A Case Study on TRICARE Online Web-enabled Appointing: Improving Utilization Rates at Navy Medical Treatment Facilities

In an effort to leverage emerging technology and address the growing beneficiary demand for online healthcare transactions, the Department of Defense (DoD) introduced TRICARE Online (TOL). The anticipated benefits included greater access to care, enhanced patient satisfaction, increased control of scheduling, and reduced operating costs (TRICARE Management Activity, 2006). In reality, across the board realization of benefits never materialized. Each user, regardless of service affiliation or Medical Treatment Facility (MTF) assignment, endures similar frustrations when navigating TOL features; therefore, problems associated with system-user interface fail to answer why variations in enrollment and utilization rates exist among the services. This study follows an explanatory structure to identify key drivers of poor TOL utilization among Navy MTF beneficiaries when compared to those of Army and Air Force and recommends two courses of action based on observed best practices. These recommendations include the implementation of an enterprise-wide TOL Policy mandating the online booking of a set percentage of all Primary Care appointments and active support of TOL policy by senior Navy healthcare executives through applicable and effective promotional and training initiatives.
A Case Study on TRICARE Online Web-enabled Appointing: Improving Utilization Rates at Navy Medical Treatment Facilities

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Abstract

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Disclaimer

The opinions or assertions expressed in this paper are those of the author and are not to be construed as reflecting the official policy or position of Baylor University, U.S. Army Medical Command, National Naval Medical Center Bethesda, Department of the Army, Department of the Navy, Department of Defense, or the U.S. Government.

Ethical Considerations

No personal identifying information was used during this study. The author declares no conflict of interest or financial interest in any product or service mentioned in this paper.
Table of Contents

Background ................................................................. 1
Benefits of Web-enabled Appointing ................................. 1
    Internet and Civilian Healthcare Sector .................. 2
    Internet and the Military Healthcare System ............ 4
Benefits of TOL Appointing ........................................... 5
    Optimization of Access — Enhanced Scheduling Abilities . 6
    Optimization of Resources ................................. 7
Purpose of the Study .................................................... 10
Propositions ............................................................... 11
    Policy Guidelines ............................................. 11
    Sustained Executive-level Support ......................... 12
Methods ................................................................. 13
Limitations ............................................................... 13
Results ................................................................. 14
    Utilization Rates ............................................ 14
    Policy Enforced Utilization Goals ......................... 16
    Comparison of Utilization Rates ......................... 17
Impact of Marketing Efforts ......................................... 20
Impact of Training Efforts .......................................... 23
Discussion, Conclusion, and Recommendation ................... 27
References .............................................................. 355
List of Tables

Table 1. 2007 TOL Marketing Materials............................... 22
Table 2. Non Web-enabled and Web-enabled Appointments......... 27
List of Figures

Figure 1. Branch of Service Reports 2008 ......................... 18
Figure 2. Percentage of Overall Activities ....................... 19
Figure 3. Breakdown of Web-enabled Appointments at
NNMC Bethesda ....................................................... 26
Figure 4. Forces Contributing to Increased TOL Appointing at
Navy MTFs ............................................................. 32
List of Appendices

Appendix A: Air Force Memorandum 10% TOL Policy.................. 39
Appendix B: Department of the Army FY08-10....................... 40
Appendix C: JTF CAPMED FY2010-2012 Business Plan............... 41
A Case Study on TRICARE Online

Background

The rising rate of online transactions exposes a pressing need for new Web-enabled approaches to satisfy the increasingly sophisticated demands of savvy healthcare consumers. Data compiled by the Internet World Stats Website indicated that 72.5% of the United States' population used the Internet in 2008. This rate represents a 3.2% increase from the previous year, and is consistent with the steady increase of Internet users and the growth of Information Technology (IT) since the new millennium (Internet World Stats, n.d.).

Online medical appointing remains an emerging technology. As a result, studies in the use of Web-enabled appointing systems are limited. Although various forms of online booking exist in different markets (mainly for commercial airline ticket purchases), it is relatively new in the healthcare industry. However, as the market for this technology expands, literature regarding efficiency analyses, application models, and other on management practices should increase.

Benefits of Web-enabled Appointing

Although few studies focusing on Web-enabled appointing exist, the allure of online appointment is not difficult to understand. Online scheduling allows users the autonomy to book appointments at their convenience, rather than based on the
operating hours of the organization. This advantage alleviates the challenges for providers to offer round-the-clock call centers. In addition, it enhances comprehensive patient care by allowing staff from one clinic to book appointments at other clinics on behalf of their patients ("Internet scheduling," 2004). According to proponents of online appointing, myriad benefits such as reduction in cost, shorter patient call times, decreased no-show rates, increased asset utilization, and greater patient satisfaction serve as compelling drivers for acquiring the technology ("Online scheduling applications," 2004; "Internet scheduling," 2004; Lowes, 2006; Friedman, 2004).

Internet and Civilian Healthcare Sector

The use of Websites to promote healthcare systems has become a competitive advantage given the rising rate of Internet users, ease of implementation, and potential marketing effects. In fact, a 2002-2003 Hospital Internet Marketing Report revealed that 82% of hospitals promote marketing initiatives through the Internet, and 99% of the hospital marketing professionals created Websites for their organizations (Romano, 2003). The explosion of Internet use among healthcare organizations will likely influence the growth of online activities for personal medical needs (TRICARE Management Activity, 2006). In March of 2003, Cigna Corporation published a national survey indicating 75% of Americans want to access health-related information over
the Internet and a Healthcare Information and Management Systems Society survey revealed that 78% of their respondents accessed consumer health information online, as cited in Romano, 2003. Although a conflicting 2003 Journal of the American Medical Association study reported a rate closer to 40%, the growing prevalence of healthcare related searches online is indisputable (Baker, Wagner, Singer, & Bundorf, 2003).

