



Postgraduate Pharmacy Resident Research Projects

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UNIVERSITY OF MINNESOTA

POSTGRADUATE PHARMACY
RESIDENCY PROGRAM

KATHERINE ANDERSON

CASH WISE CLINIC PHARMACY

Increase Coborn's and Cash Wise Pharmacy Opioid Antagonist Prescriptions Prescribed by Pharmacists to Patients Receiving Opioid Prescriptions Using a Collaborative Practice Agreement

Background: In 2020 the FDA released recommendations suggesting that all patients prescribed opioids should be offered an opioid antagonist to address this epidemic.

Methods: The goal of the project was to see: 1) a 50% increase of opioid antagonist prescribed in January and 2) to maintain an increased level 6 months after the October MTM conference call that was presented to the Coborn's and Cash Wise pharmacists. These recommendations were presented and how to use the opioid antagonist collaborative practice agreement (CPA). The pharmacists were provided prior three-month prescription history of opioid antagonist being prescribed by either providers or the CPA, 12.2% of the 92 prescriptions were prescribed by the CPA. An automated clinical program that prompts the pharmacist to assess the need for opioid antagonist was enabled in 6 of 34 Minnesota pharmacies. The pharmacists were coached at launch and followed up with regular intervals to encourage them to continue to use the program.

Results: The pharmacy prescription fill data was analyzed for CPA dispensed opioid antagonist in January, 24.4% of 119. Additionally, analyzed in May, 18.1% of 94. The study found success in using the automated clinical program to identify appropriate patients which led to increased opioid antagonist prescriptions into the community by pharmacy staff using the CPA.

Conclusion: Pharmacists buy-in and close follow up is necessary to continue to increase prescriptions. It is recommended that Coborn's continue using the clinical program to continue to increase opioid antagonist prescriptions for patients who can benefit.

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PAIGE BEHREND

PARK NICOLLET HEALTH

Medication Management in Next Generation Accountable Care Organization End-Stage Renal Disease Patients: Optimizing Patient Outreach and Drug Therapy Problem Identification

Background/Purpose: There is currently no proactive outreach to the Next Generation Accountable Care Organization (ACO) ESRD patients by the Medication Therapy Management (MTM) department at Park Nicollet. The primary purpose of this quality improvement project was to evaluate a drug therapy problem (DTP)-risk scoring system for prioritizing outreach to Next Generation ACO ESRD patients on scheduling success rate and number of DTPs per patient per risk group over a 6-month period of time. The secondary purpose was to determine whether an ESRD-specific note template increases DTP identification.

Methods: Next Generation ACO ESRD patients without a Park Nicollet MTM visit within the past 24 months were scored using the novel scoring tool and received outreach from the MTM Outreach Coordinator. Visit data was collected from October 5, 2020 to March 31, 2021. The ESRD note template was retroactively applied to 2019 ESRD MTM visits. Outcomes included scheduling success rate, number of DTPs per patient per risk category, and documented versus retrospective DTPs for the 2019 visits.

Results: The scheduling success rate among the high-risk patients was higher (52%) than the medium-risk patients (21%). There were 1.6 DTPs per patient in the high-risk group versus 0.7 DTPs per patient in the medium-risk group. An additional 22 DTPs were identified in the 45 MTM visits from 2019.

Conclusions: The novel scoring tool was effective in identifying Next Generation ACO ESRD patients at highest risk of a DTP. The use of an ESRD-specific note template resulted in a nearly 2-fold increase in DTP identification.

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DAVID BUNCH

PHARMACEUTICAL LEADERSHIP YEAR 2 – GERITOM MEDICAL, INC

A Mixed-Methods Evaluation of Clinical Pharmacogenomics Integrated into CMM Services Provided to a Long Term Care/Waivered Facility Patient Population

Introduction: The objectives of this work was to evaluate integrated pharmacogenomic testing through comprehensive medication management pharmacy services within a waived facility population has an effect on provider perspective on pharmacogenomics, the number of pharmacogenomics recommendations, and the financial sustainability of this practice through coverage conversations with an accountable care organization. Previous literature has explored the utility of pharmacogenomics integration into a comprehensive medication management service within a family medicine clinic, but this process had not been studied in a long term care or waived facility population.

