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In September 2008, the General Leonard Wood Army Community Hospital (GLWACH) Pharmacy Department executed an initiative to reduce the utilization of retail pharmacy services. This initiative was implemented due to the increase in retail prescription drug spending that prompted the Government Accountability Office to recommend individual Military Treatment Facilities (MTF) identify ways to reduce local retail pharmacy spending. The primary objective of this study was to determine if the GLWACH pharmacy intervention resulted in a significant change in utilization of retail and MTF pharmacy services using a chi-square statistical test with a preset alpha level of signficance of .05. The result of the test X2(1,N=22050)=.05, p=.8310 indicated an inability to reject the null hypothesis (H0:P1=P2): no significant difference between pre-intervention and post-intervention MTF and retail pharmacy utilization.

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RETAIL PHARMACY UTILIZATION

An Analysis of the Effectiveness of the Retail Pharmacy Utilization Intervention at General Leonard Wood Army Community Hospital

Graduate Management Project

CPT Summer Moore-Velbis

U.S. Army-Baylor University Graduate Program in Health Care Administration

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Abstract

In September 2008, the General Leonard Wood Army Community Hospital (GLWACH) Pharmacy Department executed an initiative to reduce the utilization of retail pharmacy services. This initiative was implemented due to the increase in retail prescription drug spending that prompted the Government Accountability Office to recommend individual Military Treatment Facilities (MTF) identify ways to reduce local retail pharmacy spending. The primary objective of this study was to determine if the GLWACH pharmacy intervention resulted in a significant change in utilization of retail and MTF pharmacy services using a chi-square statistical test with a preset alpha level of significance of .05. The result of the test $X^2(1,N=22050)=.05$, $p=.8310$ indicated an inability to reject the null hypothesis ($H_0:P_1=P_2$): no significant difference between pre-intervention and post-intervention MTF and retail pharmacy utilization.

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Introduction

In response to the sacrifices that Soldiers, Sailors, Airmen, and Marines have made for their country, the United States government for many years has given in return, the ability for these men, women, and their families to receive the best in their medical care. In doing so, the Department of Defense (DoD) currently provides health care benefits to more than 9.4 million eligible beneficiaries (TRICARE Operations, 2009). Amongst receiving care at Military Treatment Facilities (MTF) or through network providers, approximately 7 million of those beneficiaries utilize the Military Health System's (MHS) prescription drug benefit. The cost of providing this benefit has continued to rise and is demonstrated by the increased prescription drug spending from $1.6 billion in fiscal year 2000 to $6.2 billion in fiscal year 2006 (United States Government, 2008, p. 8). The cost of providing this benefit has received a great deal of scrutiny in the past years and will continue to garner attention as the United States Government Accountability Office (GAO) estimates spending will reach $15 billion by 2015 (2008, p. 1).

The massive growth in prescription drug spending captured the attention of the federal government which resulted in the initiation of a study by the GAO. One of the issues identified in the study was a surge in the use of the retail pharmacy benefit which dominated DoD prescription drug spending (United States

Government Accountability Office, 2008). In response, the GAO issued a recommendation to monitor this growth and identify opportunities to reduce retail pharmacy spending. Therefore, General Leonard Wood Army Community Hospital's (GLWACH) Pharmacy Department undertook an initiative to bring beneficiaries back to the MTF in accordance with the GAO's recommendation for individual MTFs to find creative solutions to curb the increased reliance on the retail pharmacy benefit.

Located in Mid-Missouri, General Leonard Army Community Hospital (GLWACH) serves a diverse military population on Fort Leonard Wood. Situated in a rustic portion of Missouri, this scenic and densely wooded United States Army installation is nestled between two small towns which are called home by less than 7,000 individuals. This rural location provides GLWACH senior staff with a unique challenge to provide accessible, quality care while containing costs.

Fort Leonard Wood is positioned on more than 60,000 acres of land which are used to provide basic training to new Soldiers in addition to serving as the home of the U. S. Army Engineer School, Military Police School, Chemical Corps School and a variety of other multi-service schools. This training environment serves more than 9,000 individuals, at any given time, composed of U.S. Army, Navy, Air Force, Marine Corps, and International Service members (data retrieved from the MANSCEN DPTM Programmed Training Load;

April 2009). In addition to the assorted contingent of Soldiers in training that cycle through the post, Fort Leonard Wood is home to more than 18,000 Active Duty Soldiers and their family members. These permanent parties also include just under 130 Soldiers who are assigned to the Warrior Transition Unit (WTU) which was established in 2007 (data retrieved from DEERS on 01 April, 2009). These reserve and active component injured Soldiers are assigned to the WTU because they meet Medical Hold, Medical Holdover, or Active Duty Medical Extension qualifications. The requirements for WTU placement include a Soldier undergoing a medical evaluation board or receiving complex care for a period longer than six months. Due to the injuries many of these Soldiers received while deployed and the complex process of medical evaluation boards, the WTU requires a good deal of medical care.

