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**Retrospective Review of Pharmacist Delivered Employee Medication Therapy
Management (MTM) Visits.**

**A Report Submitted to the University of Minnesota College of Pharmacy
Postgraduate (PGY1) Pharmacy Residency Program**

By

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05/31/2021

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Abstract

Medication therapy management (MTM) services are evolving, and through collaborative practice agreements with providers, pharmacists are in a unique position to use their knowledge and skills to improve therapeutic outcomes for patients. Studies have shown that employer provided MTM services can lead to reduced spending on employer healthcare plan costs and improve overall health outcomes for beneficiaries of the MTM program. CentraCare offers MTM programs for their employees and their beneficiaries, but the program is underutilized due to lack of awareness and limited ambulatory care pharmacists to provide MTM services. This project covers ambulatory care pharmacists' role in improving employee health outcomes and will review past pharmacist-employee MTM visits and use information from the previous year visits to support continuation of the MTM program at CentraCare. The goal of this project is to show that pharmacist-employee MTM visits will improve the health of CentraCare employees and their beneficiaries. The results of the study can also be used to target new patients who will benefit from CentraCare's MTM program and to improve employee engagement.

Acknowledgements

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Introduction

Rural pharmacists in geographically isolated areas are first-contact providers because of physician scarcity, and many patients rely on them for their expertise in medication and chronic disease management (1). In a study published in the Journal of American Pharmacist association, the authors concluded that implementation of medication therapy management (MTM) programs led to the identification of patients for chronic disease, which allowed pharmacists to optimize patient care by providing patients with in-depth education as it relates to their prescribed medications and disease states (2,3). A pharmacist's role on the healthcare team to improve patient care is increasingly becoming recognized in rural healthcare. Studies have highlighted improvement in health outcomes after patients engage in pharmacist-delivered services (4). In addition, pharmacists' role in MTM has also been shown to be effective in managing complex chronic conditions, increasing patient knowledge about their medication and health, improving patient quality of life, medication adherence and the safe and effective use of medications (5,8).

CentraCare provides healthcare services to more than 700,000 people in Central Minnesota. In 2018, CentraCare formed a partnership with Carris Health to extend their services to West Central and Southwestern Minnesota, making CentraCare and Carris Health the biggest provider of healthcare services in Central Minnesota (6). Due to the size of CentraCare and the population it serves, ambulatory pharmacy services are varied across its health system. Currently, MTM pharmacists are located in three main service areas: St. Cloud, Long Prairie, and Paynesville. While pharmacists at these sites may contribute their services to other sites through centralized services, such as a central anticoagulation team, many service areas and their respective patients do not have routine access to an ambulatory care pharmacist.

Previous work has shown that the three CentraCare hospitals serve a large geographic area, but lack ambulatory care pharmacists at Carris Health, Melrose and Sauk Centre. These sites have all expressed interest in utilizing pharmacists in the ambulatory care setting (7). CentraCare has recognized the importance of MTM services to reduce employer spending in employer-sponsored health plans and have opted to provide MTM services at no cost to their employees and beneficiaries enrolled in one of two employer-sponsored health plans. To incentivize employees to take advantage of the MTM services provided by CentraCare Health systems, employees and their family members who are insured through Health Partners pay zero copay for asthma, diabetes, and some cardiovascular medications. By optimizing medication use for employees and beneficiaries, CentraCare hopes to reduce healthcare spending on behalf of the employer, while also promoting ambulatory pharmacy services. While there are many benefits to this employee MTM Program, it is currently underutilized. On the CentraCare website, the health system reports that it employs 12,300 people across all eight of its hospitals (9). However, data obtained from Health Partners showed that about 358 CentraCare employees and their beneficiaries took advantage of the MTM program Between 2018-2020, even though the health system employs more than the people utilizing the program, which further shows underutilization of the MTM program. This project will further seek to increase utilization of this program by showing that pharmacist-employee MTM visits will improve the health of CentraCare employees and their beneficiaries.

Methods

Study design: A retrospective case study was conducted to determine the impact of pharmacists MTM services on the health of employees and their beneficiaries. The study was deemed not human research and approved by the institutional review board of University of Minnesota and CentraCare. It was also granted a waiver of patient consent requirements by CentraCare. The study included patients who were referred to or met with a pharmacist for MTM visit between 2018 and 2020. The primary outcome of the study was to measure the number of patients meeting A1c goals pre and post MTM visit, as defined by the American Diabetes Association (ADA). Secondary outcomes included quantifying the identification and resolution of medication therapy problems.

Patient identification: Employees and their beneficiaries who were referred to MTM services for follow-up or met with a pharmacist for initial MTM visit between January 1, 2018, to December 31, 2020, were included. Patients were identified by completing visits with a pharmacist, which was recorded in CentraCare's electronic medical record (EHR).

