REDUCING 30-DAY HOSPITAL READMISSIONS FOR CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN SOUTHWEST MONTANA: A QUALITY IMPROVEMENT PROJECT

by

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of

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DEDICATION

This project, paper, and the degree of Doctor of Nursing Practice are dedicated to my amazing wife, Liza Summer Brumbach and our three extremely flexible and supportive children: Myles, Kenyon, and Mari Brumbach. My success in completing this project and my degree would have been futile without the four of you allowing me the freedom and flexibility to study and write in the evenings, on weekends, and modify vacation plans. Thank you. Each of you encouraged me to take a break and go run, climb, play hockey, or see a friend when I was overwhelmed. Liza, you listened to endless comments of feeling lost, tired, and overwhelmed. You celebrated with me when I came home with new ideas for the project, and feeling successful working with patients, developing new skills, and solidifying my passion to become a Nurse Practitioner. You allowed me to store pigs' feet in the refrigerator as I honed my skills in laceration repair. Each of you let me practice my assessment skills and endured mild discomfort as I tried my hand at otoscopic exams early in my training. I wouldn't be where I am today without each of you, your love, and support.

To each of my clinical preceptors, thank you. You went above and beyond my expectations teaching me the pearls of medicine and providing an opportunity to push me out of my comfort zone. The adage, nurses eat their young, does not apply. Each of you boosted me when I struggled and encouraged me to find my confidence and trust my knowledge, skills, and instincts. I proceed toward graduation and prepare for my boards with increased confidence and assurance that I, too, will be able to provide the excellent and thorough care each of you demonstrated. My hard work, dedication, and success in completing my DNP-FNP education represent how grateful I am for everything I learned in the clinic setting.

Dr. Lindsey Davis, you helped guide me through this process. When I started down the DNP track I dreaded starting the quality improvement project. You listened as I struggled and always came back with positive and supportive feedback. You helped me see the light, while discovering the process on my own. You were there for support but ensured I tackled this project in the way it fit me and advocated for all the time and energy these projects take. Thank you.

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ABSTRACT

Chronic obstructive pulmonary disease (COPD) recently joined the leading causes of hospital readmission. Readmissions range from 7% up to 82.2% with the highest rate amongst home-bound patients. Post-discharge programs demonstrate varied impacts on 30-day COPD readmission rates. Home health provides evaluation and treatment management opportunities for the most at-risk population and the literature lacks studies evaluating patient outcomes with a home health nurse-driven COPD protocol. At the project site, the hospital COPD 30-day readmission rate for patients ≥65 years averaged 28.8% from 2018 to 2021. The clinic stakeholders recorded two 30-day readmissions during calendar year 2023. To reduce 30-day COPD hospital readmissions and identify home health qualifying patients a COPD Home Health Protocol and participant qualifying identification tool were created and evaluated with descriptive statistics. Two interventions were initiated: a provider approved, nurse-driven home health protocol managing COPD symptoms; an electronic health record .dotphrase identifying home-bound patients qualified for home health and the COPD nurse-driven protocol. The project aims were partially achieved with a 75% utilization rate of the home health qualifying .dotphrase and successful identification of one possible home health candidate who refused home health services. No patients received the COPD home health protocol during the eight-week study period. The project successfully identified participants qualifying for home health but lacked sufficient opportunity to evaluate the COPD home health protocol. Expanding age inclusion criteria to participants ≥50 years will more effectively evaluate the at-risk population.

Keywords: Chronic Obstructive Pulmonary Disease, COPD, home health, .dotphrase, protocol

CHAPTER ONE

REVIEW OF THE LITERATURE

Introduction

Background

Chronic obstructive pulmonary disease (COPD) is characterized as a progressive and treatable condition primarily associated with and exacerbated by obstructed airflow through the lungs (Njoku et al., 2020; Sharpe et al., 2021). Typically, COPD results from extended exposure to inflammatory reactants such as tobacco smoke, gases, and toxic particulates (Njoku et al., 2020; Sharpe et al., 2021). The associated lung deterioration contributes to higher rates of morbidity and mortality resulting in COPD becoming the third most prevalent cause of death worldwide (Sharpe et al., 2021; Wang et al., 2022). Additional concerns are hospitalizations and readmissions associated with acute exacerbations. Hospitalizations and readmissions increase patient mortality rates, emotional strain, and reduce patients' quality of life, and ability to work (Wang et al., 2022). Readmissions add burdensome financial costs for patients, insurance companies, and hospitals averaging $7,000 to $39,200 (Bollmeier & Hartmann, 2020; Njoku et al., 2020; Sharpe et al., 2021; Wang et al., 2022). The diseases with the highest readmission rates included heart failure and pneumonia until recently when COPD joined their ranks (Ruan et al., 2023).

With the passing of the Hospital Readmissions Reduction Program (HRRP) healthcare facilities now incur fines for excess readmissions supporting value for reducing readmissions further (Centers for Medicare and Medicaid Services, 2023). To reduce readmission rates, several

studies have focused on elucidating contributing factors and high-risk patients. Some of the common risk factors include low socio-economic status, comorbid asthma, increased hospitalization length, frailty, and recent exacerbations (Njoku et al., 2020; Sharpe et al., 2021; Wang et al., 2022).

Although treatable, acute exacerbations of COPD (AECOPD) remain one of the most prominent reasons for COPD patient admissions to the hospital (Sharpe et al., 2021). Patients living with COPD average 1.2 to 2.4 acute exacerbations yearly increasing their risk of being hospitalized (Wang et al., 2022). While many patients successfully manage COPD symptoms with the aid of their provider, many struggle to prevent exacerbations. Hospitalized COPD patients run a risk of 30-day readmission around 20% after being discharged (Sharpe et al., 2021). Hospitalization and readmissions from COPD exacerbations cost between $7,000 and $39,200 further emphasizing the need to prevent exacerbations (Bollmeier & Hartmann, 2020). Certain patient populations demonstrate increased risk due to their health status. These populations include nursing home and home bound residents (Njoku et al., 2020). Although these populations receive care from nursing staff, many staff members lack the skills needed to appropriately manage COPD exacerbations (Njoku et al., 2020; Rohde et al., 2021).

Evidence-Based Proposed Solution

With access to nursing staff and assistance, homebound patients should receive preventative care reducing severe exacerbations and readmission, but many staff members lack the appropriate skills and knowledge to effectively manage this population. Other studies suggest benefit from outreach programs involving respiratory therapists, community specialized nurses, and access to health crisis teams while others promote the use of checklist protocols to aid in

treatment (Njoku et al., 2020; Rohde et al., 2021). This scoping review aimed to summarize the literature and outcomes associated with home health protocols and standing order sets for nurse managed COPD exacerbations.

Methods

This scoping review utilized the PRISMA framework guidelines for article inclusion. The review was guided by a 5-step process involving: identification of the research question, determining relevant studies, selecting appropriate studies, compiling the data, and summarizing and reporting the results.