GLWACH provides a wide range of ambulatory care services and is a 65 inpatient bed facility. Medical services provided there include emergency care, family practice, internal medicine, pediatrics, general surgery, orthopedics, urology, ophthalmology, optometry, podiatry, obstetrics and gynecology, physical therapy, occupational therapy, audiology, otolaryngology, psychiatry, psychology, social work, neurology and substance abuse (General Leonard Wood, 2008). Ancillary radiology services offered include x-ray, magnetic resonance imaging, ultrasound, mammography, and computed tomography. Other ancillary services available include

inpatient and outpatient laboratory and pharmacy. The robust outpatient pharmacy services available on Fort Leonard Wood consist of full-service and refill counters inside the hospital, a full-service branch located inside the main Post Exchange, and dispensing station located inside of the Consolidated Troop Medical Clinic which services the Soldiers in training.

There are more than 25,000 beneficiaries who are eligible to receive medical care within Fort Leonard Wood and the 40 mile Prime Service Area (PSA) that surrounds the post. These individuals and any other eligible beneficiaries that choose to visit Fort Leonard Wood are entitled to utilize the prescription drug benefit. This benefit has evolved since its inception and in 2004, the DoD implemented a new TRICARE Retail Pharmacy benefit contract with Express Scripts Inc. This new contract improved the process for obtaining prescription drugs through retail pharmacies in addition to increasing the number of participating retail pharmacies. The previous retail pharmacy benefit was fraught with barriers that required the beneficiary to make phone calls for assistance when filling a prescription and upfront payments that were reimbursed after mailing pharmacy claims (United States Department of Defense, 2004). This improvement in the retail pharmacy benefit coupled with factors such as the distance many beneficiaries live from the MTF may influence the utilization of retail pharmacy services.

In order to affect a change in the utilization of retail pharmacy services within the GLWACH service area, an initiative was undertaken to encourage beneficiaries to utilize MTF pharmacy services instead of retail pharmacies. The GLWACH pharmacy leadership selected the month of August to serve as a representative sample of retail pharmacy benefit users. This resulted in a list of 609 beneficiaries who utilized retail pharmacy services to fill maintenance medications during that month. They drafted a letter to remind beneficiaries these medications were available through MTF pharmacy services without an out of pocket fee. It was their intention to bring beneficiaries back to the MTF instead of retail pharmacy locations. This initiative would support the GAO's overall effort to reduce prescription drug spending since MTF pharmacy services and TRICARE Mail Order Pharmacy (TMOP) are the less costly point of service options (United States Government Accountability Office, 2008). If successful, this initiative could reduce the amount of retail prescription drug spending within the GLWACH service area. The purpose of this study was to look at the utilization of MTF and retail pharmacy services prior to and after the intervention to determine if there was a significant change in pharmacy services consumption.

Conditions That Prompted the Study

DoD Pharmacy Benefit

The MHS provides pharmacy benefits to a population of beneficiaries who meet eligibility criteria and are registered in the Defense Enrollment Eligibility Reporting System (DEERS). This population is composed of more than 9.4 million Active Duty service members, Retirees, Activated members of the National Guard and Reserve, their family members, survivors, and others who meet DEERS criteria (TRICARE Management Activity, 2008). Through the normal progression of policy and procedures, this pharmacy benefit has evolved over the years. Currently, at the time of this study, the pharmacy benefit includes three primary points of service: the MTF pharmacy, TMOP, and retail pharmacy. The main variation between the points of service, other than convenience and preference, are copayments and days supply that can be received. The MTF pharmacy services are the least costly to beneficiaries as there is no cost associated with services. Both TMOP and retail pharmacy services require non-Active Duty beneficiaries to pay an out of pocket expense (TRICARE Management Activity). The fees associated with each point of service are based on a 3 tier copayment structure which was best outlined within the GAO's 2008 report on the DoD Pharmacy Program (see Table 1).

Table 1. Current Pharmacy Copayments for DOD Civilian Beneficiaries

		Copayments		
Delivery option	Supply	Formulary generic (tier 1)	Formulary brand (tier 2)	Nonformulary (tier 3)
Military treatment facility (MTF)	up to 90 days	$0	$0	$0[a]
TRICARE Mail Order Pharmacy (TMOP)	up to 90 days	$3	$9	$22
Retail network	up to 30 days	$3	$9	$22

pharmacy				
Retail nonnetwork pharmacy, TRICARE Extra and Standard[b]	up to 30 days	Greater of $9 or 20 percent of total cost	Greater of $9 or 20 percent of total cost	Greater of $22 or 20 percent of total cost
Retail nonnetwork pharmacy, TRICARE Prime[b]	up to 30 days	50 percent	50 percent	50 percent

Source: DOD.

Notes: Active duty service members are not required to pay copayments at MTFs, the TMOP, or retail network pharmacies. Active duty service members who fill prescriptions for covered medications under the pharmacy benefit at nonnetwork retail pharmacies are required to pay the total cost of the prescription and then file a claim for reimbursement with Express Scripts, Inc., a private pharmacy benefits management company that operates DOD's retail pharmacy program and the TMOP.

[a]MTFs can only dispense nonformulary drugs if medically necessary. Proof of medical necessity is not required for nonformulary drugs to be dispensed at the TMOP or retail pharmacies.

[b]Under TRICARE, beneficiaries can choose among three benefit options: a health maintenance organization option called TRICARE Prime, a preferred-provider organization option called TRICARE Extra, and a fee-for-service option called TRICARE Standard

Note. From "*DoD Pharmacy Program: Continued efforts needed to reduce growth in spending at retail pharmacies (GAO-08-327),*" by United States Government Accountability Office, 2008, p. 7.

