SIMPLIFY MY MEDS®
APPOINTMENT-BASED MEDICATION SYNCHRONIZATION
PILOT STUDY REPORT
_____

PREPARED FOR NATIONAL COMMUNITY PHARMACISTS ASSOCIATION

David Holdford RPh, MS, PhD
Professor of Pharmacoeconomics and Health Outcomes
Department Of Pharmacotherapy & Outcomes Science,
Virginia Commonwealth University School Of Pharmacy

EXECUTIVE SUMMARY

Simplify My Meds® is a turnkey program that provides NCPA member pharmacies with tools and training to implement an ABMS program. It is an Appointment Based Model (ABM) which was designed to improve patient adherence by synchronizing all of a patient's chronic fill medications to come due on a single day of the month. The synchronization is combined with a monthly phone call to offer opportunities to solve patients' problems with their medication use. This report describes the results and experiences of five NCPA member pharmacies who implemented Simplify My Meds® for their patients.

This study compared the medication adherence and persistence using a pre- post- with control group design of patients who enrolled the Simplify My Meds® Program ("Test Patients") and those who did not enroll ("Control Patients"). A retrospective claims analysis was conducted using data collected from Ateb, a pharmacy data management and technology service company, from January 1, 2013 to November 1, 2014. Interviews were also conducted with program managers who provided perceptions of their experiences with the program.

This analysis indicated better long term adherence and persistence with patients enrolled in the program compared to controls. Adherence, as measured by proportion of days covered (PDC), was significantly higher for the program patients after 12 months (90.8%) compared to controls (71.7%). Similar results were shown for medication possession ratios, average days on therapy, and number of adherent patients.

Interviews with program managers indicated that experiences with Simplify My Meds® were generally positive. Pharmacies that committed to the program appeared to have good results with it. However, like all innovations, there were some bumps in implementation. Nevertheless, program managers stated that they believed the program showed that prescription sales increased, inventory control improved, patients were more satisfied, and workflow improved. Physicians and insurance plans also accepted the program.

In conclusion, the results of this study indicate that more prescription sales result for patients enrolled in the Simplify My Meds® program. Interviews with pharmacists involved in the program suggest that the program can result in a positive return on investment by improving costs associated with pharmacy operations.

INTRODUCTION

INTRODUCTION

Appointment Based Medication Synchronization (ABMS) is a growing service innovation that is associated with greater patient adherence and persistence in patients taking chronic medications.[1, 2] The National Community Pharmacists Association (NCPA) offers exclusive, free use of an ABMS program, Simplify My Meds®, to its members.

Simplify My Meds® is a turnkey program that provides NCPA member pharmacies with tools and training to implement an ABMS program. Simplify My Meds® was designed to improve patient convenience and medication adherence by synchronizing all of a patient's chronic fill medications to come due on a single day of the month. When combined with a monthly phone call, it offers opportunities to solve patients' problems with their medication use. By simplifying the refill process and offering opportunities to interact with their pharmacist, patients can adhere and persist better with their prescribed medications. This report describes the results and experiences of five NCPA member pharmacies who implemented Simplify My Meds® for their patients.

A major goal of this study was to understand the financial benefits of offering ABMS in community pharmacies and the roles of pharmacists, technicians, and technology in providing ABMS. To date, the business case for ABMS is primarily anecdotal or based upon logic. For instance, logic suggests that if patients are adherent with their medications, prescription sales will increase. However, it is not clear how the program will influence other outcomes like nonprescription sales or costs of operations.

To answer these questions, this study contains two parts. The first part is an analysis of adherence and persistence before and after implementing the Simplify My Meds® ABMS program. This analysis provides information about the impact of the program on adherence and persistence. The second part of the study consists of interviews with pharmacists involved in providing the ABMS program. Results from this part will describe the experiences of pharmacies offering the program to (1) support the business case for the Simplify My Meds® program and (2) develop best practice recommendations for NCPA members when offering ABMS in community settings.

