Clinical and Economic Outcomes of the Texas Medicaid Medication Therapy Management (MTM) Pilot

Interim Report

Submitted to the

Texas Health and Human Services Commission

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October 15, 2012

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EXECUTIVE SUMMARY

H.B. 1, 82nd Legislature, Regular Session, 2011, Rider 49, directed the Health and Human Services Commission (HHSC) to implement a medication therapy management (MTM) pilot program and report on the effectiveness of the pilot to reduce adverse drug events and related medical costs for a subset of high-risk Texas Medicaid clients. HHSC contracted with University of Texas College of Pharmacy (UT-COP) to fulfill these requirements. UT-COP subcontracted with the Texas Pharmacy Foundation for the administration of the Texas Medicaid MTM pilot program (MTM Pilot).

The evaluation of the MTM Pilot aims to determine the clinical and economic value of a community-based MTM program among Texas Medicaid recipients. Specifically, the objective is to determine if there are significant changes in medication-related problems, total healthcare costs for patients with hypertension, blood pressure and A1c values between patients receiving MTM services (intervention group: N=150) and those who did not receive MTM services (control group: N=150). A1c is a measure indicating the level of blood glucose control over the past two to three months.

Adult patients with hypertension and taking at least four maintenance medications were enrolled in the pilot. Trained community pharmacists collaborate with physicians and patients to establish goals for proper medication use, effective prescribing, and healthy living. Pharmacists provide MTM services face-to-face or via telephone to: comprehensively review medications; provide patients with medication lists to share with other health care providers; develop medication action plans; intervene with patients and providers; provide referrals; document outcomes; and follow-up. Five visits have been planned during the one-year follow-up period. Medicaid claims data and participating community pharmacy MTM data will be extracted. Descriptive and inferential statistics will be used to address the study objectives.

This report provides a summary of the preliminary MTM Pilot results for the first five months (April 27, 2012 to September 19, 2012) and focuses on the patient needs that precipitated the MTM intervention, what interventions were made, the outcome of those interventions, and estimated cost savings. Currently, 82 pharmacies, 153 pharmacists and 116 patients are enrolled. Patient recruitment will continue until 150 patients are enrolled and have received MTM services. Patient need and pharmacist actions have primarily focused on comprehensive medication reviews and resolving medication-related problems. Early results have shown an estimated cost savings with a return-on-investment (ROI) of approximately 3:1:1. Although preliminary, these results indicate that provision of MTM services on a larger scale may improve patient outcomes and reduce healthcare costs.

For the remainder of the MTM Pilot, efforts will be focused on follow-up visits and documenting clinical outcomes (A1c and blood pressure). Data collection and analysis will be ongoing, as pharmacist interventions and patient outcomes will be tracked for a one-year period. In addition, a descriptive survey of Medicaid managed care organizations (MCOs) will be conducted to determine whether MTM is being used, how MTM is defined, the type(s) of programs provided, the length of service provision and any recommendations regarding successful MTM program implementation. A final report with MTM Pilot results will be available in May 2013.

INTRODUCTION

H.B. 1, 82nd Legislature, Regular Session, 2011, Rider 49, directed the Health and Human Services Commission (HHSC) to implement a medication therapy management (MTM) pilot program and report on the effectiveness of the pilot to reduce adverse drug events and related medical costs for a subset of high-risk Texas Medicaid clients. HHSC contracted with University of Texas College of Pharmacy (UT-COP) to fulfill these requirements. UT-COP subcontracted with the Texas Pharmacy Foundation for the administration of the Texas Medicaid MTM pilot program (MTM Pilot). The MTM Pilot program design and pharmacist recruitment and training were led by TPF, in collaboration with UT-COP researchers and faculty. MTM Pilot implementation (i.e., patient recruitment and enrollment and pharmacist provision of MTM services) was managed by TPF. UT-COP served as a consultant in project development and implementation, and led the program evaluation and report writing components.