Methods: A process for ordering and approving pharmacogenomics tests was first developed in partnership with a genetic testing company (OneOme). Next a process for analyzing patients for eligibility for testing, testing protocol, and follow-up reporting templates were developed. Once the full process was established, surveys were sent out to prescribers of patients being seen for an upcoming comprehensive medication management visit to assess provider sentiment around pharmacogenomics testing and the pharmacist involvement in interpretation of reports. The pre-surveys were sent out anywhere from a week to a day before. A post survey was also sent out to all providers who received an interpretation report from the pharmacist within 2 months. Data was also collected on the clinical variants that resulted from testing, actionable drug therapy problems that were discovered through testing, and the rate at which providers accepted recommendations based on pharmacogenomic results.

Results: In total there were 92 surveys sent out to providers with 16 responses. The respondents were a mix between physicians, nurse practitioners, and a physician's assistant who either practiced in general/family medicine or psychiatry. The majority of respondents had either taken a course or seminar on pharmacogenomics (56%) and had experience ordering a pharmacogenomics test (75%). The largest block of respondents stated that pharmacogenomics was only slightly useful in clinical decision making (44%) and that interpretation by a pharmacist would be modestly influential in clinical decision making (50%). There were 7 post-intervention surveys sent out to the providers that received a pharmacogenomics report (whether they contained specific recommendations to the prescriber or not) with no respondents. There were 11 total tests recommended, but only 4 were accepted and 3 resulted by the conclusion of the study period. There were 4 recommendations made by the pharmacist as a result of these tests with a 100% acceptance rate by the prescribers.

Discussion: A large portion of the project was affected by complications due to the COVID-19 pandemic. There were 4 months out of the total 7 month project period that required the pharmacists to devote a majority of their time towards COVID-19 vaccinations, which resulted in a low number of tests completed. Also, due to COVID-19 restrictions a focus group with the accountable care organization was unable to be conducted. The results of the pre-survey showed a potential reluctance by prescribers to utilize pharmacogenomics for clinical decision making or to consult a pharmacist for interpretation of results. The effect of the pharmacist's intervention on prescriber perception was inconclusive due to a low response rate for the post-intervention survey. The 100% acceptance rate of recommendations is encouraging for the future of this program.

Conclusion: Despite the interruption of the COVID-19 pandemic during this project, a pharmacogenomics program was successfully integrated into the comprehensive medication management program at the long term care pharmacy. The program and data collection will continue, including assessment of provider perception post-intervention.

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ATHENA CANNON

PHARMACEUTICAL LEADERSHIP YEAR 1 - BROADWAY

Pharmacist-Led Quality Improvement Project to Increase Monitoring for Metabolic Syndrome among Patients on Antipsychotic Medications in a Family Medicine Clinic

Purpose/Background: A 2019 guideline recommends initial and continuous monitoring of cardiometabolic risk factors in patients on antipsychotics. The goal of the project was to increase the percentage of patients on antipsychotics who are monitored according to the current recommendations by 50% by May 2021.

Methods: Patients prescribed antipsychotics from January 2020 to January 2021 were identified and reviewed for cardiometabolic monitoring. Patients met the recommended monitoring criteria when all four cardiometabolic risk factors (blood pressure, glucose, lipids, and weight) were assessed at the recommended time frames. Education was provided from January to May to physicians via verbal and digital education. A best practice alert (BPA) was created to flag patients in need of monitoring. The percentage of patients achieving monitoring recommendations was calculated in March and May 2021 and compared to baseline. Secondary outcomes included the percentage of patients monitored for each cardiometabolic risk factor and percentage diagnosed with hypertension, diabetes, or dyslipidemia who were uncontrolled.

Results: Four hundred and seventy-one patients were identified at baseline. The percentage of patients who had received monitoring of all four cardiometabolic risk factors was 2.12% at baseline and 3.72% in May (a 75% percent increase). At the end of the study period, the percentage of patients with monitoring for glucose, weight, blood pressure, and lipids were 18%, 10%, 20%, and 7%, respectively. The percentage of patients with uncontrolled diabetes, hypertension, or hyperlipidemia are 41%, 81%, and 98%, respectively.

Conclusions: A pharmacist-led continuous quality improvement project increased cardiometabolic monitoring in primary care patients on antipsychotics.