Another study revealed a growing number of patients who frequently access the Internet desire interactive Web features to supplement their medical care (Grover, Wu, Blandord, Holcomb & Tidler, 2002). In addition, this research showed that areas demonstrating the most significant interest for Internet-savvy patients included front desk services and tasks conducted over the telephone, such as medical refills and appointment scheduling.

In 2007, a group of family practice providers designed a simple survey to explore the use of online communication among their specific family practice patient population, and they discovered that 88% of their patients reported having Internet access. Of that total, 78% positively responded to increased personal use of electronic interaction for health related services and information (Pelletier, Sutton, & Walker, 2007).
Internet and the Military Healthcare System

In an effort to leverage emerging technology and address the growing beneficiary demand for online transactions, the Department of Defense (DoD) introduced a new healthcare electronic Website portal. Known as TRICARE Online (TOL), this new Web-enabled information gateway, designed to enhance overall patient care, began testing at several tri-service Military Treatment Facilities (MTFs). Installations chosen as beta test sites included Andrews Air Force Base, Maryland; Rader Clinic, Fort Myer, Virginia; Camp LeJeune Marine Base, North Carolina; and Marine Corps Air Station Cherry Point, North Carolina. Implemented in June 2001, TOL allows providers access to a standardized database of patient information that increases continuity of care whether in theater, aboard vessels, or at isolated duty stations (Williams, 2002). Compared with the private healthcare sector, the application of TOL among 9.2 million Military Health System (MHS) beneficiaries is referred to as a large-scale implementation program because very few systems exist to match its size and scope. Consequently, civilian healthcare IT professionals observe closely the development and progress of TOL within the MHS for lessons learned (TRICARE Management Activity, 2006).
Benefits of TOL Appointing

With a diverse patient population comprised of active duty personnel on various working schedules and a substantial dependent and retiree population with distinct needs, the ability to offer assorted appointing methods is a valuable commodity. One clear advantage is greater flexibility for patients to access care. Brian Kelly, a Navy Captain and physician who served as the E-Business director of the TRICARE Management Activity (TMA) during the introduction of TOL, suggested that the online booking program increases patient autonomy and is more equipped to suit the patient’s schedule by offering significantly greater levels of convenience, particularly for parents juggling multiple responsibilities (Williams, 2002). Due to frequent deployments, unusual working hours, and change of duty station orders, military beneficiaries have a unique requirement for exceptionally mobile and flexible access to military health benefits. TRICARE Online provides a Web-enabled information portal and automated Web appointing system to meet the specific needs of military service personnel, their dependents, and other MHS beneficiaries. As online transactions proliferate, leveraging the opportunity to provide another avenue to increase patient access can enhance a MTFs competitive advantage in the local healthcare market. TRICARE Online has demonstrated increased customer satisfaction levels
in several MTFs where aggressive promotions increased TOL usage (TRICARE Management Activity, 2006).

**Optimization of Access — Enhanced Scheduling Abilities**

The literature supports improved scheduling abilities as a benefit of online appointing. For example, McLeod Health in Florence, South Carolina, converted from a decentralized paper scheduling system to a centralized online appointing system. As a result, potentially available appointments once neglected due to poor scheduling practices became visible, specifically because cancelled appointments immediately became available for the next online user. Such improvements helped clinics maintain a full schedule. It can also increase clinic productivity by 15 to 20% by eliminating the tendency of providers to underutilize available time when managing appointment schedule ("Internet scheduling," 2004). Gable, Pappas, Jacobs, Cutler, and Kuo (2006) found facilities faced a "legacy of resistance to a more centralized approach to scheduling" attributed to the inability to structure specific guidelines, thus accommodate multiple physicians' work schedules (p. 605). With TOL appointing, the responsibility for designing and customizing a clinic's schedule template falls to the clinic manager. As a result, individual clinics can create scheduling templates to meet their own specific needs, thus alleviating issues with physician-managed appointing schedules.
Another benefit to Web-based appointing is the potential for greater honesty in disclosing the nature of appointments booked. In fact, a highly cited cyber-psychology study found that Internet users often express greater self-disclosure, a phenomenon described as the “online disinhibition effect” (Suler, 2004). This phenomenon is supported by an unrelated article suggested that online booking enhanced patients’ truthfulness when self-appointing (Lowes, 2006). Given the apparent link between honesty and anonymity, TOL provides an additional and unintentional benefit as it may promote enhanced care and treatment through greater levels of truthfulness when disclosing health conditions during appointment scheduling. This higher degree of candor increases appointing effectiveness and efficiency because patients book appointment types better aligned with their true ailments. As a result, appointments are more likely to run on schedule, which has a secondary effect on optimization of access.

Optimization of Resources

The success of TOL can reduce operating costs associated with staffing telephone call centers. According to representatives from TMA, financial support for TOL does not originate from the Navy’s healthcare budget; however, the support for this program does influence the overall allocation of funds each service receives (Doan, 2008). As with other
combined expenditures, the average fixed cost decreases given a rise in production or consumption, resulting in greater economies of scale (Baye, 2006). Collectively, each service’s efforts towards greater utilization would lower the average cost per appointment, thereby increasing the return on investment for TOL. Ideally, each service should have an individual interest to increase utilization. Yet, substantial variations in utilization rates among the three services persist; overall participation may decline as high performing facilities fail to see returns commensurate with their efforts.