METHODS

PART ONE

Objective: To compare the impact of the Simplify My Meds® ABMS program on medication adherence and persistence on existing users with individuals not enrolled in the program.

Part one of the study compared the medication adherence and persistence in the post-enrollment period between the patients who enrolled in the Simplify My Meds® Program ("ABMS Patients") and those who did not enroll ("Control Patients"). A retrospective claims analysis was conducted using data collected from January 1, 2013 to November 1, 2014. Data came from Ateb, a pharmacy data management and technology service company headquartered in Raleigh, NC.

Simplify My Meds® ABMS Program
Each pharmacy enrolled in the program agreed to administer the Simplify My Meds program in accordance with the program guidelines. The program guidelines included the following actions:

1. Designate a dedicated program manager to administer Simplify My Meds program and serve as primary point of contact for the 12-month study.
2. Participate in a one-hour Time My Meds training session prior to going live.
3. Use Ateb's Time My Meds system to manage all patients in the Simplify My Meds program during the 12-month study.
4. Participate in bi-weekly 30-min. status/update conference calls with other pharmacies in the study.
5. Administer the Simplify My Meds program in accordance with the program guidelines during the 12-month study.
   a. Target pharmacy patients who might benefit from the program.
   b. Synchronize all of each enrolled patient's prescriptions to come due on the same day of the month.
   c. Schedule a specific date for patients to pick up their medications or have it delivered to them.
   d. Seven to ten days prior to a patient's pick-up date, the program manager will pull the patient's record and contact the patient to review his or her medications. This generates the fill orders for that patient and allows the pharmacist to detect and deal with any new, discontinued, or changed prescriptions. Recent hospitalizations will also be noted and any needed changes addressed.
   e. The day before the patient's pick-up date, the pharmacist will review the medications to be filled, resolve any clinical issues, and order any drugs not in stock. Someone in the pharmacy will call the patient to remind them of the upcoming pick-up date.

Data Collection
Data from three of the five pharmacies enrolled in the pilot program were analyzed (Table 1). Data from the other two were not used because they terminated their agreements with Ateb's synchronization program.

Table 1: Patients Enrolled in Simplify My Meds program at Pharmacies

Pharmacies	Approximate # Enrolled
A	180
B	300
C	110

Data was collected from a pre-enrollment period which was the previous 3 months of prescription data before each patient's the enrollment date. The pre-enrollment data was used to compare prior adherence behavior with adherence after starting the program. The impact of the Simplify My Meds® program came from post-enrollment period data which started from the 30th day after enrollment and continued to the 395th day after the enrollment date or until January 11, 2015.

Matching algorithm
The unit of analysis was the prescription with ABMS prescriptions coming from any patients enrolled in the program and staying in the program for at least 120 days. Each ABMS prescription was matched to two control prescriptions with the following similar characteristics. The best matched controls for ABMS prescriptions were selected based on the following criteria.

- Same medication as ABMS
- Similar age of the patient enrolled
- Similar comorbidity as measured by presence of diabetes, hypertension, cholesterol or mental diagnosis
- Similar medication adherence score (PDC score) in the previous six months before being enrolled in the program
- Similar start to refill dates

PART TWO

Objective: To identify lessons learned and insight from individuals involved in implementing and running the Simplify My Meds® ABMS program.

Contact individuals from five pharmacists at the five participating pharmacies who are identified by NCPA were interviewed over the phone. Interviews were done by the primary author of this study using a compiled list of open-ended questions (Table 2). Follow-up questions explored additional insights relating to study objectives. Interviews averaged 30 minutes in length. Written notes were taken during the interview and qualitatively analyzed for lessons learned and insights.

Approval for Parts 1 and 2 of the study was received from the Virginia Commonwealth University Investigational Review Board (IRB).

Table 2: Questions asked of program managers about program experiences

Promotion and recruitment
- How were patients Identified/recruited?
- Which methods worked best?
- What were the roles of technicians/pharmacists at this step?
- What difficulties/opportunities existed at this step?
- What benefits appealed most to patients?