DoD officials have indicated "the vast TRICARE retail network of about 59,000 pharmacies, which has become more convenient for beneficiaries; and the prescription copayment structure, which does not discourage beneficiaries from using the more costly retail pharmacies" (United States Government Accountability Office, 2008, p. 9), has contributed to the increased retail pharmacy utilization. In 2000, retail prescription drug spending accounted for approximately 24.5% of dollars spent by the DoD on prescription drugs and MTF spending led the way at more than 69%. By 2006, retail prescription drug spending had assumed the dominate position in DoD prescription drug spending with more than 63% of prescription drug dollars going toward retail pharmacies and less than 25% going toward MTF pharmacies (United States Government Accountability Office, p. 9)(see Figure 1).

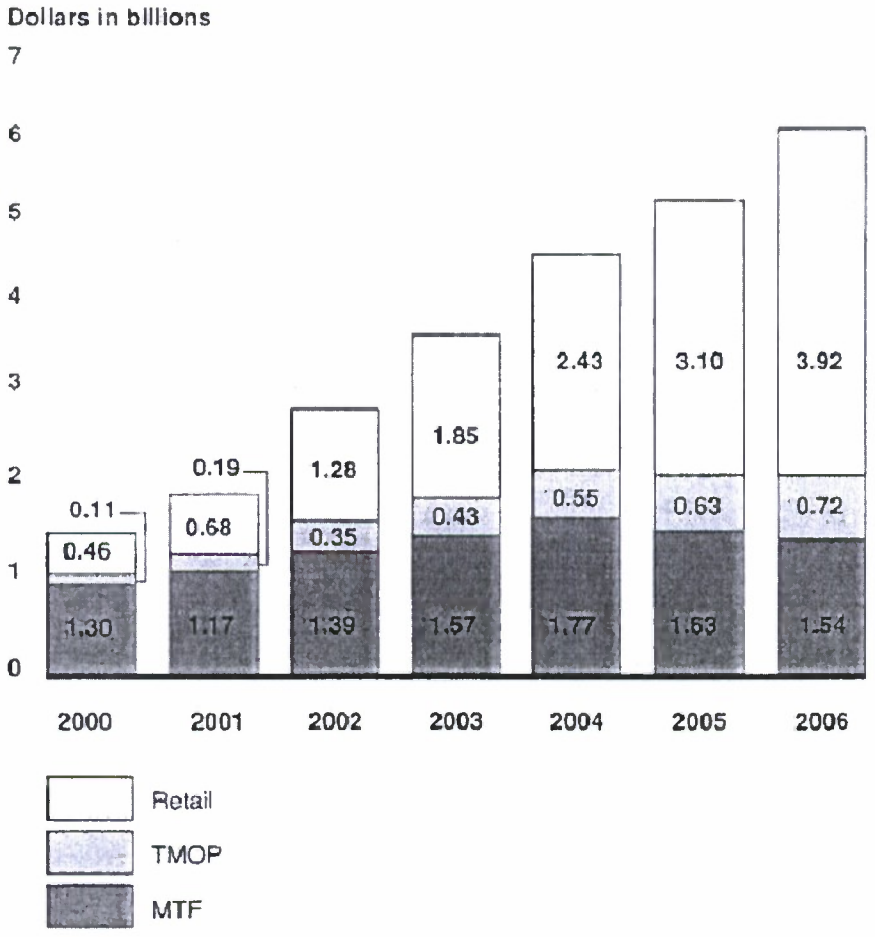


Figure 1. DoD Prescription Drug Spending for Fiscal Year 2000 through Fiscal Year 2006, by Point of Service.