In 2008, the estimated annual cost for sustaining TOL was $7.73 million (Doan, 2008). Interested in ways to reduce program inefficiencies, top DoD officials scrutinized expenses associated with operating TOL. As a result, TOL Website managers actively sought areas in which to decrease costs without disrupting the overall system. A May 7, 2008 a Defense Health Services Systems representative presented a TOL briefing to the Intelligence Priorities Working Group that outlined these specific areas. Highlights included the TOL Portal and its ten subordinate. These modules subdivided into three provider and seven beneficiary modules, along with the appointing module. All modules operated through the TOL Portal that comprised 55% of the program’s expenses. To determine annual cost calculations, Website managers counted the number of "hits" (regarded as a
TOL Case Study

transaction) per module to determine a relative usage cost. The pro-rated Portal costs, determined by the relative number of module transactions (or hits), was added to the total direct module costs. The sum of Portal and direct module costs was then divided by the number of transactions per module resulting in a relative cost per appointment. Using this method, representatives determined a relative cost of $9.43 per TOL-generated appointment (Doan, 2008, Slide 6). However, since each hit did not necessarily result in an appointment, study results may have overstated actual usage. Consequently, the relative cost per actual appointment created via TOL may be much higher.

In contrast to TOL's low returns, civilian healthcare facilities experienced added business value through leveraging Internet technology. A pediatric clinic that introduced Web-enabled scheduling reported a 33% reduction in staffing levels, including the elimination of one full-time equivalent (FTE) office manager from 1.25 to 0.25 FTEs, and a decrease in the number of patient complaints about services provided by the receptionist since implementation (“Online scheduling applications,” 2004). A five-physician group practice in Plano, Texas reported between 15 and 20% of their patient population used online appointing software with positive results (Lowes, 2006). The article also described the experience of Internist Jeffry Friedman, co-founder of the Murray Hill Medical Group in
New York City, who reported 25 to 50% of daily appointments at his clinic were booked through an online scheduling program (Lowes, 2006).

Purpose of the Study

With the launch of TOL, the leaders of the MHS envisioned enhanced access to medical information and appointments for TRICARE Prime and Plus beneficiaries (TRICARE Management Activity, 2006). Authorized users retrieved their medical data through the secured TOL Website by creating password-protected accounts. In addition to obtaining medically related healthcare information, users were able to view and book available appointments at specific MTFs and/or with assigned Primary Care Managers (PCM) (Williams, 2002). Anticipated benefits of TOL included greater access to care; enhanced patient satisfaction; improved scheduling flexibility and control; and reduced operating costs (TRICARE Management Activity, 2006). In reality, the success of implementation varied among MTFs and services. This paper reports on business practices and TOL Web-enabled appointing experiences of various MTFs in order to understand factors that contributed to low usage rates among Navy MTFs.

Consistently low utilization rates have prompted top senior Navy Medicine Leadership to question why Navy MTF beneficiaries appeared to underutilize TOL for booking appointments and whether a successful TOL appointing system was possible.
Experiences to date led to the following research question: "Why are Navy MTFs consistently reporting TOL utilization rates markedly below other DoD healthcare MTFs"? This study explores business practices and TOL Web-enabled appointing experiences of various MTFs in an effort to understand factors that have contributed to low usage rates among Navy MTFs, the purpose of which is to develop specific recommendations to increase TOL Web-based appointing among beneficiaries of Navy MTFs.

Propositions

Policy Guidelines

The effective use of policies to guide implementation of innovative IT systems is critical to successful adoption within an organization. According to Holland and Skarke, integrating enterprise-wide implementation of new IT systems in the same manner as other internal initiatives is critical to successful acceptance. They discovered that new systems gradually incorporated into the day-to-day operations of a business led to a tremendous amount of unrealized benefits (Holland & Skarke, 2001). Harvard Business School Assistant Professor Andrew McAfee offered similar advice, stating the importance of treating new IT system implementation as a change in business practices, rather than a mere technology exchange, with clearly defined goals and objectives (Cowley, 2003). Employing a Navy-wide TOL appointing policy that mandates an explicit usage level will
result in efforts to increase TOL utilization thus enhancing patient access to care and ultimately increase return on investment.

**Sustained Executive-level Support**

In addition, convincing end users of the benefits of TOL E-appointing by senior leadership in Navy Medicine is necessary for complete organizational adoption. Holland and Skarke explains that top management must help end users to take control of a new system in order to realize its full business value (2001). Another study, regarding the change to year-round education states, “Successful change results when these two conflicting realities—organizational initiation of change and the need for faculty implementation and institutionalization of change—are linked” (Severson, 1997, p. 4). Based on this concept, the institutionalization of TOL occurs with the coupling of management support for TOL and employee buy-in. A usage policy provides guidelines in initiating change; however, the crucial element for employee buy-in lies with Navy executive support of marketing campaigns, promotional strategies and standardize training programs for support services and end-users to meet policy objectives and achieve comprehensive acceptance of online booking.
Methods

The research included both quantitative and qualitative data for DoD MTFs. Archival records consisting of historical usage rates for TOL registration and booking from multiple MTFs within the DoD, and secondary data from previous published studies conducted on TOL comprised the quantitative data. Qualitative data consisted of semi-structured interviews with physicians, clinical managers, TOL administrators and users regarding the promotion and marketing of TOL for appointing purposes, memorandums and other official documentation from the Army, Air Force and Navy, and secondary sources from prior published studies and reports. The study followed a problem-solution theoretical framework in depicting the issues of low utilization rates for Navy MTFs and offered potential remedies. Subsequently, noted were several limitations.

