Value of Medication Therapy Management (MTM) Services from a Pharmaceutical Care Provider's Perspective

Introduction

In 2003, the Medicare Prescription Drug, Improvement, and Modernization Act (MMA) identified pharmacists as potential providers of medication therapy management (MTM) services to ultimately increase patient adherence to therapy, prevent adverse drug reactions, and provide education to improve patients' understanding of their medication therapy .[1] MTM services involve a number of components aimed at improving and optimizing therapeutic outcomes for patients. These components usually include medication therapy reviews (MTRs), generating a personal medication records (PMRs) and medication-related action plans (MAPs) for the patient, and interventions and/or referrals by the pharmacist.[2] Several studies have shown that MTM services improve clinical and economic outcomes for patients, especially in the management of chronic disease states such as hypertension, diabetes, and dyslipidemia. [3-4] Community pharmacies provide an ideal situation to provide MTM services, as they house medication records, provide clinical services such as vaccinations, and can be convenient for patients to access. While MTM services provide excellent benefits to the patient and payer, it is unclear whether incorporating these services into a community pharmacy setting can be financially feasible to the pharmacy. Current literature analyzing the financial feasibility of implementing MTM services to a community pharmacy setting is scarce due to the competitive nature of the business of pharmacy.

Within the state of North Carolina (NC) a program entitled ChecKmeds NC has been developed to offer a variety of MTM services to eligible patients free of charge. ChecKmeds NC was implemented in October 2007 through funding allocated from the NC Health and Wellness Trust Fund. To be included in this program, patients must be at least 65 years of age, a resident of the state of NC, and participate in Medicare Part D prescription drug plan. Through this program, pharmacists can provide, and be reimbursed for, a number of services including Comprehensive Medication Review (CMR), cost efficacy management, detection of drug therapy problems, counseling on medication administration/technique, and counseling on prescription and over-the-counter (OTC) therapies. Billing for these services can be done online utilizing the Outcomes Pharmaceutical Health Care® (Outcomes) platform.

Objective

The objective of this project was to show that implementing MTM services within a community pharmacy can generate additional revenue to the pharmacy, and increase medication adherence rates for patients.

A secondary objective was developed to analyze improvement of pharmacy staff knowledge concerning MTM services.

Methods

Revenue

Two independent pharmacies in NC were chosen for implementation of MTM services from November 2009 through January 2010 based on several factors. These included: their willingness to participate and provide a patient population to be seen by the clinical pharmacist, close proximity (within 20 miles) to the clinical pharmacist's location, and having less than five paid MTM claims within the Outcomes platform since the implementation of ChecKmeds. Patients were selected based upon their eligibility for the ChecKmeds NC program. (age >65 years, NC resident, and participation in a Medicare Part D prescription drug plan). Patients

residing in a nursing home or LTC facility were excluded from this study. Billing and quality assessment for these services was completed through the Outcomes platform.

Revenue generated for the service implementation was calculated using the direct expenses of clinical pharmacist time, technician/administrative time for billing/scheduling, and travel costs for the clinical pharmacist. These costs were estimated using the National Community Pharmacists Association (NCPA) Digest surveyed national pharmacist's hourly wages and standard consultant rates of Kerr Health. Outcomes billing revenue was used as the primary source of revenue generation in this analysis (Table 1).

Outcomes Pharmaceutical Health Care® billable service	**Revenue (per service billed)**
Comprehensive Medical Review	$ 50
Cost efficacy management	$ 20
Drug therapy problem detected	$ 20
Administration/technique counseling	$ 20
New/changed prescription and OTC therapy counseling	$ 10

Table 1. Billing revenue for services offered during MTM service implementation

Adherence

Medication therapy adherence data was collected for the three months prior to the initial MTM session and compared to the three months following the session. Refill history was analyzed and a gap in therapy of greater than or equal to 7 days of the expected refill date was considered to be the benchmark for non-adherence. Only chronic medications were included in this analysis being defined as a medication that had been at least five times within the six months (or two refills if product was filled for a 90-day supply) or as deemed necessary by the clinical pharmacist. Statistical analysis was performed by a consultant statistician.

Knowledge Assessment

A 10-question survey was developed to assess knowledge and opinions about the ChecKmeds NC program and MTM services at Metcalf Pharmacy only. This assessment was only conducted at one pharmacy location due to the previous MTM program participation of the other pharmacy staff members. Assessment was measured using a Likert-type scale. This survey was given to staff prior to implementation, after implementation, and following completion of the 3-month project. Results were analyzed by a consultant statistician. See Appendix A for a copy of the survey.

Results

Revenue

MTM services were implemented at two community pharmacy sites - Burke Pharmacy (Morganton, NC) and Metcalf Pharmacy (Brevard, NC). At each of these sites, the pharmacy technician and/or administrative staff scheduled an average of 12 MTM service appointments on each of two days per calendar month. Clinical pharmacists traveled to the pharmacy sites on these days to meet with patients face-to-face.

The major expenses calculated for implementing this program included clinical pharmacist wages of $55/hr and pharmacy technician/administrative assistant wages of $12/hr. Clinical pharmacist travel time was calculated using a wage of $25/hr. Revenue was generated by billing for the various MTM services through the ChecKmeds NC program administrator, Outcomes Pharmaceutical Health Care® platform. The billable rates for each service are listed in Table 1.

Table 2 shows the revenue analysis of the service implementation at the two community pharmacy sites. Burke Pharmacy generated a total net profit of $1,378, billing for 59 initial CMRs and 79 follow-up services. Metcalf Pharmacy generated $833 in total net profit, billing for 69 initial CMRs and 78 follow-up services. There was a combined total net profit of $2,211 for this project.