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EMILY EVAN

COMMUNITY-UNIVERSITY HEALTH CARE CENTER

Expanding and Implementing a Protocol to Ensure Appropriate Metabolic Monitoring in Patients on Antipsychotic Medication Therapy

Metabolic adverse effects related to antipsychotic medications have been well established as a serious consequence of their use. In 2013, a consensus panel issued recommendations for monitoring parameters and their frequency of measurement. The aim of this project was to increase compliance by 20% for clinically appropriate metabolic monitoring for patients with active long-acting injectable antipsychotic medication orders at the Community-University Health Care Center. This project included reviewing and updating the clinic protocol, identifying patients actively using long-acting injectable antipsychotics, providing education to a variety of care team members at the clinic, and performing a baseline chart review to determine the rates of monitoring. After two months, the charts of these patients were reviewed to assess monitoring progress and determine ways to make the workflow more effective and sustainable going forward. The percentage of patients with complete, up-to-date metabolic monitoring parameters increased from 0 to 23% (13 of 55 patients). In addition to this improvement, added benefits of engaging patients in their care and ensuring they were receiving adequate primary care were also seen. This project met the aim of increasing metabolic monitoring compliance by 20%, and future efforts will include exploration of ways to sustain these rates, including the potential for tools within the electronic health record.

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BRIANNA FERRELL

ESSENTIA HEALTH SERVICES

Provider Knowledge and Satisfaction with Medication Therapy Management in a Primary Care Setting

Purpose: The purpose of this study was to evaluate primary care provider knowledge and satisfaction with the Essentia Health MTM program.

Methods: This study was a 12-question cross-sectional electronic survey. The following question formats were used: select-all, scale from 0-10, Likert scale (1=strongly disagree; 5=strongly agree), and open-ended. The survey was emailed to 409 Essentia Health family medicine and internal medicine physicians and advance practice clinicians in January 2021. The independent variable was the respondents' level of direct access to MTM.

Results: Among 142 respondents (33.1% response rate), nearly half of respondents (47.2%) have had at least one positive experience with MTM, and 45.8% consider MTM services to be valuable. Respondents agree that having a pharmacist clinician as part of the primary care team has helped their patients understand their medications and make progress towards their health goals. This was statistically significant across all three independent variables (median score 4). Median scores for overall satisfaction with the MTM program and satisfaction with the communication received from a pharmacist clinician were 9 and 10, respectively, and were significantly higher for those who have made a referral to a pharmacist clinician for MTM and for those who have access to a pharmacist clinician on site (p-value 0.008 and <0.001, respectively).

Conclusions: Primary care providers at Essentia Health are satisfied with the MTM program. This survey indicates that most providers agree that pharmacist clinicians help patients progress towards their health goals. Greater direct access to a pharmacist clinician appears to correlate to greater satisfaction and knowledge of MTM at Essentia Health.

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TAYLOR GRUPA

ESSENTIA HEALTH SERVICES

Evaluation of Knowledge, Confidence, and Satisfaction with Real-Time Pharmacy Benefits Tool among Ambulatory Care Prescribers

Background/Purpose: Medication cost transparency when ordering medications helps prescribers determine the overall value of a medication and reduce non-adherence due to cost. It also aids in choosing high-value medications to best steward healthcare resources. The purpose of this study is to evaluate prescriber knowledge, confidence, and satisfaction with a real-time pharmacy benefits tool. The aim of this tool is to provide visibility of ambulatory patients' insurance coverage and co-payments of medications prior to submitting medication orders to the pharmacy.

Methods: This study was planned as mixed-methods survey of prescribers before and after the implementation of the pharmacy benefits tool. The study population included physicians, advanced practice clinicians, and clinical pharmacists who prescribe outpatient medications. The initial, 12-question survey was electronically distributed to 1775 health care providers in November 2020. Results were used to develop provider education prior to the real-time pharmacy benefits tool go live. A post-survey was planned for March 2021; however, the timeline has been delayed due to COVID-19.

Results: Among 205 survey respondents (response rate 12%), 53.7% identified as physicians, 31.2% as nurse practitioners, 13.2% as physician assistants, and 2.0% as clinical pharmacists; 32.2% practiced in family medicine, 25.4% in non-surgical specialties, 14.6% in surgical specialties, and 2.9% in emergency or urgent care settings. Participants estimated they would use the real-time pharmacy benefit tool to support decision-making when prescribing outpatient medications a median of 64% (IQR 45%) of the time. Participants rated satisfaction with resources currently available to determine medication cost to the patient, on a scale from 0 = Extremely Dissatisfied to 10 = Extremely Satisfied, with a median of 3.0 (IQR 4.0). When asked about recommendations for successful integration of the tool into daily practice, 14% of respondents desired more information, education, and training.

