

DEVELOPMENT AND IMPLEMENTATION OF A NEW REFERRAL  
PROCESS AND DOT PHRASE TECHNOLOGY FOR A  
RURAL MEDICATION THERAPY MANAGEMENT  
PROGRAM TO IMPROVE PATIENT SAFETY

by

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of

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## ABSTRACT

No medication or procedure will cure dementia, and most patients will experience behavioral and psychiatric symptoms as the disease progresses. Medications to treat the symptoms of dementia are complex. Medication therapy management is a patient-centered collaborative agreement between provider and pharmacist that has shown positive outcomes in reducing adverse drug reactions. In January 2021, an outpatient clinic in Southwest Montana implemented the Rural Access to a Psychiatric Pharmacist for Seniors (RAPPS), an MTM pilot program to address the complex medication-related problems of elderly dementia. During the RAPPS process, an internal review identified two major concerns: (1) clinical information being communicated from provider to pharmacist needs to be more consistent and (2) the current system lacks a clearly defined referral process.

This ongoing process improvement project used four Plan-Do-Study-Act cycles to develop, implement, and evaluate the dot phrase. A dot phrase is a section of text to be inserted into an electronic health record progress note. The dot phrase's utilization was analyzed at three different timepoints over the project's 6-week implantation period. A five-question visual analog scale provider-satisfaction survey was developed to be conducted at the fourth PDSA cycle.

Preliminary data collected from the electronic health record from November 2022 to December 2022 found that 45% of providers' notes at the time of referral did not document a psychiatric diagnosis, and 81% of the notes did not confirm or deny outside psychiatric management. The primary, secondary, and tertiary SMART goals were not met. The QI project encountered many unforeseen problems throughout this study.

The preliminary data collected in this project demonstrated that documentation deficits are occurring between providers and the clinical pharmacist. As more and more of our medical information becomes digital, health professionals will require additional training to become proficient in using these systems. IT systems are complex and challenging, so future quality improvement projects should have a dedicated IT specialist on their team. For collaborative agreement programs to succeed, clear communication between all stakeholders must be championed. Future research should examine technologies that encourage interprofessional communication within electronic referral systems.



## CHAPTER ONE

## INTRODUCTION AND REVIEW OF THE LITERATURE

Background

Dementia is a debilitating and progressive neurological disease. The behavioral and psychological symptoms of dementia (BPSD) occur in nearly all patients with dementia (Mendez et al., 2022). As the patient's dementia progresses, so do the behavioral and psychological symptoms, and managing these behaviors may necessitate pharmacologic intervention.

In addition to more significant caregiver distress, BPSD, such as agitation, aggression, psychosis, and depression, significantly impair the ability to care for these patients (Mendez et al., 2022). BPSD will often become pronounced enough that the patient's safety becomes a concern, and a transition to a higher level of care is required. Furthermore, the escalation of BPSD can be unsettling and sometimes traumatic for family members to observe. Worst of all, the progression of the disease is variable, and the prognosis is irreversible, which translates to a higher amount of medical utilization (i.e., increased emergency room visits, polypharmacy, recurrent infections) (Khera et al., 2019, Gallimore et al., 2018), increased economic burden (Oh et al., 2019, O'Connell et al., 2021), and caregiver burnout (Ma et al., 2022).

As the U.S. healthcare system shifts toward value-based payment incentives, maximizing the use of nonphysician team members will increase in importance and is critical for older adults with dementia because of the inherent complexities in coordinating care for this population (Woodall et al., 2017). To address the coordination complexities for dementia patients, future models of care must deliver patient-centered, team-based care that has a reimbursement structure

that is dependent on the achievement of positive economic, clinical, and humanistic outcomes (McBane et al., 2015). An example of one of these new models is medication therapy management (MTM) (McBane et al., 2015). The American College of Clinical Pharmacy (ACCP) defines MTM as:

A collaborative practice agreement between one or more providers and qualified clinical pharmacists who work within the context of a defined protocol that permits the clinical pharmacist to assume responsibility for performing patient assessments; ordering drug therapy-related laboratory tests; administering drugs; and selecting, initiating, monitoring, continuing, and adjusting drug regimens (McBane et al., 2015, p. 41).

In January 2021, a small clinic in Southwest Montana implemented the Rural Access to a Psychiatric Pharmacist for Seniors (RAPPS) intervention to address the complex medication-related problems of older adults. An internal review of the program identified the referral process as inefficient due to a lack of standardization. In the practice guidelines by Jorgenson et al. (2013), for the successful implantation of a clinical pharmacist into practice, the authors recommended primary care teams standardize their referral process and develop a provider-pharmacist referral template.

### Objective

Current treatment for dementia patients is centered on maximizing the function and well-being of patients and their families, including comprehensive assessment, optimization of pharmacotherapy, and attention to patient comfort and quality of life (Oh et al., 2019). The medication management model has shown positive outcomes in reducing ADR and increasing patient and provider satisfaction (Bell et al., 2020). This literature review was conducted to provide a general foundation of knowledge on medication therapy management programs. The

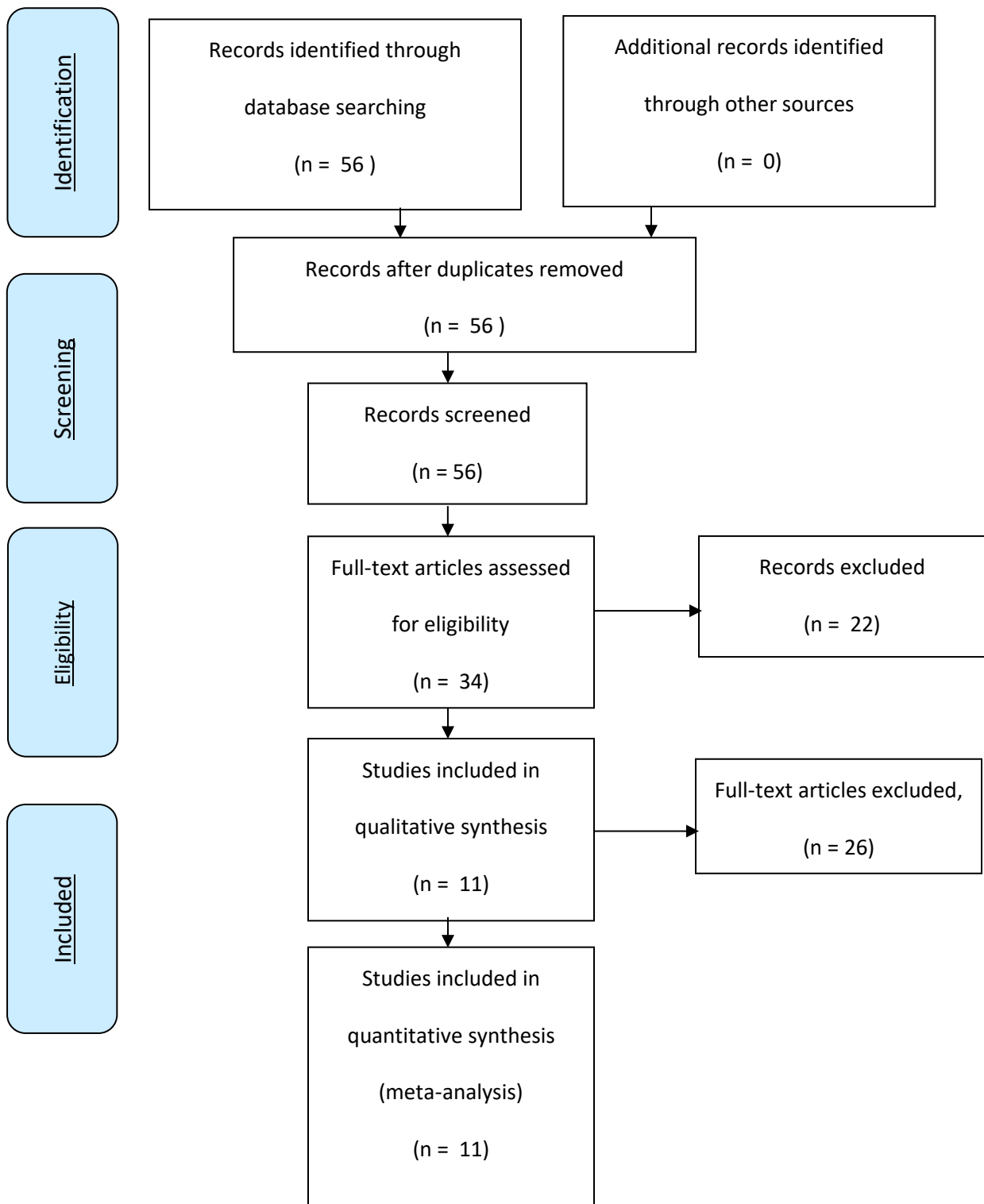
knowledge gained from this literature review will help guide the development of a new referral process for a small clinic in Southwest Montana.

