Comparison of two Medication Therapy Management Practice Models on Return on Investment

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Abstract

Objective: To compare the return-on-investment (ROI) of an integrated practice model versus a "hub and spoke" practice model of pharmacist provided medication therapy management (MTM).

Methods: A cohort retrospective analysis of MTM claims billed in 76 pharmacies in North Carolina in the 2010 "hub and spoke" practice model and the 2012 "integrated" practice model were analyzed to calculate the ROI.

Results: In 2010, 4,089 patients received an MTM resulting in 8,757 claims in the "hub and spoke" model. In 2012, 4,896 patients received an MTM resulting in 13,730 claims in the "integrated" model. In 2010, \$165,897.26 was invested in pharmacist salary and \$173,498.00 was received in reimbursement, resulting in an ROI of +\$7,600.74 (+4.6%). In 2012, \$280,890.09 was invested in pharmacist salary and \$302,963 was received in reimbursement, resulting in a ROI of +\$22,072.91 or (+7.9%).

Conclusion: The integrated model of MTM showed an increase in number of claims submitted and in number of patients receiving MTM services, ultimately resulting in a higher ROI. While a higher ROI was evident in the integrated model, both models resulted in positive ROI highlighting that MTM programs can be cost effective with different strategies of execution.

Keywords

Medication therapy management, return-on-investment, reimbursement, community pharmacy, medication review

INTRODUCTION

Community pharmacists own an opportunity for face-to-face interactions with patients at every medication fill.^{1,2} Many pharmacists have implemented programs to optimize these interactions with patients, namely through Medication Therapy Management (MTM) services. One service offered through MTM is the Comprehensive Medication Review (CMR), which consists of a full review of all medications and past medication history.^{1,2} If a medication problem is identified, a targeted medication review (TMR) will occur to resolve this specific medication-related problem.^{1,3,4}

When providing CMRs and TMRs pharmacists focus on optimal medication regimens to improve patient outcomes.² The Asheville ProjectTM extensively evaluated the implementation of MTM and its effects on patient outcomes finding improvements in hypertension, dyslipidemia, asthma, and diabetes patients.^{5,6,7} Despite the benefits of increased patient interaction and data suggesting MTM correlates to increased patient outcomes, there is still a significant financial barrier to implementing MTM services.^{8,9,10}

A commonly used method to determine the financial impact of an MTM program is return on investment (ROI). ROI represents revenue generated through MTM interventions versus investment in the MTM program.^{1,8,11} This is significant to obtain since 79% of pharmacies do not know their ROI and ROI is not typically used as a study parameter.¹ It is important for pharmacists to be more cost conscious in order to meet the ever-increasing financial demands placed on community pharmacists and to encourage implementation of sustainable business models.^{1,8}

A regional chain pharmacy in North Carolina experimented with different MTM models. One model utilized was a “hub and spoke” model in which select pharmacists

are hired to solely conduct MTM services for designated pharmacy locations. Another model utilized was an “integrated” model in which all pharmacists conduct MTMs in their own pharmacy and community as part of the pharmacy workflow. Currently, there is no literature published comparing the ROI of each model.

OBJECTIVE

The purpose of this study is to compare the ROI of two MTM practice models.

METHODS

This study was a multi-site, retrospective cohort analysis of 76 community pharmacies within a regional chain in North Carolina. Patients who received a CMR or TMR in calendar years 2010 or 2012 were included. Revenue data generated from CMRs and TMRs were collected from a web-based MTM service provider. All paid claims were included. Excluded from analysis were non-paid claims and claims from the calendar year 2011, in which both models were deployed simultaneously. This study was approved by the University of North Carolina Institutional Review Board.

Revenue associated with a TMR correlated to a \$10 or \$20 reimbursement. Revenue associated with a CMR correlated to a \$50 or \$75 reimbursement. Patient or prescriber refusals yielded \$0 or \$2 in reimbursement.

The investment by the pharmacy was calculated using two elements: pharmacist average salary and average time for completion for MTM encounters. The average hourly salary in 2010 was \$52.43, obtained from the regional pharmacy chain’s corporate office.⁴ The average hourly salary in 2012 was \$54.54. This was estimated

utilizing trends data from the National Community Pharmacist's Association (NCPA) and the Bureau of Labor Statistics, which suggested a conservative 2% increase in salary from 2010-2011 and again from 2011-2012.^{12,13}

The average time for completion used to calculate ROI was 20 minutes for a TMR and 30 minutes for a CMR. These values were designated after consultation with two MTM service providers for accepted practice.

ANALYSIS

ROI was calculated for both the 2010 "hub and spoke" and 2012 "integrated" practice models by totaling each year's revenue and subtracting total investment. Pharmacy revenue was calculated by tallying payment for the total number of CMRs and TMRs within each 12 month period (Table 1). Pharmacy investment was calculated by determining the total amount of time invested by pharmacists to conduct both TMRs and CMRs, in each model year, independently. The total number of CMRs and TMRs completed each year were multiplied by 20 minutes and 30 minutes, respectively. The pharmacist average hourly salary for each model year was multiplied by the total amount of pharmacist time, in hours, invested to complete TMRs and CMRs reimbursed to the pharmacy.