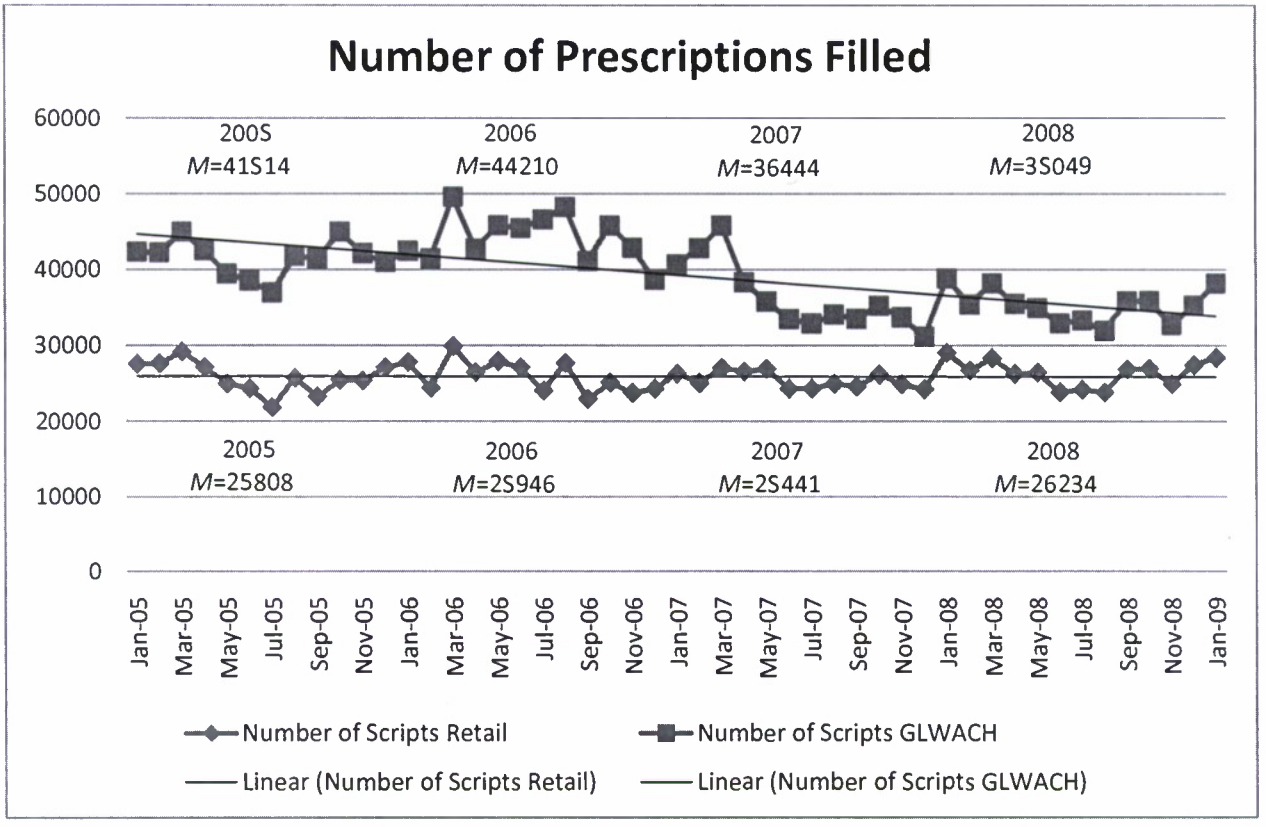
Note. From "*DoD Pharmacy Program: Continued efforts needed to reduce growth in spending at retail pharmacies (GAO-08-327),*" by United States Government Accountability Office, 2008, p. 9.

The increasing trend of retail pharmacy utilization seen in Figure 1 received the attention of the federal government and prompted a study by the GAO which returned recommendations that the DoD should seek out opportunities to reduce increased retail pharmacy spending and to maintain a vigil to watch and control future retail pharmacy utilization (United States Government

Accountability Office).

GLWACH Pharmacy

What began as a program which provided no or low cost prescription drugs dispensed within DoD medical facilities has grown into a multi-dimensional benefit which requires greater cost and utilization management. During the month of August 2008 alone, more than $550,000 worth of prescriptions were filled in retail pharmacies within the GLWACH 40 mile PSA or at retail pharmacies outside of that radius by beneficiaries who lived within the 40 mile PSA (data retrieved from Business Objects on 5 September, 2008.) As depicted by the data shown in Figure 2, there was a minimal fluctuation each year in the mean number of prescriptions filled at retail pharmacies in the GLWACH area from 2005 to 2009. The greatest change in the mean utilization of retail pharmacies during that period was an increase of 3.1% from 2007 to 2008. Utilization of GLWACH pharmacy services saw a 6.5% increase in the mean number of prescriptions filled from 2005 to 2006. However, the next two years saw a decrease in mean with a 17.6% drop from 2006 to 2007 followed by an additional decrease of 3.8% from 2007 to 2008. Overall, there has been a



Source: Pharmacy Data Transaction Service

Figure 2. Illustration of Retail and GLWACH MTF pharmacy utilization from 2005 to 2009.

discernible decrease in utilization of GLWACH pharmacy services over the last four years (R^2 = 0.4478) compared to almost no change in retail utilization (R^2 = 0.0002) seen in Figure 2.

Statement of the Question

The purpose of this study was to determine "If the GLWACH Pharmacy Department retail pharmacy intervention resulted in a significant change in utilization of retail pharmacy and MTF pharmacy services." In order to determine if the intervention significantly affected the number of beneficiaries who consumed retail pharmacy services, pre-intervention utilization was compared with post-intervention utilization of retail and MTF

services.

Literature Review

In health care, it is important to understand the needs and motivation which drive health care consumers' decisions. Cost, quality, and access are factors that will affect a health care consumer's perception of the care they receive. If one of these factors is more important to the individual consumer than the others, that factor will compel them to choose care in line with their priorities. This creates a unique opportunity for health care administrators to influence consumer behaviors by identifying and understanding the relationship between consumers and Kissick's (1994) "Iron Triangle" of cost, quality, and access. The difficult task of shifting health care consumers' habits was best summed up by the words of Kissick in his book Medicine's Dilemmas: Infinite Needs Versus Finite Resources.

> But in what I call the iron triangle of health care…access, quality, and cost containment have equal angles, representing identical priorities, and an expansion of any one angle compromises one or both of the other two. All societies confront the equal tensions among access to health services, quality of health care, and cost containment. Trade-offs are inevitable regardless of the size of the triangle (Kissick, 1994, p. 2).

While Kissick's model may be spoken to and referenced more in line with the struggle to provide accessible, quality care while managing costs, it is important to recognize this model is equally applicable to the perspective of the consumer.