Limitations

The primary limitation involved access to the Composite Health Care System (CHCS) data. An ad hoc CHCS report for the National Naval Medical Center (NNMC) Bethesda detailing access, and appointing data was pulled for the 2007 calendar year; however, repeated attempts to obtain the same data pull for different Navy MTFs for calendar year 2008 failed. In addition, research uncovered a report for marketing materials used in 2007 at Air Force Medical Centers (MEDCEN) but similar reports for
subsequent years were unavailable. Consequently, the study used Branch of Service (BOS) reports for calendar year 2007 to determine the top three MEDCENs for each service and evaluated this data against the marketing material available for only the Air Force. The study evaluated current marketing strategies of the Army and Navy against the 2007 data.

Results

Utilization Rates

Since 2001, certain MTFs were able to capitalize on the advantages that online medical appointing provides. In fact, according to Flight Surgeon McCafferty at Vance Air Force Base in Enid, OK, utilization peaked around 20% for individual military activities that actively marketed this service (Lowes, 2006). Many of the most successful applications of TOL stemmed from Air Force MTFs. Although key objectives for implementing TOL include enhanced access to military medical appointments, standardized point-of-reference for TRICARE policies and general healthcare information, and an electronic database of patient information, full realization of TOL's potential on an aggregate level was disappointing. Unfortunately, Navy MTFs had not been able to leverage the advantages of TOL, and TOL utilization rates among Navy MTFs consistently ranks lowest among the three services, as indicated on BOS reports acquired through the TMA from its inception to the present.
A wide variance existed in utilization rates among the Air Force, Army, Navy and Coast Guard. Despite the ability to book routine appointments around the clock, rather than waiting until appointment call centers opened for business, only a 4,000 appointments were booked via the Web-enabled scheduling function of TOL between June 2001 and approximately September 2002 (Williams, 2002). Low usage volume raised concerns about the effectiveness of TOL. In 2004, the eHealth Division of TMA Information Management conducted a study to explore TOL appointing rate. The results were discouraging; MHS beneficiaries scheduled less than 1% of all available online appointments through TOL (TRICARE Management Activity, 2006).

In an independent study conducted on another Web-enabled healthcare portal at Walter Reed Army Medical Center (WRAMC), researchers revealed similar usage results. From January 2001 to April 2002, online transactions comprised a slight but growing percentage of overall services provided; the usage rates increased from 0.16% to 0.27% for (Boocks, Sun, Boal, Propatich & Abbott, 2003). Using least squares linear regression to forecast one- and two-year usage rates, the WRAMC analysis suggested only a modest increase from 819 to less than 1,000 monthly online appointments made through the Internet within a two-year period. This figure still represented less than 1% of all booked appointments.
Policy Enforced Utilization Goals

Among the DoD, the number of Air Force beneficiaries enrolled in TOL and the volume of Web-enabled appointments (WEA) greatly exceeded both the Army and the Navy (see Figure 1). However, the Air Force implemented a TOL appointing policy in 2006 that mandated a minimum of 10% of all primary care appointments must be booked online (see Appendix A). Current usage data indicated that Air Force TOL appointing rates for January 2008 through December 2008 were the highest among the three services. In July 2008, the Army instituted its own TOL policy as part of its Fiscal Year (FY) 2008-2010 Business Plan. Unlike the Air Force TOL Web-based appointing policy, the Army mandated only a minimum number of registrants and WEA, rather than specifying a minimum rate for actual booked appointments (see Appendix B). Similarly, in February 2009, the Joint Task Force, National Capital Region Medical (JTF CAPMED), the cognizant authority for DoD medical commands in the Northeast, released a Business Planning Guidance that required Web enabling of 85% of all Primary Care appointments by August 1, 2009 (see Appendix C). Neither the Army nor the Navy had policies to standardize, enforce, and guide marketing and training procedures or delineated an explicit target for Web-based appointing rates.
Comparison of Utilization Rates

Air Force MTFs consistently attained exceptionally high numbers of TOL-generated appointments when compared to the Navy and Army MTFs based on BOS Reports. Among MTFs that participated in a TOL Centers of Excellence study, several Air Force MTFs achieved utilization rates at or above 12% for TOL booked appointment in 2006. In stark contrast, the Navy's most robust TOL appointing site, Naval Medical Center (NMC) Portsmouth in Portsmouth, Virginia, reported its highest online utilization rate represented only 2-3% of scheduled appointments (TRICARE Management Activity, 2006). Army MTFs consistently reported usage levels comparable to half the Air Force rates (see Figure 1).
Figure 1. Branch of Service Reports 2008. Combined bi-monthly utilization rates for each DoD Service as obtained through Branch of Service Reports disseminated through the TRICARE Management Activity, http://mytoc.tma.osd.mil/

Current BOS reports obtained through the TRICARE Management Activity demonstrated Navy's under-utilization of TOL appointing functions (see Figure 2). In addition, the Navy's cancellation rate for appointments booked through TOL was consistently high, while the percentage of registered users actually booking appointments through TOL ranked among the lowest of the three services, based on BOS reports.
Figure 2. Percentage of Overall Activities. Comparison of activity rates among Branch of Services based on BOS Reports disseminated through the TRICARE Management Activity, http://mytoc.tma.osd.mil/

A 2006 TMA study revealed myriad causes for low usage, such as complicated Webpage navigation and burdensome username and password requirements. Although these problems discouraged beneficiaries to use TOL appointing services, all DoD TOL users encountered these challenges equally. Because every TOL beneficiary, regardless of service affiliation or MTF
assignment, faced similar frustrations, this problem failed to answer why discrepancies in TOL enrollment and utilization rates existed among the services. To explore possible causes of these variations, this study examined differences in business practices that contribute to lack of uniform acceptance and ultimately poor Navy utilization rates. Based on usage rates in the Air Force, the only service with a policy mandating the use of TOL in booking 10% of all Primary Care appointments, Army and Navy business practices TOL contained obvious shortcomings. The lack of an enterprise-wide plan to addressed objectives for TOL marketing, training, and benchmarking user rates contributed to inconsistent utilization among Navy MTFs.