How do the following processes work at your pharmacies?
- Initial Synchronization
- Reminder Call
- Pickup or Delivery of the Medication

Benefits/Costs of the program
- How do you think ABMS affected participation in MTM and other pharmacy services?
- How do you think ABMS affected patient pharmacy visits & front end merchandise sales?
- How did ABMS impact
  - Pharmacist & tech productivity?
  - Relationships with physicians?

Adherence
- What elements of the program do you think helped patients the most in taking their medicines as directed?
- What types of patients benefited most?
- What tasks can pharmacists delegate to techs or technology?

Additional questions

- How have you had to adapt and make changes for your pharmacy? What changes have been made in how this program works?
- What has been the biggest surprise about this program?
- What would you recommend to other independent pharmacists interested in offering ABMS?

RESULTS

PART ONE
ANALYSIS OF ADHERENCE AND PERSISTENCE

Over the one year study period, 211 unique prescriptions for individuals enrolled in the program were evaluated and matched to 422 control prescriptions. Note that the number of prescriptions analyzed were a subset of the total number of ABMS prescriptions filled because of inability to match to controls.

Individuals in the ABMS program were similar to those not enrolled. The mean age of both groups was approximately 71 years. Comorbid medical conditions of the groups were also the same with the largest number suffering from high cholesterol and/or mental health conditions (Table 3).

Table 3: Medical Conditions of ABMS and Controls

Group	ABMS		Control	
	Num	Prob	Num	Prob
Other	38	17.19%	76	17.19%
Mental Health Only	21	9.50%	42	9.50%
Cholesterol Only	116	52.49%	232	52.49%
Cholesterol & Mental Health	30	13.57%	60	13.57%
Diabetes Only	4	1.81%	8	1.81%
Diabetes & Mental Health	2	0.90%	4	0.90%
Diabetes & Cholesterol	5	2.26%	10	2.26%
Diabetes & Cholesterol & Mental Health	3	1.36%	6	1.36%
Diabetes & Cholesterol & Mental Health & Hypertension	2	0.90%	4	0.90%

Medication Adherence and Persistence

Medication adherence prior to enrolling in the ABMS program was over 90% in both groups, exceptionally high compared to historical levels. After enrolling into the program, the same high adherence levels were retained for program patients but adherence measured by proportion of days covered (Table 4) dropped almost 20% in patients who were not in the program. A similar adherence measure, medication possession ratio (MPR), showed a comparable drop (Table 5).

Average days on therapy (ADT), a measure of medication persistence, was similar between groups at the start of the program but was significantly higher for the ABMS group after starting the program (Table 6). The number of adherent patients was also much higher for the ABMS group after enrolling in the program (Table 7).

Table 4: Proportion of Days Covered (PDC) for ABMS and Controls Before and After Synchronization

Group	Pre-Enrollment Period				Post-Enrollment Period			
	Mean	Std Dev	95% CL Mean		Mean	Std Dev	95% CL Mean	
Control	**90.28%**	0.1228	89.1%	91.4%	**71.71%**	0.3243	68.7%	74.7%
ABMS	**90.47%**	0.1185	88.9%	92.0%	**90.79%**	0.1245	89.1%	92.4%
Diff (1-2)	-0.19%				-19.08%			
P value*	0.8486				<.0001			

Note: *Two-sample t test was used.

Table 5: Medication Possession Ratios (MPR) for ABMS and Controls Before and After Synchronization

Group	Pre-Enrollment Period				Post-Enrollment Period			
	Mean	Std Dev	95% CL Mean		Mean	Std Dev	95% CL Mean	
Control	**95.32%**	0.0876	94.5%	96.1%	**84.47%**	0.2796	81.9%	87.1%
ABMS	**93.86%**	0.1128	92.4%	95.4%	**95.18%**	0.1003	93.9%	96.5%
Diff(1-2)	1.46%				-10.70%			
P_value*	0.0686				<.0001			

Note: *Two-sample t test was used.