Conclusions: Real-time pharmacy benefits tools aid in determining overall value of a medication and reduce non-adherence to medications. The survey, distributed to prescribers of outpatient medications, indicated providers estimated using a real-time pharmacy benefits tool over 60% of the time in their practice. Additionally, participants felt more education or training was needed to successfully integrate a real-time pharmacy benefits tool into their practice.

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ANNA INSLEY

WELIA HEALTH

Implementation of a Pharmacist-Led Virtual Medication Therapy Management Service in a Rural, Critical Access Healthcare System

Purpose: Rural patients often experience factors limiting access to care. Therefore, there was an established need to be able to provide continuous medication therapy management (MTM) services to patients at Welia Health. This continuous quality improvement project shows the patient care impact of implementation of virtual MTM services in a rural, clinic based MTM program.

Methodology: Patients referred to the MTM clinic with access to a smartphone, computer or tablet were eligible to participate. Patients were voluntarily scheduled for virtual visits. At the conclusion of the virtual visit, patients were surveyed about their satisfaction. Data on number of visits and type of medication therapy problems (MTPs) was collected and compared with those of the same time period in the previous calendar year.

Results: Seventy-four MTM visits were conducted in 2020, compared to 105 visits in 2021. In-person visits made up 97% of visits in 2020, compared to 42% of visits in 2021. A total of 312 MTPs were identified in 2020, compared to 397 MTPs in 2021. Data showed pharmacists identified the same general medication related needs between in-person and remote visit types during 2021. Limited data suggest patients find this service convenient and comfortable.

Conclusion: Data suggests remote visit types meet the in-person standard of care at Welia Health. Additionally, patients found this visit type convenient and comfortable. Several barriers and benefits were identified and addressed throughout the study period. We determined remote visits positively impacted the Welia Health pharmacist's ability to provide continuous and quality care to patients.

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TIMOTHY ISDAHL

MINNESOTA COMMUNITY CARE

Ferrous Sulfate Prescribing Optimization – A Continuous Quality Improvement Project

Objective: To assess the effectiveness of multiple forms of communications in changing prescribing practices of Minnesota Community Care (MCC) providers. The project focused on increasing the percentage of new oral iron prescriptions dosed as every other day (QOD) by 100% and decreasing the percentage of new prescriptions dosed two times daily (BID) by 50% over a three month period, comparing the efficacy of multiple interventions.

Methodology: Two interventions were given to prescriber groups at the La Clinica (email intervention and EMR update) and East Side (in-person meeting and EMR update) clinics from January to March 2021. The primary outcome was analysis of the efficacy of each intervention in changing provider prescribing patterns. The secondary outcome focused on assessing the percent change in prescribing trends at each site between the start and end of the project to determine how willing providers are to change their prescribing.

Results: Both EMR and email communications were effective, leading to an increase of over 200% in QOD prescriptions at both sites and decrease in BID prescribing of 18% at East Side and 31% at La Clinica. In-person communication was ineffective, with no change in QOD prescribing.

Conclusion: Providers at Minnesota Community Care are open to receiving therapeutic recommendations from the pharmacist staff from multiple forms of communication

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ASHLEY JENSEN

NEW ULM MEDICAL CENTER

Impact of Comprehensive Medication Reviews on Hypertension Care in a Rural Primary Care Setting

Purpose: To integrate a pharmacist within the New Ulm Medical Center's (NUMC) Hypertension Clinic to perform an average of five initial comprehensive medication reviews (CMRs) per week from December 1, 2020 to March 31, 2021.

Methodology: Patients were referred to the NUMC Hypertension Clinic by primary care providers (PCP). Eligible patients were 18 years or older with seven or more medications or three or more hypertension medications. The pharmacist prospectively reviewed the Hypertension Clinic schedule and offered a CMR visit to eligible patients. The primary outcome of the study was the average number of initial CMRs completed on a weekly basis from December 1, 2020 to March 31, 2021. Secondary outcomes included the quantity and type of drug therapy problems (DTPs) identified and resolved by the pharmacist. A DTP was defined as resolved when the pharmacist recommendation was accepted by both the patient and the PCP and appropriate adjustments medication were made.