### Methods

A systematic search for peer-reviewed literature was conducted from August 2022 until October 2022 in PubMed, Web of Science, MEDLINE, and Cochrane databases. Search terms included the following: “medication therapy management (MTM)” OR “clinical pharmacist,” OR “primary care,” OR “pharmacist-led,” OR “pharmacist-driven,” OR "referral," OR “collaborative drug therapy management (CDTM),” and “dementia” OR “dementia with behavioral disturbance.” Additional studies were identified from bibliographical reviews of pertinent articles.

This review used the PRISMA tool in Figure 1 to guide article inclusion processes (Moher et al., 2009). Studies were included if they met each of the following conditions: the studies were peer-reviewed, the manuscript was published in English, studies were conducted within the last 10 years, studies could be qualitative or quantitative, had measured outcomes, and the clinical pharmacist was either in a collaborative drug therapy management (CDTM) or medication therapy management program (MTM). Studies were excluded if they did not meet inclusion criteria.

Figure 1. PRISMA



## Results

Eleven articles were selected for this review: two single-center pilot studies that were conducted in the United States (O'Connell et al., 2021; Bell et al., 2020), one systematic review (Kwint et al., 2013), two guidelines (McBane et al., 2015, Badowski et al., 2018), two randomized controlled trials conducted, one in Finland and the other in Canada (Toivo et al., 2019; Legault et al., 2012), one quasi-experimental conducted in Canada (Khera et al., 2019), and a descriptive study and qualitative study, both conducted in the United States (Woodall et al., 2017; Jorgenson et al., 2013). A feasibility study was conducted in Australia (Cross et al., 2020). The number of participants in these studies ranged from 60 to 7,500. There was only one study that included participants under the age of 50 years old (O'Connell et al., 2021).

There are two papers by The American College of Clinical Pharmacy (ACCP), with one providing a general overview of MTM history, legislation, and future implications (McBane et al., 2015). The ACCP also published their recommendations on how the delivery of MTM by telehealth is a modality that has two promising strategies to provide medical care to the rural geriatric population. First, MTM by telehealth provides access to patients in remote areas lacking adequate medical and pharmacy services and to high-risk patients requiring frequent monitoring (Badowski et al., 2017). Second, MTM is considered a billable service by Medicare Part B. Reimbursement of MTM telehealth services provides economic security for providers, which provides patients consistent medical care access (Badowski et al., 2017). In Jorgeson et al. (2013), 18 Primary Care Pharmacy Specialty Network (PC-PSN) members evaluated 103 articles and condensed the information into a list of 10 recommendations that will assist pharmacists in successfully integrating into existing primary care teams in Canada. Four studies examined the

change in the total number of medication-related problems (MRPs) and/or drug-related problems (DRPs) pre- and post-intervention (Toivio et al., 2019; Woodall et al., 2017; Legault et al., 2012; Khera et al., 2019). One study developed its own MRP and/or DRP classification tool (Woodall et al., 2017). O’Connell et al. (2021) evaluated if pharmacist-conducted medication reconciliation influences the length of stay in a psychiatric patient population. In Khera et al. (2019), the authors examined changes in the number of medications pre- and post-medication review. Cross et al. (2020) examined the number of inappropriate medications pre- and post-medication reviews. Two studies examined the impact of the MTM intervention on patients who had mild cognitive impairment (MCI) or dementia that were prescribed psychotropic medications (Bell et al., 2020; Cross et al., 2020). In Cross et al. (2020), the intervention was developed to only focus on deprescribing psychotropic medications. The results of Cross et al. (2020) were mixed; as a whole, there were no significant changes in total medications. However, when the results are viewed at an individual level, there was a significant decrease in not only the number of medications but also medication regimen complexity (Cross et al., 2020).

A variety of secondary outcomes, including subjective and objective clinical health outcomes, costs, and patient-provider satisfaction, were also reported (Kwint et al., 2013; O’Connell et al., 2021, Legault et al., 2012; Woodall et al., 2017; Toivo et al., 2019; Khera et al., 2019; Cross et al., 2020; Bell et al., 2020).

### Discussion

This literature review was conducted to provide a general foundation of knowledge on medication therapy management programs. MTM programs have grown from 13 states in 1997

to 40 states in 2015 that authorize MTM services in any clinical setting (McBane et al., 2015). Advances in the delivery of healthcare via telemedicine have been shown to be an efficient use of healthcare professionals' time, resources, and expertise (Badowski et al., 2018). It has been estimated that, each year, 28% of hospitalizations among the elderly are drug-related (O'Connell et al., 2021). One possible strategy to decrease hospital utilization among the elderly would be to have a closer follow-up, which could be accomplished through a telehealth MTM program. The prevalence of clinical pharmacists providing MTM by telehealth is steadily increasing, and challenges remain with reimbursement for clinical pharmacist MTM services (Badowski et al., 2018). Primary care teams considering the implantation of an MTM program should review current MTM state regulations for reimbursement to ensure the long-term economic stability of the program. Jorgenson et al. (2013) found that the successful integration of a clinical pharmacist into a primary care team is due to personality traits, i.e., assertiveness and confidence. For MTM to be generalizable, healthcare teams need to develop a standardized integration process that incorporates education and training for both the clinical pharmacist and the primary care team.

Five studies investigated changes in the number of medications pre- and post-MTM implantation (Khera et al., 2019; Toivo et al., 2019; Woodall et al., 2017; Bell et al., 2021; Cross et al., 2020). In three of these studies, the results did not show any significant changes in the total number of medications pre- and post-MTM program implantation (Khera et al., 2019; Toivo et al., 2019; Woodall et al., 2017). In all five of the studies, the providers had the final say on whether or not medication would be deprescribed (Khera et al., 2019; Toivo et al., 2019; Woodall et al., 2017; Bell et al., 2021; Cross et al., 2020). Two explanations for the unfavorable results include: (1) having potentially different prescribing behaviors of the physicians regardless

of the MTM recommendations and (2) patients being prescribed additional medications during the study period (Khera et al., 2019; Toivo et al., 2019; Woodall et al., 2017; Bell et al., 2021; Cross et al., 2020). Researchers did find that an MTM program is effective in optimizing high-risk medication, i.e., central nervous system, psychotropic, and opioid medications (Toivo et al., 2019; Khera et al., 2019), patient satisfaction with the MTM program was high (Woodall et al., 2017), and a cost analysis of MTM services with Medicare reimbursement demonstrated an ROI of 38.1% (Woodall et al., 2017).

Small study sizes, diverse geographical locations, and variable outcome measures speak to the poor generalizability of these studies. Future studies should evaluate an MTM program against a control group that has been powered appropriately. Provider rationale for accepting or declining pharmacist recommendations should also be investigated in future studies.

#### Implication for Practice

This review of 11 studies indicates that MTM programs have promising potential for vulnerable populations in the outpatient setting. Integration of the MTM model into primary care is an evidence-based strategy to address the 1.3 million yearly hospitalizations due to ADRs in the United States (Shepard et al., 2018). The MTM model seeks to mitigate medication errors by maximizing the scope of clinical pharmacists. Clinical pharmacists are experts in pharmacology and, as part of an MTM program, are better positioned to stop inappropriate medications before any patient harm. For successful MTM implantation, primary care teams must provide new policies and education on roles and responsibilities for all the key stakeholders involved. The growing need for healthcare will require providers to provide more services in less time. The



MTM program is a team-based strategy that uses existing personnel more efficiently to meet the growing healthcare needs of this growing patient population.