Table 6: Average Days on Therapy (ADT) for ABMS and Controls Before and After Synchronization

Group	Pre-Enrollment Period				Post-Enrollment Period			
	Mean	Std Dev	95% CL Mean		Mean	Std Dev	95% CL Mean	
Control	**153.3**	47.5452	148.9	157.8	**198.7**	123.2	187.2	210.3
ABMS	**153.9**	47.0669	147.7	160.2	**262.2**	102.6	248.6	275.8
Diff(1-2)	-0.6041				-63.4864			
P value	0.8771				<.0001			

Note: *Two-sample t test was used.

Table 7: Percentage of Adherent Patients for ABMS and Controls Before and After Synchronization

Group	Pre-Enrollment Period	Post-Enrollment Period
	Proportion of PDC Score >= 80%	Proportion of PDC Score >= 80%
Control	**84.84%**	**59.85%**
ABMS	**87.33%**	**85.97%**
Diff(1-2)	-2.49%	-26.12%
P value*	0.3886	<.0001

Note: *Chi-square test was used.

PART TWO
INTERVIEWS WITH PROGRAM MANAGERS

The following section summarizes the findings of interviews with program managers.

Question 1: What is your overall impression of the Simplify My Meds Program?

Finding: All five pharmacies had a good overall impression of the program. They felt the program was particularly good for patients, and overall, they felt it was good for pharmacy operations. One pharmacist summed up a view with, "We started with a manual system that took one hour to synchronize each patient manually. Now, it only takes a few minutes."

Despite the good impression, there were some reservations. Some felt that the idea was good, but they could not fully take advantage of the program due to issues like resistance from employees and difficulties integrating it into their work flow.

Question 2: How difficult was it to administer the Simplify My Meds program in accordance with the program guidelines?

Finding: Responses differed significantly to this question. Some found it easy to use the program as a turnkey system, while others chose to adapt it to their other operating systems. Sometimes they found it difficult to adapt systems.

The biggest difficulty was the lack of integration with the pharmacies' dispensing software systems. It was felt that this required too many screen changes when managing medication sync patients. One pharmacist complained, "Having two programs was a big problem." Others had difficulties not with the program but with normal implementation pains like not committing sufficient staffing to the program, unexpected employee turnover, or resistance to change.

This made it difficult for some pharmacies to administer the Simplify My Meds program in accordance with the program guidelines. Some pharmacies had difficulty keeping patients on a consistent synchronized schedule. One pharmacist said, "We were redoing them way too much."

Consistently keeping up with the program's reminder calls to patients was another issue. One pharmacy could not keep up with them due to staff turnover. Another said, "We just did not have time to do it until recently. Now the personal interaction with the pharmacist is really paying off. Patients feel that you really care about them."

Question 3: How have you had to adapt the Simplify My Meds program to your pharmacy? What changes have been made in how this program works?

Finding: Most adapted the program in some way. Some already had procedures in place similar to elements of the ABMS program. One pharmacy had a "refills due report" that staff members

preferred over elements of the med synch program. Another did not use the refill request forms to be sent to physicians - using tools available within their dispensing system instead.

Some did not make automatic monthly calls to all patients. One pharmacy found that half of the ABMS patients opted out of the calls because they did not like them. Another pharmacy only made calls for patients who they felt would benefit from them. Another pharmacy chose to substitute their own system for targeting patients instead of using Ateb's reports for targeting patients who would benefit from medication synchronization.

Question 4: What Detectable Outcomes Have You Seen With the Program?

Finding: The answer to this question is summarized by responses listed in Tables 8 and 9 with additional information below.

Workflow
All five pharmacies reported that workflow was better or significantly better with ABMS. Notable quotes were:

>"It allows planning ahead and planning of the day better."
>"Fewer home deliveries needed to be made. Less calls from customers asking for refills."
>"One half to one hour was save each day in delivery time."
>"Able to use personnel time better."

Inventory Control
Four out of five pharmacies reported better inventory control and turnover. The general feeling was that it helped in "planning purchases". It allowed pharmacies to "order larger bottles of chronic meds instead of smaller bottles." One pharmacist said the improvement was "Amazing", allowing expensive medications for AIDs patients and others to be purchased five days before being dispensed.

