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Medication Therapy Management Implementation in Conjunction with a Rural Health Clinic in Minnesota: A CQI Impact on Diabetes Metrics

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Medication therapy management implementation in conjunction with a rural health clinic in Minnesota: A CQI Impact on Diabetes Metrics

A report submitted to the University of Minnesota College of Pharmacy

Postgraduate (PGY1) Pharmacy Residency Program

By

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Abstract

The purpose of this continuous quality improvement project was to implement a pharmacist-led Medication Therapy Management (MTM) clinic in rural, central Minnesota and assess the impact on patients' healthcare over a six-month period. Patients were identified through the clinic's diabetes registry, which included patients 18 through 75 years old with a diagnosis of diabetes not meeting all five D5 goals, as recommended by the Minnesota Community Measurements, independently referred by the provider, or be identified by their insurance company as a patient that would benefit from an MTM visit. The D5 focuses on blood pressure and blood sugar control, appropriate statin and aspirin use, and cessation of tobacco products. Referred patients were offered and scheduled for an appointment with the pharmacist. MTM visits were provided both in person and via telephone. The pharmacist identified and documented drug therapy problems (DTPs) and implemented changes, via the system's clinical pharmacy collaborative practice agreement, to improve patient outcomes. All MTM visits, DTPs, and composite D5 scores were analyzed after the conclusion of the study period. Thirty-one visits were provided by the pharmacist at the clinic between October 1st, 2021 and March 31st, 2022, with 22 unique patients seen. Seventy-three DTPs were identified, with 69 DTPs documented as closed. Of the 22 unique patients seen, 13 patients were reviewed for D5 metrics. Referral processes were created, implemented, and modified over the six-month period to increase patient volume.

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I. Introduction

People who reside in rural areas are more likely to experience social factors that impact health. Rural populations have lower income, on average, compared to urban counterparts.[1] Rural areas also have limited access to healthcare and reliable transportation. The prevalence of hypertension, hyperlipidemia, diabetes, and smoking are higher in rural communities. All of these factors lead to increased mortality rates.[2] Rural Health Clinics (RHCs) are intended to increase access to primary care services for patients in rural communities to bridge the gaps in health for patients living in rural areas.[3] RHCs follow specific Medicare regulations to be certified as a RHC, and in turn, receive enhanced reimbursement rates to allow the ability to continue to provide care in rural communities.

Approximately 22% of the population lives in rural Minnesota,[4] compared to the 13.8% of the United States (US) population.[5] Sauk Centre is a town in west-central Minnesota, located in Stearns County, with a population of 4,550.[6] The town is home to a critical access hospital and RHC.

Medication therapy management (MTM) is a service that pharmacists provide, which includes five components, including a medication therapy review.[7] Through MTM visits, the pharmacist identifies and resolves drug therapy problems (DTPs), which can improve patient health outcomes. MTM has been implemented in numerous settings, including Federally Qualified Health Centers (FQHCs), patient-centered medical homes, managed care health systems, community pharmacies, and primary care clinics. The Current Procedural Terminology (CPT) codes currently approved to bill MTM includes 99605, 99606, and 99607.[8] Currently in RHCs, MTM is not recognized as a billable

service.[9] Studies have shown that pharmacists providing MTM and comprehensive medications reviews in rural communities have improved chronic disease outcomes, including decreasing A1c and blood pressure and ensuring appropriate statin therapy. There are few studies, however, specifically focused on pharmacists providing services in collaboration with RHCs, potentially due to reimbursement models not established.[10,11] With RHCs being designated in underserved areas, there is potentially more of an impact pharmacists providing MTM services could make on the patients receiving care in these areas.

The D5 for diabetes is published through the Minnesota Community Measurements and is a set of five treatment goals in managing patients with diabetes.[12] This includes controlling blood pressure, cholesterol, blood glucose, and tobacco and aspirin use. By meeting all five D5 goals, health complications from diabetes are greatly reduced. Across Minnesota, the average score for composite D5 metrics is 45%.[13] In 2020, CentraCare-Sauk Centre had a clinic score of 42%.