Search Strategy

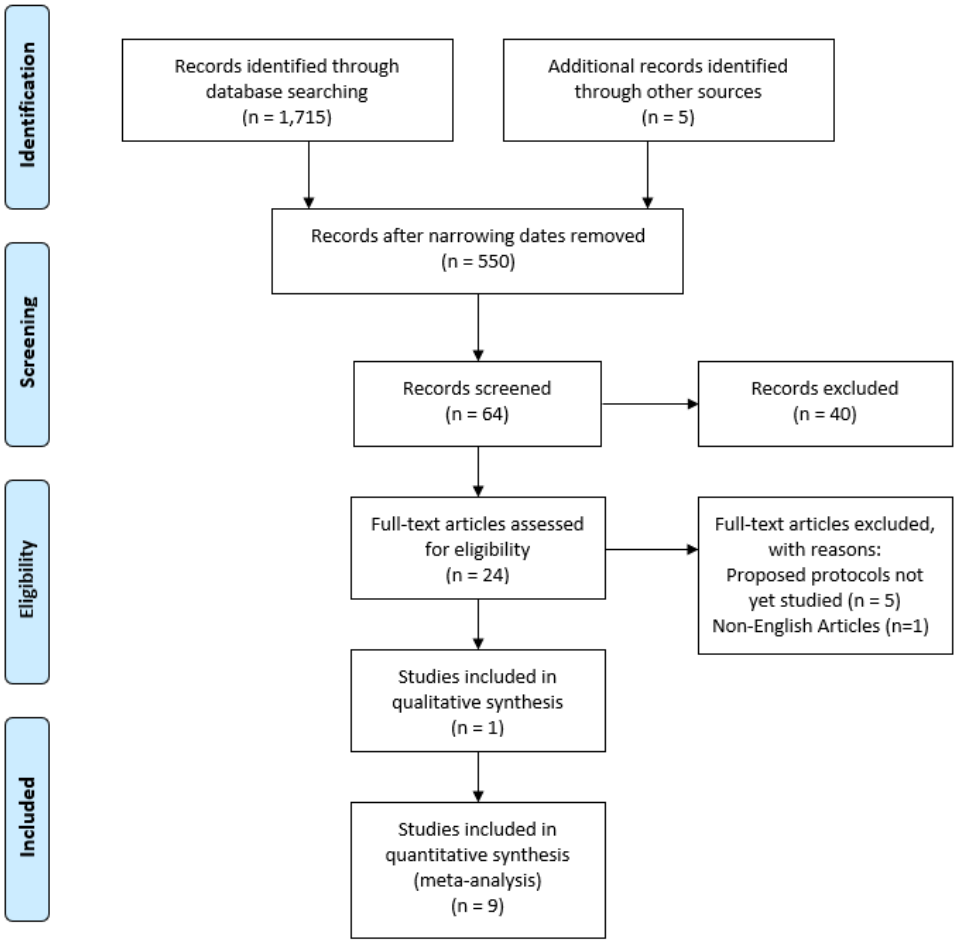
Initial searches occurred using Web of Science and CATSEARCH beginning on August 29, 2023. Key terms searched included COPD hospital readmission, chronic obstructive pulmonary disease and hospital readmission, and chronic obstructive pulmonary disease and home health protocol. Article selection was bound by publication dates no older than January 1, 2018 and through September 2023.

Inclusion Criteria

Articles satisfying the following criteria were included: systematic and meta-analysis reviews, articles reviewing COPD readmission risk factors, COPD and health management protocols, and other disease processes managed by home health or community-based protocols. Excluded studies were those encouraging alternative readmission prevention modalities other than home health and community-based management protocols.

Relevant reviews were selected with an initial screening of titles and abstracts. All available full-text articles were reviewed and screened by this author independently to determine if the article met inclusion criteria. The screening process is outlined in Figure 1.1.

Figure 1.1: Study PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) Flow Diagram



Results

The initial literature search yielded 1,715 articles, of which 550 met initial inclusion criteria for publishing date. Articles found with search terms “COPD hospital readmission” and “chronic obstructive pulmonary and hospital readmission” were further narrowed by specifying

"review article only" reducing the results to 64. A total of five articles met the remaining inclusion criteria and provided access to full length texts. Utilizing the search phrase "chronic obstructive pulmonary disease and home health protocol" provided a total of five articles for inclusion after removing proposed protocols not yet studied, duplicates, and articles without full length text access.

A total of ten articles were included in this scoping review. Of these articles there were five systematic reviews, one meta-analysis review, one qualitative systematic review, one mixed-methods study, one quality improvement project, and one clinical review.

Synthesis

Review of the literature demonstrated several consistent themes and a few contradictions in readmission rates associated with COPD. In general, the readmission rate at 30 days ranged from 7% up to 82.2% (Bollmeier & Hartmann, 2020; Njoku et al., 2020; Portillo et al., 2018; Ruan et al., 2023). Additionally, patients discharged to a skilled nursing facility saw readmission rates as low as 18.8%, however, other studies indicated higher rates of readmission from skilled nursing facilities due to lack of staff training on COPD management (Bollmeier & Hartmann, 2020; Njoku et al., 2020).

Increasing rates of readmission at 30 and 60 days post initial discharge occur most commonly in male sex (1.23-1.41 readmissions), greater numbers of hospitalizations within the year prior, those patients with longer than seven days in the hospital, and presence of comorbidities (Ruan et al., 2023). When hospital length of stay was greater than seven days, 14% of patients were readmitted at 30 days compared to 7% when the initial hospitalization was less than seven days (Ruan et al., 2023). Additionally, social determinants of health (SDOH), such as

financial challenges and transportation difficulty, also contribute to higher rates of hospitalization and 30 day readmission rates (Kearney et al., 2022). Acute COPD exacerbations result in a 3% to 9% hospital mortality rate (Wang et al., 2022). Although patients may not experience exacerbation within the first 30 to 60 days post discharge leading to readmission, 73.2% of COPD patients hospitalized will be readmitted within the year for an exacerbation (Wang et al., 2022).

Influencing Readmission Rates

Several interventions have been tested to reduce readmission rates for diseases including COPD. These interventions include Hospital-at-Home models where patients are given hospital level care at home, home-based pulmonary rehabilitation programs, community care models, community care workers, and home health (Bollmeier & Hartmann, 2020; Leong et al., 2021; Nygard et al., 2023; Portillo et al., 2018; Silva et al., 2022). Hospital-at-Home models reduced hospital costs and patient length of stay but resulted in longer duration of needed care at home by three to 9.1 days on average (Leong et al., 2021). The Hospital-at-Home model noted mortality and readmission improvements and enhanced patient satisfaction and quality of life over inpatient care, and lowered hospital readmissions in some with increased length of stay for care in others with mean days of care ranging from -8.09 to 17 days compared to inpatient hospital stay (Leong et al., 2021; Nygard et al., 2023). Similarly, home-based pulmonary rehabilitation improved patient symptoms over the course of 12 months with a mean difference of an increase in six-minute walk test of 51 meters ($p<0.00001$) (Silva et al., 2022). By improving patient functional capacity it was concluded readmission rates would likely reduce (Silva et al., 2022).

However, when home-based pulmonary rehabilitation programs stopped at six months, an increase in readmission rates occurred (Silva et al., 2022).

Community care models utilize pharmacists and nurses to visit the patient within 30 days of discharge to adjust medications, educate on medication administration, and what symptoms indicate need for further evaluation (Portillo et al., 2018). Use of community COPD care models reduced readmission rates at 30 days from 22.6% to 0% (Portillo et al., 2018). Kearney et al. (2022) noted that 54.8% of patients studied listed transportation for medical care as a barrier to care and stressor. Use of community health workers (lay citizens trained in specific cares) allowed patients with difficult access to medical care and SDOH challenges the opportunity to engage in their health management after discharge and improved patient self-efficacy (Kearney et al., 2022). Additionally, other studies support the use of community health workers and the beneficial impact on improving screening for breast cancer and cardiac disease outcomes along with asthma associated burdens but did not directly evaluate the effect on COPD patients (Kearney et al., 2022).

Multimodal interventions, which involve follow up in the form of nurse phone call, appointment set up, and education on self-management of the disease, reduced hospital readmissions (no stats provided) in many studies but several had higher risk of bias (Sharpe et al., 2021). However, other information contradicts this with finding no reduction in 30 and 60 day readmission rates with nurse phone follow up (Bollmeier & Hartmann, 2020). Typically, the greatest benefit occurred with medication and treatment support (Sharpe et al., 2021). However, once the support ceased, readmission rate slightly increased (Sharpe et al., 2021).

Qualitative studies indicate patients experience difficult home adjustments post discharge and home visits from nurses increase a sense of safety (Nygard et al., 2023). Additionally, home interventions enhanced self-management while decreasing anxiety and readmission rates (Nygard et al., 2023).

Few studies directly focused on hospitalization and readmission rates associated with home health interventions and COPD. However, the data shows readmission rates without home care of 31.1% and with home care 27.7% (Bollmeier & Hartmann, 2020).

Discussion and Conclusions

Through this scoping review, COPD management and readmission prevention primarily focused on pulmonary rehabilitation and community outreach. Minimal, if any, research focused on the effect of a home health protocol intended to prevent COPD readmissions. Although evidence supports pulmonary rehabilitation protocols to improve lung function, quality of life, and decrease readmission rates, pulmonary rehabilitation is best suited for more independent patients. Often COPD patients cannot make appointments due to transportation difficulties and may not complete pulmonary rehabilitation (Kearney et al., 2022; Silva et al., 2022).

With SDOH factors, like transportation difficulty, influencing patient outcomes the focus needs to shift to managing modifiable risk factors. Modifiable risk factors influencing COPD exacerbations include SDOH, comorbidities (heart failure, diabetes mellitus, malnutrition) and COPD. Management of these risk factors and the impact of exacerbations on overall cost and mortality is best achieved with close home-based care and education.