Patient Satisfaction
Patient satisfaction was generally better with the program although some patients were reluctant to embrace it. Patients like that it was free and allowed them to manage visits to the pharmacy. One pharmacy reported that "80% to 90% like the program. Patients make one trip, and pharmacists have more time to spend with them. Some people still like to call in and socialize" between appointments but they do it by choice, not because they have to."

Some patients did not like the program. Reasons were varied. One was confusion caused by the med synch program and other programs like automated fill programs or reminder calls from PBMs. Other patients were happy with the status quo and did not want to change. One pharmacist reported conflicts with nonadherent patients who would dispute the fact that they should be needing medications at the time of the appointment. They felt that the pharmacist

must be wrong, not them. Although many liked receiving the reminder phone calls, others did not.

Prescription (RX) Sales

Three out of five pharmacies reported better sales with the program for the obvious reason that patients who adhere and persist with their medications will have more prescriptions filled. The majority of additional sales occurred in current customers. No pharmacy reported that the program attracted new customers to the pharmacy.

Two pharmacies felt that prescription sales did not increase. Both reported that that current programs at the pharmacy were already working well and that the Simplify My Meds® program did not appreciably increase sales.

Front-End Sales

No change in front-end sales was reported by any of the five pharmacies because none had very large front-end sections in their pharmacies.

Relationships with physicians

Relations with physicians either improved slightly or stayed the same at pharmacies. Some physicians liked it for their patients, but many did not want to be bothered with it. On average, physicians appeared to like it if it did not mean additional work or hassle for them. Comments from pharmacists included:

> "We had no pushback from physicians. They like it, but we need to do a better job educating and reaching out the physicians. Also, physicians are now keeping up with their patients' meds more."

> "Doctors like the program but were pessimistic that the insurance companies would let it be done right. The staff at the doctor's office knows us better now."

> "Some physicians called to complement us. Most do not care. There were no complaints."
> "We were able to tie in the program to marketing to physicians. They are pleased with program but they do not like the faxes. We had no complaints from any physicians."

Relationships with Managed Care

No major problems were reported with managed care regarding the program. Pharmacies found that short fills during the synchronization process were not a problem. Comments included:

> "Health plans worked with co-pays. Last January, Part D plans changed their policy to prorate the co-pay for partial prescriptions. So 1/2 of a prescription could receive 1/2 of a copay."

"We had no issues with auditing. The program did not trigger an audit."

"No managed care problems. We waived some copays to avoid complaints from patients."

We had no problems except insurance companies would call patients after the pharmacy just filled their medications. This would confuse patients."

"We had no problem with insurance companies. We already had experience with short fills because we have been using blister packs."

Participation in MTM and other pharmacy services
Answers for this question were mixed. Some stated no change in promoting MTM or other services. Others reported increases in MTM, use of packaging services, flu vaccine sales, and possibly companion sales.

Employee Satisfaction
Answers for this question were also mixed. In general techs and delivery drivers liked it because it reduced their workload. Some pharmacies faced stiff resistance to the program from techs or pharmacists. The reasons did not appear to be due the program itself - more a resistance to any change.

What investments did you make in making the program work?
Significant time was spent by staff and management on starting up the program. Those who did not commit the time wished they had because they saw potential for improvements in operations and service. Minimal to moderate time was needed to maintain the program. Monetary investments spent on promoting the program and running it were limited.