The goal of this project was to successfully implement a pharmacist to provide MTM services in conjunction with a RHC that previously did not have a pharmacist in this setting. Additionally, we wanted to assess the impact of MTM services on composite D5 scores.

II. Methods

Setting: This was a continuous quality improvement (CQI) project that was conducted in conjunction with the Sauk Centre RHC in Minnesota.

Participants: Patients included in this study had an established primary care provider (PCP) at the CentraCare-Sauk Centre clinic. Patients were recruited in three primary ways: (1) direct MTM referral by a PCP, (2) identified on an insurance registry as a patient that would benefit from MTM services, or (3) pended referral by pharmacist from diabetes registry. The diabetes registry focuses on the Diabetes D5 Metrics and includes patients 18 to 75 years old with the diagnosis of diabetes mellitus and their D5 score. To have a composite score of 5/5 with the D5 metrics, the patient would need to have documented controlled blood pressure (less than 140/90 mmHg), documented blood sugar control (A1c less than 8%), appropriate statin use, appropriate aspirin use, and cessation from smoking.

Intervention: Referred patients were offered and scheduled for an appointment with the pharmacist. The pharmacist was available at the clinic location approximately one day per week (0.2 full time equivalents (FTE)). MTM visits were provided both in person and via telephone. Documentation of the visit was included in the patient's electronic health record in a standardized MTM template. The initial visits for patients were comprehensive medication reviews (CMRs). Subsequent appointments were either targeted disease state management or follow up CMRs. The pharmacist identified and documented drug therapy problems (DTPs) and implemented changes, via the site's collaborative practice agreement, to improve patient outcomes. All MTM visits, DTPs, and D5 composite scores were analyzed after the conclusion of the study period.

This project was submitted to the CentraCare and University of Minnesota Institutional Review Boards (IRB) and deemed not human research.

III. Results

Thirty-one visits were provided by the pharmacist at the clinic between October 1st, 2021 and March 31st, 2022, with 22 unique patients seen. The majority of patients were referred to the pharmacist by direct provider referral (table 1). The number of patients seen by the pharmacist increased in the last months of tracking (table 2). Seventy-three DTPs were identified, with 69 DTPs documented as resolved. The most common DTP identified was needs additional drug therapy, followed by adverse drug reactions, dose too high, and adherence (table 3). Of the 22 unique patients seen, 13 patients were reviewed for composite D5 metrics (table 4, graph 1). Referral processes and workflows were created, implemented, and modified over the six-month period to increase patient volume (figure 1). Specifically, it was seen that, in the fourth month, after implementing the change in pharmacist's physical location in the clinic and having the pharmacist pend MTM referrals to the provider from the D5 registry, the number of patients seen by the pharmacist increased.

IV. Discussion

From the changes in workflow implemented in the fourth month of the project period, an increase in MTM visits were observed in the months following. In a literature review, there were no studies mentioning location of pharmacists in the clinic setting and increased referral rates; however, it is known in many, if not all, situations that multidisciplinary collaboration has a positive impact compared to non-collaboration.[14] Thus, by having pharmacists more available in the clinic setting, more multidisciplinary collaboration can occur, in turn allowing for a more positive impact on patient care.

Additionally, there were no studies that discussed referral workflow, as many studies were retrospective in nature and not focused on how the referral for the patient came through.

This project supports the findings from Prudencio et al and Anderson et al that a pharmacist providing MTM or CMRs make a positive impact on chronic disease outcomes, such as blood pressure, A1c, and statin therapy, for patients residing in rural areas. With the D5 composite scores increasing after the MTM appointment, the pharmacist in CentraCare-Sauk Centre was able to improve blood pressure, A1c, and statin and aspirin therapy. Cessation from tobacco use has to be shown for a 6-month period, in which this project period was not long enough to show this metric improvement.