The use of community care models and community health workers provides opportunity for home-based care and evaluation. However, these studies were conducted in large urban areas

and replication in rural Montana may prove more challenging. Other studies indicated a lack of training and knowledge contributed to higher rates of readmission from some patients discharged to skilled nursing facilities (Njoku et al., 2020). When skilled nursing staff lacked knowledge in COPD evaluation and management, non-medical community members may be challenged to adequately learn to evaluate and treat those patients most at risk. Evidence supports home treatment and management. Knowing many at-risk patients remain homebound, it will be best to utilize home health nurse-initiated protocols to improve patients' quality of life, decrease disease severity, and reduce readmission rates.

CHAPTER TWO

QUALITY IMPROVEMENT PROPOSAL

Introduction and Problem

Introduction

Worldwide chronic obstructive pulmonary disease (COPD) contributes to more than 3.23 million deaths annually (World Health Organization, 2023). The United States reports that 12.5 million people live within the confines of COPD equating to a prevalence rate of 5.6% and an age-adjusted death rate of 105.6 per 100,000 (American Lung Association, 2023; Centers for Disease Control and Prevention, 2022). In Montana, the prevalence rate increases slightly (5.7%) but with a markedly higher age-adjusted death rate from national numbers at 143 per 100,000 (Centers for Disease Control and Prevention, 2022). As previously discussed, COPD is now a leading cause of hospital readmissions which leads to increased patient mortality and significant healthcare costs (Bollmeier & Hartmann, 2020; Wang et al., 2022). Costs for hospitalization from COPD range between $7,000 to $39,200 per patient (Bollmeier & Hartmann, 2020).

Preventing COPD exacerbations and rehospitalization will reduce mortality rates and improve patient outcomes while decreasing healthcare expenses. Recognizing that Montana presents higher than the national average death rates, developing programs successful in reducing exacerbations and rehospitalization proves essential. Several interventions have demonstrated success in improving patient outcomes, with many involving home-based treatments: an essential component for rural communities.

Problem Statement

The problem faced in Southwest Montana includes a higher than national average prevalence and age-adjusted death rate from COPD and that many patients live in rural settings with limited transportation and access to available healthcare. Furthermore, homebound residents tend to experience challenging SDOH and additional comorbidities including asthma, obesity, diabetes, and heart failure, which contribute to increased rates of readmission (Kearney et al., 2022; Ruan et al., 2023). Medical providers frequently manage COPD patients independently offering phone calls, follow up appointments, and instructions on treatment. However, the most significant reductions in readmission occurred with programs utilizing community care models and home-based interventions with 30-day readmissions of 27.7% and 0% (Bollmeier & Hartmann, 2020; Portillo et al., 2018). Some programs also noted 63.2% of patients receiving home-based interventions no longer needed a post-discharge visit with their primary care provider, saving a provider visit allowing increased access for other patients (Portillo et al., 2018). Qualitatively, home visits also contribute to a feeling of safety, confidence, reduced anxiety, and enhanced adaptation to home-life post hospitalization and improve overall quality of life (Nygard et al., 2023; Silva et al., 2022). This is important because the Global Initiative for Obstructive Lung Disease (GOLD) recognizes the value of reducing psychological comorbidities, including anxiety, to improve COPD prognosis and outcomes (Anllo et al., 2022). Understanding the improvements in patient outcomes associated with home-based treatment and management, and the challenging SDOH experienced in Montana supports the implementation of a physician approved, nurse driven home health protocol.

Patients may be hesitant to accept home health (HH) and studies indicate up to 28 percent of patients offered HH during hospital discharge refused care services (Levine & Lee, 2017).

Home health refusals occurred due to feeling overwhelmed with decisions in that moment, feeling an invasion of privacy, care giver refusing services, having a previous negative experience, services not meeting their needs, and fear of the unknown (Levine & Lee, 2017). Unfortunately, patients qualifying for HH, who refuse, demonstrate a two-fold increase in likelihood of 30-day readmission compared to those who go home on home health (Levine & Lee, 2017).

Understanding the impacts of being home bound or with limited transportation options, bringing management to the home becomes that much more essential. A nurse driven HH protocol for managing COPD symptoms will help to reduce symptom severity in patients by allowing specially trained nurses to evaluate patient status and titrate respiratory medications based on presenting symptoms. Additionally, patients will receive and review education material along with reinforcement from the home health nurse allowing for patients to manage their own symptoms more effectively over time. Through reducing exacerbations, readmissions will concurrently decrease.

Organizational Microsystem Assessment

Montana COPD rates and mortality remain higher than the national average. However, regionally, at the local hospital associated with the stakeholder group, COPD 30-day readmissions in patients greater than 65 years, totaled 8 between October 12, 2022, and October 13, 2023. The total number of discharged patients during that time was unavailable. Between 2018 and 2021 the anticipated number of 30-day readmissions was calculated at 19.6835 with an actual number of readmissions climbing to 23 which is consistent with roughly 8 readmissions yearly. This is from a total of 80 discharges over the three-year period, for a total 30-day

readmission rate of 28.8%. There was an excess readmission rate of 1.0792 and any readmissions indicate room for improvement.

The project will be implemented in a primary care clinic located in Southwest Montana. Stakeholders include 23 providers (physicians, and advanced practice clinicians), clinic nursing staff, the HH agency implementing the nurse driven protocol, and the patients receiving care. The stakeholders expressed a desire to decrease COPD readmissions, particularly 30-day readmissions, and requested assistance in implementing and evaluating the effectiveness of a physician-approved nurse driven home health protocol for COPD management.

Quality Improvement Framework

Project effectiveness depends largely on assessing inputs and outcomes. Several frameworks and models exist to aid in this process including the IOWA model, Johns Hopkins Evidence-Based Practice Model, and the model for improvement Plan, Do, Study, Act (PDSA) framework. While any of these models would effectively assist in project development, implementation, and evaluation, the PDSA framework and its iterative process, works well for this quality improvement project because the framework allows for minimal costs and the ability to grow with the project (Institute for Healthcare Improvement, 2023). Because this is an iterative process allowing for multiple cycles, the option for continued use and reassessment exists. The duration planned for initiating this quality improvement (QI) process allows for one to two PDSA cycles with the hope it can be carried on easily by the stakeholders for additional cycles if needed.

The PDSA framework requires planning out the intervention of interest. For this project, the involved stakeholders worked on a provider approved protocol for home health nurses to

utilize with patients. The HH stakeholders verbalize comfort with implementing and managing the protocol. Clinic stakeholders recognized identifying COPD patients qualifying for HH during the transition of care management (TCM) visit was as an area for improvement as knowing who qualifies was often difficult and laborious to determine. Therefore, the project plans to create a flow tool aiding in HH qualified patient identification and to evaluate the effectiveness of the protocol at reducing 30-day readmissions for COPD exacerbation. This will be implemented with nursing and provider stakeholders at the clinic level and outcomes will be assessed allowing for further cycles to drive potential changes.

Specific Aims and Purpose Statement

This QI project, Reducing 30-day Hospital Readmissions for Chronic Obstructive Pulmonary Disease in Southwest Montana, aimed to evaluate the effectiveness in improving provider identification of HH qualified patients and the impact of a provider approved nurse managed protocol for older adult home-bound COPD patients ≥65 years. The QI project evaluated outcomes after four- and eight-weeks post implementation by measuring; (a) 30-day COPD readmission rates for all patients; (b) 30-day COPD readmission rates for patients discharged home under usual care; (c) 30-day COPD readmission rates for patients discharged with HH not using the protocol; and (d) 30-day COPD readmission rates for patients discharged with HH utilizing the nurse managed protocol. Long-term goals, beyond the scope of this QI project, include evaluating the protocol's effectiveness at also reducing 60-day readmission rates.

Short-term SMART goals (Appendix A) include 50% of TCM scheduling calls will utilize the Home Health Qualifying Identification Tool by week four and at least a 25% reduction in 30-day readmission rates. Mid-term SMART goals (Appendix A) review the short-

term goals with increased success rates of 70% utilization of the TCM call HH Qualifying Identification Tool by week 8 and a 50% 30-day readmission reduction. Utilizing these SMART goals allows for intermediate adjustments to the program helping ensure program success and improved patient outcomes. It follows the PDSA framework by studying (S) the initial plan (P) that was implemented (D) and enacting (A) any changes necessary during the study period (Institute for Healthcare Improvement, 2023).