According to a 2004, U.S. Federal Trade Commission and Department of Justice report on improving health care through competition, there are several factors which from a consumer's perspective must be performed well by the delivery system in order for the care to be perceived as being of high quality. "These factors include whether the diagnosis is correct, whether the 'right' treatment is selected…whether the treatment is performed in a technically competent manner, whether service quality is adequate, and whether consumers can access the care they desire" (United States Department of Justice, 2004). These factors highlight quality of care and access; however, many beneficiaries do not have the luxury to place quality or access over cost. At GLWACH, most of the pharmacy staff is familiar with beneficiaries who travel an hour or more to procure their prescriptions through the MTF. However, not all consumers will have the same priorities. In order to identify the effects of cost sharing on beneficiary utilization and beneficiary characteristics related to consumption habits a review of available literature was conducted.

By recognizing that motivating factors will influence the consumer's decision to choose a specific pharmacy point of service

over the others, efforts have been made to link beneficiary demographics to the individual points of service. To analyze this, a study conducted by Linton, Garber, Fagan, and Peterson (2007) examined factors among DoD beneficiaries aged 65 years or older that were associated with utilizing MTF, TMOP, or retail pharmacy services. The researchers examined beneficiaries residing in North Carolina, Texas, and California who utilized pharmacy services during a three month period of time. They looked at characteristics such as gender, age, catchment area status, state, and number of medications filled. In their results they established that 67% of their study population utilized one point of service exclusively and the number of individual medications to be filled was the biggest predictor when deciding where to purchase their prescription. Also, they found in this study population that the minimal financial savings of shifting from retail pharmacy services to mail-order services was insufficient to warrant a change. Finally, it is of note that they determined the choice in point of service was significantly related to geographic proximity to an MTF with beneficiaries who resided in non-catchment areas being more apt to choose retail or TMOP over MTF pharmacy services. They concluded it may be necessary to provide a larger incentive to effect a migration of pharmacy utilization away from retail pharmacy services.

In 2003, Rector, Finch, Danzon, Pauly, and Manda conducted an analysis on how the financial incentive of using tiered prescription copayments affect the consumer's decision to use benefit preferred brands over non-preferred brands. For this study, the preferred brands consisted of generic drugs while the non-preferred brands were the more costly version that did not provide a significant clinical advantage. They found the use of tiered copayments for preferred and non-preferred brands did result in a significant movement in consumer utilization from non-preferred to preferred drugs. In their study they indicate this change may be related to the degree of difference between copayments. The majority of the pharmacy benefit plans they studied had a difference in copayment of $15 for non-preferred versus preferred drugs. One of the plans had a difference of $18 between non-preferred and preferred drugs. While they found the $15 and $18 difference in copayments resulted in an increase of beneficiaries choosing preferred drugs; they did not find the $3 differential between the $15 and $18 copayments resulted in a significant change in utilization between the plans. This supports the findings in a 2001 study by Gaither, Kirking, Ascione, and Welage which indicated consumers would more favorably regard generic drugs as the differential in copayment increased.

A study by Klepser, Huether, Handke, and Williams (2007) delved deeper into the relationship between out of pocket expenses

and utilization of a pharmacy benefit. They examined the effect a change from a three tier copayment to coinsurance would have on beneficiary utilization of the benefit. They began with two privately insured groups with a similar three tier copayment structure. After adjusting the benefits of one group to a four tier coinsurance they compared drug expenditures and utilization of the two groups before and after implementation. While the out of pocket costs associated with the change did not significantly increase, they found for three essential drug classes that utilization and spending increased at a lower rate for the coinsurance group. They were able to conclude coinsurance can be leveraged for certain drug classes to manage consumption and spending.

Nau, Chi, Mallya, and Kirking (2007) examined prescription drug plan member's satisfaction related to costs or drug use management interventions such as prior authorizations, step therapy, and quantity limits. Their study was concerned with the possible affect these utilization and cost management tools may have on not only satisfaction but also the level of difficulties the patients would have in acquiring medication and continuing use of medication. Their results determined the majority of the members were satisfied to some level with their benefits; however, those members who utilized mail-service pharmacy were more likely than community pharmacy users to encounter difficulties.

Dissatisfaction with the benefits was significantly related to copayment increases and difficulties in obtaining medication. Of the 2,061 respondents to the study survey, 915 had experienced an increase in the copayment and 15.5% of those individuals reported a change in their medication utilization. While 11% of them changed to a medication with a lower copayment, 4.4% discontinued use of their medication altogether. This reaction to cost-related difficulties could present a potential problem related to providing quality care while managing costs in this manner. In time this may even lead to an increased cost to the healthcare system as patients, who discontinued use of their medication, require care when their condition becomes acute or complications arise as a result of their lack of medication continuity.

The effects of changing beneficiaries' cost share through tiered copayments have been the subject of other studies. Zhang et al. (2007) found that for members who recently began utilizing single-agent angiotensin system blocking medication there was a harmful impact on their refill persistence. They measured the odds of non-persistence with increases in cost-share associated with the implementation of a tiered copayment. They found a $10 increase had a consistent negative influence, with members having a 31.9% greater chance of non-persistence. In a similar study by Huskamp et al. (2003) two employer-sponsored health plans that adjusted their cost-share model were observed. For the purpose of

their study they focused on utilization of angiotensin-converting enzyme inhibitors, proton-pump inhibitors, and statins. One plan was changed from a one-tier formulary to a three-tier formulary with copayment increases for all three tiers. The other plan changed from a two-tier formulary to a three-tier formulary with a copayment increase only for tier three drugs. Their study determined there was a significant effect on both medication continuation and out of pocket expense related to the plan which changed from a one tier to three tier formulary. The increased copayments associated with the plan adjustments led to a change in consumption that for beneficiaries taking tier three statins resulted in 21% entirely discontinuing use.