Expense/Revenue	**Burke Pharmacy**		**Metcalf Pharmacy**		**Total**	
	Quantity	*Revenue*	*Quantity*	*Revenue*	*Quantity*	*Revenue*
Clinical Pharmacist Wage ($55/hr)	**48**	**($ 2,640)**	**57**	**($ 3,135)**	**105 hr**	**($ 5,775)**
Technician/Assistant Wage ($12/hr)	**26**	**($ 312)**	**36**	**($ 432)**	**62 hr**	**($ 744)**
Travel Costs ($25/hr)	**4**	**($ 100)**	**12**	**($ 300)**	**16 hr**	**($ 400)**
Comprehensive Medical Review	59	$ 2,950	69	$ 3,450	128	$ 6,400
Cost efficacy management	12	$ 240	0	$ 0	12	$ 240
Drug therapy problem detected	14	$ 280	6	$ 120	20	$ 400
Administration/technique counseling	43	$ 860	41	$ 820	84	$ 1,680
New/changed prescription and OTC therapy counseling	10	$ 100	31	$ 310	41	$ 410
Total net profit		**$ 1,378**		**$ 833**		**$ 2,211**

Table 2. Revenue analysis of MTM service implementation

Adherence

The two pharmacy sites exhibited an overall reduction in medication adherence rates after the initial CMR visit. Statistical analysis showed significant variances between the data sets of the two pharmacy sites so each was analyzed individually using a paired t-test analysis. Adherence rates from Burke Pharmacy decreased significantly (7% decrease, $p = 0.0014$) while the adherence rate drop from Metcalf Pharmacy was non-significant (1% decrease, $p = 0.37$).

Knowledge assessment

Surveys were given to six Metcalf Pharmacy staff members at the three allotted times - pre-implementation, post-implementation, and post-project completion. The survey consisted of 10 questions, scored 1-5 for each. Scores could therefore range between 10 and 50 for each survey. A higher score would mean that the knowledge was better or that the staff member had a higher opinion of the service in question. The scores were analyzed by the Friedman Test, which showed that they were statistically different ($p = 0.003$). Further analysis by repeated measures ANOVA on the rank transformed data shows a statistically significant difference between the survey results from pre-implementation and either of the two post-service surveys ($p = 0.0014$). There was no statistical difference between the results from post-implementation and post-project completion.

Discussion

MTM services were successfully implemented at two pharmacies in North Carolina during a three month period. This project demonstrated that implementing MTM services within a community pharmacy can be profitable, as a total net profit of more than $2,000 was noted. In this project, clinical pharmacists met with patients on two days in each month and averaged 12 appointments on each of those days. This represents a manageable workload for most community pharmacy settings, especially those with more than one staff pharmacist employee. During this project, the clinical pharmacist needed to travel to the participating pharmacy, which detracted from net profits. By using a pharmacist on staff, the added travel expense could be eliminated completely. In this project, Burke pharmacy's total net profit would have increased to $1,478, a $100 difference. The pharmacist had to travel a longer distance to get to Metcalf pharmacy so travel expenses were a

larger proportion of the expenses. Eliminating this $300 expense would have increased the total net profit to $1,133 for this pharmacy. Also, pharmacies that have pharmacy interns/students could reduce expenses further by incorporating their knowledge and skill sets into the workflow.

While adherence rates for medications did not improve over the course of this project, this could be partially attributed to the timing. Implementation of services was conducted during the winter and holiday months of November through January. Since many people travel for the holidays, the adherence rates after the initial CMR visit may have been adversely affected by patients refilling prescriptions at pharmacies other than their usual pharmacy. Also, the holiday season can be stressful and busy for many people, which can lead to missed doses and other adherence issues (*i.e.* cost) that may not have been a factor in the months leading up to the initial CMR visit. With an improved adherence rate, the pharmacy could track this as indirect revenue from the MTM sessions. The authors of this study realize that a control group was not selected for comparison.

As expected, implementation of MTM services at a community pharmacy improved the knowledge of the staff about such services. As many of the survey questions pertained to the staff member's opinion about the service value, it appears that staff members at Metcalf pharmacy felt implementing MTM services would be valuable to patients and the pharmacy. Statistical analysis was not performed on each survey question, so it is unclear exactly where improvements between pre and post-service assessments came from.

Limitations

The major limitation for this project was the timing and duration of implementation of services. The duration of the project led to limited data on sustainability of services for each pharmacy setting and long-term effects on adherence rates. The effect of the season of the year on adherence rates would have been eliminated if the program was evaluated over the course of a full year. A longer project term would have allowed for further development and refinement of the service as well as better understanding about the long-term profitability of implementing MTM services.

Another limitation was the omission of training expenses for implementation of MTM services in the financial analysis. This type of expense would vary greatly between pharmacies depending on baseline experience and knowledge of the staff and was therefore difficult to estimate in this study. Utilizing currently trained Kerr Health clinical pharmacists made the MTM process more efficient allowing the pharmacist to capitalize on the MTM encounter identifying drug therapy problems and potential billing services. Time and other training resources would be needed to fully engage non-MTM participating pharmacists into the MTM workflow.

Conclusions

MTM services have previously demonstrated improved patient healthcare outcomes. This project showed that they can also improve profit margins for a community pharmacy willing to implement such services for their patients. Pharmacies may benefit from additional revenues generated from billing for MTM services.

References

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