results of this study indicate generally high patient satisfaction to access (mean of 4.35), the caveat is that only patients that had an appointment participated in the survey. The difference between patient satisfaction mean (4.39) prior to the implementation of the standardized appointment types and the mean following the implementation (4.32) did not yield a statistical difference. Further study is needed to determine if this finding will remain consistent when the MCSC comes online.

In conclusion, improvements in patient access can be met by following the HA's access guidelines. Providing patient access to an appointment with a one-phone call system should enhance patient satisfaction with access. Using the standard appointment types will meet the appointment length requirements and will not have an adverse impact on patient satisfaction. Management of appointment templates and communication between TSC and MTF are vital to an improved appointment system and to internal customer satisfaction. MTF leadership, especially in academic MTFs, must provide direction to overcome organizational cultural resistance to change. The standard appointment system must have the flexibility to meet readiness, educational, and access requirements.

References

Anctil, R. & Winters, M. (1996). Linking Customer Judgements with Process Measures to Improve Access to Ambulatory Care. The Joint Commission Journal on Quality Improvement, 22 (5), 345-357.

Anthem Alliance for Health Inc. (1997). Best and Final Offer, MDA906-95-R-005.

Garner, S., Tillman, J., Rowley, W., Tomkins, R., Garst, P., Arthur, D., Lischak, M., Bristow, D., & Thomas, H. (1997). Memorandum for TRICARE Mid-Atlantic Commanders dtd November 4, 1997, 6000 series, serial number 03/02605.

Greene, J. (1997) Scheduling. Winding down the wait. Hospitals & Health Networks, 71 (3), 74.

Harrison, A. (1988) Appointment systems: evaluation of a flexible system offering patients limited choice. British Medical Journal 5 March 1988, (296), 685-686.

Health Insurance Plan of New Jersey [On-line]. Available:
<http://www.hipnj.com/member/md16.html>.

Joseph, S. C. (1995) Maintaining Cost-effective Military Health Care. [On-line]. Available: <http://www.defenselink.mil/pubs/di95/di1088.html>.

Loomis, K. (Ed.) (1997), The Beneficiary Information Sheet, 1(3), 2-4.

Lwenthall, L. & Bingham, E. (1987). Length of consultation: how well do patient's choose? Journal of the Royal College of General Practitioners (November 1987) 37, 498-499.

Meng, Y., Jatulis, D., McDonald, J., & Legorreta, A. (1997). Satisfaction With Access to and Quality of Health Care Among Medicare Enrollees in a Health Maintenance Organization. West Journal of Medicine (April 1997) 166, 242-247.

Mezey, A. P. & Lawrence, R. S. (1996). Ambulatory Care. In A. R. Kovner (Ed.), Jona's Health Care Delivery in the United States (pp. 122-161). New York, NY: Springer Publishing Company.

Military Health Services System Performance Report Card Handbook (July 1997).

Prepared by Health Services Analysis and Measurement.

Military Health System Performance Report Card Handbook (December 1997). Prepared by Health Services Analysis and Measurement.

Morrow, A., Rosenthal, J., Lakkis, H., Bowers, J., Butterfoss, F., Crews, C., & Sirotkin, B. (1998). A Population-based Study of Access to Immunization Among Urban Virginia Children Served By Public, Private, and Military Health Care Systems. Pediatrics, 101 (2) available online at <http://www.pediatrics.org/cgi/content/full/101/2/e5>.

Palmer, G. S., Wilson, J., & Hubble, C. P. (1987). Management Support System: Automation of Patient Appointments in the U. S. Army. Military Medicine, 152 (7) 355-357.

Scholz, R. P. (1990). Computerized Scheduling: Pros and Cons. Journal of Clinical Orthodontics, 24 (1) 32-35.

Smith, C. M. & Yawn, B. P. (1994). Factors Associated with Appointment Keeping in a Family Practice Residency Clinic. The Journal of Family Practice, 38, 25-29.

Solit, R. L. & Nash, D. B. (1996). Academic Health Centers and Managed Care. In P. R. Kongstvedt (Ed.), The Managed Health Care Handbook (3rd ed. pp. 215-233). Gaithersburg, MD. Aspen Publishers, Inc..

Unknown (1988) The "one-call" outpatient appointment system. Navy Medicine 79 (5), 22-23.

Appendix A

The approved appointment types are briefly discussed below.

<u>Types</u>	<u>Definition</u>
!NW	Routine appointments requiring longer appointment length for evaluating a new patient.
!EB	Routine appointment requiring a brief appointment length for evaluating an established (as used in CPT coding) or follow-up patient.
!ED	Routine appointment requiring a longer appointment length for evaluating established (as used in CPT coding) or follow-up patients.
!AC	Acute appointment requiring the patient be seen within 24 hours. The patient could be new or established and anything more urgent should have provider-to-provider intervention.
!HM	Health Maintenance Exams or routine screenings appointments requiring separate appointment criteria.
!PR	Procedures scheduled by the Service Centers.
!GR	Group session or training session requires multiple appointments for the same time period.
!PA	Pap Smear
!WB	Well Baby

The appointment types may be modified to differentiate the enrollment status. To provide for management of the TRICARE access standards, the clinics are able to designate in the CHCS appointment template the enrollment status requirements for each appointment. The enrollment status requirement is made readily apparent to the MCSC when booking the

appointments to assist in meeting the access standards by adding the first modifier. The following three categories act as modifiers to the approved appointment types.

<u>Category</u>	<u>Definition</u>
A	indicates the appointment type is only available for active duty members , i.e., !NWA = new appointment for active duty only.
B	indicates the appointment type is for ANY TRICARE Prime enrollee , active duty or non-active duty, i.e., !NWB = new appointment for retiree enrolled in prime.
C	indicates the appointment type is for any category of patient , prime enrollee or nonprime enrollee, i.e., !NWC = new appointment for an non-enrolled active duty family member.

One other classification type was identified to act as a quick reference for patient demographic appointment clarification. The fifth digit in the appointment type will be as follows:

<u>Category</u>	<u>Definition</u>
1	Ages 0-17 only, i.e., !NWB1 = new appointment for prime enrollee under 18 years old.
2	Ages 18 and older, i.e., !NWB2 = new appointment for prime enrollee 18 or older.
3	All Ages, i.e., !EBB3 = established or follow-up enrollee any age.
4	Females only, i.e., !EBB4 = established or follow-up female enrollee.

If no code is designated in the appointment template, the default is 3.

Appendix B

Data collection consisted of the following data elements:

Patient identification = identifier based on provider seen and order of patient seen by that provider.

Booked appointment time in = the time the appointment was scheduled to begin.

Booked appointment time out = the time the appointment was scheduled to end.

Booked appointment length = the scheduled length of the appointment.

Actual time in = the observed time the appointment began.

Actual time out = the observed time the appointment ended.

Actual appointment length = the actual length of the appointment.

Appointment source = what source the patient used to make the appointment.

Patient satisfaction with the appointment process = patient's response on a 1 to 5 scale to the following statement. Regarding the appointment process, rate your experience getting today's appointment.

Standardized appointment type (converted to standard appointment type if old type is used),
Clinic,
Date.