Impact of Marketing Efforts

This study investigated TOL marketing strategies of the top Navy, Air Force, and Army MEDCENS. Several similarities and differences in marketing strategies existed among the facilities observed. It appeared that MEDCENS with the highest utilization rates employed more robust promotional efforts; however, the use of multiple marketing materials did not ensure high usage rates, nor did the absence active advertising equate with low usage rates.

In the Navy, Naval Medical Center (NMC) Portsmouth, NMC San Diego, and NNMC Bethesda revealed inconsistent and paltry marketing strategies. According to a Health Benefits Advisor at
NMC Portsmouth, staff members mention online appointing during indoctrination briefs to active duty service members. In addition, a TOL appointing link appeared on the official Website; however, NMC Portsmouth did not offer any marketing materials nor did it employ dedicated staff to promote TOL appointing (Mike Williams, personal communication, July 21, 2009).

The Website for NMC San Diego contained a link for online appointing through TOL; however, the TRICARE number given was that of the DoD-wide TOL technical support office rather than a live representative at the facility. There was no active marketing campaign for TOL through the TRICARE Managed Care Department of NMC San Diego (Wendy Pritt, personal communication, July 21, 2009).

A similar situation existed at NNMC Bethesda. There, the managed care support contractor, Health Net, operated the TRICARE service desk. A pamphlet describing benefits of TOL was located in the office; however, TRICARE representatives did not provide information about the features of TOL as it is not a function within the scope of their services. In fact, they did not mention TOL appointing during TRICARE enrollment, nor did they discuss it in active duty orientation.

In 2007, the 97th Medical Group (MDG) in Altus, Oklahoma had the highest Air Force TOL appointing rate of 13.05%. During this
year, the 97th MDG reported using magnets, tri-fold pamphlets, professionally produced TOL commercials, and CDs and DVDs to advertise the features of TOL, based on a report from the Air Force Air Education and Training Command (AETC). The second and third ranking Air Force MDGs, according to BOS reports for 2007, were Maxwell and McConnell with usage rates of 12.67% and 11.70% respectively; however, neither of these facilities employed marketing materials to promote TOL benefits (see Table 1).

Table 1

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<td>97 MDG Altus</td>
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<td>14 MDG Columbus</td>
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<td>1 MDG Goodfellow</td>
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<td>81 MDG Keesler</td>
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<td>59 MDG Lackland</td>
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<td>56 MDG Luke</td>
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<td>47 MDG Laughlin</td>
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<tr>
<td>114 MDG Little Rock</td>
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<td>42 MDG Maxwell</td>
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<tr>
<td>12 MDG Randolph</td>
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<tr>
<td>92 MDG Sheppard</td>
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<tr>
<td>325 MDG Tyndall</td>
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<td>71 MDG Vance</td>
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The top three Army MEDCENs were Womack Army Medical Center (AMC) at Fort Bragg, Dewitt AMC at Fort Belvoir, and Kimborough Ambulatory Care Center (ACC) at Fort Meade. The latter two facilities were geographically located within the National
Capital Area, which may have allowed for the additional benefits of economies of scale in promotional and training initiatives. At Fort Belvoir, TOL promotion consisted of live representatives assisting with immediate registration into TOL following TRICARE enrollment. There, beneficiaries were guided through the registration process via two dedicated laptops and were walked through the online appointing process (David Johnson, personal communication, July 31, 2009). The Kimborough ACC Webpage featured general TRICARE information that included a link to TOL. In addition, its automated answering service message mentioned procedures for accessing TOL appointing features.

Impact of Training Efforts

Variants in the amount of, and support for, staff and end-user TOL training can drastically contribute to differences in utilization rates. Although beneficiaries may be aware of the services, and have registered accounts, utilization of TOL for scheduling appointments may be low due to lack of user training and poor template management.

A 2005 TMA focus group cited difficulties in navigating the Website’s features as a primary user complaint. Although mentioned as a function of poor site construction and navigational guides, interviewees suggested increased training of TOL Website features at point of registration, via online
tutorials, and during command indoctrination to mitigate these difficulties (TRICARE Management Activity, 2005).

Training of support staff emerged as another issue negatively influencing TOL utilization. Effective template management required that TOL scheduling administrators correctly code appointment slots prior to online viewing and booking. Web-enabled appointments inaccurately coded may appear available, but may be inaccessible to online patients.

According to David Corey (personal communication, October 24, 2008), a Karta Technology Consultant, a critical success factor for increasing utilization of TOL for appointing was accurate template management. One of the creators of the online TOL template manager course and an instructor for the TOL template training, Mr. Corey believed that many appointments qualifying for Web-enabled booking were simply not accessible through TOL due to inaccurate template management. Training is critically important in mitigating TOL template management deficiencies, yet trainee attendance records revealed unequal representation among the services. Mr. Corey reported that the vast majority of students attending the course were Air Force representatives. Army representatives made up the second largest group of students, followed lastly, by Navy representatives.