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## CHAPTER TWO

## PROJECT PROPOSAL

Introduction and Problem

As the patient's dementia progresses, so do behavioral and psychological symptoms, and managing these behaviors may require pharmacologic intervention. Psychiatric treatment poses a particular challenge to medication safety and patient outcomes. Psychiatric medication regimens are commonly complex and, at times, require frequent changes, thus, increasing the likelihood of a medication error (Toivo et al., 2019). In addition, factors such as multiple provider prescriptions, self-medication with herbal supplements, and issues surrounding medication compliance add to the complexity, thereby potentially increasing the likelihood of a patient experiencing an adverse drug reaction (McBane et al., 2015). Medication therapy management is one strategy that has shown promise in remedying medication issues in complex patients. Medication therapy management (MTM) is a patient-centered collaborative agreement between provider and pharmacist, with three main components: (1) the pharmacists provide an assessment of each patient's medication and evaluate for appropriateness, safety, effectiveness, and adherence, (2) the development of a care plan with individualized goals of treatment, and (3) follow-up to evaluate patient outcomes (Woodall et al., 2017).

As the U.S. healthcare system shifts toward value-based payment incentives, maximizing the use of nonphysician team members will increase in importance and is critical for older adults with dementia because of the inherent complexities in coordinating care for this population (Woodall et al., 2017). “New models of care delivery emphasize patient-centered, team-based

care and increasingly link payment to the achievement of positive economic, clinical, and humanistic outcomes” (McBane et al., 2015, p.39).

On average, the time a patient spends with a provider lasts 21 to 24 minutes (Mercer et al., 2018). Within this timeframe, the primary care provider is responsible for managing complex medical issues, coordinating care, and providing education, while also finding the time to conduct a detailed medication review. Elderly dementia patients with behavioral disturbances are complex patients, meaning there is less time for providers to conduct a targeted medication review needed to address all the potential nontherapeutic medication. In addition, an incomplete medication review can lead to adverse drug reactions, drug-drug interactions, nonadherence, suboptimal dosing and monitoring, and polypharmacy (Gallimore et al., 2018).

In general, Montana lacks healthcare providers and has a finite number of resources for dementia patients with behavioral disturbances. With a lack of providers, facilities, and home health services, the current services must be run efficiently to serve as many vulnerable patients as possible.

In January 2021, an outpatient clinic in Southwest Montana implemented the Rural Access to a Psychiatric Pharmacist for Seniors (RAPPS) pilot program to address the complex medication-related problems of elderly dementia patients with behavioral disturbances.

During the implementation of the RAPPS program, internal feedback identified the referral process as inefficient and cumbersome. Currently, there is no standardized internal referral process between geriatric providers and their clinical psychiatric pharmacists. In its current form, there is a vast amount of variation in the type of information and how it is communicated in the current referral process. In addition, there is a knowledge deficiency among

providers and staff on the clinical pharmacist's scope of practice. For example, for the clinical pharmacist to legally begin initiating the referral, there must be two minimum requirements. First, there must be a psychiatric, mental health, or behavioral health diagnosis documented in the EHR, and second, the said diagnosis should reasonably correspond to current patient behaviors and symptoms. With multiple diagnoses and extensive healthcare documentation within each patient chart, the current referral method requires extensive chart review by the clinical pharmacist to ensure the referral falls within the clinical pharmacist's MTM scope of practice. By spending more of their time searching for information than providing their valuable insights, the current referral method is impeding the clinical pharmacist's scope of practice, leading to delays in medication administration, and increasing the likelihood of patient distress. The internal referral process's issues are not isolated to the clinics' MTM practice. In Jorgenson et al. (2013, pp. 345–346), the authors recommended that, for successful integration of pharmacists into the primary care team, "team members will need to be educated regarding how to refer a patient for a pharmacist referral" and the team will need to "develop a procedure and create a pharmacist referral form." To address the inefficient and cumbersome referral process, a Montana State University nurse practitioner student was tasked as project lead to complete a quality improvement project on the referral process.

### Problem Statement

No medication or procedure will cure dementia. Of those diagnosed with dementia, up to 80% will exhibit behavioral and psychiatric symptoms of dementia (BPSD) (Mendez et al., 2022). BPSD symptoms are associated with a decline in quality of life, poor functional status,

and worsened cognition; therefore, managing BPSD is of high medical and social priority (Ma et al., 2022). Currently, there is no standardized internal referral process between geriatric providers and their clinical psychiatric pharmacists. In its current form, there is a vast amount of variation in the type of information and how it is communicated in the referral process. The RAPPS team conducted an internal review that identified two major concerns: (1) clinical information being communicated from provider to pharmacist is inconsistent and (2) the current system lacks a clearly defined referral process, which is causing inefficiencies and increasing the potential for adverse patient outcomes.

#### Organizational Microsystem Assessment

This quality improvement project will be conducted in a clinic setting. The clinic serves rural geriatric patients. They provide services in the outpatient setting, including clinics, home visits, and assisted living/memory care facility visits. The organization's mission is to improve community health and quality of life. The clinic is comprised of doctors, nurse practitioners, physician assistants, nurses, and countless support staff. The clinic focuses on preventing and treating diseases and disabilities in the elderly population, and they specialize in patients with dementia.

#### Specific Aims

The primary aim of this project is to improve patient safety and decrease patient distress by creating a standardized referral process, thereby decreasing medication delays and errors and maximizing the medications' therapeutic benefits. This quality improvement (QI) project will use the Plan-Do-Study-Act framework to design an internal patient referral document that will

catalyze the efficiency of the referral process. By creating a new referral process and dot phrase, the MTM team will be better equipped to provide high-quality care to a greater number of patients. Standardization of the communication process will ensure that the pertinent information will be available at the initiation of the referral process, thereby reducing delays with pharmacological intervention. This ongoing process improvement project will evaluate the dot phrase's utilization at three different timepoints throughout the study. The project will also capture provider satisfaction via a five-question visual analog scale survey to gain a deeper understanding of their perceptions and experiences with the implemented dot phrase.

### Rationale

Plan-Do-Study-Act (PDSA) is a tool for developing, testing, and implementing changes leading to improvement and has four stages (Perry et al., 2014). First, a plan is developed to test the change (plan), and then a test is carried out (Do); the data from the test is examined and reflected on (Study), and then changes are planned or implemented for the next cycle of change (Act) (Perry et al., 2014). This project will monitor the use of the dot phrase over the course of 6 weeks, and there will be no direct patient interaction in this quality improvement project. The intervention will be initiated on Monday, January 16, 2023, and will end on February 24, 2023. Each PDSA cycle will last 2 weeks. On the second Friday of each cycle, the site representative will run an EHR report that captures all the MTM referrals during the 2-week cycle. The EHR report will be transferred onto a password-protected computer. To protect patient identification, the only piece of patient identification that will be stored on the password-protected computer will be the patient's medical record number (MRN).



The MRN can only be used to obtain patient information if an individual has access to an EHR. At the end of the project, the information will be erased from the computer by the project lead and site representative. The project lead will use the list of patients' MRNs to conduct a retrospective chart review to identify if the pilot dot phrase was used and if the provider modified the dot phrase. The project lead will calculate the total number of referrals from providers to the clinical pharmacist during the 2-week PDSA cycle. The project lead will also evaluate each dot phrase, noting for completeness, and if there was any additional information added to the template or any information missing. The line-by-line data collected by the project lead will be imputed into an Excel spreadsheet for data analysis, and no identifiable patient information will be kept in the spreadsheet. The Excel spreadsheet will only delineate binary data, i.e., yes, the provider completed the question, or no the provider did not complete the question. The project lead, clinical pharmacist, and site representative will also evaluate for any recurring themes within the information given by the providers and staff at team meetings to facilitate the continuous improvement of the communication tool.

### Intervention & Implementation

In the first PDSA cycle, the project lead will use interviews with experts and evidence-based research to identify the critical information needed for the dot phrase and process change. The project lead will conduct a retrospective chart review of 11 MTM referrals to facilitate current referral deficiencies and to discern vital clinical information needed for the MTM referrals. The project lead will develop a rough draft dot phrase that will be peer-reviewed by key stakeholders, including the site representative clinical pharmacist. Once key stakeholders

approve the dot phrase, the primary lead will present the document to the clinic team for peer review. The project lead will then revise the dot phrase document with key stakeholders. Once the dot phrase is finalized, the project lead will input the document into the electronic health record. The first PDSA cycle will be completed by January 14, 2023.