While these studies highlight only a few methods that could be used to leverage a change in beneficiary prescription drug utilization, they provide valuable information for future studies. However, as highlighted by Kissick's (1994) model on cost, quality, and access; effecting a change in any one of these areas could potentially result in a negative alteration in the other two variables. In the case of increasing beneficiary out of pocket expense the result could be an unacceptable decline in quality of care.

Purpose

The primary purpose of this study was to examine the effectiveness of the GLWACH Pharmacy Department's intervention to

reduce the utilization of the retail pharmacy service in support of the GAO's recommendation to trim down retail drug spending. This quantitative study analyzed beneficiary utilization data with the use of Microsoft Excel with the statistical add-in MegaStat version 11.1.

In order to identify a change in utilization of retail pharmacies, this study used a dichotomous variable that differentiated between the use of MTF and retail pharmacy services. The no difference model or null hypothesis ($H_0 : P_1 = P_2$) was: no significant difference between pre-intervention and post-intervention MTF and retail pharmacy utilization. The alternate hypothesis ($H_a : P_1 \neq P_2$) was: significant difference between pre-intervention and post-intervention MTF and retail pharmacy utilization.

Method and Procedures

Methods

The research method for this formal study was cross-sectional and causal in nature as the objective of the study was to determine if a change in utilization was effected after implementation of a pharmacy initiative in September 2008. This was accomplished by analyzing data during the timeframe of June

2008 to December 2008, on the number of prescriptions that were obtained through two pharmacy points of service prior to and after implementation. This research was conducted with an ex post facto design as data is reported only on what occurred prior to and after the initiative without influence from the researcher. For the purpose of the initiative and this study, secondary data was collected from the Pharmacy Data Transaction Service (PDTS) data warehouse using Business Objects software and was pulled by internal sources and the staff of the Patient Administration Systems and Biostatistics Activity (PASBA) office.

GLWACH Pharmacy Intervention

In September of 2008, the Chief of Pharmacy and the Pharmacy Non-Commissioned Officer In Charge (NCOIC) of the GLWACH Pharmacy Department initiated an intervention that supported the GAO's recommendation to reduce retail pharmacy drug spending. The intent of the intervention was to inform beneficiaries of the cost savings available to them by using pharmacy benefits provided by the MTF instead of retail pharmacies. In order to target beneficiaries who would receive greater benefit by making this change, two criteria were established for inclusion. The first criterion was to establish beneficiary use of retail pharmacy services. For this purpose, data were retrieved from PDTS for the month of August 2008 listing all of the prescriptions filled during the month either at retail pharmacies within the GLWACH 40

mile PSA or at other retail pharmacies by beneficiaries who live within the 40 mile PSA.

The second criterion was intended to identify those beneficiaries who might regularly utilize pharmacy services. Therefore, thirteen formulary drugs which were considered maintenance medication were identified (see Appendix A). After the second criterion was applied to the data retrieved from Business Objects, duplicate names and those beneficiaries who did not have a valid address were removed, leaving a list 609 beneficiaries who composed the study's sample population. A letter was created that informed the beneficiaries they could fill up to a 90 day supply of their prescription at one of the GLWACH pharmacy locations and reminded them no co-pay was required at these sites (see Appendix A). This letter was mailed to the address listed in the DEERS system for each individual beneficiary. Of the 609 letters, 54 were returned to sender due to incorrect address. This 8.9% error rate in the contact information portion of the beneficiary medical record was an inconsistency which could potentially affect the results of this and other studies.

Data Collection

The secondary data utilized for the GLWACH pharmacy initiative and this study was obtained from the PDTS data warehouse which stores information on all pharmacy transactions obtained at MTFs, retail pharmacies, and TMOP by DEERS eligible

beneficiaries. This data was retrieved from PDTS by Business Objects which is a web accessible Windows based software interface (Department of Defense Pharmacoeconomic, 2006). The data collected for the intervention was pulled by internal sources and the data for this study was collected by the PASBA office.

In order to identify the sample population, specific data were pulled on beneficiaries who obtained prescription drugs through retail pharmacies in the GLWACH area or by beneficiaries who lived in the GLWACH area and obtained prescriptions at retail pharmacies outside the PSA during the month of August 2008. The sample population was limited to those beneficiaries who filled prescriptions for esomeprazole, clopidogrel, zolpidem, omeprazole, atorvastatin, monteluckast, fexofenadine, ezetimibe, fluticasone/salmeterol, venlafaxine, tolterodine, celecoxib, and topiramate.

In order to determine if the GLWACH initiative resulted in a change in utilization of retail pharmacy services, data were pulled on the utilization of pharmacy services in the GLWACH area. The data gathered for the purpose of this study consisted of the number of prescriptions filled at GLWACH MTF and retail pharmacy sources within the GLWACH PSA by prescription drug generic code number (GCN) for the months of June, July, August, October, November, and December of 2008. Since the beneficiary letters were

mailed at the beginning of September 2008, this month was excluded from the data analysis.

Results

In order to measure a change in the population proportions of beneficiaries who utilized retail and MTF pharmacy services before and after the execution of the pharmacy intervention, a chi-square distribution with one degree of freedom was utilized as the statistical test. This test utilized a contingency table (see Table 2) and measured the proportions of observed and expected frequencies to conclude if there was a significant difference in the utilization of MTF and retail pharmacy services before and after implementation.