Limitations of this quality improvement project include that this project was completed at one RHC in Minnesota with one pharmacist completing the visits. Both articles referenced provided services to patients in other rural settings, rather than in conjunction with a RHC. In the article from Anderson et al, the pharmacists provided MTM services from the community pharmacy setting, and in Prudencio et al, comprehensive medication management was provided in a rural family medicine clinic. Patients residing in rural communities are all at risk for similar health disparities, however each rural community has their own individual barriers. At Sauk Centre, some patients that had MTM referral signed by their provider declined a visit with the pharmacist. Some patients were confused with the service being offered and were not willing to schedule an appointment. This was not mentioned in Prudencio et al or Anderson et al, as both were retrospective studies; however, it was noted in Anderson

et al that many patients did not attend a follow up visit. This could potentially be due to availability of the pharmacist in the clinic or limited knowledge of pharmacy services, however this has not been studied. In the rural health clinic in Sauk Centre, Minnesota, the providers showed support in utilizing and referring patients to the pharmacists. Additionally, a CPA was already in place across the system, indicating acceptance of pharmacist work. If provider buy-in is not visible, having a pharmacist to provide MTM services may not be as feasible.

Another limitation was the short duration project period of six months. This makes it difficult to see the impact specifically on the patients' diabetes composite D5 score, as it can take time to see improvements in certain metrics (A1c, blood pressure, tobacco cessation). Additionally the limited availability of the pharmacist would impact this, as they were only available in clinic one day per week. With 73 DTPs identified and addressed throughout the six-month period, it can be inferred that the resolved DTP will positively impact patients' A1c values, blood pressure levels, and other components of the D5 score, which improves composite D5 scores. A statistical analysis of the data was not completed; however, the data qualitatively shows the positive impact the pharmacist can make in a RHC.

There is a need for additional studies to further drive the impact pharmacists make by providing MTM services in conjunction with RHCs. Specifically with the RHC in Sauk Centre, there are additional patients identified on the diabetes registry that would benefit from a MTM visit with a pharmacist. It would be beneficial for the clinic to continue to have a pharmacist (0.2 to 0.4 FTE) to provide MTM services and further

improve the clinic's D5 score. Automatic referrals for patients not meeting a set number of the D5 metrics would be another option to help increase referral rates at this RHC.

Additional discussion is needed with legislation and Medicare to get MTM CPT billing codes recognized in RHCs. This would allow reimbursement of MTM services provided in this setting and would help to support the implementation of more pharmacists in RHCs to sustainably provide MTM. Even with the current MTM CPT codes, payment for pharmacy services does not financially support having pharmacists providing MTM services. Further discussion and lobbying is needed to improve pharmacist payment for MTM and other clinical services. By increasing access to pharmacists and MTM services in rural areas, this would improve patient outcomes and help to bridge the healthcare gaps of patients living in rural communities.

V. Conclusion

Implementation of a pharmacist in conjunction with a RHC was shown to be successful after making changes in workflow to increase referrals for MTM. Additionally, the pharmacist identified DTPs beyond diabetes during MTM appointments and was able to improve composite D5 scores, which can be inferred to improve patient health outcomes.

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VII. Appendix

Provider MTM Handout

Pharmacist-Provided Medication Therapy Management (MTM)

Ideal patients

- Patients with chronic diseases who are not meeting goal
- Patients with numerous medications who need additional support with medication management

- Needs additional drug therapy
- Unnecessary drug therapy
- Ineffective drug therapy
- Dose too low
- Dose too high
- Adherence (cost, formulation, frequency of dosing, etc)

How to refer in EPIC

1. In the "search for new orders," type *MTM*
    a. Click Request – Medication Therapy Management
2. In Location for MTM service, choose Other (Specify)
    a. Type *Sauk Centre*
3. In comments, place reason for referral (diabetes, chronic disease state management, etc)
4. Accept and sign like an order