- PDSA Cycle 1: November 10, 2022–January 16, 2023.
  - The project lead will conduct a retrospective chart review of 11 MTM referrals by December 14, 2022.
  - The project lead, clinical pharmacist, and site representative will develop a dot-phrase referral document.
  - Review and adjustments to dot phrase to be completed by December 14, 2022.
  - The project lead will attend a team meeting on January 10, 2023, to present and educate staff on the dot phrase and the new referral process.

The second and third PDSA cycles will evaluate the dot phrase and the referral process at 2 and 4 weeks. On the second week in both the second and third PDSA cycles, the project lead will attend a staff meeting to discuss the dot phrase and referral process. The primary goal of attending these meetings will be to ascertain any barriers providers encounter with the new process and pilot dot phrase. The project lead will collect the information via handwritten field notes. The project lead will then meet with the clinical pharmacist and site representative to discuss peer-reviewed feedback. The peer-reviewed comments will be used to help guide decisions on whether or not to adjust the dot phrase.

- PDSA Cycle 2: January 16–27, 2023

- Initiation of dot phrase, the project lead and site representative will input the dot phrase into the electronic health record by January 15, 2023.
- The project lead, clinical pharmacist, and site representative will attend a weekly team meeting for feedback from providers and staff.
- IT specialist will run an EHR report on January 27 to capture all referrals from providers to the clinical pharmacist within the last 2 weeks. The project lead will then input patients' MRNs into a list for the corresponding 2-week cycles. This list will be uploaded onto a password-protected computer and stored at the clinical site for safety.
- Review and adjust the dot phrase and referral process from January 27, 2023, to January 29. If changes are made to the dot phrase project, lead will input the updated dot phrase by January 30.
- PDSA Cycle 3: January 30–February 10, 2023
  - The project lead, clinical pharmacist, and site representative will attend a weekly team meeting to collect feedback from providers and staff on dot phrase.
  - IT specialist will run an EHR report on January 27 to capture all referrals from providers to the clinical pharmacist within the last 2 weeks. The project lead will then input patients' MRNs into a list for the corresponding 2-week cycles. This list will be uploaded onto a password-protected computer and stored at the clinical site for safety.

- The project lead and site representative will review feedback from providers and adjust the dot phrase from February 10 to 12, 2023; the project lead will then update the dot phrase in the electronic health record by February 12.

Starting on February 13, the fourth PDSA cycle will begin. In this cycle, the information technologist specialist will run an EHR report to capture the total number of referrals from providers to clinical pharmacists. The list of patients' MRNs will be used to calculate the total number of referrals to the clinical pharmacist from the providers and whether the providers used the proposed dot phrase for the referral. Next, the project lead will take data and calculate a percentage of providers using the dot phrase. The project's last day of data collection will be February 24, 2023. The project lead will send out a five-question visual analog scale (VAS) survey to all MTM providers on February 27 via their work emails. On March 1, the project lead will compile completed VAS surveys and begin data analysis. Each survey question will be calculated into a mean scale, with a higher numerical mean indicating a higher degree of provider satisfaction.

- PDSA Cycle 4: February 14, 2023–March 1, 2023.
  - The IT specialist will run an electronic health record report. The report will capture the total number of clinical pharmacist referrals during the last 2-week PDSA cycle. The project lead will then conduct a chart review to identify if the dot phrase was utilized for referral.
  - 6-week provider utilization data will be calculated into a percentage. The numerator is represented by the number of providers who used the dot

phrase for referrals and the denominator is represented by the total number of referrals that occurred during the project's 6-week timeframe.

- A five-question VAS survey will be sent to all participating providers on February 27. Surveys will be collected on March 1 by the project lead. Survey responses will then be calculated into means to facilitate a deeper understanding of providers' satisfaction with the dot phrase and referral process.

In the literature, two barriers that routinely arise during an MTM implantation include "team members' lack of education regarding how to refer a patient to the clinical pharmacist" and "lack of a pharmacist referral form." This quality improvement project will address these barriers by using the PDSA framework to create a dot phrase referral template and a new referral policy, thereby addressing two common barriers encountered in previous projects.

The clinic is comprised of a small, multidisciplinary team that conducts proactive management in order to meet the complex needs of this vulnerable population. The team's makeup and the population they serve should be heavily weighted when considering the project's reproducibility. The patients that the geriatric team service have multiple diagnoses, often requiring a multitude of medications. The authors recognize that consultations could be artificially inflated due to the complexity of the patients and the lack of available health resources in Southwest Montana (DPHSS, 2021).

Evaluation

Table 1. SMART Goal #1

|   |
|---|
| <p><b>#1 SMART Goal:</b> 100% of geriatric team providers will use the dot phrase to refer the clinical psychiatric pharmacists by the end of February 2023.</p>  |
| <p>The site representative will run an EHR report to capture all referrals to the clinical psychiatric pharmacist from geriatric team providers from January 16, 2023, to February 24, 2023.</p> <p>The project lead will then conduct an individual chart review to identify if dot phrase was included in their documentation at the time of the referral. The project lead will then calculate the percentage. The numerator will represent the number of geriatric team providers who used the pilot dot phrase from January 16, 2023, to February 24, 2023, and the denominator will represent the total number of referrals to clinical pharmacists by geriatric team providers.</p> <p>A PDSA cycle will help identify successful components of the dot phrase at different timepoints of the project; feedback from stakeholders will guide dot phrase developers as they work towards achieving their goal of 100% utilization of providers.</p> <p>The project lead will attend a weekly geriatric staff meeting during the second week of each cycle (January 24, January 31, and February 14) and collect field notes about the dot phrase and referral process, focusing on issues or barriers that staff are encountering with the new process change and dot phrase.</p> <p>The field notes will then be broken down into themes to guide the project lead, site representative, and clinical pharmacist in any changes needed to the dot phrase or referral process.</p> <p>The project lead will oversee updating changes to the dot phrase, and EHR will reflect changes by January 30 (2nd PDSA cycle) and February 13 (3rd PDSA cycle).</p> |

Table 1. SMART Goal #1 Continued

| <b>Data to be collected</b>   | <b>Method of Collection and who is responsible</b>  | <b>Planned data analysis</b>  |
|---|---|---|
| <p>- Quantitative: total number of clinical pharmacist referrals and number of referrals that used the proposed dot phrase.</p> <p>- Qualitative: general questions will try and identify issues or barriers at bimonthly staff meetings.</p> | <p>- IT specialist will generate an EHR report that captures the number of electronic referrals from providers to clinical psychiatric pharmacists, a total number of referrals will be identified and then the project lead will conduct individual chart reviews using MRN lists on the thumb drive. The lead investigator will identify if the dot phrase was used, this ratio will be presented as a percent: dot phrase use/total number of referrals = %.</p> | <p>-percent = (# of referrals that used proposed dot phrase/total number of clinical pharmacist referrals)</p> <p>-Recurring themes and issues will be evaluated.</p> |

Table 2. SMART Goal #2

|  |
|--|
| <p><b>#2 SMART Goal:</b> To design a peer-reviewed, standardized dot phrase that will then be implemented into an electronic health record by January 20, 2023.</p> <ul style="list-style-type: none"> <li>• A team of stakeholders, including the project lead, site representative, and clinical pharmacist, will develop a dot phrase template by December 5, 2022.</li> <li>• The project lead will conduct a retrospective chart review of 11 MTM referrals to facilitate current referral deficiencies and to discern vital clinical information needed for the MTM referral process.</li> <li>• The project lead will present the preliminary template for peer review by January 11, 2023.</li> <li>• The project lead will finalize the dot phrase template and will input the dot phrase template into EHR by January 14, 2023.</li> </ul> |
|--|