Measurement of SMART goals will occur by tabulating and calculating percentage of TCM calls utilizing the HH identification tool by reviewing all COPD TCM calls completed during the project timeframe. Additionally, electronic medical record (EMR) generated reports will differentiate patients discharged home on own with usual care, and home with HH. The reports cannot differentiate those patients receiving the protocol. Therefore, the HH agency stakeholder will provide deidentified reports outlining the total number of clinic stakeholder patients receiving the COPD protocol and those not. These data points will be compared to 30-day readmissions to allow for percentage calculations.

Long-term SMART goals are beyond the scope of this QI project. However, long-term goals aim to encourage 100% utilization of the HH Identification Tool during TCM follow up calls and a 50% reduction in 60-day readmission rates for patients receiving the HH protocol compared to HH patients without the protocol.

Methods

Implementation Summary

The project was implemented at a primary care clinic in Southwest Montana in conjunction with a HH agency implementing the COPD management protocol evaluated via this

project. The stakeholders include 23 providers (physicians and advanced practice clinicians), nursing staff, HH agency nurses and staff, and patients managed for COPD. The focused patient population includes all patients discharged after hospitalization with a primary diagnosis of COPD and assessing the effectiveness of the HH nurse managed protocol for COPD symptom management. Some of these patients will receive the protocol at discharge from the discharging provider, however, other patients may initially refuse or not be recognized as HH qualifying. Therefore, additional screening with a TCM phone call will help determine patients who qualify for HH allowing for primary care providers to order the protocol. This will be aided with a process addition of a .dotphrase script added to a currently existing script utilized by the nurse navigators performing TCM phone call follow up. Results will be followed and evaluated between January 3, 2024 and February 27, 2024.

Intervention and Implementation

Interventions involved in this QI project include both the approved COPD HH protocol and implementation of the .dotphrase script guiding HH qualification decision making. The COPD HH protocol involves a provider ordering the protocol and then the HH nurse implementing the protocol with the patient in their home. The protocol consists of a standing order set for acute exacerbation based on COPD symptom status. Presenting symptoms become categorized into green, yellow, and red zone levels. Patients exhibiting symptoms consistent with yellow and red zone will receive order set treatments and provider notification. The participating HH agency and nurses verbalize comfort with protocol implementation and are not part of this QI process evaluation. The HH agency will be presenting the protocol to the primary care

providers to ensure the protocol is available for utilization with qualifying patients prior to project implementation.

Healthcare providers and nurses make countless decisions daily, many of which influence patient health and outcomes (Pignatiello et al., 2018). Frequent decisions lead to a well-known construct, decision fatigue. Decision fatigue contributes to impaired decision making and impulsivity impacting patient care (Pignatiello et al., 2018). Therefore, adding the HH qualifying .dotphrase script into the TCM phone call will help reduce the time and energy required to determine a patients HH qualifying status. With time and energy preserved, providers can focus on shared-decision making and patient education aiding in their treatment plan, like ordering of the COPD HH protocol. The script will be added to the pre-existing TCM hospital follow-up phone call note allowing for ease of use with TCM calls (Appendix B). Nurses will be provided with a brief, 5-minute, presentation during the monthly nurse meeting about the use and application of the script. Once HH status is determined, the nurse will then place this in the scheduled TCM appointment note for the provider to see prior to entering the visit. With the provider knowing the HH qualifying status of the patient prior to the visit the provider becomes better equipped to discuss COPD treatment options and recommend HH with the COPD protocol.

Costs associated with project implementation currently amount to zero dollars. Creation of the TCM follow-up phone call note was developed by and will be produced in the electronic health charting system by the project leader, Kevin Brumbach. The project leader's qualifications include nine years of registered nurse experience ranging from acute care inpatient nursing to outpatient clinic nursing performing hospital discharge follow-up phone calls and developing

.dotphrases. Additionally, the project leader will be completing a Doctor of Nursing, Family Nurse Practitioner program May 2024 for which course work focused on preparing for such a project.

Each stakeholder involved in this project possesses licensing credentials pertinent to their respective fields and responsibilities qualifying each for the required task. For instance, the nurse navigators responsible for the TCM follow-up phone calls are all registered nurses. The providers ordering the COPD HH protocol are all licensed physicians (MD and DO), physician assistants, or nurse practitioners practicing within their scope of medicine.

Potential barriers to implementation include the perceived addition of workload to both nurses performing follow-up calls and evaluation of HH qualification along with provider reluctance to order the protocol. As previously described, short and mid-term SMART goals intend to address any concerns and barriers after four weeks of implementation.

Evaluation and Analysis

Collection of data needs to remain deidentified to follow HIPAA compliance. To ensure this, EMR deidentified analytics generated reports were created providing clinic specific readmissions at 30-days for patients ≥65 years of age. These reports separate quantity of patients readmitted at 30-days based on prior discharge location. Discharge locations include home with usual care, home with home health, or home with hospice. The data obtained for patients discharged home with home health includes all patients with HH, not just those with the stakeholder HH agency providing the COPD protocol. Therefore, the stakeholder HH agency providing the COPD protocol will forward the project leader deidentified reports detailing the number of patients receiving the HH protocol to then be compared to the clinic EMR data.

Reports will be generated monthly starting January 3, 2024 and finishing February 27, 2024 (Appendix C).

To measure utilization of the TCM follow-up call .dotphrase, the project leader will review patient discharges weekly from the discharge report nurse navigators use when performing the follow-up calls. These lists will allow the project leader to manually review patient charts for patients with a primary diagnosis of COPD to review utilization, or lack, of the note .dotphrase (Appendix D). No patient information will be collected or saved, and all data will be kept deidentified in the data collection tools.

Data analysis will occur via percentage calculation basing total numbers of readmitted COPD patients in 30-days to the total number of discharged patients. This is in accordance with similar studies reviewing readmission rates at 30-days, 60-days, and 12-months (Sharpe et al., 2021). Data will be compared to historical data from the previous 1 year. The organization transitioned to a new charting system around 2 years ago, limiting the ability to compare to more historical data.

Project goals focus on improved COPD patient outcomes and utilization of the HH COPD protocol. As outlined in the SMART goals (Appendix A) these goals are measured via 30-day readmission rates aiming for a 50% reduction in hospital readmissions from the previous 30-days and 1-year, through utilization of the HH COPD protocol. Additionally, to aide in selection of patients qualified for HH and the HH COPD protocol, percentage of use of the follow-up call .dotphrase will be assessed as previously outlined. Ultimately, long-term project goals aim to reduce 60-day readmission rates, further demonstrating improved patient outcomes.

Safety and Confidentiality

Patient safety remains the most important aspect of any project and this quality improvement project aims to improve patient outcomes. Patient safety is ensured as all patients will continue to receive usual care, however, those qualifying for HH may receive a provider approved protocol managed by licensed registered nurses in communication with the provider ensuring patient safety. No informed consent for the project is required of patients. The addition of the TCM follow-up call script only enhances the opportunity patients will be identified as HH qualified allowing for closer health monitoring and management reducing risk further.

Data collection will ensure patient confidentiality through deidentified analytics reports generated via the EMR. Furthermore, reports generated by the HH agency will be deidentified providing only numbers of patients being cared for and receiving the COPD protocol and submitted monthly to the project leader via email. In the event patient identification is needed for cross referencing all identifiable information will be transferred via phone conversation and any written information will be appropriately disposed of in shred bins per clinic policy immediately following use. This includes discharge call sheets obtained for assessment of TCM follow-up call script use calculations. Deidentified data will be stored on the project leader's password protected computer in a document table with no patient identifiers. No patient health information or documents will be removed from the clinic setting to ensure further security of information.

CHAPTER THREE

REDUCING 30-DAY HOSPITAL READMISSIONS FOR CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN SOUTHWEST MONTANA: A QUALITY IMPROVEMENT PROJECT

Contribution of Authors and Co-Authors

Manuscripts in Chapter 3: 1

Author: Kevin C. Brumbach, DNP-FNP Candidate

Contributions: Evaluation and analysis of clinical problem, literature review, project and intervention development, project implementation, data collection, analysis, and results dissemination.