Table 2. Chi-square Contingency Table Test for Independence

		MTF	Retail	Total
Pre	Observed	**6249**	**4435**	10684
	Expected	6256.80	4427.20	10684.00
Post	Observed	**6664**	**4702**	11366
	Expected	6656.20	4709.80	11366.00
Total	Observed	12913	9137	22050
	Expected	12913.00	9137.00	22050.00

.05	chi-square
1	df
.8310	p-value

The predetermined alpha level of significance for this chi-square

test was .05. The test returned a chi-square = .05 and a p-value of .8310 which was greater than the .05 alpha level [$X^2(1,N=22050)=.05$, $p=.8310$]; therefore, the null hypothesis failed to be rejected. The result of this assessment was a lack of significant difference between pre-intervention and post-intervention, MTF and retail pharmacy utilization.

Discussion and Conclusion

This study provided a method to determine if the GLWACH pharmacy intervention resulted in a significant change in consumer habit when choosing a point of service for filling their prescription. Since the result of the chi-square test indicated a failure to reject the null hypothesis of no significant difference, there may have been several factors not taken into consideration when planning the intervention which led that outcome. Factors such as beneficiary demographics related to proximity to the MTF, out of pocket expenses associated with points of service, and the method of out reach to the beneficiary may have contributed to the lack of point of service migration.

In the literature review several studies identified characteristics of beneficiaries that may be more or less inclined to utilize specific points of service. As identified by Linton et al. (2007) beneficiaries who live outside of the PSA may be less inclined to travel to the MTF to fill their prescriptions. The GLWACH intervention sample population included 84 beneficiaries

who lived outside of the PSA. That equated to a possible 13.7% reduction in the number of the beneficiaries who were mailed letters in September 2008 that would be inclined to change their pharmacy point of service. In the same study it was also noted that these beneficiaries who lived further from the MTF were more inclined to choose retail or TMOP over MTF services. This information may have provided a valuable contribution to the planning of the intervention if a more thorough review of available literature had been conducted. As this information was not considered during the planning phase, the letter which was mailed to the beneficiaries did not provide a recommendation or information on the benefits of switching from retail pharmacy services to TMOP

(see Appendix A).

One of the major points outlined in the letter to beneficiaries was the cost savings associated with a change in utilization of MTF pharmacy services over retail pharmacies. As previously seen in Table 1, beneficiaries do not have an out of pocket copayment expense if they obtain their prescription drugs at the MTF. It is important to note that non-formulary medications are generally not available through the MTF. But for the purpose of the intervention this fact would not affect the outcome as the sample population consisted of beneficiaries who were filling prescriptions for drugs included in the formulary. Therefore, the

copayment differential between MTF and retail pharmacy services for the intervention was between $3 and $9. This is a much lower copayment differential than was used in the study by Rector et al. (2003) which saw significant change in utilization with a $15 to $18 differential. This result supports the findings of Gaither et al. (2001) that change is related to the degree of the differential. Since this minimal cost savings is the only incentive leveraged in the intervention letter to persuade beneficiaries to change their point of service, the letter may not have had the intended desired impact.

To that point, the letter also may not have clearly conveyed the intended message. In the body of the letter the beneficiary was notified that one or more of the prescriptions they received was available through the MTF. Immediately following that statement, the beneficiary was encouraged to bring in their new prescriptions to be filled at the MTF. The benefit of bringing in new prescriptions was referenced twice in the letter while the procedures and information on refilling their current prescriptions was not mentioned. This may have been confusing to the beneficiaries and resulted in the intended message not being adequately communicated.

While beneficiary demographics, out of pocket expenses, and communication may have played a part in the failure of the GLWACH pharmacy intervention to change beneficiary point of service

utilization habits, they are not necessarily wholly responsible. Other factors may have contributed to the lack of change which were not considered when attempting to bring beneficiaries back to the MTF. To some beneficiaries, pharmacy services within the MHS have a poor reputation. In some cases it is justified; the beneficiary may not want to tackle the lack of close to the door parking or they may feel their time could be better spent by not waiting for what they perceive to be long periods of time to receive their prescription. Since the MHS is viewed as single unit providing a standardized level of health care, a solitary negative experience at an individual MTF may affect the perception of care which will be received at all MTFs. This harks back to Kissick's triangle. If the perceived quality and access are below the individuals expected standard then it may require a far greater cost incentive to affect a change then the MHS is prepared to undertake.

Limitations

There are several limitations to this study. The first limitation is the appropriateness of the sample population for this study. Inclusion was based on utilization of a retail pharmacy during the month of August 2008 within the GLWACH area. The study population may not have provided a representative sample of retail pharmacy users. A lack of analysis of average beneficiary demographics compared with the demographics of the

study population may have led to an inability to generalize the results of this study.

The second limitation is the time-frame given for the length of the study. The pre-intervention and post-intervention time-frames were three months. This allowed for turnover of 90-day supply prescriptions. However, the short duration may not factor in changes in utilization habits related to seasonal or unaccounted for variables. This study had a limited span of time for completion which did not allow for longitudinal data collection. An ideal pre and post analysis for this study would be a 12 month time frame for collection before and after the intervention.