Table 2. SMART Goal #2 Continued

| <b>Data to be collected</b> | <b>Method of Collection and who is responsible</b>  | <b>Planned data analysis</b>  |
|-----------------------------|---|---|
| Peer review comments        | The project lead will collect responses from staff via field notes. The notes will be reviewed by the project lead, clinical pharmacist, and site representative. This group will analyze the responses and look for reoccurring issues and themes. | The notes will be reviewed by the project lead, clinical pharmacist, and site representative. Expert opinion will guide referral template inclusion/exclusion criteria. |
|                             |   |   |

Table 3. SMART Goal #3

| <b>SMART Goal #3:</b> To conduct a provider-satisfaction survey from February 27 to March 1.   |   |   |
|--|---|---|
| <ul style="list-style-type: none"> <li>• The project lead and site representative will develop a 5-question visual analog scale (VAS) survey to measure provider satisfaction with the referral dot phrase.</li> <li>• The project lead will then use the data collected from the survey to calculate a mean scale to assess overall satisfaction with the MTM program.</li> <li>• The results of the survey will help guide ongoing process improvement of the dot phrase.</li> </ul> |   |   |
| <b>Data to be collected</b>  | <b>Method of Collection and who is responsible</b>  | <b>Planned data analysis</b>  |
| VAS survey   | Project lead will send VAS survey to providers via work email. Project lead will be responsible for collection and data analysis. | A mean scale will be calculated to assess provider satisfaction with the MTM program. |
|  |   |   |



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## CHAPTER THREE

DEVELOPMENT OF A NEW REFERRAL PROCESS AND DOT  
PHRASE TECHNOLOGY FOR A RURAL MEDICATION THERAPY  
MANAGEMENT PROGRAM TO IMPROVE PATIENT SAFETY:  
A QUALITY IMPROVEMENT MANUSCRIPT

No medication or procedure will cure dementia. Of those diagnosed with dementia, up to 80% will exhibit behavioral and psychiatric symptoms of dementia (BPSD) (Mendez et al., 2022). BPSD symptoms are associated with a decline in quality of life, poor functional status, and worsened cognition; therefore, managing BPSD is of high medical and social priority (Ma et al., 2022). As the patient's dementia progresses, so can behavioral and psychological symptoms, and managing these behaviors may require pharmacologic intervention. Psychiatric medication regimens are commonly complex and, at times, require frequent changes, thus increasing the likelihood of a medication error (Toivo et al., 2019). Medication therapy management (MTM) has shown positive outcomes in reducing adverse drug reactions and increasing patient and provider satisfaction (Bell et al., 2020). Medication therapy management (MTM) is a patient-centered collaborative agreement between provider and pharmacist with three main components: (1) the pharmacists provide an assessment of each patient's medication and evaluate for appropriateness, safety, effectiveness, and adherence, (2) the development of a care plan with individualized goals of treatment, and (3) follow-up to evaluate patient outcomes (Woodall et al., 2017). In January 2021, an outpatient clinic in Southwest Montana implemented the Rural

Access to a Psychiatric Pharmacist for Seniors (RAPPS), an MTM pilot program to address the complex medication-related problems of elderly dementia patients with behavioral disturbances.

Currently, there is no standardized internal referral process between geriatric providers and their clinical psychiatric pharmacists. In its current form, there is a vast amount of variation in the type of information and how it is communicated in the referral process. During the RAPPS process, an internal review identified two major concerns: (1) clinical information being communicated from provider to pharmacist is inconsistent and (2) the current system lacks a clearly defined referral process, which has caused inefficiencies and a high potential for adverse outcomes. Preliminary data collected from the electronic health record (EHR) from November 2022 to December 2022 found that 45% of providers' notes at the time of referral did not document a psychiatric diagnosis, and 81% of the notes did not confirm or deny outside psychiatric management. An electronic health record dot phrase was developed and implemented to address the referral inaccuracies from September 2022 until March 2023.

### Literature Review

Successful coordination of referrals hinges upon effective and timely communication to facilitate positive patient outcomes and promote interprofessional collaboration (Esquivel et al., 2012). Multiple studies have identified the potential of technology in health information systems as a strategy to improve interdisciplinary communication (Esquivel et al., 2012; Zheng et al., 2022; Mercer et al., 2018). For example, Kapriniotis et al. (2022) found that introducing a dot phrase significantly improved daily rounding documentation. Ekstrom et al. (2015) found that using a dot phrase can substantially reduce total documentation time and improve the accuracy of

the medical record. This pilot QI project was designed to examine providers' use of a dot phrase when they refer patients to the clinical pharmacist as a strategy to improve interprofessional communication.

### Quality Improvement Framework

Plan-Do-Study-Act (PDSA) is a tool for developing, testing, and implementing changes leading to improvement and has four stages (Perry et al., 2014). First, a plan is developed to test the change (plan), and then a test is carried out (Do); the data from the test is examined and reflected on (Study), and then changes are planned or implemented for the next cycle of change (Act) (Perry et al., 2014). The PDSA model was chosen because it has been shown to help guide organizations struggling to introduce new EHR systems and develop appropriate corrective responses to implementation barriers they encounter (McAlearney et al., 2014). For the project to reach its primary goal, it will require provider feedback. The PDSA model will allow this project to analyze the provider feedback expeditiously to identify strong data signals, then use the data singles to facilitate changes in the referral process and dot phrase technology. The PDSA model will evaluate the dot phrase utilization at three different timepoints throughout the study. To gain a deeper understanding of providers' experiences with the dot phrase, a five-question visual analog scale provider-satisfaction survey will be conducted at the end of the study.

### Aims

The primary aim of this project is to improve patient safety and decrease patient distress by creating a standardized referral process, thereby decreasing medication delays and errors and maximizing the medications' therapeutic benefits. The project's primary goal was to have 100%

of geriatric team providers use the dot phrase to refer patients to clinical psychiatric pharmacists by the end of February 2023. The second goal was to design a peer-reviewed, standardized smart phrase to be implemented into an electronic health record by January 20, 2023. The third goal of this QI project was to conduct a provider-satisfaction survey from February 27 to March 1. Standardizing the communication process will ensure that the pertinent information will be available at the referral process initiation, thereby reducing delays with pharmacological intervention. Finally, creating a new standardized referral process and dot phrase allows the MTM team to provide high-quality psychiatric care to a greater number of their rural geriatric patients.

## Methods

### Context

This quality improvement project was conducted in a small clinic setting. The clinic serves rural geriatric patients. The clinic is unique in that most of its providers are mobile, with >50% of patients' appointments occurring as home visits or assisted living/memory-care facility visits. The organization's mission is to improve community health and quality of life. The clinic is comprised of doctors, nurse practitioners, physician assistants, nurses, and countless support staff. The clinic focuses on preventing and treating diseases and disabilities in the elderly population, and they specialize in patients with dementia.

### Sample & Recruitment

Eleven charts were identified for retrospective review. The 11 charts represented all referrals from MTM providers to the clinical pharmacist during November & December of 2022.

The November and December months were chosen for two reasons. First, the individual sample sizes for November and December were small. To minimize bias and strengthen generalizability, the project widened its data set to capture referrals for 2 months. The second rationale for using November and December of 2022 was to capture providers' documentation behaviors with the new EHR technology.