This interim report provides a literature review and summary of the preliminary MTM Pilot results for the first five months of the pilot (April 27, 2012 to September 19, 2012). The report outlines the patient needs that precipitated MTM intervention, the interventions that were made, the outcome of those interventions, and the estimated cost savings for the reporting period.

LITERATURE REVIEW

The Texas Medicaid program spent approximately $17.9 million on medication-related adverse drug events (ADEs) in 2009.[1] Nationally, ADEs account for an estimated $177 billion annually in injury and death.[2] Medication therapy management (MTM) is one tool that can improve patient behaviors and outcomes, and reduce the frequency of adverse events.

Several state Medicaid programs have executed MTM pilots in an effort to study the impact on clinical and economic outcomes.[12] In Minnesota, a community-based MTM program produced annual cost savings of $403 per Medicaid patient.[13] In Iowa, clinical outcomes were significantly improved for Medicaid patients (N=524), who were on at least four medications, without increasing total medical costs.[14] In North Carolina, Medicaid beneficiaries with 12 or more medications received MTM services, which resulted in cost savings of $107 per patient per year.[15] California Medicaid enrolled patients in an HIV/AIDS MTM program to improve adherence and economic outcomes. Over a three-year period, adherence increased, and there was no significant difference in total patient costs between the intervention and control groups.[16]

Although pharmacists were just recently recognized as MTM providers for Medicare beneficiaries,[3] studies have documented successful outcomes associated with pharmacist interventions.[4-15] Inappropriate drug use and suboptimal therapy remain major challenges to optimal patient outcomes. Patients often miss doses, unilaterally stop and start therapy, create duplicate therapies by 'doctor shopping', or otherwise exhibit poor compliance and adherence for a myriad of reasons. These factors routinely lead to poor patient outcomes which in turn increase medical costs by precipitating the need for further evaluation, emergency room visits, hospitalizations and other costly interventions.

Previous MTM programs have resulted in positive clinical and economic outcomes. The Asheville Project[4] examined the impact of comprehensive medication review and patient consultations on clinical outcomes and medical costs of patients with diabetes. Clinical outcomes improved dramatically within the first 14 months; 67 percent of study participants were able to achieve a hemoglobin A1c value within the normal range compared to 33 percent of patients at baseline, and 85 percent of patients

exhibited at least some improvement in their A1c values. (A1c is a measure indicating the level of blood glucose control over the past two to three months). The improvement in patient A1c values correlated with a corresponding decrease in risk for retinopathy (63 percent), neuropathy (60 percent), and albuminuria (54 percent). In addition, total direct medical and indirect (sick days) costs decreased due to decreases in emergency room visits and hospitalizations. Additional Asheville studies of other disease states (asthma, hypertension, hyperlipidemia) have also shown positive outcomes when pharmacists help patients manage their medications more effectively.[5,6] Another study, in which a managed care organization examined ten years of MTM services, also showed positive outcomes. The authors reported 3.7 encounters per patient and a 1.3:1 return on investment for the services.[7]

Several medication management programs have been sponsored by the American Pharmacists Association Foundation. Project IMPACT (IMProving America's Communities Together) included ambulatory care pharmacists in a variety of settings and disease states. Project IMPACT Hyperlipidemia showed that pharmacists had a significant impact on increasing patient (N=532) adherence to lipid therapy and in helping patients meet cholesterol goals.[8] Project IMPACT Osteoporosis used pharmacists to screen patients for osteoporosis and to work collaboratively with health care providers to manage their care. Of the patients who could be contacted for follow-up (N=305), 24 percent of them were initiated on therapy.[9] Eighty community pharmacists across the nation participated in the Patient Self-Management Program (PSMP), which focused on providing medication management, education and monitoring to patients with diabetes. Program participants (N=256) had improved diabetes outcomes and $918 in health care costs per patient was saved (compared to projected costs).[10] Similarly, the Diabetes Ten City Challenge (DTCC) improved patients' (N=573) lipid, A1c and blood pressure levels, as well as reduced health care costs by $1,079 (compared to projected costs).[11]

STUDY AIMS

The Texas Medicaid MTM Pilot Program addresses an innovative shift in the practice of community pharmacists to help meet patient care needs and decrease total medical costs among patients suffering from chronic hypertension and taking several concurrent medications. This study aims to determine the clinical and economic value of a community-based MTM program among Texas Medicaid beneficiaries.