The last limitation for this study was the lack of inclusion of TMOP utilization data. This study focused on the changes in consumption of prescription drugs obtained through MTF and retail pharmacies, due to the intent of the intervention to bring beneficiaries back to the MTF. While the results of this study found no significant difference in pre and post intervention utilization of MTF and retail pharmacy services, it did not account for variation in the utilization of TMOP services. Deviations in TMOP utilization during the time-frame of pre and post data gathering periods may have swayed the data to give the appearance of no significant change.

Recommendations

The result of this study indicates the need to conduct further analysis of available literature. The information gleaned from this should provide valuable insight into the planning process before implementing new interventions for addressing the retail pharmacy spending in the GLWACH area.

To reduce the growing trend in retail prescription drug spending, alternate methods to reduce utilization are already being examined across the DoD. Faced with limitations on increasing beneficiary copayments, the DoD has made past recommendations to eliminate TMOP copayments as an incentive to increase TMOP utilization (Dicken, 2008). In 2007, retail pharmacy spending accounted for 64% of total drug expenditures across the DoD while only 13% of spending was attributed to TMOP (Trice, Devine, Mistry, Moore, & Linton, 2009). This type of incentive could positively affect a decrease in retail consumption while bolstering use of the underutilized TMOP service. This, according to a TRICARE press release could save beneficiaries who require medication for conditions such as high blood pressure, asthma, and diabetes up to 66% on their prescription drug (TRICARE Management Activity, 2007). Future endeavors should explore opportunities to encourage GLWACH beneficiaries to utilize TMOP services in order to adhere to the GAO's guidance on reducing retail pharmacy utilization. At a minimum, efforts to contact beneficiaries by letter should encourage refilling formulary maintenance

medications through MTF pharmacy services and highlight the availability of TMOP (see Appendix B).

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Appendix A
Letter Sent to Beneficiaries

Pharmacy Division September 2008

Dear Pharmacy Patron:

The General Leonard Wood Army Community Hospital (GLWACH) Pharmacy has the following items on formulary.

- Nexium (esomeprazole)
- Plavix (clopidogrel)
- Ambien (zolpidem)
- Prilosec (omeprazole)
- Lipitor (atorvastatin)
- Singulair (montelukast)
- Allegra (fexofenadine)
- Zetia (ezetimibe)
- Flovent (fluticasone/salmeterol)
- Effexor (venlafaxine)
- Detrol (tolterodine)
- Celebrex (celecoxib)
- Topimax (topiramate)

We have noticed that you are taking one or more of the above listed medications. You may bring in a new prescription for up to a 90 day supply with refills and we can fill your prescription at no cost to you. There is no co-pay when you have your prescriptions filled at the Fort Leonard Wood Pharmacy.

All new prescriptions from your civilian physician should be taken to the PX Pharmacy located in the new PX one block south of General Leonard Wood Army Community Hospital.

The hours of operation are 8AM to 6PM, Monday thru Friday.

The online formulary can be found at http://glwach.amedd.army.mil

If you have additional questions, please contact GLWACH Pharmacy Division at (573) 596-0515. We stand ready to assist.

The Pharmacy Division looks forward to serving you and your prescription needs.

Sincerely,
Fort Leonard Wood Pharmacy Division

Appendix B
Revised Letter to Send to Beneficiaries

Dear Pharmacy Patron:

The General Leonard Wood Army Community Hospital (GLWACH) Pharmacy has noticed that you are taking one or more of the following medications.

- Nexium (esomeprazole)
- Plavix (clopidogrel)
- Ambien (zolpidem)
- Prilosec (omeprazole)
- Lipitor (atorvastatin)
- Singulair (montelukast)
- Allegra (fexofenadine)
- Celebrex (celecoxib)
- Topimax (topiramate)
- Zetia (ezetimibe)
- Flovent (fluticasone/salmeterol)
- Effexor (venlafaxine)
- Detrol (tolterodine)

We would like to remind you that these medications and many others are available on Fort Leonard Wood and through the TRICARE Mail Order Pharmacy.

- **General Leonard Wood Army Community Hospital Main Pharmacy**
  - New prescriptions ordered by a GLWACH Provider and Refills for medications listed on our Formulary can be filled at this location. This service is free of charge and you can fill up to a 90-day supply for most medications.
  - For a list of Formulary medications visit our website at http://glwach.amedd.army.mil
  - Hours of Service: 7:30 AM to 5:30 PM Monday – Friday

- **Fort Leonard Wood PX Pharmacy**
  - New prescriptions ordered by a GLWACH Provider or Civilian Provider and Refills for medications listed on our Formulary can be filled at this location. This service is free of charge and you can fill up to a 90-day supply for most medications.
  - Hours of Service: 8 AM to 6 PM Monday – Friday

- **TRICARE Mail Order Pharmacy**
  - We recommend that you use the mail-order pharmacy for prescriptions you need on a regular basis. You can get up to three times the quantity of medications for your money, compared to the same prescriptions at a retail network pharmacy. And, there's no charge for standard shipping and handling.
  - Contact Express Scripts, Inc. for more information on how to register for this program by calling 1-866-363-8667 or visiting their website at www.express-scripts.com/TRICARE

If you have additional questions, please contact GLWACH Pharmacy Division at (573) 596-0515. We stand ready to assist.

Sincerely,
Fort Leonard Wood Pharmacy Division