Table 8: Detectable outcomes associated with the Simplify My Meds® ABMS program

GENERAL QUESTIONS	SB	B	NC	W	SW
What detectable outcomes have you identified in:					
Workflow	2	3			
Inventory Control	2	2	1		
Patient Satisfaction	1	3	1		
Prescription Sales		3	2		
Front End Sales			5		
Relationships with physicians		3	2		
Relationships with managed care plans			5		
Participation in MTM and other pharmacy services	1	1	3		
Employee Satisfaction		2	1	2	

Significantly Better (SB), Better (B), No Change (NC), Worse (W), Significantly Worse (SW)

Table 9: Investments Need to Offer the Simplify My Meds® ABMS program

Investments in the program	Minimal	Some	A lot
How much additional time did you and your staff spend on startup of the program?	1		4
How much additional time did you and your staff spend on running the program?	1	4	
How much additional money did you need to spend to start up the program?	5		

DISCUSSION

The results of this study indicate that individuals enrolled in the Simplify My Meds program had higher levels of adherence and persistence compared to control patients.

Results differ depending on the pharmacy involved and the medications being synchronized (Appendix II). All pharmacies showed better adherence and persistence rates in ABMS patients than controls at the end of the one year study period. Adherence and persistence rates were higher for ABMS in nearly every medication class at each pharmacy also.

The total number of prescriptions filled was higher in two out of three pharmacies after they started the ABMS program. However, it was not possible to attribute the program as the cause the overall increase due to limitations in the study design and implementation of the intervention.

Based upon interviews with program managers, experiences with the Simplify My Meds® were positive. Pharmacies that committed to the program appeared to have good results with it. Like all innovations, there were some bumps in implementation and not all processes were followed, but perceptions of sales increased, perceptions of inventory control improved, patients appeared more satisfied, and workflow improved. Physicians and insurance plans accepted the program.

Some pharmacies were unable to commit to the program fully for reasons specific to the pharmacy. Barriers included employee resistance and/or turnover, preference for current systems over the ABMS, and lack of time spent implementing the program. Future improvements in the Simplify My Meds® program should attempt to integrate the program with current operations in community pharmacies.

All respondents felt that the program was a good idea and feel that patients benefit from it.

STUDY LIMITATIONS

The first limitation was that it was not possible to match ABMS pharmacies with non-ABMS pharmacies. Matching can only occur when there is a good argument to be made that the ABMS and matched pharmacies will be similar in key characteristics associated with the study. However, each independent pharmacy is unique, and there was little confidence that matching could strengthen the study design. Therefore, matching was only done on patients within study pharmacies.

Another important limitation was that pharmacies did not administer the Simplify My Meds program in accordance with the program guidelines. Although some adaptation of the program can be expected in real life settings, heterogeneity in the way the program was administered makes conclusions about its effectiveness less robust. For example, not all pharmacies made

16

reminder calls to patients or reconciled changes in therapy prior to medication delivery. Interviews with some pharmacists gave the impression that they were actually administering coordinated refill programs rather than medication synchronization. With home delivery of medications to patients, it was not clear whether patients were actually taking the medications or simply stockpiling them. Not all pharmacies targeted patients who might benefit from the program, preferring instead to enroll everyone including patients with only one medication.

Financial information provided by individual pharmacies did not give useful information about the success of the program. Only three pharmacies responded to requests. One of the responding pharmacies was unable to provide information because they had switched pharmacy software in late October 2014 and the current software was unable to access information prior to installation. Another pharmacy was sold since the study and the information provided may not be representative of performance of other pharmacies in the program.

A further limitation is that this analysis did not control for all factors affecting adherence to medications. One factor of particular importance to this study is self-selection bias. The people who signed up for the Simplify My Meds program might be inherently different from those who did not. This self-selection limitation was reduced in the study design by assessing and matching patients on adherence behavior in the period before ABMS was started.

Other factors not addressed in the study design include the insurance status of the patient, the complexity of the patient's medication regimen, the severity of the patient's condition(s), and the level of patient motivation and engagement in their health care. Small sample sizes also made it difficult to do meaningful comparisons by drug or by condition.

Finally, patients labeled as "adherent" and "non-persistent" may not really be so. "Adherent" patients may be getting their prescriptions filled but not taking them as directed. "Non-persistent" patients may have been directed by the physician to discontinue therapy or they may have simply switched pharmacies. There was nothing built into to the study design to verify that dispensing records were consistent with actual medication taking behavior. This is a limitation of all adherence research that is based on prescription records or claims databases.