Co-Author: Dr. Lindsey Davis, DNP-FNP

Contributions: Direct advising to the author regarding clinical problem evaluation, project development, and review of proposal, project, and final manuscript.

Co-Author: Dr. Amanda Lucas, DNP-FNP

Contributions: Additional guidance on project development and review and editing of manuscript.

Manuscript Information

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American Association of Nurse Practitioners

Status of Manuscript: [Put an x in one of the options below, then delete instruction in brackets]

X Prepared for submission to a peer-reviewed journal

☐ Officially submitted to a peer-reviewed journal

☐ Accepted by a peer-reviewed journal

☐ Published in a peer-reviewed journal

Abstract

BACKGROUND: Chronic obstructive pulmonary disease (COPD) recently joined the leading causes of hospital readmission. Readmissions range from 7% up to 82.2% with the highest rate amongst home-bound patients. Post-discharge programs demonstrate varied impacts on 30-day COPD readmission rates. Home health provides evaluation and treatment management opportunities for the most at-risk population and the literature lacks studies evaluating patient outcomes with a home health nurse-driven COPD protocol.

LOCAL PROBLEM: At the project site, the hospital COPD 30-day readmission rate for patients ≥65 years averaged 28.8% from 2018 to 2021. The clinic stakeholders recorded two 30-day readmissions during calendar year 2023.

METHODS: To reduce 30-day COPD hospital readmissions and identify home health qualifying patients a COPD Home Health Protocol and participant qualifying identification tool were created and evaluated with descriptive statistics.

INTERVENTION: Two interventions were initiated: a provider approved, nurse-driven home health protocol managing COPD symptoms; an electronic health record .dotphrase identifying home-bound patients qualified for home health and the COPD nurse-driven protocol.

RESULTS: The project aims were partially achieved with a 75% utilization rate of the home health qualifying .dotphrase and successful identification of one possible home health candidate who refused home health services. No patients received the COPD home health protocol during the eight-week study period.

CONCLUSIONS: The project successfully identified participants qualifying for home health but lacked sufficient opportunity to evaluate the COPD home health protocol. Expanding age inclusion criteria to participants ≥50 years will more effectively evaluate the at-risk population.

Keywords: Chronic Obstructive Pulmonary Disease, COPD, home health, .dotphrase, protocol

Clinical Problem

Chronic obstructive pulmonary disease (COPD) presents patients with a lifelong and progressive battle to breathe and is frequented by exacerbations due to obstructed airflow through the lungs (Njoku et al., 2020; Sharpe et al., 2021). Chronic obstructive pulmonary disease develops from prolonged exposure to inflammatory reactants like tobacco smoke, gases, and toxic particulates (Njoku et al., 2020; Sharpe et al., 2021). With no cure for COPD, symptomatic management provides the only basis for prolonging length and quality of life. The World Health Organization (2023) reports 3.23 million deaths worldwide, annually, making COPD number three in causes of death (Sharpe et al., 2021; Wang et al., 2022).

The United States reports approximately 12.5 million residents live under the confines of COPD, with an age-adjusted death rate of 105.6 per 100,000 people (American Lung Association, 2023, Centers for Disease Control and Prevention, 2022). Montana reports a higher age-adjusted death rate at 143 per 100,000 to national numbers (Centers for Disease Control and Prevention, 2022). Chronic obstructive pulmonary disease now leads for hospital readmission, in line with heart failure and pneumonia (Bollmeier & Hartmann, 2020; Wang et al., 2022). Hospitalization for COPD contributes to significant costs ranging between $7,000 to $39,200 per patient (Bollmeier & Hartmann, 2020). While COPD symptom management exists, COPD patients average 1.2 to 2.4 exacerbations yearly (Sharpe et al., 2021; Wang et al., 2022). Acute exacerbations of COPD (AECOPD) contribute significantly to patient hospital admissions. Hospitalized COPD patients run an approximate 20% 30-day readmission risk after discharge (Sharpe et al., 2021). In Southwest Montana, the local hospital associated with the stakeholder group, reported 10 COPD 30-day readmissions in patients ≥ 65 years between January 1, 2023,

and December 31, 2023. The primary care stakeholders reported two total readmissions for patients ≥ 65 years during calendar year 2023, with an unknown readmission rate. Furthermore, between 2018 and 2021 a total of 23 patients ≥ 65 years were readmitted to the local hospital within 30 days out of 80 total discharges. These historic values remain consistent with roughly 8 readmissions yearly, for a total 30-day readmission rate of 28.8%.

The Hospital Readmissions Reduction Program (HRRP), passed in 2010, incentivizes healthcare facilities to prevent readmissions through monetary fines for excess readmissions (Centers for Medicare and Medicaid Services, 2023a). To reduce readmission rates, studies have focused on elucidating contributing factors and high-risk patients. Common risk factors include low socio-economic status, comorbid asthma, increased hospital stay length, frailty, and recent exacerbations (Njoku et al., 2020; Sharpe et al., 2021; Wang et al., 2022). Many programs have been developed attempting to improve COPD patient outcomes utilizing a home-based approach with evidence supporting the benefit of home health.

Available Knowledge

Hospital 30-day readmission rates for COPD patients ranged from 7% up to 82.2%, while 73.2% of patients will be readmitted within the year (Bollmeier & Hartmann, 2020; Njoku et al., 2020; Portillo et al., 2018; Ruan et al., 2023; Wang et al., 2022). Hospitalization for AECOPD results in a 3% to 9% mortality rate (Wang et al., 2022). Prior studies indicate Hospital-at-Home models where patients are given hospital level care at home, home-based pulmonary rehabilitation programs, community care models, community care workers, and home health all contribute to lower readmission rates (Bollmeier & Hartmann, 2020; Leong et al., 2021; Nygard et al., 2023; Portillo et al., 2018; Silva et al., 2022).

Hospital-at-Home models reduced hospital costs and patient length of stay; however they resulted in increased length of needed care at home by three to 9.1 days on average (Leong et al., 2021). Home-based pulmonary rehabilitation programs improved patient symptoms over the course of 12 months with a mean difference of an increase in six-minute walk test of 51 meters, which they concluded would likely reduce readmission rates (Silva et al., 2022). Community care models, which utilize pharmacists and nurses to educate patients and adjust patient medication after discharge reported 30-day readmission rates reduced from 22.6% to 0% (Portillo et al., 2018).

Qualitative studies indicate patients experience difficult home adjustments post discharge and home visits from nurses increase a sense of safety, enhance self-management, and decrease anxiety and readmission rates (Nygard et al., 2023). Few studies directly focused on hospitalization and readmissions associated with home health interventions and COPD. However, data indicates readmission rates without home care of 31.1% and with home care 27.7% supporting the benefit of home health (Bollmeier & Hartmann, 2020). The time and energy required to determine which patients qualify for home health contributes to provider decision fatigue. Decision fatigue results in impaired decision making and impulsivity impacting patient care (Pignatiello et al., 2018). The impact typically presents with increased error rates and misdiagnosis. Furthermore, the process for identifying home health qualified patients also contributes to missed patient captures limiting the number of patients who would benefit from home health. Reducing provider decision fatigue will aid in improved provider recommendations and better patient outcomes.

Conceptual Framework

The QI project utilized the Plan-Do-Study-Act (PDSA) framework. The PDSA framework and its iterative nature guided two PDSA cycles of four weeks, totaling eight weeks of project implementation and data collection. The project was quantitatively based, however, qualitative conversations between the project leader and stakeholders contributed to project changes. After the first PDSA cycle, data and stakeholder feedback guided recommendations on the communication and protocol ordering process, directing actions for the second PDSA cycle.

Project Aims

The QI project described in this article aimed to evaluate the readmission rate impact of improving provider identification of home health (HH) qualified patients through use of a standardized question set (.dotphrase) and the effect of a provider approved nurse-managed COPD symptom management protocol for adult home-bound patients ≥65 years.

Methods

Context

The project was implemented in a primary care clinic serving Southwest Montana. Primary care clinic stakeholders included 23 providers (physicians and advanced practice clinicians), and clinic nurse navigator staff totaling seven. The nurse navigators are responsible for calling each patient within 48-72 hours of discharge to review symptoms, answer questions, and schedule follow up appointments. The provider stakeholders expressed interest in decreasing COPD readmissions, particularly 30-day readmissions. The stakeholders requested assistance in implementing and evaluating the effectiveness of a physician-approved, nurse-driven home

health protocol for COPD management. Additional stakeholders included the independent home health agency implementing the nurse driven protocol, home health nurses and patients.