Objectives

The primary objective is to determine the degree to which a comprehensive community-based MTM program involving hypertension patients, physicians, and pharmacists can decrease total medical costs[a1] within the Texas Medicaid program as compared to similar patients who do not receive MTM services. The secondary objectives are to assess: resolution of medication-related problems; effects on total prescription costs; clinical markers including blood pressure, fasting blood glucose, and lipid status; and number of emergency room visits and hospitalizations. Specific objectives are listed below:

1. Describe the number and type of MTM services provided.
2. Describe the frequency of blood pressure assessments.
3. Describe the frequency of A1c tests conducted.
4. Determine if there are significant:
    a. changes in medication-related problems one year prior to and one year post first patient/pharmacist visit among patients receiving MTM services (intervention group).

[a1] Due to potential data collection and systems issues, HHSC may not be able to provide sufficient data to enable total medical cost comparisons.

b. differences in pre-to-post changes in medication-related problems between patients receiving MTM services (intervention group) and those who did not receive MTM services (control group).

5. Determine if there are significant:
   a. changes in total health care costs one year prior to and one year post first patient/pharmacist visit among patients receiving MTM services (intervention group).
   b. differences in prior-to-post changes in total health care costs between patients receiving MTM services (intervention group) and those who did not receive MTM services (control group).
6. Determine if there are significant:
   a. changes in quality of care (blood pressure and A1c) one year prior to and one year post first patient/pharmacist visit among patients receiving MTM services (intervention group).
   b. differences in pre-to-post changes in quality of care (blood pressure and A1c) between patients receiving MTM services (intervention group) and those who did not receive MTM services (control group).

Note: This preliminary report focuses on objective 1. Data collection is ongoing and the results of the remaining objectives will be shared in the final report.

METHODOLOGY

Texas Medicaid MTM Pilot Program Elements

This pilot is a wellness program designed to help build collaboration between physicians, pharmacists and patients with hypertension to address a spectrum of disease states including cardiovascular disease, diabetes, and metabolic syndrome. The patient, pharmacist and other healthcare providers establish goals for proper medication use, effective prescribing, and healthy living. The program is not intended to replace or substitute for physician care. Rather, it is intended to be an adjunct to physician office visits. The American Pharmacists Association (APhA) and the National Association of Chain Drug Stores (NACDS) developed a framework for providing optimal MTM services in community pharmacy settings. The framework consists of five core components (shown below), which are designed to increase patient and healthcare provider communication, enhance healthcare provider collaboration, and improve medication management.[17]

Core Elements[17] of the MTM Pilot include:

- Comprehensive medication reviews that include pharmacists screening for adverse drug reactions, drug interactions, and appropriateness of therapy, assessing medication therapy outcomes and targeting clinical goals.
- Personal patient medical records containing a personalized list of medications (name, dose, administration, etc.) are provided to patients to be shared with all healthcare providers.
- Medication-related action plans that are individualized and may include strategies to improve medication adherence, manage side effects, identify and avoid triggers. These plans also include personalized follow-up information for patients.
- Pharmacist interventions that include patient education on medications and basic health and lifestyle modifications as needed. In addition, pharmacists provide therapy recommendations and updates to appropriate healthcare providers when needed.
- Documentation and follow-up, which are key to facilitating communication among providers and promoting continuity of care.