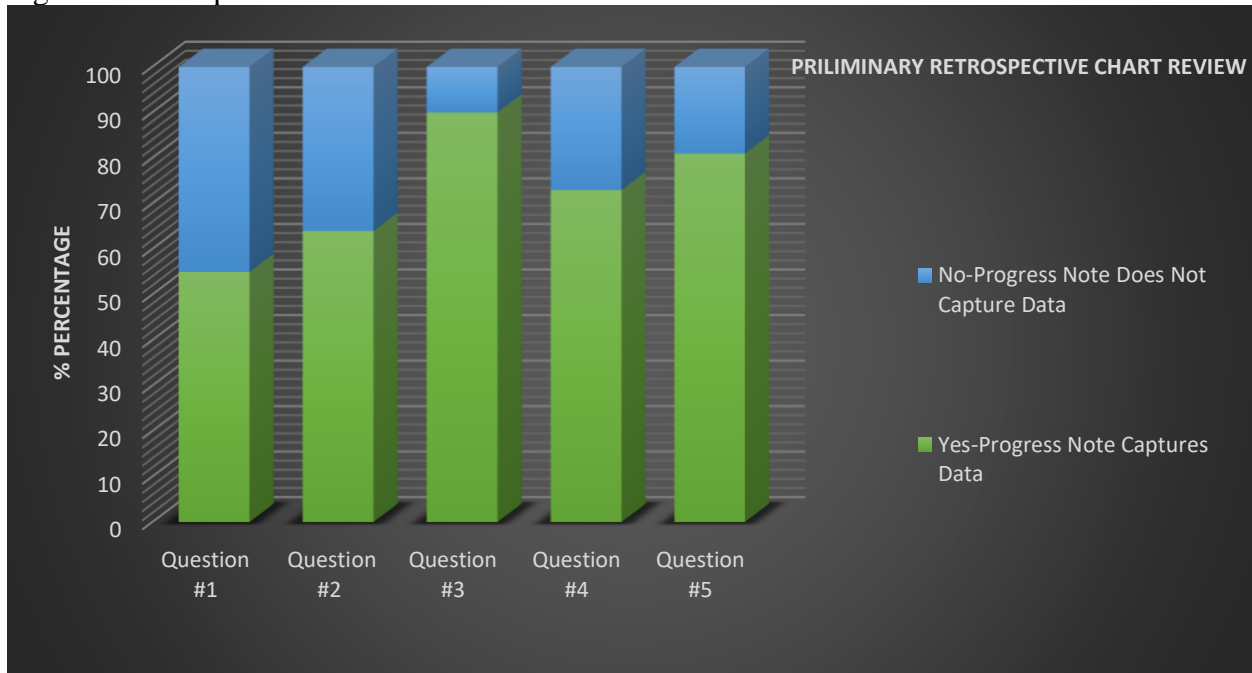
This QI project was reviewed and approved by the Institutional Review Board at Montana State University and by the facility's site representative. This QI project had no direct patient interactions, this project performed retrospective chart reviews to evaluate provider progress notes for the presence or absence of five pieces of data. The data collected from the progress notes in patient charts were coded to deidentify patient data and the coded data was stored on a password-protected computer. The handling and storage of patient data by all team members was in concordance and compliant with the Health Insurance Portability and Accountability Act of 1996 (HIPAA) guidelines (HHS, 2003).

### Interventions

This ongoing process improvement project used four Plan-Do-Study-Act cycles to develop, implement, and evaluate the dot phrase. A dot phrase is a section of text to be inserted into an electronic health record progress note. Dot phrases contain both prepopulated default text and areas requiring completion before the provider may sign the note. The dot phrase's utilization was analyzed at three different timepoints over the project's 6-week implantation period. In the first PDSA cycle, the MTM contract and pre-dot phrase provider notes were reviewed by the project lead, clinical pharmacist, and site representative to facilitate a deeper

understanding of the current referral process. The project lead conducted additional interviews with clinic personnel and performed a retrospective chart review to identify specific key information for developing the dot phrase. Data collected from the retrospective chart review can be seen in Figure 2.

Figure 2. Retrospective Chart Reviews



Expert opinion guided inclusion and exclusion criteria for each component within the prototype dot phrase. The final version of the dot phrase is seen in Appendix A.

The second, third, and fourth PDSA cycles each lasted 2 weeks. On the second Friday of each cycle, the site representative ran an EHR report to capture all the clinical psychiatric pharmacist referrals during the previous 2-week cycle. In addition, the project lead attended bimonthly clinic team meetings to collect data and provide educational in-services to optimize dot phrase use. The data collected from the clinic team meetings allowed for the analysis of

current QI strategies and facilitated discussions on whether any component of the dot phrase should be adopted, adapted, or abandoned. Finally, a five-question visual analog scale survey was conducted at the end of the last PDSA cycle to enhance the understating of providers' perceptions and experiences with the dot phrase during the study period. The five-question visual analog scale survey can be seen in Appendix B.

### Measures & Statistical Analysis

The primary goal was measured by the percentage of providers who included the dot phrase in their documentation at the time of the referral compared to the total psychiatric pharmacist referrals from January 16, 2023, to February 24, 2023. Individual patient chart reviews were conducted to identify if the dot phrase was included in their documentation at the time of the referral. The project lead evaluated the provider progress notes for five pieces of information. First, was there a psychiatric diagnosis charted at the time of referral? Second, is there documentation of non-clinic psychiatric management past, present, or no involvement? Third, was the patient's primary care provider notified of the clinical pharmacist referral? Fourth, was the primary contact of the patient documented in the note? Fifth, are there laboratory findings documented in the note, or is there a discussion for why there are no laboratory findings in the progress note? The project lead used the retrospective patient chart reviews to measure if providers had the dot phrase information presence or absence in their progress notes. The numerator represents the number of geriatric team providers who used the pilot dot phrase. The denominator represents the total number of referrals to clinical pharmacists by geriatric team providers. The preliminary data collected in the 11 progress notes represents this project's



baseline statistical analysis. The QI project's secondary goal was to have the dot phrase implemented into the EHR by January 20, 2023, with success defined as “yes, the dot phrase was implemented into the EHR by January 20, 2023,” and unsuccessful defined as “no, the dot phrase was not implemented into the EHR by January 20, 2023.” The second goal measures the project's progress at the halfway point and represents the beginning of the implantation phase. The third goal of this project was to measure provider satisfaction. A five-question visual analog scale survey sent via work email from February 27 to March 3, 2023 measured provider satisfaction. A mean scale was then calculated from the providers' responses to the survey questions. Provider-satisfaction scores will be reported in two ways; first, as a total mean score of all respondents, and second, individual survey questions' averages will also be calculated.

### Results

A retrospective chart review to collect preliminary data identified 11 psychiatric pharmacist referrals from November 1 to December 31, 2022. The preliminary data indicate that 45% of providers' progress notes did not have a psychiatric diagnosis at the time of the referral, 81% of the notes did not confirm or deny outside psychiatric prescribing, and 45% of notes did not have any current laboratory values or did not provide a rationale to why no laboratory values were documented. However, 90% of providers' progress notes did document if the patient's PCP had been notified, and 72% of the notes did accurately identify the patient's primary contact. Of note, there were two occasions where addendums of psychiatric diagnosis were added to the patient's chart after the referral was placed.

A five-question dot phrase was implemented into the EHR on January 27, 2023. The first team meeting occurred on January 31, 2023, and this meeting was used to educate staff on when and how to implement the dot phrase. Providers were given a PowerPoint presentation with instructions on incorporating the dot phrase into the provider's required daily documentation. Providers were given the option to either attach the dot phrase within a progress note or create a new note with just the dot phrase. A total of four referrals were placed during the implantation period. No provider (0/4) used the dot phrase to refer patients to the clinical psychiatric pharmacist. An unforeseen technology problem was discovered late in the third PDSA cycle, which ultimately restricted providers' access to the dot phrase. The five-question visual analog scale survey was not conducted because technology issues restricted access to all providers' use of the dot phrase. The survey was intended to quantify provider experiences with the dot phrase interface. Due to the restricted access to the dot phrase leading to a lack of utilization, the providers did not meet the criteria to partake in the survey because providers had no interaction with the dot phrase. Any changes to the survey would have required the project to resubmit a new survey to Montana States University IRB. With no additional time to resubmit such a survey, the decision was made not to send out the provider-satisfaction survey.

### Discussion

The primary goal of this quality improvement (QI) project was to have 100% of geriatric team providers use the dot phrase to refer patients to clinical psychiatric pharmacists by the end of February 2023. The results of this project show that 0% of providers used the dot phrase to refer patients to clinical psychiatric pharmacists by the end of February 2023. We provide three

explanations for why this QI project's primary goal was not reached. First, the healthcare organization that oversees the clinic upgraded its electronic healthcare system in October of 2022, which caused significant disruptions for the entire organization and its patients. The effects of the upgrade were encountered in this quality improvement project. All the organization's staff were required to go through each patient's chart and evaluate all components of the patient's chart for correctness. There was a robust response from the providers when the dot phrase was introduced; unfortunately, the responses were ones of apprehension and disengagement. One provider stated, "there is no way I am going to attach that to my note." Another provider stated, "that feels like a lot of extra charting just for a single referral." The additional work and poor communication created a dissatisfied workplace and may be why there was such pushback when providers were introduced to the new referral process and dot phrase. The high amount of criticism and pushback required the project team to pivot.