Interventions

The interventions implemented for this QI project consisted of a provider approved COPD HH symptom management protocol and use of a .dotphrase script guiding HH qualification decision making. The COPD HH protocol involves a provider ordering the protocol and then the HH nurse implementing the protocol with the patient in the patient's home. The protocol uses a provider-approved standing order set for acute exacerbation treatment based on COPD symptom status. Presenting symptoms are categorized into green, yellow, and red zone levels. Patients exhibiting symptoms consistent with yellow and red zones will receive HH nurse-initiated order set treatments and HH nurses will notify providers via phone call.

The development of the HH qualifying .dotphrase used a series of standardized questions developed by the primary author to determine a recently discharged patient's qualification for receiving home health. The .dotphrase questions were determined with guidance from the Center's for Medicare and Medicaid Services (2023b) The script (Figure 1.2) was added to an existing note template utilized by nursing staff when calling patients within 48-72 hours of discharge. During this post-discharge phone call nurses review a brief hospitalization course with the patient, verify current medications and any new medications prescribed, answer patient questions, and schedule the patient for a transition of care management appointment with the patient's primary care provider. The home health qualification questions add three additional questions, minimally increasing call length and providing baseline qualification status for providers to review.

Figure 1.2: Transition Care Management Nurse Call Note with HH Qualification .dotphrase

FYI, patient hospitalized for *** See discharge note for full details.
Discharge location/plan: ***

- Can insert additional HH qualification dotphrase here which asks:
    - Are you having trouble leaving your home without help due to illness or injury (use a cane, wheelchair, walker, crutches, special transportation, help from another person)? YES/NO
    - Is leaving your home not recommended because of your condition? YES/NO
    - Are you normally unable to leave your home because it is a major effort? YES/NO

Medications prescribed/stopped: ***
Recommended testing/treatment: ***
Follow-up appt: ***
LCM: ***
Spoke with patient they report: ***

Measures

After four- and eight-weeks post implementation, the project was evaluated by measuring; (a) 30-day COPD readmission rates for all patients; (b) 30-day COPD readmission rates for patients discharged home under usual care; (c) 30-day COPD readmission rates for patients discharged with HH not using the protocol; and (d) 30-day COPD readmission rates for patients discharged with HH utilizing the nurse managed protocol. Goals included 25% reduction in 30-day readmissions at week 4 and a 50% reduction in hospital readmissions by week 8. The HH qualifying .dotphrase goals included a 50% utilization rate by week 4. By week 8, a 70% utilization rate was desired. Any deficiencies in .dotphrase utilization would be discussed with nursing staff to better streamline use and determine areas of improvement.

Analysis

While data was collected weekly (Table 1) analysis occurred at the end of week 4 and week 8. Data analysis used percentage calculation assessing total numbers of readmitted COPD

patients in 30-days to the total number of discharged patients. This analysis methodology is in accordance with similar studies reviewing readmission rates at 30-days, 60-days, and 12-months (Sharpe et al., 2021). Data was compared to historical data from the previous 1 year.

Ethical Considerations

Ethical considerations included human versus non-human research, patient confidentiality, and data security. Montana State University and their Internal Review Board (IRB) determined the project met criteria for non-human subject's research. No IRB process was required from the stakeholder site. Patient confidentiality was maintained as no identifiable patient information was recorded or stored outside of the electronic health record system. Additionally, all data collected was recorded in tables as tallied-total encounters and stored on a password protected computer.

Results

Over the course of this quality improvement project, a total of four patients (n = 4) meeting inclusion criteria were discharged from the local hospital with AECOPD diagnosis. The process measure training of nurse navigators to use the HH qualifying .dotphrase successfully occurred with 100% verbalization of comfort with use and evidenced by direct implementation of the .dotphrase with discharged patients during TCM follow up calls. During the first 4-week PDSA cycle three patients were discharged and all three received the HH qualifying .dotphrase for a utilization rate of 100% exceeding the utilization SMART goal of 50% (Table 1). Additionally, during week three, one patient met criteria for HH qualification indicating 100% success at patient identification. The patient, however, declined home health services. The

second PDSA cycle finished with one additional discharged patient meeting inclusion criteria discharged in week 8. This patient did not receive the HH qualifying .dotphrase resulting in a utilization rate of 0% which was below the SMART goal of 70% (Table 1).

Table 1: Home Health Qualifying .dotphrase TCM Call Data

Week	*# of TCM Calls*	*# of TCM Calls using .dotphrase*	*# Patients identified as HH Qualified*	*% .dotphrase was used*
Week 1	0	0	0	N/A
Week 2	1	1	0	100
Week 3	2	2	1	100
Week 4	0	0	0	N/A
Week 5	0	0	0	N/A
Week 6	0	0	0	N/A
Week 7	0	0	0	N/A
Week 8	1	0	0	0
Total	*4*	*3*	*1*	*75*

The four patients included in the QI project all went home with usual care (Table 2). A total of zero patients received the COPD home health protocol during the two phases of the project. Of these four patients, zero readmissions within 30-days of discharge occurred resulting in a 0% readmission rate when discharged home under usual care. Zero readmissions remain consistent with historical data from this same timeframe. Between January 3, 2023, and February 27, 2023, a total of zero 30-day readmissions for COPD occurred for the project site.

Table 2: Discharge Disposition and Readmissions

Discharge Disposition	*# of Discharges*	*# 30-day Readmissions*	*Readmission Rate %*
Home, usual care	4	0	0
Home Health, usual care	0	0	0
Home Health, COPD Protocol	0	0	0
Total	*4*	*0*	*0*

Discussion

This QI project focused on reducing COPD exacerbation hospital readmissions at 30-days post discharge. The project was born out of desire to improve COPD patient outcomes and reduce hospital burden from readmissions. The stakeholders involved developed and approved the COPD home health protocol and requested assistance in implementing and evaluating the protocol's effectiveness on reducing hospital readmissions. After significant project development, clinic stakeholder data revealed only two 30-day readmissions between January 1, 2023 and December 31, 2023 and zero 30-day readmissions for January 3, 2023 to February 27, 2023 for COPD patients ≥ 65 years. The historical data provides few starting data points for comparison. Additionally, this project recorded only four total patient encounters meeting inclusion criteria, with zero receiving the COPD home health protocol. With no utilization of the COPD HH protocol and zero readmissions, evaluating the COPD HH protocol's efficacy proved impossible for the study's timeframe. However, noting that zero 30-day readmissions occurred, the involved stakeholders demonstrate a lower than average readmission rate of 0%, compared to the national average of 7% up to 82.2% (Bollmeier & Hartmann, 2020; Njoku et al., 2020; Portillo et al., 2018; Ruan et al., 2023; Wang et al., 2022). Although not effectively evaluated, the COPD HH protocol is most similar to COPD community care models. The COPD care

models decreased 30-day readmission rates from 22.6% before implementing care models to 0% with care model use (Portillo et al., 2018).

Nurse navigator use of the home health qualifying .dotphrase proved very successful with an overall utilization rate of 75% and appropriate identification of qualifying patients at 100%. Communication with the nurse navigator staff who implemented the .dotphrase reported ease in integrating it into phone calls. The one patient encounter that did not use the .dotphrase was based on one nurse navigator forgetting to use it due to many weeks without COPD patient discharges. With a 100% result in correct identification of HH qualifying patients, continued use of the HH .dotphrase should continue to be used to help identify future patients beyond the project and attempt to reduce provider decision fatigue further. Dissemination of the HH qualification results to providers proved more difficult than anticipated as some providers did not read the nurse navigator notes. Sending a nurse communication directly to the patient's provider of the patient's qualifying status and choice to accept or decline services may encourage the provider to spend more time educating the patient on HH benefits. The patient who declined home health may have benefited from further conversation with the primary care provider. Of HH qualified patients, 28% offered HH decline services due to anxiety of new people in their home and not understanding the beneficial impact HH provides and benefit from further education (Levine & Lee, 2017).