Results: The average number of initial CMRs performed per week was 2.3. The pharmacist identified 95 DTPs with 98% of them being resolved. Of the DTP types identified, the two most common were indication (45%) and effectiveness (27%). The average blood pressure reduction was (-) 20 mmHg and (-) 6 mmHg for systolic and diastolic respectively and the majority (89%) of patients had CMR as a covered benefit.

Conclusion: A pharmacist can have a positive impact on improving patient outcomes by identifying and resolving drug therapy problems, assuring an accurate medication list, and improving blood pressure control.

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SARA MAKI

PHARMACEUTICAL LEADERSHIP YEAR 2 - NORTH MEMORIAL BLAINE

Implementation of Pharmacist-Led Continuous Glucose Monitoring (CGM) Workflow for Adult Patients with Type 2 Diabetes in a Primary Care Clinic

Implementation of Pharmacist-Led Continuous Glucose Monitoring (CGM) Workflow for Adult Patients with Type 2 Diabetes in a Primary Care Clinic

Continuous glucose monitoring (CGM) systems have been shown to improve A1c control and decrease time spent in hypoglycemia in adult patients with type 2 diabetes on oral antidiabetic agents, insulin, or both. However, CGM is often not effectively employed in primary care clinics due to competing priorities, lack of familiarity, and unclear workflows.

This project uses quality improvement strategies including a driver diagram and PDSA cycles to design, implement, and measure the impact of a pharmacist-led CGM workflow. Successes include improved A1c in those who had at least one CGM interpretation by a clinical pharmacist, high patient satisfaction, and establishment of a sustainable referral source for continued clinical pharmacist services. Barriers to efficient implementation of CGM include variability in prescribing and dispensing, lack of or complicated requirements for insurance coverage, and accessibility and inconsistency of technology.

Overall, CGM is a valuable tool to improve quality of care and yield high patient satisfaction in adults with type 2 diabetes within a primary care setting. Standardized processes support increased adoption of CGM and should continue to be refined for optimal efficiency within one clinic, with the possibility of expansion across the North Memorial system.

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LAUREN MARTENS

CENRACARE – ST. CLOUD

The Clinical and Financial Impact of Continuous Glucose Monitor Use within the CentraCare Family Health Clinic

Background/Purpose: The use of continuous glucose monitors (CGMs) can provide patients with convenient testing and access to comprehensive data. Ambulatory pharmacists providing billable CGM services also provides opportunity for reimbursement in the clinic setting. The purpose of this study was to determine the revenue generated from CGM services and clinical patterns associated with CGM use.

Methodology: This study was approved by CentraCare's Institutional Review Board (IRB) and was deemed not to be Human Research by the University of Minnesota IRB. Patients included were at least 18 years old and seen by a Family Health Clinic (FHC) pharmacist for a CGM related service 7/1/20- 3/31/21. Patients without follow-up after CGM initiation were excluded. A chart review was done to collect Current Procedural Terminology (CPT) codes billed, interventions made, and A1c changes. Financial data was obtained from a report with specific information for each CPT code.

Results: A total of 30 patients met inclusion criteria, seven of which were excluded. A total of \$6719.34 was charged for the 95249 and 95251 codes, and the expected reimbursement was \$2740.94. The FHC has a high Medicaid population which may affect reimbursement rates. The most common intervention made was increasing long-acting/intermediate/premixed insulin. Of patients that were seen for both initiation and follow-up, a majority of patients did see A1c lowering to some degree.

Conclusions: Pharmacist provided CGM services generate revenue to support their role and provide opportunities to make interventions to improve patients' hemoglobin A1c.

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ANN NAGLE

PHARMACEUTICAL LEADERSHIP YEAR 1 - SMILEY'S

Improving Patient Blood Pressure Control through Self Blood Pressure Monitoring

Purpose: The purpose of this continuous quality improvement (CQI) project was to examine the impact of self monitored blood pressure (SMBP) and pharmacist intervention on blood pressure (BP) control. The aim was to increase the number of patients at goal BP by 25% over a six-month period.

Methods: Across four clinics, patients with hypertension or elevated BP readings were supplied a home BP monitor. Patients were identified and followed by a pharmacist to help manage BP over a six-month period. BP readings at the time monitors were supplied were compared to most recent readings. Those patients who had at least one intervention with a pharmacist were also identified. Subgroup analysis of those patients also diagnosed with diabetes was also performed.