The team discussed the provider's remarks and revised the dot phrase. The decision was made to condense the dot phrase from nine questions to five with our hypothesis that dot phrase utilization will increase by decreasing the workload to providers. The five-question dot phrase was then inputted into the EHR and was accompanied by an email providing education on the five-question dot phrase on January 30, 2023. The second rationale for why the primary goal was not met was due to the rescinding of organizational IT personnel access. The organization approved the onsite IT personnel access in the design stage of this QI project. With the new EHR, the IT personnel could not assist in the project because of high workloads. As a result, the project lead was forced to implement and track the dot phrase, and the project lead had no formal IT knowledge or training. The project lead was able to implement the dot phrase into the EHR

program, but he did not have access to the clinic's employee dossier. The project lead did discover that, by not incorporating the dossier program, the dot phrase was inaccessible to everyone except the project lead, site representative, and clinical pharmacist. The project lead understands that if this project were occurring outside the context of a dissertation project, actions would have been taken to obtain assistance from IT personnel to ensure that the dot phrase implantation was correct.

The secondary aim was to design a peer-reviewed, standardized smart phrase to be implemented into an electronic health record by January 20, 2023. The IRB application for this QI project was turned in on December 10, 2022, IRB approval was granted on January 27, 2023, and the dot phrase was implemented on January 30, 2023. The secondary goal was unmet due to an employee shortage at Montana State University's International Review Board (IRB). The IRB did not publicize that the review process was encountering extended delays or provide any new timeframe for the IRB application approval process. If the IRB had supplied notice of the application delays prior to submitting the application, the project timeframe would have been adjusted accordingly to provide the opportunity for our second goal to be successful.

The third goal of this QI project was to conduct a provider-satisfaction survey from February 27 to March 3. Unfortunately, due to the rescinding of IT personnel leading, limited time to complete the project, and miscoding of the dot phrase, no providers could access the dot phrase during the study period. As discussed above, the unavailable IT personnel required the project lead without computer training to input the dot phrase. Unfortunately, the dot phrase was not coded correctly, which completely restricted the providers' ability to access the dot phrase. The survey was intended to quantify provider experiences with the dot phrase interface. Due to

the restricted access to the dot phrase leading to a lack of provider utilization, the providers did not meet the criteria to partake in the survey because providers had no interaction with the dot phrase. The project lead did consider redesigning the survey, but any changes to the survey would have required the project to resubmit a new survey to Montana State University's IRB. The project's strict timeline could not account for any additional IRB delays, which is why the decision was made not to send out the provider-satisfaction of dot phrase survey.

The COVID-19 pandemic is still causing disruptions in all facets of our lives. Future projects need to adjust for the ongoing fallout from the COVID-19 pandemic. For example, in this project, the IRB approval process encountered massive delays and, due to the delay, the project's secondary goal was not met. Future QI studies should evaluate individual steps within their project process to ensure issues like workforce shortages and supply chain problems do not affect project outcomes.

### Limitations

There were many limitations encountered throughout this QI project. First was time; more time should have been allocated for needed functionality testing and subsequent adjustments to the dot phrase. As more and more of our medical information becomes digital, health professionals may require additional training to become proficient in using these systems. IT systems are complex and challenging, so future quality improvement projects should have a dedicated IT specialist on their team. The organization notified the QI team that access to an in-house IT specialist would be unavailable, and the project did not have additional time or resources to obtain outside IT specialist services. The ramifications of not having access to IT

personnel were crippling to the project's intervention and subsequent data collection. The project lead also concedes that the project should have created a contingency plan for each critical checkpoint along the design and implantation stages of the dot phrase. This project should have investigated the providers' viewpoints on developing the consultation process or dot phrase. The project team believes this is why the clinic's providers had a robust unfavorable reaction. Future studies should learn from these project mishaps by designing contingency plans for critical components of the QI project and ensure that all stakeholders' viewpoints are represented. By adding contingency plans and securing the viewpoints of all stakeholders, future quality improvement projects will be positioned to anticipate and mitigate critical issues related to the project's ongoing sustainability.

### Conclusion

This pilot quality improvement project attempted to use dot phrase technology to improve interprofessional communication with the long-term goal of increasing the efficiency of the clinic's MTM providers, thereby decreasing medication delays and adverse medication errors and maximizing the therapeutic benefit of the pharmacological intervention. One strength of this project is that it provided statistical validity to the previously unsubstantiated findings of the initial RAPPs internal review. The preliminary data collected in this project demonstrated that documentation deficits are occurring between MTM clinic providers and the psychiatric clinical pharmacist. Interprofessional collaboration programs like the MTM program have two significant practice implications. First, collaborative agreement programs could be used to help address the service gaps currently caused by the healthcare worker shortage crisis by optimizing

the scope of practice of current healthcare personnel. Second, this project's preliminary data provided statistical validity to the initially voiced concerns of the RAPPS internal review. The preliminary data also adds to the work of Zheng et al. (2022) and Esquivel et al. (2012) that referral communication between provider and clinical pharmacist is prone to breakdown. For collaborative agreement programs to succeed, clear communication between all stakeholders must be championed. Future research should examine technologies that encourage interprofessional communication within electronic referral systems.

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## CHAPTER FOUR

## REFLECTION ON DNP ESSENTIALS

Essential I: Scientific Underpinnings for Practice

The DNP Essential I prepares students to use science-based theories and concepts to determine the nature and significance of health and healthcare delivery phenomena; describe the actions and advanced strategies to enhance, alleviate, and ameliorate health and healthcare delivery phenomena as appropriate; and evaluate outcomes (AACN, 2006). When I meet a patient, I observe, organize, and analyze how the patient interacts with the world. I listen to the patient as they describe their chief complaint and use my pathophysiology knowledge from NRSG 602 to guide me as I systematically move through the review of systems questions. The answers collected from the review of systems and the pertinent findings from the physical exam are compiled with the patient's subjective information and, together, they represent your evidence. The evidence provides the foundation for your medical diagnosis. Only when a medical diagnosis has been made can a provider initiate the specific guideline-directed recommendations. I will ensure my patients receive empirically beneficial interventions by practicing guideline-directed medicine.

In my quality improvement project, I used the skills and knowledge from NRSG 604 & 605, Evidenced Based Practice 1 & 2, and conducted a literature search across multiple scientific databases. By searching various databases, I gained the necessary background knowledge of what has been studied as a foundational justification for my future quality improvement project. I evaluated each of the studies against the hierarchy of scientific evidence to ascertain the studies'

significance to health for my specific patient population. Healthcare is constantly evolving and changing, and it is up to individual providers to take the initiative to analyze the research and relate those findings to their patient population to ensure their patients receive current guideline-directed therapies.

I used the skills I learned in NRSG 611 Program Planning & Evaluation to evaluate the current healthcare process to develop strategies to optimize the provider's daily practice. For example, I evaluated the referral process between prescribing providers and a clinical pharmacist and found that interprofessional miscommunication led to inefficiencies. I developed and implemented a dot phrase technology into the electronic health record to improve both the inefficiencies and miscommunication to enhance positive patient outcomes. I have learned in my 674 & 675 classes that, to be a steward of medicine, one must discover the clinical significance of literature outcomes to provide care tailored to the specific needs of my patient population. By finding the clinical significance, I will champion the therapeutic patient-provider relationship while providing tailored, patient-centered interventions.

### Essential II: Organizational and Systems Leadership for Quality Improvement

In my DNP project, I worked with a group of medical providers and a clinical psychiatric pharmacist in an outpatient setting that was involved in a pilot medication therapy management program. A medical therapy management contract between providers and clinical pharmacists allows the clinical pharmacists to evaluate, manage, and prescribe independently. In my NRSG 674 & 675 classes, I planned, developed, and tested an electronic health record dot phrase to facilitate better interdisciplinary communication between pharmacists and providers. By

improving communication between the pharmacist and providers using technology, I have fulfilled Essential II, Organizational Leadership for Quality Improvement and systems thinking (AACN, 2006).

