Implementation of a community pharmacy comprehensive medication review program in the workplace setting

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Background: *This program was designed to allow clinical pharmacists in Charleston, SC based Kerr Health clinical site to provide comprehensive medication reviews for the employees and dependents of local self-insured employer(s).* This program will demonstrate the impact of a community pharmacist-run comprehensive medication review program in the workplace setting. Additionally, this program sought to demonstrate an opportunity for community pharmacists to target employers to offer comprehensive medication review Medication Therapy Management (MTM) services rather than waiting for Medicare Part D or other third party insurance programs to contract with their community pharmacies.

More than 1.5 million preventable medication-related adverse events occur each year in the U.S., which in turn accumulate $177 billion in medication-related morbidity and mortality costs and expenses.[1,2] The Institute of Medicine recognizes the need for programs such as Medication Therapy Management (MTM) to improve the quality and safety of the medication-use process.[2,3] MTM, defined by the Medicare Prescription Drug Improvement and Modernization Act of 2003 (MMA), is a program aimed at optimizing therapeutic outcomes to improving medication use for individual patients.[4] The MMA has mandated the coverage of MTM services under Medicare Part D plans.[4] MTM has been formally defined by the profession's consensus definition. *MTM is a distinct service or group of services that optimize therapeutic outcomes for individual patients. MTM services are independent of, but can occur in conjunction with, the provision of a medication product.*[5]

The offering of and participation in pharmacist-provided MTM services, such as the Asheville Project® and Diabetes Ten City Challenge, have proven to be valuable and have taken the step in the right direction to prevent some of the nation's medication-related concerns.[6,7,8,9] These programs have shown that pharmacists assist with improvement in compliance, decrease in overall health care costs, reduction in employee absenteeism, and increase in employee productivity.[6,7,8,9] These successful, pharmacist-run MTM services are focused on disease state management, mostly diabetes mellitus, in the workplace setting. However, MTM services may potentially benefit any patient using any number of prescription and nonprescription medications and should not be limited to patients taking only a certain amount of medications or those with specific disease states.[7]

The primary component of a MTM service is a comprehensive medication review (CMR).[10,11,12] This medication therapy review often occurs annually and may then be supplemented by targeted interventions if specific problems arise with a patient's medication regimen.[10,11,12] During a CMR, the pharmacist collects valuable data about the patient's current medications, including all prescription and non-prescription medications, herbal products, and other dietary supplements. The interaction between the patient or the patient's primary caregiver occurs, preferably, through a face-to-face consultation. The pharmacist uses this patient interaction and any other relevant data to identify medication related problems. The pharmacist also provides the patient with medication and disease state education, and works with the patient's prescribers and other members of the health care team to improve the patient's self-management of the medication regimen, as well as acute and chronic health conditions.[1,2,4] Additionally, the patient receives a personal medication record and develops a medication action plan in collaboration with his/her providers. The pharmacist documents the session and provides appropriate intervention/follow up.

It was proposed that the offering of CMRs in the workplace setting may potentially lead to similar successes shown by the disease state management MTM services.[6,7,8,9] Charleston-area employer groups,

which we have worked closely for other pharmacy services such as HealthMapRx[sm] and health and wellness screenings, have already expressed interest in a CMR program. Unfortunately, they currently do not have the financial backing for this service without tracked outcomes to show the service's benefit in a workplace setting. This program will demonstrate the impact of a community pharmacist-run comprehensive medication review program in the workplace setting. Additionally, this program sought to demonstrate an opportunity for community pharmacists to target employers to offer comprehensive medication review Medication Therapy Management (MTM) services rather than waiting for Medicare Part D or other third party insurance programs to contract with their community pharmacies.

Objectives:

1. Develop and implement an employer-based comprehensive medication review (CMR) program
2. Demonstrate a community pharmacist-run CMR program in the workplace setting such that other community pharmacists will be able to easily replicate this model in their practices
3. Optimize healthcare outcomes related to cost, quality, and access
4. Develop a continuum of care between the patient, pharmacist and physician
5. Demonstrate the value of the community pharmacist as an actively involved member of the healthcare team
6. Provide Pharm.D. candidates with a rich learning environment including meaningful patient interactions, MTM, and interdisciplinary collaboration

Methods:

Approval was obtained from the Medical University of South Carolina Institutional Review Board (IRB) and was subsequently renewed for the duration of the study. This program utilized two Kerr Health clinical coordinator pharmacists (shared faculty with South Carolina College of Pharmacy), two PGY-1 community pharmacy residents and one full-time office manager. A number of employers in the greater Charleston area were contacted regarding the benefits of a comprehensive medication review program for their employees. The office manager utilized resources from the Charleston Chamber of Commerce and contacted mid-size employers (greater than 500 employers) in the Charleston area that were likely to be self-insured. This employer size was a suitable size to offer a CMR program to all employees who were interested. Kerr Health (KH) pharmacists and staff met with local self-insured employer(s) to discuss goals/objectives and logistics of a CMR program.

The CMR program utilized the framework for community pharmacy-based MTM services developed by the American Pharmacists Association and the National Association of Chain Drug Stores Foundation. Patients (employees, spouses, and dependants) aged 18 years and older, taking at least one or more prescription and/or nonprescription medications, were eligible for a CMR. Employers distributed a designated flyer, informing their employees of the free, voluntary comprehensive medication review program being offered. All patients interested in the MTM service were contacted by the KH office manager and scheduled with a pharmacist and/or pharmacy resident. Each patient session was scheduled for a 60-minute appointment to allow adequate time for the pharmacist to provide appropriate patient care and documentation. The patients were seen either in a private area at their workplace or at Kerr Health clinic. At the initial MTM session, a follow-up visit was determined. Each patient was eligible for one follow-up session.