Kim Taylor (personal communication, August 4, 2009), Command Access Manager of NMC San Diego echoed similar
sentiments. She explained that the biggest factor sabotaging efforts to increase utilization was access to online appointment; simply Web-enabling an appointment did not guarantee online visibility of the slot. Rather, the top factors influencing usage were: 1) provider template training to ensuring mandatory detail codes were accurate; 2) active marketing and advertising to targeted populations; and 3) staff education and training on the benefits and features of TOL (Taylor). Seemingly illustrative of the problem, Ms. Taylor attended a class taught by David Corey, in which she was the only Navy representative.

A general theme of frustration emerged among Navy MTF clinical managers about TOL template management. Many administrators claimed the process that ensured Web-enabled and visible appointments were available to TOL beneficiaries was complex. TRICARE Online administrators faced many barriers to proper accounting and assignment, as with numerous codes, which were cumbersome at best. Often template managers inadvertently created WEA containing erroneous codes. As a result, WEA rates were satisfied, yet appointments remained unfilled because errors in matching patient complaints with appointment types prevented users from booking slots. Such defects impeded accurate data collection, as MTFs were meeting WEA requirements but actual online access remained restricted. Consequently,
excess WEA implied underutilization, inadequate demand forecasting, or other sources of process variability when in fact, online appointments may have been truly limited because of poor template management. Although determining causes contributing to underutilization may have been difficult, disparities in the number of available and booked WEA were easily recognizable. For example, data retrieved from an ad-hoc inquiring for Primary Care appointments at NNMC Bethesda in 2007 revealed that of the total appointments booked, 17% were Web-enabled. However, despite relatively substantial numbers of WEA,

![Figure 3. Breakdown of Web-enabled Appointments at NNMC Bethesda](image)

only 1349 appointments, or 4.41% were actually booked via TOL, as shown in Figure 3. The remaining appointments were booked via convention means. Interestingly, appointments booked through TOL for beneficiaries stationed at NNMC comprised merely 909, or
2.97% of all WEA appointments. Beneficiaries of various other MTFs comprised the remaining 440 appointments and services (see Table 2).

### Table 2

#### Non Web-enabled and Web-enabled Appointments

<table>
<thead>
<tr>
<th>Not WEA or WEA</th>
<th>TYPE</th>
<th>KACC</th>
<th>NNMC</th>
<th>Not</th>
<th>Web</th>
<th>WRAM</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not</td>
<td>ACUT</td>
<td>4</td>
<td>4254</td>
<td>14365</td>
<td>49</td>
<td>18672</td>
<td></td>
</tr>
<tr>
<td></td>
<td>APV</td>
<td></td>
<td>55</td>
<td></td>
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<td>55</td>
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<tr>
<td></td>
<td>EST</td>
<td>1</td>
<td>11004</td>
<td>53858</td>
<td>288</td>
<td>65151</td>
<td></td>
</tr>
<tr>
<td></td>
<td>GRP</td>
<td>1</td>
<td>1135</td>
<td>5160</td>
<td>8</td>
<td>6303</td>
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<td></td>
<td>OPAC</td>
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<td>21</td>
<td>341</td>
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<td>362</td>
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<tr>
<td></td>
<td>PCM</td>
<td>1</td>
<td>339</td>
<td>271</td>
<td>4</td>
<td>614</td>
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</tr>
<tr>
<td></td>
<td>PROC</td>
<td></td>
<td>6202</td>
<td>1</td>
<td>6203</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>RAD*</td>
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<td>1353</td>
<td>5961</td>
<td></td>
<td>7314</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ROUT</td>
<td>5</td>
<td>4823</td>
<td>6514</td>
<td>100</td>
<td>11437</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SPEC</td>
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<td>2024</td>
<td>8368</td>
<td>134</td>
<td>10531</td>
<td></td>
</tr>
<tr>
<td></td>
<td>WELL</td>
<td>4</td>
<td>10173</td>
<td>12569</td>
<td>364</td>
<td>23110</td>
<td></td>
</tr>
</tbody>
</table>

| WEA            | ACUT | 5    | 4630 | 2576 | 225 | 29   | 7465  |
|                | EST  | 7423 | 2779 | 669  | 96  | 10967 |       |
|                | GRP  | 2    |      | 2    |     | 2    |       |
|                | PCM  | 1    | 1    | 1    |     | 2    |       |
|                | ROUT | 4613 | 1591 | 395  | 49  | 6648  |       |
|                | SPEC | 6    | 27   | 7    | 2   | 35   |       |
|                | WELL | 4430 | 912  | 60   | 41  | 5443  |       |

| Totals         | 19   | 56229 | 121552 | 1349 | 1165 | 180314 |

| Total Not WEA  | 149,752 |
| Total WEA      | 30,562  |
| Total WEA Booked Online | 1,349 |
| Total NNMC Beneficiaries Who Booked WEA Online | 909 |
| % of Total WEA Booked Online | 4.41% |
| % of NNMC Beneficiaries Who Booked WEA Online | 2.97% |

### Discussion, Conclusion, and Recommendation

Several issues relevant to evaluating utilization rates of TOL were uncovered during the research for this project. One area for discussion pertains to the relatively smaller Air Force
MTFs compared to Army and Navy MTFs. A reasonable conclusion is that smaller facilities, which have less complicated and diverse operations, can lead to higher utilization rates.

Another area for consideration involves the availability of different access to care avenues. According to Kim Taylor (personal communication, August 4, 2009), if a beneficiary must spend several minutes navigating through the log-in and appointing process for TOL, but can book an appointment over the call center in less time, she would favor the use of the call center. She urged that the needs of the beneficiary are paramount and cannot be properly addressed through a policy mandate.