Limitations

Limitations for this QI project included only four patient encounters, project timeline constraints, multiple concurrent projects for the stakeholders, and a burdensome protocol ordering system. With only four COPD patient encounters and no ordering of the HH protocol

the project could not evaluate protocol effectiveness. Therefore, no generalizability or recommendations for using the protocol occurred. Additionally, the stakeholders had two 30-day readmissions during calendar year 2023 indicating a need for an implementation period longer than the eight weeks available for this QI project.

Communication between the various stakeholders mildly delayed the dissemination of the COPD home health protocol for provider review and approval, however, the clinic providers were still able to sign and approve the protocol January 3, 2024. Additionally, provider feedback after the first PDSA cycle indicated a likely cumbersome HH protocol ordering process. During week six of data collection the providers worked, independently of the project, with the organization's informatics team and added the protocol to the electronic medical record with a single click home health ordering function. Unfortunately, this feature was not tested during the implementation period.

The primary stakeholders involved in this QI project participated in two additional QI projects running concurrently. Although no verbalization of difficulty managing all three QI projects occurred, concern for stretching limited resources exists.

Recommendations

Future studies building off this QI project platform should expand inclusion criteria to patients ≥ 50 years to capture a more adequate population. While data mining for .dotphrase utilization, additional patient encounters for patients between ages 50 and 65 years surfaced. One patient in this demographic did qualify for home health and received the protocol yet was omitted due to not meeting inclusion criteria. While current EMR generated reports only exist for patients ≥ 65 years, collaboration with informatics should emphasize new report generation to

include patients ≥ 50 years, and total number of discharged COPD patients. While working with informatics additional trackable metrics should be considered to monitor .dotphrase use in the electronic health system. Tracking .dotphrase metrics will help with project sustainability and potential financial savings via decreased workload, decreased staff time, and possible improved patient outcomes.

Although the only included patient encounter to qualify for home health declined services, the use of home health frequently decreases patient anxiety once implemented. The Global Initiative for Obstructive Lung Disease (GOLD) notes that reducing psychological comorbidities, including anxiety, improves COPD prognosis and outcomes (Anllo et al., 2022). Future studies should consider qualitative surveys for patients pre- and post- COPD HH protocol to quantify the effect the protocol provides for patient quality of life. The qualitative results could be used educationally for home health resistant patients to better understand the benefit of home health and the recommended protocol.

Further evaluation of the HH qualifying .dotphrase should include a questionnaire quantifying provider decision fatigue pre- and post- .dotphrase use. Provider decision fatigue leads to impulsive shared decision making, and poor patient care (Pignatiello et al., 2018). Therefore, measuring the .dotphrases effect will lead to further adoption of the .dotphrase or modification to promote better effectiveness.

Conclusion

Chronic obstructive pulmonary disease impacts the lives of millions of people worldwide including a larger than the national average in Montana. This QI project aimed to improve the identification of HH qualified COPD patients and to reduce 30-day hospital readmissions from

AECOPD. To achieve the aims, use of a HH qualifying .dotphrase identifying HH appropriate patients and a HH COPD nurse-driven protocol were developed and tested.

Although unable to evaluate the effect of the HH COPD protocol, this QI project set the foundation for further investigation and outlined many recommendations for future work. Future QI projects should expand the COPD age inclusion criteria to ≥ 50 years of age to capture a more representative local population. The development of electronic medical record generated reports incorporating the recommended age bracket will aid in data collection and evaluation.

This QI project streamlined identification of home health qualified patients through use of a .dotphrase aiding nurse navigators calling recently hospitalized COPD patients to identify patients able to receive HH. The .dotphrase successfully identified qualifying patients, but failed to incorporate aspects encouraging acceptance of home health. Developing patient education to assist in recommending home health will likely improve patient acceptance. Recommendations include use of qualitative data from patient pre- and post- COPD protocol care evaluating patient self-perceptions of quality of life. Providers and nurse navigators can utilize this information in discussion with HH resistant patients. Additionally, expanding use of the HH .dotphrase to other high readmission rate diagnoses may help identify additional patients who qualify for HH. Although patients without a diagnosis of COPD will not receive a specific HH protocol, the benefits of HH care widely support improved patient outcomes.

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CHAPTER FOUR

ADVANCED NURSING ESSENTIALS REFLECTION

Personal Reflection

When deciding to pursue my Doctor of Nursing Practice (DNP) degree I spent many hours talking to DNP trained Nurse Practitioners, reading about various programs, and attempting to convince myself of the greater value a DNP program offers over a Masters. Ultimately, timing, cost, and location persuaded me to fully embrace the challenges and rewards of achieving my DNP degree. As program completion and graduation near, I am grateful for the time, training, critical thinking, and energy required from the DNP track. As with any program, key essentials are developed for each student to follow and use to strive for success. My quality improvement (QI) project and subsequent manuscript directly contributed deeper learning and greater understanding to the intricacies involved with practicing as a medical practitioner and the leadership needed to test and implement patient care change. While numerous factors contributed to my growth and learning the following competencies continually rose to the top.

Knowledge for Nursing Practice

Early in my DNP student clinical rotations, a provider summarized a research article she read exemplifying that if every medical decision made utilized approved guidelines, providers would require 35 working hours a day to provide patient care. Utilizing guidelines for every medical decision, therefore, remains unrealistic and yet use of evidence-based knowledge for medical decision making is essential. The knowledge for nursing practice domain emphasizes using knowledge and science while also reflecting on nursing history.

While providers lack the time to review all guidelines in medical decision making, QI projects make this possible. Quality improvement projects allow for one or a few individuals to deeply dive into literature and then summarize the recommendations to their partners. Synthesizing and translating evidence into daily practice is exactly what I did through a literature review guiding recommendations for use of the Chronic Obstructive Pulmonary Disease home health protocol, identification of qualifying patients, and ease of ordering (Domains 1.1e and 1.2f). Additionally, through the literature review process, and use of Plan-Do-Study-Act (PDSA) framework a systematic and defendable approach informed practice decisions and guided recommendations including expanding inclusion criteria, focusing on patients self-perception of quality of life, and measuring provider decision fatigue (Domain 1.2g).

Person-Centered Care

Medicine, historically, predominated with the provider instructing the patient how to manage a disease or symptom. As healthcare evolves, we begin to embrace a holistic, individualized, compassionate, and respectful patient-centered plan. This is best done through developing caring relationships with patients. I developed this skill set over the course of clinical work through guidance by instructors and preceptors evidenced by patient commentary asking to follow up with me at subsequent visits (Domain 2.1d, and 2.1g). As a practitioner I learned patients are at their most vulnerable when sharing intimate details about their life. During many visits with patients experiencing challenging circumstances including cancer, substance use disorder, and grief I was able to build trusting rapport aiding in improved communication and witnessed many patients emotionally share their struggles (Domain 2.2j).

Many times, the best patient-centered care involves risk-reduction strategies. This was particularly seen with patients living with substance use disorders including alcohol and opioid use disorders. Working with everyone to create a personalized risk reduction plan that included both cognitive behavioral therapy and pharmacological interventions aided in the chronic management of disease and reduced the risk of further disease development (Domain 2.5i).

Quality and Safety

Quality and safety must remain at the forefront of any medical decision to promote better patient outcomes. The design and implementation of the COPD home health protocol QI project focused on patient safety as the primary priority. Patient safety was maintained through use of a provider approved nurse-driven protocol that was evaluated on a weekly basis by me. The evaluation reflected benchmarks through data mining and email and phone correspondence driving the potential for PDSA changes (Domain 5.1i). One patient, outside of the project's inclusion criteria, who was receiving the COPD protocol was readmitted to the hospital. Although outside the scope of the intended project, I collaborated with both primary care and home health entities to narrow down any deficiencies needed to enhance patient outcomes (Domain 5.2h). Additionally, through completion of the project, limitations and recommendations allowed for further project development and additional PDSA cycles to promote improved patient outcomes (Domain 5.2h). The data obtained and subsequent analysis was disseminated to the involved stakeholders through a live online presentation of the results and recommendations, in addition to a community wide presentation during my project defense and subsequent poster presentation (Domain 5.1o). Utilization of transparent communication and avoiding punitive commentary, concerns were openly discussed to promote positive change

(Domain 5.3g). While utilization of the protocol remained limited due to few qualifying patients, the communication between the stakeholders and myself was collaborative and transparent with a desire to seek improvement and positive outcomes.