Participants will receive at least five pharmacist consultations, which will include:

- An initial visit with an estimated duration of 50-60 minutes will focus on compiling a detailed medication profile/medication history and performing a comprehensive medication review. After this visit, a 10-20 minute telephone meeting will occur within two weeks of the initial visit to follow up on the discussion and interventions initiated during the initial visit.
- A second in-person consultation to discuss patient education regarding adherence and compliance, the importance of proper medication use, and assess initial patient satisfaction.
- Subsequent follow-ups will be conducted via telephone or in-person at one-month intervals.

Pharmacist Providers

MTM Pilot providers are pharmacists in independent, chain and ambulatory care community pharmacies in Texas. Pilot sites have semi-private counseling areas and emergency facilities located within a reasonable distance. Prior to enrolling, all pharmacists received training on MTM.

Patient Inclusion Criteria

- Texas Medicaid recipients (150 intervention/150 control)
- Ages of 18 to 65
- Hypertension diagnosis
- Minimum of four maintenance medications
- Continuous Medicaid enrollment one year prior to and one year after study enrollment

Study Variables

To determine the impact of MTM services on outcomes, both intervention (received MTM services) and control groups will be utilized in a quasi-experimental design. The control group will be matched on relevant demographic and clinical characteristics. To determine what changes occurred from baseline to follow-up in the intervention group only, a pre- and post-test design will be employed. The data will be collected from Medicaid and community pharmacy records and will include: health care costs; number and type of medication-related problems; adherence; blood pressure; A1c; BMI; medical conditions; total number of medications; demographics and pharmacy-related information.

Dependent Variables

- Resolution of medication-related problems (MRPs): Change in number of MRPs from baseline to follow-up
- Total Health Care Costs: Change in health care costs from baseline to follow-up
- Quality care improvement: Change in clinical outcomes (blood pressure and A1c) from baseline to follow-up

Primary Independent Variable (Intervention vs. Control)

- The intervention group will include recipients who have received MTM services, whereas the control group will NOT have received MTM services.

Covariates

- Additional variables will be collected, including demographic and pharmacy-related information.

Data Collection and Analysis

Based on feedback from pharmacists and careful evaluation, OutcomesMTM™ was utilized as the MTM management and documentation system. Pharmacists were able to integrate the platform with their dispensing software, which facilitated documentation of MTM interventions and outcomes. OutcomesMTM™ is designed to guide pharmacists through the MTM process with relevant prompts and recommendations to facilitate medication management. In addition, OutcomesMTM™ developed an economic model that provides a return-on-investment (ROI) or estimated cost avoidance (ECA) of pharmacists' MTM interventions and outcomes. OutcomesMTM™ used a cost-of-illness study on drug morbidity and mortality[18] as the basis for the ECA values. After meeting with a patient, the pharmacist assigns an outcome level ranging from 1-7, which corresponds to their estimation of ECA based on the interventions provided to the patient. OutcomesMTM™ pharmacists audit the documentation and determine if the outcome level is accurate. See Table 1 below for an explanation of how ECA values are derived.

Table 1. Description of estimated cost avoidance

Outcome Level	Pharmacist Interventions	Estimated Cost Avoidance($)
Level 1 **Improved quality of care**	• **Provided Comprehensive Medication Reviews (CMRs) with patient** • **Provided patient education and monitoring**	**$0**
Level 2 **Avoided drug product costs**	• **Consulted with prescriber** • **Recommended more cost-effective therapy** • **Identified unnecessary therapy** • **Identified excessive dose or duration of therapy**	**Varies: calculated based on drug product savings**
Level 3 **Avoided additional physician visit**	• **Consulted with prescriber for drug therapy problem resolution** • **Consulted with patient for non-compliance**	**OutcomesMTM™ estimated cost savings based on cost-of-illness study[18] (costs adjusted to current dollars)**
Level 4 **Avoided additional prescription order**		
Level 5 **Avoided emergency room visit**		
Level 6 **Avoided hospital admission**		
Level 7 **Avoided life threatening event**		

PRELIMINARY RESULTS

The following is a summary of the preliminary pilot program results for the first five months (April 27, 2012 to September 19, 2012) and focuses on the patient needs that precipitated the MTM intervention, what interventions were made, the outcome of those interventions, and estimated cost savings. Pharmacist interest in the program has been growing with 82 pharmacies and 153 pharmacists currently enrolled. Patient recruitment has been more challenging, but the numbers continue to grow. Currently, 116 patients have been enrolled in the intervention group, with a target sample size of 150 patients.