Due to high capacity enrollment in the San Diego region, access to appointments is limited. Consequently, she fears that active promotion of TOL for Web-based appointing will only lead to greater beneficiary frustration as many appointments are booked within minutes of opening and, therefore, appear as unavailable online. Mrs. Taylor deliberately avoids promoting the online appointing option, fearing that beneficiaries, discouraged from negative experiences, will permanently reject the use of TOL.

Finally, policy makers should consider how to minimize errors in appointment types when booking online medical appointments. This occurs when beneficiaries, through lack of
education, experience, or in an effort to circumvent the system, book an appointment for a condition that does not match their condition. For example, an individual may have a child with a diaper rash, but inadvertently books the child for a well-baby appointment. This impacts the daily schedule as the appointment times allotted for each appointment type may be inadequate or excessive to treat the beneficiaries. Mitigating unintentional errors due to inadequate training or knowledge may require additional information on the Website or a link to a live representative who can answer questions. However, intentional errors caused by individuals unable to access an appointment for their true condition who choose to search for available appointments under different appointment types are more challenging to correct. These appointment type errors place great strains on the clinic that must honor the appointment at the sake of delaying all subsequent appointments.

The lack of consistent TOL appointing practices across the MTFs resulted in a wide variance of user experiences. Differences in TOL management among various MTFs contribute to patient frustration. The main problem contributing to inconsistent expectations resulted from ill-defined or non-existent policies on marketing, training, and user benchmarks. Implementation of TOL without supportive social interaction impedes the adoption and successful integration of this
technology. According to current literature, optimal IT use requires an ensemble approach that considers the interface between user and system, including various social components such as policies, training, and commitment (Kling & Schacchi, 1982; Orlikowski & Iacono, 2001).

According to a 2005 focus group summary, the top three responses to the question of why participants did not use TOL were: 1) never heard about it or thought about it, 2) lack of advertising and promotion of TOL, and 3) difficulty of use (TRICARE Management Activity, 2005). Lack of a uniformed marketing strategy prevented beneficiaries from learning of enhancements to TOL Web-based features. In addition, poor senior leadership support provided no incentive for the additional efforts required to promote and manage an effective program.

The latter complaint is primarily a function of the navigational aspect of the Website but poor template management exacerbated the problem. Recent improvements in password and account set-up requirements minimized some of the end-user frustrations; however, despite improvements, the ease of booking online appointments is a process greatly dependent upon the number of WEA accurately entered. Each clinic is responsible for creating and managing its own scheduling templates. Limited and/or insufficient training created a negative impact on the accurate display of available appointments, causing patients
undue difficulty when attempting to book a visit. Addressing the standardization of training for TOL appointing may enhance utilization rates by increasing the number of accurately entered WEA and improve user familiarization with TOL features allowing for greater access to WEA. Encouraging participation in comprehensive template management training for clinic managers along with clearly defined policy guidelines to include booked appointment benchmarks and marketing objectives can assuage some of the deficiencies detracting from the appeal of online appointing.

Although emerging literature recognizes the financial and intangible benefits of a Web-based appointing system for healthcare facilities, challenges in the successful implementation of this technology in a large-scale organization such as the MHS makes full realization of benefits elusive. This objective is attainable by adopting a policy mandate for minimum usage requirements and enforcing policy guidelines by implementing effective marketing efforts and providing proficient and ongoing training throughout the enterprise until the concept of online booking becomes synonymous with access to care. Top executives must embrace and support this policy; however, many interviewees stated that support should arise out of the genuine belief that TOL offers superior business practices and user benefits. Through the promotion of these
benefits, senior executives encourage greater adoption of TOL usage. Figure 4 depicts how top management support coupled with a sound policy founded on clear goals and bolstered by relevant marketing and training initiatives lead to institutionalized practices that instill a culture of change. These changes, well managed, produce desired outcomes.

![Diagram showing the linkage between Proposition #1: Standardize Navy Policy and Proposition #2: Top Management Support](image.png)

**Figure 4.** Forces Contributing to Increased TOL Appointing at Navy MTFs.

This conceptual model illustrates the intricate linkage between Proposition #1: Standardize Navy Policy and Proposition #2: Top Management Support. Aligning the propositions with a foundation of benchmarks that guide training and marketing initiatives leads to an institutionalized acceptance of business practices that will increase TOL appointing.
The features of TOL can provide greater access to care opportunities, improve allocations of limited resources, and significant return on investment. The Air Force supports TOL Web-based appointing through a unique policy that mandates minimum TOL utilization requirements for active duty members. As evident in weekly BOS reports, resultant business practices have propelled the Air Force to the top-ranking position for TOL utilization within the MHS. Adopting a model similar to the Air Force can result in improved Navy TOL usage. A bimodal approach in which policy mandates for minimum appointing requirements coupled with strong executive support provides the basis for effective change. Top-level rhetoric should not be merely a façade; genuine leadership buy-in demonstrated by enforcing the policy guidelines through marketing and training initiatives are necessary components in the creation of a Navy culture that fosters online appointing.

This study recognizes the importance of understanding end user needs and recommends a focus group study or customer survey analysis to identify specific concerns among the MHS healthcare beneficiaries in regards to TOL. In addition, surveys to understand perceptions of access to care among Air Force beneficiaries given their higher utilization rates may prove beneficial in determining whether a minimum usage TOL policy
mandate has appreciable impact on customer satisfaction and enhanced access to appointments.
References


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TRICARE Management Activity. (2006, September 27). *The centers of excellence for TRICARE Online appointing: Final Report*
(Version 15.8). Falls Church, VA: Department of Defense, TRICARE Management Activity, Information Management eHealth Division.