CONCLUSION

The results of this study indicate that the Simplify My Meds program was associated with greater adherence and persistence in patients. This can increase potential revenue per patient by hundreds of dollars.

In general, program managers described positive experiences with the Simplify My Meds® program although not all pharmacies were committed to the program. Some had difficulty integrating it into their other computer and workflow systems or faced resistance from employees. Pharmacies that fully committed to the program appeared to have good results with it.

REFERENCE LIST

(1)   American Pharmacists Association Foundation. Pharmacy's Appointment Based Model: A prescription synchronization program that improves adherence. Washington, DC: American Pharmacists Asssociation; 2013 Aug 30.

(2)   Holdford DA, Inocencio TJ. Adherence and persistence associated with an appointment-based medication synchronization program. *J Am Pharm Assoc (2003)* 2013;53(6):576-583.

APPENDIX I

Measured Medications

The top 10 medications with the largest enrolled population were used in the study.

- Levothyroxine Sodium
- Lisinopril
- Furosemide
- Omeprazole
- Atorvastatin Calcium
- Gabapentin
- Amlodipine Besylate
- Metformin Hcl
- Metoprolol Tartrate

Definitions

Average Days on Therapy (ADT) (Medication Persistent)

Cumulative day supply in the measurement period

Proportion Days Covered (PDC)

Proportion of days covered by the medication

(Sum of days covered by the medication between the index date and the last day of the measurement period) / (Total number of days between the index date and the last day of the measurement period)

Medication Possession Ratio (MPR)

The percentage of dates that a patient has access to a medication. If the MPR is larger than 1, then it will be capped at 1.

(Sum of day supply between the index date and the last day of the measurement period) / (Total number of days between the index date and the last day of the measurement period)

Percentage of Prescription Refilled On Time

Pharmacy Name	Percent of Prescription Refilled On Time***		Measured Refills	
	Pre-Period*	Post-Period**	Pre-Period*	Post-Period**
Pharmacy A	64.56%	67.01%	395	785
Pharmacy B	68.97%	79.88%	319	487
Pharmacy C	77.54%	82.50%	138	240

* Pre-period is the previous 6 month before the patient enrolled in the TMM program

** Post-period is starting from day 30th to day 395th after the patient's enrollment date (12 months in total).

*** Refilled on time is defined as + or - 5 days of the refill due date.

The prescriptions in the report are the same population of the TEST GROUP in the previous NCPA #2 TMM Analysis.

Medication Persistence

Pharmacy A

Disease State	Group	Average Days On Therapy		Measured Prescriptions
		Pre-Period*	Post-Period**	
Diabetes	Control	162.88	148.13	8
	Test	173.00	306.00	4
Hyperlipidemia	Control	158.07	176.86	44
	Test	158.14	251.73	22
Hypertension	Control	151.29	168.86	112
	Test	149.13	238.80	56
Other	Control	156.13	198.23	62
	Test	153.16	261.42	31
Ulcer	Control	156.89	161.50	18
	Test	152.67	224.00	9

Pharmacy B

Disease State	Group	Average Days On Therapy		Measured Prescriptions
		Pre-Period*	Post-Period**	
Diabetes	Control	149.80	212.10	10
	Test	150.40	273.20	5

Disease State	Group	Pre-Period	Post-Period	Measured Prescriptions
Hyperlipidemia	Control	160.47	209.23	62
	Test	159.77	251.97	31
Hypertension	Control	166.44	283.11	54
	Test	179.67	330.70	27
Other	Control	171.94	183.88	16
	Test	177.25	243.63	8
Ulcer	Control	171.50	359.00	2
	Test	175.00	363.00	1

Pharmacy C

Disease State	Group	Average Days On Therapy		Measured Prescriptions
		Pre-Period*	Post-Period**	
Diabetes	Control	155.30	255.70	10
	Test	108.80	261.60	5
Hyperlipidemia	Control	112.60	217.90	10
	Test	130.40	294.60	5
Hypertension	Control	109.11	154.94	18
	Test	114.00	249.00	9
Other	Control	131.50	165.75	8