Data Extraction: Employees and their beneficiaries who met with a pharmacist between 2018 and 2020 were pulled into an excel spreadsheet, which allowed the primary investigator to review patient charts in EHR to obtain data for this project. The spreadsheet contained information for identification such as patient name, date of birth and medical record number (MRN). Patients were included in the study if their A1c was >7%. Patient charts were also reviewed for the number of medication therapy problems that were identified, resolved and documented in EHR by the MTM pharmacist during visits. All data was saved securely on the hospital shared drive.

Results:

Of the 358-patient data received, 200 patients were reviewed, and 43 patients had A1c > 7%. The mean age was 48.4 years, with an age range of 26-70 years. The study population included 48% women and all study participants were white. The average A1c was 8.4 % with baseline A1c range of 7-15% among patients that were included in the study. Table 1 shows the mean A1c of participants with A1 c> 7%. The A1c of MTM patients seen by a pharmacist in 2018 was categorized into 3 groups: A1c > 12%, 8%, and 7%. The mean A1c for these groups were 12.7%, 8.7% and 7.4% pre MTM visit respectively. When these patients were consistently followed by a pharmacist over 2 years, it was noted that patients with mean average A1c greater than 12% saw a 48% reduction in A1c over 2 years after pharmacist MTM visit. The mean percent A1c reduction in the A1c groups greater than 8% and 7% were 17% and 2.7% respectively. This information is also summarized in figure 1 and table 1.

For the secondary outcome of the project, we sought to quantify the identification and resolution of drug therapy problems in the study. A total of 147 medication therapy problems were identified among the participants reviewed. Each patient had an average of 4 drug therapy problems for their MTM visit. To quantify the results, the medication therapy problems identified were categorized as shown in figure 2. The data shows that the majority of patients needed additional therapy to resolve a medication condition, as represented by 33% of the identified drug therapy problems. Adverse drug reactions and adherence also accounted for 20% and 15% respectively. Figure 2 breaks down the medication therapy problems identified. Of the 147 medication therapy problems identified, 83% of them were resolved. During the MTM visits, pharmacists were also involved in optimizing therapies for patients with heart failure, dyslipidemia, hypertension, gout and also providing education and recommendations for vaccinations. However, outcomes data for these conditions were not measured during data collection and analysis.

Discussion

The study shows that pharmacist-employee MTM visits improved the health of employees and their beneficiaries as evidenced by significant A1c reduction and resolution of drug therapy problems. This result is significant because it can allow CentraCare to expand MTM services to geographically isolated rural clinics and hospitals to target more employees and their beneficiaries who will benefit from the program. The findings in this study can also be used to target new patients who will benefit from the MTM program and expand the services offered by MTM pharmacists.

To improve employee and patient engagement in the MTM program offered by CentraCare, the institution can leverage their available technology and resources to ensure that employees and their beneficiaries who are on two or more prescription medications receive automated reminders for MTM visits and follow-up at the nearest CentraCare clinic or hospital. CentraCare can also utilize their outpatient pharmacies to provide MTM services when employees and their beneficiaries are picking up prescriptions. Lastly, CentraCare can conduct risk assessments and stratifications for their employees and beneficiaries based on factors such as

number of chronic conditions and medications, barriers to providers and medication access, and frequency of medication use to develop targeted engagement campaigns to employees and their beneficiaries who will benefit from the MTM program.

During the study, there were some key challenges with data collection that also needed to be reported. First, some key information such as the number of medications patients were taking, some lab values, and demographics were not collected due to time constraints. A1c values collected were from the beginning of 2018 and the last A1c collected in 2020. A1c between these years were not collected for evaluation due to time and missing information such as follow up visits. In addition, some patients were lost to follow-up or switched providers and were not included in the study. Some of the patients reviewed initially were managed by their endocrinologist and diabetes nurse educator and were not properly followed as some of these patients were also lost to follow up.

Conclusion

While there were positive outcomes to the pharmacist-employee MTM services, challenges still remain in the delivery of the service. This manuscript identifies ways to improve employee engagement and potential challenges that could be investigated in future studies.