Tables 2-4 detail intervention reason (i.e., medication-related problems identified), pharmacists' actions and the results (outcomes) of those actions. Of the 116 patients enrolled, 51 have received services and 207 claims have been submitted for an average of 4.1 claims per patient.

Intervention Reason

The most frequent (28.0 percent) patient need was help with managing their complex drug therapy. See Table 2 for frequencies and below for a documented patient encounter related to complex drug therapy.

> *"I…discovered that patient does not have medications namely Seroquel, sertraline, glipizide, metformin and Detrol LA for past 5 days. She takes about 16 medications including OTC. She has about 5 major diseases. I resolved her medication refill problem and prior authorization. Her blood sugar was reading over 220 and I advised her caregiver to take her to the doctor because it is not a situation I can resolve over the phone by calling her doctor. She agreed with me. Dr. placed patient on Novolog 70/30. Medication list was given to patient and caregiver. I will follow up with her and her doctor for the following interventions: 1. Weight gain (obese): patient will need weight loss program. 2. Diabetic shoe and foot care due to reoccurring foot fungi. 3.Sliding scale insulin to determine how much insulin she needs."*

The second most frequent (25.1 percent) issue was medication timing and use of devices for administering medications. Below is an example of how timing with a medication used for a thyroid disorder helped the patient improve her energy levels.

> *"While going through her medication I asked the patient and her caregiver to demonstrate how and when she takes her medication. Patient said that she takes her levothyroxine medication with breakfast in the morning. I advised her to take it on empty stomach with a glass of water 1 to 2 hours before eating or drinking. A few days ago, I asked patient how she takes her thyroid medication and she said that she takes it as I instructed and she said that her energy level is better than before."*

Another example regarding asthma medication administration timing may have avoided the cost of a physician visit.

> *"1.Patient shared inability to walk for long periods, difficulty breathing. Reviewed use of Advair twice daily. Patient shared, not using twice daily, using this as needed, and it was not helping. 2. Explained proper use/directions/indication for Advair. Advised he should use twice, regardless of "weather" or "allergies". 3. Spoke to patient today, patient shared improved breathing symptoms and decreased need for use of nebulizer. Refilled Advair on time. 4. Patient is stable due to compliance and potentially avoided an additional physician visit."*

Lastly, 14 percent of patients needed help with over-the-counter medications. The patient below was educated on the negative consequences to the liver of overuse of acetaminophen (Tylenol®).

> *Patient is currently taking OTC acetaminophen for pain. She states when she is in pain, she will take as many tablets of acetaminophen as she needs regardless of the dosing instructions indicated on the bottle. Counseled the patient on the importance of staying under 3 grams of acetaminophen daily and the possible liver toxicity that may occur from acetaminophen overdose. Upon follow up, patient stated she has been watching the amount of acetaminophen she ingests. She states that she never takes more than 6 tablets daily. She explains she now understands the importance of taking her Tylenol® correctly. Counseled patient on continuing her Tylenol® for pain, and discouraged her from any NSAID use due to her GFR (40-50 ml/min).*

Table 2. Frequency of intervention reason

Intervention Reason	Frequency	Percent
Complex drug therapy	58	28.0
Administration/technique[a]	52	25.1
Over-the-counter therapy	29	14.0
Needs therapy	18	8.7
Adverse drug reaction	12	5.8
New/change prescription therapy	11	5.3
Excessive dose/duration	7	3.4
Insufficient dose/duration	7	3.4
Suboptimal drug selection	5	2.4
Unnecessary therapy	3	1.5
Drug interaction	2	1.0
Underuse	2	1.0
Overuse	1	0.5
TOTAL	207	100.1[b]