Interprofessional Partnerships

The ability to foster collaborative, respectful, and transparent conversations between various people, departments, and entities significantly impacts the success of any project. For this QI project communication occurred between three distinct groups where I acted as the central command. The three groups included the home health agency stakeholder, the primary care providers, and the nurse navigator staff implementing the .dotphrase for qualifying patient identification. I worked to facilitate improved communication in the electronic health record through the development of the home health qualifying .dotphrase, and aimed to reduce provider decision fatigue (Domain 6.1h). This improved interprofessional communication between nursing and providers. Additionally, the COPD home health protocol ordering process proved cumbersome leading to the development of an electronic health record ordering button to simplify this process. This process was not developed and implemented until the final week of data collection, unfortunately (Domain 6.1h). Through the literature review, the entire project based decisions from evidence including use of home health to decrease 30-day hospital readmissions and reduce provider decision fatigue with the qualifying .dotphrase (Domain 6.2g). These evidence-based approaches improved communication effectiveness between nursing staff and providers (Domain 6.2g).

I learned the value of listening to and receiving feedback from multiple perspectives and agencies and the need to embrace these perspectives in the beginning. While communication

worked well throughout the duration of the project, clarity was found when each entity was able to share concerns. The perspectives shared helped to shape the project including development of the electronic health record ordering system for ease of provider use. The ordering process would not have occurred without the continued sharing of perspectives and openness to interprofessional learning (Domain 6.4f).

Informatics and Healthcare Technologies

The QI project utilized healthcare technologies primarily through use of the electronic health record and the home health qualifying .dotphrase developed for nursing to help identify home health candidates. By reducing provider decision making, and using technology to disseminate the qualification status of patients, provider decision fatigue may have been reduced. With the need for fewer decisions, and thus increased time for alternative decisions, providers could focus their energy on patient care and outcomes. Healthcare technology aided in this process eliminating the need for each nurse completing the transition of care management follow up phone call from also needing to verbally communicate with the providers. Use of the .dotphrase helped enhance communication, inform decision making, and develop support tools for promoting quality and ethical patient care (Domains 8.1g, 8.2f, 8.3h, and 8.4f).

Personal Professional and Leadership Development

Developing professional and leadership skills requires practice and confidence. During the infancy of this QI project, I initially approached the project timidly and followed the ideas and direction from those with greater experience. Through the QI process, I developed confidence, understanding, and adaptability resultant from the learned experience of developing a QI project. Specifically, learning to work on a school timeline, which limited some of the

parameters like changing project direction and inclusion criteria, helped strengthen my confidence and ability to be resilient and flexible with project change (Domain 10.2g). Additionally, I learned the value of promoting self-care and well-being. Setting personal boundaries, while limiting to some stakeholder's desire, allowed me to promote and develop a successful project under the confines of time limitations (Domain 10.1c). The QI process and PDSA framework foster lifelong learning through illuminating the benefits of change and continued development seeking for better solutions to issues (Domain 10.2i).

Aside from the QI project development and implementation, the DNP program enhanced personal leadership skills through program coursework and in particular clinical placement rotations. Each clinical rotation fostered growth in learning diagnostic and treatment knowledge from preceptors. Clinical rotations also promoted my growth in communication, interaction, and treatment techniques desirable to add to personal practice. These techniques include listening, patient engagement, evidence-based practice, patient-centered and shared-decision making and the ultimate value of a collaborative and supportive work environment (Domain 10.3q). I now hold finding a future employment opportunity focused on teamwork, individual development, life-long learning, and adaptability of utmost importance for a successful career and quality patient care (Domains 10.1c, 10.1d, 10.2i, and 10.3q). While job opportunities are frequently finite, finding the aforementioned work setting remains important, and I now possess the confidence, knowledge, and ability to advocate for myself more wholly than possible without the DNP training and experience.

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APPENDICES

APPENDIX A

SMART GOALS: ENSURING APPROPRIATE PROJECT DIRECTION

Short-term SMART Goal #1: At least 50% of TCM nurse calls will utilize the Home Health Qualifying Identification Tool by 1/31/2024.		
Description of strategies to be utilized to accomplish goal including any needed resources. • Nurse navigators completing TCM calls will be trained in use of the HH ID tool via email correspondence. • HH ID tool will be streamlined into existing TCM follow up dotphrase for ease of use.		
Data to be Collected	**Method of Collection & Responsible Party**	**Planned Data Analysis**
• Number of TCM calls utilizing the HH ID tool	• Responsible Party: Kevin • Review of clinic TCM call lists, sorted by COPD diagnosis, and tallied number of times HH ID tool used between implementation date and 1/31/24.	• Percentage of TCM calls utilizing the HH ID tool from total TCM call for COPD.

Short-term SMART Goal #2: At least 25% reduction in 30-day readmissions in patients with primary diagnosis of COPD by 1/31/2024.		
Description of strategies to be utilized to accomplish goal including any needed resources. • Provider education presentation on use and ordering of protocol during all Provider meeting • Education pamphlet reviewing the benefits of Home Health for providers and patients to review at TCM visit. o Will need to budget cost associated with printing of pamphlet.		
Data to be Collected	**Method of Collection & Responsible Party**	**Planned Data Analysis**

• Number of readmissions in prior 30 days.	• Responsible Party: Kevin
	• Print report generated from EMR.
		• Readmission rate calculated from reports.
		• Compare data to previous historical data:
		  o 30-day
		  o 1-year

Mid-term SMART Goal #1: At least 70% of TCM nurse calls will utilize the Home Health Qualifying Identification Tool by 3/01/2024.		
Description of strategies to be utilized to accomplish goal including any needed resources. • Send follow up email to Nurse Navigators completing TCM phone calls for feedback on ease of use and barriers to implementation after initial evaluation. • Adjust tool based on end use feedback and update end-users. • HH ID tool will be streamlined into existing TCM follow up dotphrase for ease of use.		
Data to be Collected	**Method of Collection & Responsible Party**	**Planned Data Analysis**
• Number of TCM calls utilizing the HH ID tool	• Responsible Party: Kevin • Review of clinic TCM call lists, sorted by COPD diagnosis, and tallied number of times HH ID tool used between implementation date and 3/01/24.	• Percentage of TCM calls utilizing the HH ID tool from total TCM call for COPD.

Mid-term SMART Goal #2: At least 50% reduction in 30-day readmissions in patients with primary diagnosis of COPD by 3/01/2024.		
Description of strategies to be utilized to accomplish goal including any needed resources. • Follow up with primary Provider contacts regarding barriers to use and implementation after initial evaluation. Work with resistant providers for Goal #2 on an as needed basis.		
Data to be Collected	**Method of Collection & Responsible Party**	**Planned Data Analysis**

• Number of readmissions in prior 30 days.	• Responsible Party: Kevin
	• Print report generated from EMR.
		• Readmission rate calculated from reports.
		• Compare data to previous historical data:
		  o 30-day
		  o 1-year

APPENDIX B

TCM HOSPITAL FOLLOW-UP .DOTPHRASE WITH HH QUALIFICATION

Appendix B: Transitional Care Management (TCM) nurse navigator .dotphrase with home health qualifying questions embedded.

FYI, patient hospitalized for *** See discharge note for full details.
Discharge location/plan: ***

- Can insert additional HH qualification dotphrase here which asks:
    - Are you having trouble leaving your home without help due to illness or injury (use a cane, wheelchair, walker, crutches, special transportation, help from another person)? YES/NO
    - Is leaving your home not recommended because of your condition? YES/NO
    - Are you normally unable to leave your home because it is a major effort? YES/NO

Medications prescribed/stopped: ***
Recommended testing/treatment: ***
Follow-up appt: ***
LCM: ***
Spoke with patient they report: ***

APPENDIX C

30-DAY DISCHARGE AND READMISSION DATA TABLE

Appendix C: Sample table for data mining of 30-day COPD readmissions differentiated by discharge disposition.

	# of Discharges	# 30-day Readmissions	Readmission Rate
Home, usual care			
Home Health, usual care			
Home Health, COPD protocol			
Total			

APPENDIX D

TCM CALL DATA COLLECTION TABLE

Appendix D: Sample TCM data collection table for monitoring and evaluating .dotphrase utilization.

	# of TCM Calls	# of TCM Calls using .Dotphrase	# Patients identified as HH Qualified	% .Dotphrase was used
Week 1				
Week 2				
Week 3				
Week 4				
Week 5				
Week 6				
Week 7				
Week 8				