Essential III: Clinical Scholarship and Analytical  
Methods for Evidence-Based Practice

The primary aim of my quality improvement project was to improve patient safety by creating a standardized consultation process, thereby decreasing medication delays and errors and maximizing the medications' therapeutic benefits. I conducted a literature review across multiple evidence-based databases to inform and guide the development of the implantation phase within my quality improvement project. I used the Plan-Do-Study-Act nursing methodology to conduct an analysis of the project's QI strategies at three different timepoints and facilitated whether any component of the dot phrase should be adopted, adapted, or abandoned. All the information I gathered was then compiled into a single document and disseminated by a thesis dissertation, professional poster, and online public presentation. I have achieved Essential III by successfully conducting a doctoral-level quality improvement project that generated new knowledge and then disseminating that information to multiple audiences.

Essential IV: Information Systems/Technology and Patient Care  
Technology for the Improvement and Transformation of Health Care

Essential IV prepares DNP graduates "to use information technology to support and improve patient care and healthcare systems" (AACN, 2006). In my NRS 622 & 624 clinical rotations, I learned and conducted many telehealth appointments for rural Montanans. I learned

how to collect, assess, and diagnose patients in a virtual setting while also being cognizant of the technology's limitations to ensure patient safety. In addition, I routinely encouraged patients to sign up for and use patient portals in their electronic health records to increase patient engagement, promote health advocacy, and improve patient outcomes. As a result, I have achieved Essential IV in multiple ways, from conducting virtual appointments via telemedicine to improving patient outcomes by designing a dot phrase. I will continue using technology in my practice to promote healthcare access for all Montanans.

#### Essential V: Health Care Policy for Advocacy in Health Care

The DNP Essential V prepares graduates to "educate others, including policymakers at all levels, regarding nursing, health policy, and patient care outcomes" (AACN, 2006, p.14). In my QI project, a clinical pharmacist and a group of providers entered a contract that facilitated a hybridized scope of practice for the clinical pharmacist. The providers and the clinical pharmacist were able to start this hybridized scope of practice because of health care policy. As providers, we may have the evidence, knowledge, and skillset to care for our patients, but we also must remember that state and federal healthcare policies govern our actions. Elected officials represent the voice of the people. Effective grassroots healthcare advocacy occurs when providers are allowed to take the time to provide tailored medical education that is easily understandable to all our patients. I have achieved Essential V by capitalizing on educational opportunities with patients in my NRS 621, 622, 623, & 624 clinical rotations.

Essential VI: Interprofessional Collaboration for  
Improving Patient and Population Health Outcomes

DNP essential VI states, "To accomplish the IOM mandate for safe, timely, effective, efficient, equitable, and patient-centered care in a complex environment, healthcare professionals must function as highly collaborative teams" (AACN, 2006). I have achieved Essential VI because I have cared for multiple complex patients during my clinical rotations. Complex patients require a team of healthcare professionals, and as a family nurse practitioner, it will be my job to be the patients' referee. As the patient's referee, I will develop a plan of care with the patient and then communicate with other healthcare disciplines on behalf of my patient. In addition to communicating with other healthcare disciplines, my job will be to monitor other professionals' recommended interventions while continuously verifying that the interventions are patient-centered and safe. Interprofessional collaboration is most effective when healthcare professionals use clear communication accompanied by accurate documentation.

Essential VII: Clinical Prevention and Population  
Health for Improving the Nation's Health

I have achieved Essential VII because I have acquired all my clinical hours in NRS 621, 622, 623, and 624 during the COVID-19 pandemic. DNP essential VII prepares DNP graduates to "analyze epidemiological, biostatistical, environmental, and other appropriate scientific data related to individual, aggregate, and population health" (AACN, 2006). In the early stages of the pandemic, new information, policies, and procedures were constantly changing, and people looked to healthcare professionals, including DNP students, for answers. Throughout the pandemic, I used my critical appraisal skills to dissect news, social media, and scientific

literature so that I was prepared with an accurate and understandable response when a patient asked me a COVID-19 question. I was just as genuine when responding, "we just do not know yet." I plan to continue to use and sharpen my critical appraisal skills to better provide evidence-based information to my patients and the surrounding community.

### Essential VIII: Advanced Nursing Practice

APRNs are expected to use advanced, highly refined assessment skills and employ a thorough understanding of pathophysiology and pharmacotherapeutics in making diagnostic and practice management decisions (AACN, 2006). I have achieved Essential VIII because my clinical preceptor and professor agreed that my clinical performance met or exceeded their expectations during my midterm review at my final clinical site evaluation. In my QI project, I designed, implemented, and evaluated an intervention to improve interprofessional relationships while optimizing high-quality patient care. I have a long way to go before I call myself a proficient provider. However, I recognize that expertise requires experience, and it takes time to accumulate such experience, so I must be patient.

I look forward to growing professionally, seeing future medical innovations, and providing economically mindful, high-quality, patient-centered care.

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APPENDICES

APPENDIX A

DOT PHRASE

## Appendix A: Dot Phrase

**Clinical Pharmacist Referral  
.BZNPSYCHPHARMREFERRAL**

Diagnosis associated with consult: \*\*\* (free text)

Psychiatric management: \*\*\* (currently managing, previous management, no involvement)

Notification of PCP: \*\*\* (EHR, email, telephone, in person)

Primary contact: \*\*\* (free text)

**Lab Results**

| Component   | Value     | Date |
|-------------|-----------|------|
| WBC         | 4.5-11    |      |
| RBC         | 3.8-5.9   |      |
| Hemoglobin  | 12.5-16.0 |      |
| Hematocrit  | 36-46     |      |
| PLTCOUNT    | 165-415   |      |
| MCV         | 80-100    |      |
| MCH         | 26-34     |      |
| MCHC        | 31-37     |      |
| NEUTROPCT   | 40-70     |      |
| LYMPHSPCT   | 22-44     |      |
| MONOSPCT    | 4-11      |      |
| EOSPCT      | 0-8       |      |
| BASOPHILPCT | 0-3       |      |

| Component    | Value   | Date |
|--------------|---------|------|
| GLUCOSE      | 70-100  |      |
| BUN          | 7-20    |      |
| CREATSERUM   | 0.4-1.0 |      |
| NA           | 135-145 |      |
| POTASSIUM    | 3.5-5.0 |      |
| CL           | 98-107  |      |
| CO2          | 22-30   |      |
| CA           | 8.5-10  |      |
| PROTEINTOTAL | 6.0-8.3 |      |
| ALBUMIN      | 3.5-5.0 |      |
| ALKPHOS      | 40-140  |      |
| AST          | 10-40   |      |
| ALT          | 10-50   |      |
| BILITOTAL    | 0.8-1.2 |      |

| Component | Value   | Date |
|-----------|---------|------|
| TSH       | 0.5-5.0 |      |

| Component        | Value       | Date |
|------------------|-------------|------|
| Color            | Yellow      |      |
| Turbidity        | Clear       |      |
| Specific Gravity | 1.001-1.035 |      |
| pH               | 4.5-8.0     |      |
| Glucose          | Negative    |      |
| Bilirubin        | Negative    |      |
| Blood            | Negative    |      |
| Protein          | Negative    |      |
| Leukocyte Est    | Negative    |      |



APPENDIX B

THE FIVE-QUESTION VISUAL ANALOG SCALE SURVEY

Appendix B: The Five-question Visual Analog Scale Survey

**Providers' Satisfaction of Dot Phrase**

Please provide a numeric value between 0-100 for each of the questions below, with 0% indicating the least or unsatisfied and 100% indicating the greatest or very satisfied.

-----|  
(0% or No Improvement) (100% or Greatly Improved)

1.) The dot phrase has enhanced communication between the clinical pharmacist and myself.  
1.)\_\_\_\_\_

-----|  
(0% or No Improvement) (100% or Greatly Improved)

2.) The dot phrase has improved the efficiency of the referral process.  
2.)\_\_\_\_\_

-----|  
(0% or Not Likely) (100% or Very Likely)

3.) How likely would you be to use similar technology in the future?  
3.)\_\_\_\_\_

-----|  
(0% or No Satisfaction) (100% or Very Satisfied)

4.) My overall satisfaction with the dot phrase.  
4.)\_\_\_\_\_

5.) Please use the space below for any additional comments or concerns and thank you for your time!