[a]Time of administration or device administration technique
[b]Did not add to 100.0 due to rounding

Pharmacists' Actions

Table 3 shows that pharmacists interacted with patients by counseling them on medication use, as well as providing them with individualized education on health and lifestyle-related issues. Almost 23 percent of the cases involved the pharmacist interacting with the patients' prescribers, whereas 28 percent provided comprehensive medication reviews (CMRs), which are the cornerstone of MTM interventions. According to the National MTM Advisory Board, a CMR is a review of all patient medications (prescription, herbal, over-the-counter) with the goals of identifying and resolving medication-related problems by engaging, educating and empowering the patient.

Table 3. Frequency of pharmacist actions

Pharmacist Action	Frequency	Percent
Patient consultation	**62**	**30.0**
CMR[a]	**58**	**28.0**
Prescriber consultation	**47**	**22.7**
Patient education/monitoring	**40**	**19.3**
TOTAL	**207**	**100.0**

[a]CMR- comprehensive medication review

The following is an example of a pharmacist's description of a CMR encounter:

> *"At our CMR meeting, patient complained of chest pain. When I checked his medication profile, I found that he did not have any sublingual nitroglycerine tablets to be used as needed for chest pain. I recommended to the prescriber that this be added to his regimen, and today the patient received a prescription for Nitrostat 0.4mg. The nitroglycerine may relieve chest pain that may otherwise prompt a visit to the ER."*

MTM Result/Outcome

Table 4 shows that the most frequent outcomes were associated with completing CMRs. Over 10 percent of the outcomes involved resolving therapeutic issues (13.5 percent) and altering patient medication administration time or device techniques (11.1 percent). Only 1.9 percent of the recommendations were rejected by the prescriber and 1 percent of patients were not able to be reached after three attempts.

Table 4. Frequency of result/outcome of MTM encounter

MTM Result	Frequency	Percent
CMR[a] with encounter	48	23.2
Therapeutic success (resolved/stable)	28	13.5
Altered administration/technique[b]	23	11.1
CMR[a] without encounter	9	4.4
Altered compliance	6	2.9
Initiated new therapy	3	1.5
Altered regimen	2	1.0
Decreased dose/duration	2	1.0
Three attempts/unable to reach[c]	2	1.0
Changed drug	1	0.5
Discontinued therapy	1	0.5
Increased dose/duration	1	0.5
Pending – awaiting patient response	*37*	*17.9*
Pending – awaiting prescriber response	*30*	*14.5*
Pending - pharmacist action	*9*	*4.4*
Pending- unknown	*1*	*0.5*
Prescriber refusal	4	1.9
TOTAL	207	100.3[d]

[a]CMR- comprehensive medication review
[b]Time of administration or device administration technique
[c]Lost to follow-up
[d]Did not add to 100.0 due to rounding

Preliminary Cost Savings

Table 5 provides a preview of the value of the MTM pilot program. Pharmacist encounters are categorized into levels based on a validated algorithm provided by the MTM documentation system (i.e., OutcomesMTM™). The levels are associated with an estimated cost avoidance (ECA) of additional healthcare services such as physician visits, emergency room visits or hospitalizations.

The highest percentage of pharmacists' interventions (43.5 percent) were assigned a Level 1, which was associated with improved quality of care and valued at $0 according to OutcomesMTM™. These Level 1 interventions were usually the result of a CMR, which often involve increasing patient medication adherence and identifying and resolving various adverse drug reactions. Although interventions such as increasing adherence by 10 percent or making recommendations that may prevent a patient from feeling nauseous or drowsy is beneficial to patients, they are not easily quantifiable in dollar amounts (i.e., ECA).