VIII. Tables

Table I: Type of referral

Type of referral	**n=31**
Provider	13
Insurance registry	2
Pharmacist pended	7

Table II: Number of visits by month

Month	**Total Number of Visits (n=31)**	**Initial Visits (n=22)**	**Follow-Up Visits (n=9)**
Month 1	3	3	0
Month 2	3	2	1
Month 3	0	0	0
Month 4	6	6	0
Month 5	6	5	1
Month 6	13	6	7

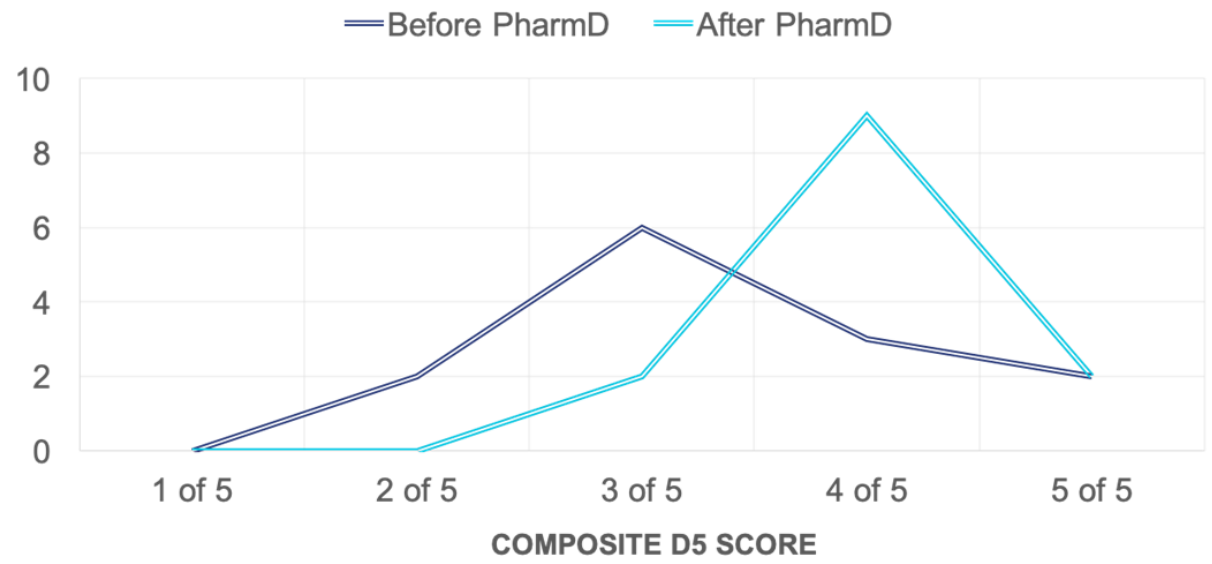
Table III: Drug Therapy Problems (DTPs) Identified

Drug Therapy Problem (DTP)	**Number (n=73) (%)**
Education/teaching	1 (1.4)
Therapeutic interchange	1 (1.4)
Therapeutic duplication	2 (2.7)
Drug-drug interaction	2 (2.7)
Unnecessary drug therapy	4 (5.5)
Dose too low	8 (11.0)
Dose too high	11 (15.1)
Adherence	11 (15.1)
Adverse drug reaction	13 (17.8)
Need additional drug therapy	16 (21.9)

Table IV: Composite Diabetes D5 Metrics

Composite D5 Score	**Before PharmD Visit (n=13)**	**After PharmD Visit (n=13)**
1 of 5	0	0
2 of 5	2	0
3 of 5	6	2
4 of 5	3	9
5 of 5	2	2

Graph I: Composite Diabetes D5 Metrics



IX. Figures

Figure I: Pharmacist Timeline