MEMORANDUM FOR ALMAJCOM/SG

FROM:   HQ USAF/SGO
        110 Luke Avenue, Room 400
        Bolling AFB DC 20032-7050

SUBJECT:  Ten Percent Benchmark for Primary Care Appointments Booked on TRICARE Online

In line with the Air Force Chief of Staff’s emphasis on Lean Six Sigma to reduce waste and improve processes across the Air Force, I challenge MTF Commanders to improve access to care and provide patient-centered appointing business practices by achieving 10 percent of primary care appointments booked on TRICARE Online (TOL) by 31 December 2006.

Two Air Force MTFs have already achieved the 10 percent benchmark--Vance (doing traditional appointing) and Maxwell (doing open access appointing). In fact, Maxwell surged from 0 percent to the 10 percent mark in only 6 months. Vance and Maxwell are MHS leaders in online appointing.

In last year’s Focus and Follow-Up, a TRICARE Online appointing measure was developed and will soon be available on the P2R2 Virtual Analyst to enable MTFs to view their performance against the 10 percent benchmark. Recent hardware and software upgrades to TOL have made it a more reliable and stable system. Also, later this year, Air Force members will be able to logon to TOL without a second logon/password via the Air Force Portal, similar to how members access the vMPF. Strategies for success, as well as information and tools as to how to set up CHCS and TRICARE Online to make appointments available for online booking, can be obtained from Access Improvement Seminars offered regionally throughout the year. The information may also be found on the AFKx Health Benefits website at https://kx.afms.mil/healthbenefits.

My POC is Maj Mark Meersman, the AFMS TRICARE Online Program Manager, at (202) 767-0779, DSN 297-0779, or email: mark.meersman@pentagon.af.mil.

CHARLES B. GREEN
Major General, USAF, MC, CFS
Assistant Surgeon General, Health Care Operations
Office of the Surgeon General
MEMORANDUM FOR

COMMANDERS, MEDCOM REGIONAL MEDICAL COMMANDS
DIRECTORS, OTSG/MEDCOM ONEWAFF

SUBJECT: TRICARE Online Primary Care Appointments

1. TRICARE Online (TOL) recently introduced system improvements that make the application more user-friendly and attractive to our patients. These changes provide an opportunity to better leverage the capabilities of TOL.

2. The intent of this policy is to increase the overall usage of TOL and ease some of the burden on our telephone appointing systems. In order to meet my intent, I am accelerating and requiring the achievement of two goals established in the FY08-10 Business Plan.

   a. The first goal is to web-enable and have available for booking through TOL a minimum of 50% of the primary care appointments within three months and 80% within six months. This applies only to Acute, Open Access, Routine, Wellness, Established, and Initial PCM appointments.

   b. The second goal is to register a minimum of 20% of MTF Prime enrollees on TOL by end of FY07 and 50% by end of FY08.

3. Commanders, Regional Medical Commands will report to me the accomplishment of the goals following each milestone noted in paragraphs 2.a. and 2.b.

4. Additional TOL information is available online at MEDCOM's Access Knowledge Center on AKO. POC for this action is MAJ Bill Judd, TRICARE Division, Health Policy and Services Directorate, William.Judd@AMEDD.Army.Mil, (703) 681-1203.

GALE S. POLLOCK
Major General
Commanding
MEMORANDUM FOR JTF CAPMED COMPONENT AND MTF COMMANDERS

SUBJECT: Fiscal Year (FY) 2010-2012 Joint Task Force National Capital Region Medical (JTF CapMed) Business Planning Guidance (BPG)

1. The mission of the JTF CapMed is to ensure medical readiness, provide quality healthcare, and execute Base Realignment and Closure (BRAC) requirements across the joint operations area (JOA). Our vision is to deliver on our promise of providing world-class medical care to our nation’s warriors, military retirees and their families.

2. Deliberate and successful business planning requires an operational shift from Service MTF-centric healthcare delivery to joint integrated patient-centered healthcare delivery. The expectation is to support this transformation while maintaining quality care commensurate with the great reputation that our MTFs collectively share. This is especially important in FY2010-2011 (the transition period) when the governance, manning, and budget execution for various JOA MTFs transfers from North Atlantic Regional Medical Command, Navy National Capital Area, and Air Force District of Washington to Joint Task Force National Capital Region Medical.

3. My guidance during this transition period emphasizes the importance of adhering to Service-specific FY2010-2012 BPG and timelines while simultaneously embracing regional initiatives that promote and improve quality, patient satisfaction, and enhance the effective and timely delivery of healthcare (see Enclosure 1). In FY 2012, the new Walter Reed National Military Medical Center and Fort Belvoir Hospital will be directly aligned as subordinates of the JTF. JOA MTFs that are not identified as joint facilities will continue to receive concurrent guidance from the JTF and Component Commanders. Close collaboration among the Components, MTFs and JTF will ensure an integrated healthcare delivery approach that optimizes facility and human resources capabilities to meet the needs of our patients.

4. Component Commanders should endorse and provide comment on MTF business plans before submission to the JTF. Component Commanders should prepare to brief me on your regional plans in the April 2009 timeframe. Point of contact is COL John M. Cho, Chief, Healthcare Business Operations (HBO), J3, JTF CapMed at (301) 295-5514, or email john.cho@med.navy.mil.

Enclosure