Table 5. Frequency of pharmacists' interventions by intervention level and estimated cost avoidance

Intervention Level	ECA[a] ($)	Frequency	Percent	Total ECA[a,b] $
Level 1 - Improved quality of care	0	77	37.2	0
Level 2 - Drug product costs	65.11	1	0.5	65.11
Level 3 - Additional physician visit	366.73	14	6.8	5,134.22
Level 4 - Additional prescription order	424.33	7	3.4	2,970.31
Level 5 - Emergency room visit	845.25	6	2.9	5,071.50
Level 6 - Hospital admission	26,205.40	1	0.5	26,205.40
Prescriber or Patient refusal; Drug product costs with $0 value; Pending	0	101	48.8	0
TOTAL		207	100.1[c]	39,446.54

[a]Estimated Cost Avoidance
[b]Total ECA = ECA * Frequency (all funds amount)
[c]Did not add to 100.0 due to rounding

Despite this, the preliminary results are very encouraging because even with valuing many of the interventions at $0, pharmacist MTM services have led to patients avoiding 14 physician visits, 7 additional prescriptions, 6 emergency room visits and 1 hospitalization. The total cost avoidance of these interventions is $39,447 all funds (Table 5) for an ECA of $191 (all funds)/claim submitted or $773 (all funds)/patient served.

Thus far, the cost of the program in terms of compensating pharmacists for service provision has been $5,347 all funds (Table 6). Table 8 shows that this has resulted in a ROI of 7.4:1. If the Texas Pharmacy Foundation program administration costs are included ($7,350 all funds), total costs are $12,697 all funds, resulting in an ROI of 3.1:1. Although these are preliminary results, it appears that pharmacist interventions have resulted in significant cost savings to the Texas Medicaid program.

Table 6. Frequency of pharmacist fees

Fees $	Frequency	Percent	Total Fees[a] $
0	77	37.2	0
2	6	2.9	12
10	28	13.5	280
20	39	18.8	780
75	57	27.5	4,275
TOTAL	207	99.9[b]	5,347

[a]Total Fees = Fees * Frequency (all funds amount)
[b]Did not add to 100.0 due to rounding
[c]Did not add to 100.0 due to rounding

Table 7. Return on investment

Cost Items	Costs ($)	ECA[a] ($)	ROI[b]
Pharmacists' Fees	**5,347**	**39,446.54**	**7.4:1**
Pharmacists' Fees + Program Costs[c]	**12,697**	**39,446.54**	**3.1:1**

[a]Estimated Cost Avoidance
[b]Return on Investment = ECA/Costs (all funds amount)
[c]Texas Pharmacy Association program administration costs = $7,350 (all funds)

FUTURE PLANS

Patient enrollment will continue until the target sample size (N=150) is reached. Efforts will be focused on follow-up visits and documenting clinical outcomes (A1c and blood pressure). Data collection and analysis will be ongoing, as pharmacist interventions and patient outcomes will be tracked for a one-year period. Best practices will continue to be shared with pharmacists to ensure that efficient and effective strategies are implemented to provide optimal patient care.

In addition, a descriptive survey of Medicaid MCOs will be conducted to determine whether MTM is being used, how MTM is defined, the type(s) of programs provided, the length of service provision and any recommendations regarding successful MTM program implementation.

A final report with MTM Pilot results will be available in May 2013.

CONCLUSION

The first five months of the Texas Medicaid MTM Pilot has been instrumental in identifying and intervening with patients who have hypertension and are on four or more medications. This study identified that patient need and pharmacist actions have primarily focused on comprehensive medication reviews and resolving medication-related problems, which are at the cornerstone of MTM. Similar to previous studies, early results show an estimated cost savings and return-on-investment. Although preliminary, the results of this study indicate that provision of MTM services to Medicaid recipients improve patient outcomes and reduce healthcare costs. It is expected that similar results could be achieved if this type of MTM program is implemented on a larger scale.

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