23

	Test	124.25	233.50	4
Ulcer	Control	103.88	203.88	8
	Test	122.25	302.50	4

Proportion Days Covered

Pharmacy A

Disease State	Group	Proportion Days Covered		Measured Prescriptions
		Pre-Period*	Post-Period**	
Diabetes	Control	93.73%	56.88%	8
	Test	93.29%	95.97%	4
Hyperlipidemia	Control	94.38%	69.20%	44
	Test	95.01%	94.46%	22
Hypertension	Control	88.45%	63.48%	112
	Test	89.07%	87.15%	56
Other	Control	91.51%	71.00%	62
	Test	92.23%	92.41%	31
Ulcer	Control	94.05%	69.00%	18
	Test	93.52%	93.98%	9

Pharmacy B

Disease State	Group	Proportion Days Covered		Measured Prescriptions
		Pre-Period*	Post-Period**	
Diabetes	Control	94.64%	80.83%	10
	Test	94.88%	97.54%	5
Hyperlipidemia	Control	91.53%	80.39%	62
	Test	90.70%	92.16%	31
Hypertension	Control	93.74%	84.50%	54
	Test	93.89%	94.40%	27
Other	Control	91.84%	80.79%	16
	Test	92.69%	94.70%	8
Ulcer	Control	89.07%	95.22%	2
	Test	91.26%	95.63%	1

Pharmacy C

Disease State	Group	Proportion Days Covered		Measured Prescriptions
		Pre-Period*	Post-Period**	
Diabetes	Control	92.44%	76.45%	10
	Test	91.15%	75.00%	5
Hyperlipidemia	Control	86.85%	66.76%	10

	Test	87.32%	84.98%	5
Hypertension	Control	74.73%	54.56%	18
	Test	75.11%	79.50%	9
Other	Control	73.02%	71.74%	8
	Test	69.06%	90.98%	4
Ulcer	Control	84.62%	69.00%	8
	Test	85.38%	89.33%	4

Medication Possession Ratio

Pharmacy A

Disease State	Group	Medication Possession Ratio		Measured Prescriptions
		Pre-Period*	Post-Period**	
Diabetes	Control	96.73%	70.39%	8
	Test	94.63%	98.90%	4
Hyperlipidemia	Control	97.48%	88.29%	44
	Test	98.29%	97.20%	22
Hypertension	Control	95.09%	79.85%	112
	Test	92.28%	92.39%	56
Other	Control	97.15%	85.71%	62
	Test	94.72%	96.06%	31
Ulcer	Control	98.74%	86.75%	18
	Test	96.79%	96.97%	9

Pharmacy B

Disease State	Group	Medication Possession Ratio		Measured Prescriptions
		Pre-Period*	Post-Period**	
Diabetes	Control	93.32%	91.46%	10
	Test	98.24%	98.58%	5

Disease State	Group	Pre-Period*	Post-Period**	Measured Prescriptions
Hyperlipidemia	Control	95.75%	87.75%	62
	Test	95.13%	95.04%	31
Hypertension	Control	96.40%	94.95%	54
	Test	97.17%	98.54%	27
Other	Control	95.60%	87.32%	16
	Test	95.81%	97.16%	8
Ulcer	Control	94.23%	99.16%	2
	Test	96.15%	99.45%	1

Pharmacy C

Disease State	Group	Medication Possession Ratio		Measured Prescriptions
		Pre-Period*	Post-Period**	
Diabetes	Control	96.82%	78.70%	10
	Test	96.78%	79.63%	5
Hyperlipidemia	Control	93.04%	70.67%	10
	Test	96.31%	92.16%	5
Hypertension	Control	85.72%	66.51%	18
	Test	76.80%	95.99%	9
Other	Control	80.14%	82.96%	8

	Test	72.35%	93.65%	4
Ulcer	Control	92.28%	78.78%	8
	Test	87.52%	96.54%	4