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Figures

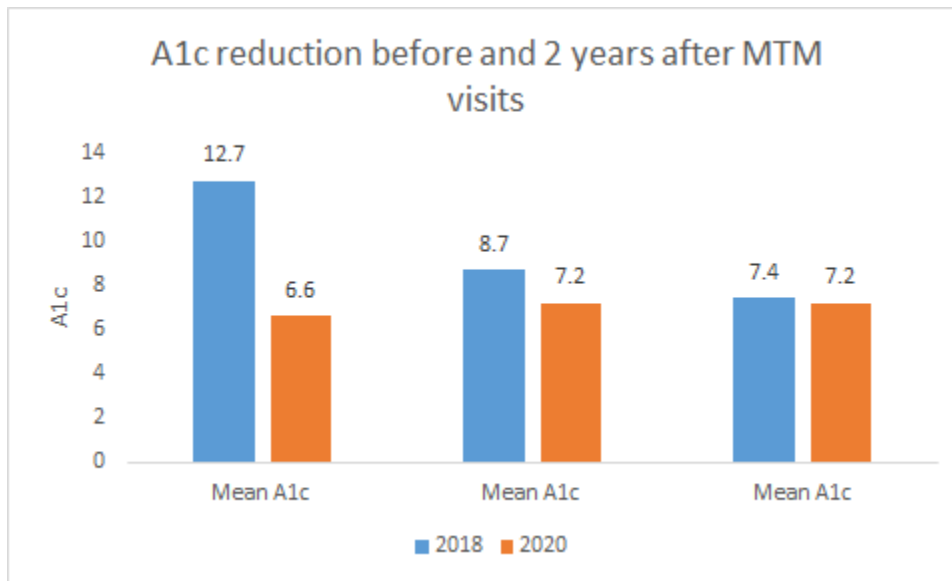


Figure 1. Mean A1c reduction over 2 years in pharmacist employee MTM visits

Mean A1c	N	2018	2020	% A1c Reduction
Mean A1c > 12	7	12.7	6.6	48%
Mean A1c > 8	16	8.7	7.2	17%
Mean A1c > 7	20	7.4	7.2	2.70%

Table 1. Mean A1c of study participants who met MTM pharmacists between 2018-2020

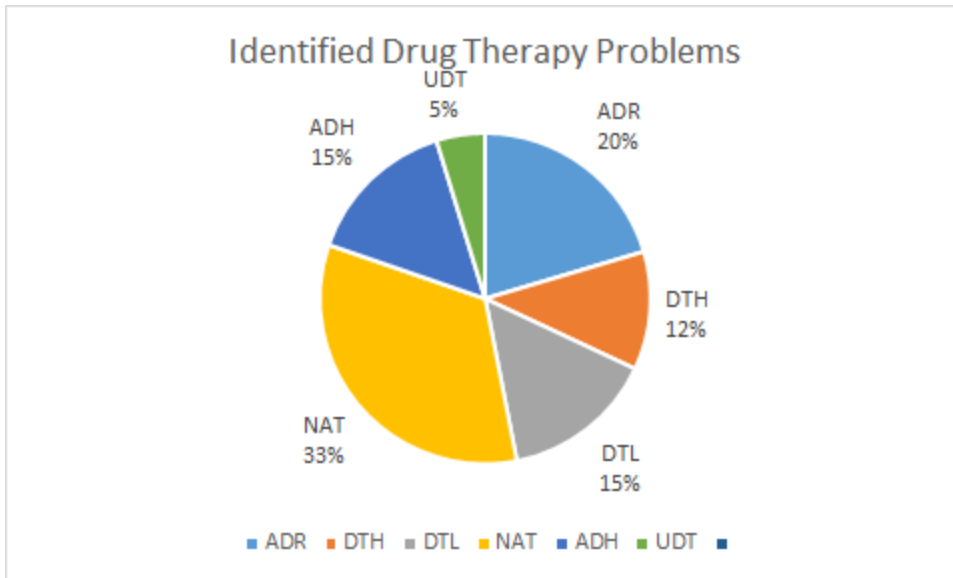


Figure 2. Drug therapy problems identified during MTM visits between 2018-2020

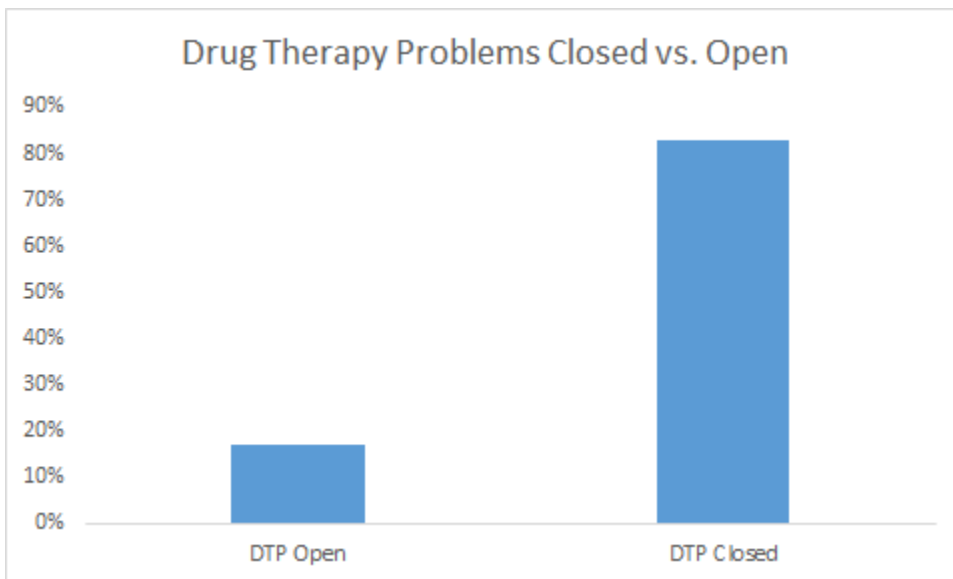


Figure 3. Drug therapy problems opened and closed during MTM visits between 2018-2020