Each patient was required to complete an IRB-approved informed consent form and HIPAA form (attached). During the initial MTM session, the pharmacist gathered and reconciled all medication information from both the medical record and patient interview. The pharmacist then reviewed and evaluated the medications the patient was taking to identify and address drug therapy problems - including underutilization, overutilization, adverse drug reactions, drug-drug or drug-disease interactions, inappropriate therapy, duplicate therapy, insufficient dose or duration, excessive dose or duration, and cost-saving opportunities. Additionally, the pharmacist observed and corrected medication administration

problems including: appropriate inhaler technique, insulin administration, and timing of medications with food or other medications.

Findings, including the medication list, were documented in the online MirixaEdge® program. The patient was provided an up-to-date Personal Medication Record (PMR) including patient's drug allergies, medical conditions, and medications and a Medication Action Plan (MAP) that included recommendations made by the pharmacist to be completed by the patient during the MTM session. These recommendations included measures to improve adherence, compliance, efficacy and recommendations to decrease adverse drug events or cost. If immediate issues presented, the pharmacist contacted the patient's primary healthcare provider to assist in resolving the issue. However, a majority of recommendations were routed through the patient. Each patient was responsible for following up with their primary healthcare provider to discuss recommendations and/or changes. Pharmacists followed up with a majority of patients within 4-8 weeks to assess their understanding of previous recommendations and answer any additional questions related to their MTM session.

Results:

A number of employers in the greater Charleston area were contacted regarding their participation in the MTM program. However, only three employers signed on to participate in the program. Each employer enrolled, had an established wellness program within their institution, with a primary contact. A total of thirty seven (37) patients enrolled and participated in the initial MTM session. The study population was representative of the general population employed by these employers. Seventy three percent (73%) of participants were male. Sixty five percent (65%) of participants were African American, 27% were Caucasian and 2% were Asian. The average age of participants was 52 years (age range: 30-64 years). The participants had an average of 3 disease states (range: 1-10 disease states) and took an average of 7 medications (range: 1-17 medications); including an average of 5 prescription medications and 2 over-the-counter or herbal products. The pharmacists recorded 169 interventions, which averaged to 4.5 per participant. Table 1 summarizes the interventions made.

Table 1. Summary of Interventions Made by Pharmacist

Type of Intervention	**Number of Interventions Made**
Adherence	3
Administration Timing (Statins, Omeprazole)	7
Administration Technique	2
Identification of Adverse Drug Reaction	3
Cost Savings Opportunity (Brand, Generic Switches)	36
Excessive Dose of Medication	7
Excessive Duration (Plavix > 12 months)	2
Counseling on medication use	9
Inappropriate Medication	9
Needs Therapy • Statins • Fish oil • Metformin • Anti-hypertensives	40 5 8 6 8

• Calcium/Vitamin D • Other	5 8
Overuse of Medication	1
Referral • Primary Care Provider • Laboratory • Immunizations	26 4 4 18
Suboptimal Dose • Metformin • Fish Oil • Other	19 8 4 7
Unnecessary Medication	5
Total Interventions	169

Overall, the pharmacists made a variety of interventions. The most frequently made recommendations were: new/needed therapy, increase of a suboptimal dose of a medication, referral and cost savings opportunities. Pharmacists made recommendations for needing additional therapy or suboptimal therapy based on evidence-based clinical guidelines or standards of treatment to make such recommendations. The pharmacist was best able to make recommendations when the patient supplied recent labs, including a recent lipid panel, hemoglobin A1c or fasting blood glucose as well as blood pressure readings. Patients from one employer had labs readily available due to recent participation in a health and wellness screening which assessed cardiovascular risk (lipid panel, fasting blood glucose, blood pressure, weight, height). In a number of cases, the pharmacist referred the patient to their primary care provider for treatment or laboratory work. Additionally, the pharmacist made 18 recommendations for immunizations, including both influenza and pneumococcal vaccines. The pharmacist used a combination of approaches to assist with cost savings including brand to generic switches, use of combination medications, or switching to a more cost effective alternative (example: Brand ARB to generic ACE inhibitor),

Limitations:

Health-related cost information from employers would have been helpful to further identify additional interventions and how the MTM program could impact their financials. As discussed in the methods, participants were eligible for up to one follow-up visit. However, a majority of participants were lost to follow-up despite multiple contacts to reach them. Additionally, the limited number of participants makes data analysis difficult. Possible reasons for the limited amount of participants include: (1) not all employees may have been aware of the CMR program being offered due to insufficient delivery of the flyer or lack of advertising made by the employer; (2) employees may not have understood the true benefits of a CMR and how it applied to them; (3) the CMR program was not mandated nor was an incentive provided by the employers for participation; (4) scheduling of appointments occurred during specific times frames which may not have fit with employee's work schedule.

Conclusions:

The pharmacist team was able to identify areas for interventions and make multiple recommendations to enhance the participant's drug therapy. Of note, 21% of the interventions were related to cost savings, which would indicate that the cost savings related to medications may decrease. Twenty-four percent (24 %) of the interventions made by the pharmacists were recommendations for additional or new therapy

needed. Longitudinal studies would need to be conducted to determine if the addition of more appropriate therapies recommended during the MTM session would increase medication costs in the short-term, but would ultimately reduce overall health care costs in the long-term. The investigators also identified the need to accurately educate employers, employees and other potential "customers" on the benefits of MTM to make a program successful. This study demonstrates that based on interventions alone, it is evident that a pharmacist-based CMR program in a workplace setting could benefit both employees and their employers by ultimately optimizing medication use as well as improve health maintenance and education. Additional studies are needed to identify the cost-benefit for employers to participate in similar programs in the future.

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