RESULTS

The "hub and spoke" model yielded 8,757 claims to 4089 patients resulting in 1471 CMRs and 7286 TMRs. A total of 3164.17 pharmacist hours were invested, 735.5 pharmacist hours to CMRs and 2428.67 hours to TMRs. At \$52.43 per hour, \$165,897.26 was invested in MTM services for the "hub and spoke" model. Comparatively, the "integrated" model yielded 13,730 claims in total to 4896 patients, or

3441 CMRs and 10289 TMRs. A total of 1720.5 pharmacist hours were invested in CMRs and 3429.67 pharmacist hours were invested in TMRs. This resulted in a total of 5150.17 pharmacist hours at \$54.54 an hour investing \$280,890.09 in MTM services for the “integrated” model (Table 1).

Pharmacy revenue through reimbursements was calculated by summing the reimbursements from the various types of CMRs and TMRs. This resulted in a total reimbursement of \$173,498.00 for the “hub and spoke” model and \$302,963.00 for the “integrated” model (Table 1). The “hub and spoke” yielded a net gain of \$7,600.74 or a 4.6% return on investment with the “hub and spoke” model. Comparatively, the “integrated” model yielded a net gain of \$22,072.91 or a 7.9% return on investment (Table 1).

DISCUSSION

The integrated model of MTM resulted in a higher ROI than the traditional “hub and spoke” model. Across 76 stores this equates, on average, to \$100.00 net revenue per store in the hub and spoke model and \$290.43 net revenue in the integrated model. Although such revenue would not be considered as a significant revenue source to individual pharmacy practices, the data demonstrate MTM services can provide revenue for the service. This trial suggests that the additional pharmacy investment in pharmacist hours can be overcome by the reimbursements for services. While both models of MTM presented a positive ROI, integrated models may have a greater potential for higher returns on investment by maximizing the efficiency of daily workflow, which may afford an opportunity to increase the number of patient encounters and thus reimbursable claims.

This is the first study looking at ROI for MTM services across a regional community pharmacy chain, showing feasibility and sustainability and contrasting different execution models of MTM. A study by Truong et al.¹⁴ analyzed medication therapy management in a safety net clinic and found a high return on investment of 1:5 to 1:25. However, only 246 received MTM over 4 years, and results have limited translation to the community pharmacy setting. McDonough et al.⁹ showed in one independent pharmacy that MTM services resulted in a net gain of \$3.28. The authors concluded a very modest ROI in one community pharmacy practice compared to the \$100.00 per store in 2010 and \$290.43 per store in 2012 found in the current study. Additional research is needed to determine long term sustainability of MTM services.

LIMITATIONS

While confounding factors were minimized by study design, it is prudent to mention several limitations. Firstly, direct observational data would have provided great insight into pharmacist “time for completion” for each MTM intervention. A prospective review should be considered to closely follow, rather than estimate, the exact time for completion of interventions made by pharmacists.

This study is also limited by the lack of ability to collect auxiliary revenue generated at the pharmacy, secondary to MTM services. These include new and refilled prescriptions, over-the-counter sales, and front-end items sold to the patient. Additionally, many of the community pharmacists in this analysis provided additional services including blood pressure screening and assessment, cholesterol and blood glucose point of care testing, and immunizations, all representing additional revenue sources. It is difficult to determine whether patients would have participated in the

aforementioned revenue sources in response to pharmacist provided MTM services without purposeful and concurrent data collection. Lastly, the availability of MTM opportunities and reimbursement programs may limit the generalizability of the study due to large variances by state, region, payer, and contract year.

CONCLUSION

The integrated MTM model showed an increase in pharmacist provided MTM interventions resulting in a higher ROI. However, both models resulted in a positive ROI showing MTM services can be cost effective with varying practice models.

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Table 1. Pharmacy Investment and Revenue		
MTM practice model	Hub and Spoke	Integrated
Investments		
Number of CMRs (pharmacist hours)	1471 (735.50)	3441 (1720.50)
Number of TMRs (pharmacist hours)	7286 (2428.67)	10289 (3429.67)
Total time invested by pharmacists	3164.17	5150.17
Average pharmacist salary	\$52.43	\$54.54
Total expenditures	\$165,897.26	\$280,890.09
Revenue		
CMR (\$50)	\$70,700	\$164,750
CMR (\$75)	\$0	\$525
TMR (\$20) <i>Indication, efficacy, or safety</i>	\$66,400	\$74,360
TMR (\$0 or \$10) <i>Compliance</i>	\$36,230	\$63,230
TMR (\$0 or \$2) <i>Patient or prescriber refusal</i>	\$168	\$98
Total reimbursements	\$173,498.00	\$302,963.00
Return on Investment		
ROI in dollars	\$7,600.74	\$22,072.91
ROI percent change	+4.6%	+7.9%
Key: CMRs, comprehensive medication reviews; TMRs, targeted medication reviews; ROI, return on investment		