Results: At the end of the study period, 121 patients were given BP monitors. Of these, 64% were found to be at a goal of <140/90 mmHg. Of the 121 monitors given to patients, 82 (68%) of the patients had at least one intervention by a pharmacist and of that group, 72% were at goal BP at the end of six months. Of the patients who also had diabetes (55 of those followed), 67% were found to be at goal. Of this subset, 45 (82%) had at least one intervention with a pharmacist and of these, 76% were at goal BP at the end of the study period.

Conclusion: SMBP helped patients to reach their BP goals, and an increased number of patients were at goal with pharmacist intervention.

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RADHIKA PATEL

MINNESOTA COMMUNITY CARE

Integrated Pharmacy Services to Support Pre-exposure Prophylaxis (PrEP) Maintenance at a Federally Qualified Health Center: A Needs Assessment

Background/Purpose: The goal of this project was to enhance adherence rates for PrEP therapy to greater than 0.8 as measured by medication possession ratio (MPR) and proportion of days covered (PDC) in an underserved patient population by May 2021.

Methodology: A survey was created to identify top barriers for PrEP adherence. Patients who were taking PrEP were contacted by phone in January 2021 and asked about the following barriers for adherence: cost, stigma associated with HIV, non-compliance, assuming that PrEP is no longer needed, side effects, laboratory monitoring, and appointment access. Patients were included if they had been taking PrEP for three months or longer within the past year. A drug usage report for FDA-approved PrEP regimens was generated from 12/01/2019-12/01/2020. Adherence rates were calculated by determining the medication possession ratio (MPR) and proportion of days covered (PDC) in April 2021 and May 2021.

Results: Eleven patients were included in the study. Four (36%) responded with each patient reporting a different top barrier, including needing an American Sign Language interpreter, having difficulties getting refills in a timely manner, experiencing side effects, and feeling uncomfortable around nursing staff when discussing HIV. The average MPR was 0.7 and average PDC was 0.6 in April 2021. In May 2021, the average MPR and PDC were both 0.5.

Conclusion: The findings from this project identified opportunities for pharmacists to enhance the quality of care for PrEP patients and help improve adherence rates.

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CAITLIN PEDERSON

FAIRVIEW PHARMACY SERVICES

Exploring Characteristics of Patients who Received Medication Therapy Management

Background/Purpose: Primary Care Transformation (PCT) aims to provide high quality, accessible, collaborative, and efficient healthcare to patients. MHealth Fairview (MHFV) began transitioning to PCT in 2018 with a goal of proactively identifying patients who would benefit from medication therapy management (MTM) services. An algorithm was later implemented to MHFV physicians to refer patients to MTM. This study aims to evaluate characteristics of patients who saw MTM pharmacists by whether or not they met algorithm criteria, post hoc, to determine if the referral algorithm may necessitate additional criteria.

Methodology: Patients seen by MTM pharmacists at the Eagan and Apple Valley MHFV clinics from May 2019-February 2020 were identified and categorized as to whether they met the newly-established referral criteria for MTM, post hoc. Multiple logistic regression examined differences between patients who met criteria and those who did not; a subset of charts was reviewed to evaluate supplementary information.

Results: Patients who saw MTM pharmacists without meeting referral criteria were more likely to be over 65 years old, have heart disease, osteoporosis, digestive issues, genitourinary issues, have experienced an injury, or take antineoplastic medications. Diabetes was indicated in the majority of MTM referrals and drug therapy problems.

Conclusion: Additional criteria based on patient age and comorbidities may be warranted within newly-established MTM referral criteria to provide greater benefit to patients and bolster their outcomes. Further studies are needed to precisely characterize that criteria, as well as determine circumstances where other care team members, such as diabetes educators, may provide greater benefit.

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SAMANTHA RUSSO

GOODRICH PHARMACY

Monitoring Safety and Efficacy of Low-Dose Naltrexone for Pain in a Community Pharmacy

Background/Purpose: The purpose of this project was to integrate a process into a community pharmacy's workflow to improve monitoring during initiation and titration of low dose naltrexone (LDN), a non-opioid alternative medication to treat pain.

Methods: Patients who received a new prescription for LDN to be compounded at Goodrich Pharmacy underwent an initial consultation with the resident. Education on LDN was provided, including mechanism of action, potential side effects, and necessity of titration. Additional monitoring and assessment included a Pain, Enjoyment, General Activity (PEG) assessment and adverse effects. Monitoring occurred before initiation and at pick up each month to monitor for efficacy and safety.

Results: Twelve patients were assessed and monitored while initiated and titrating LDN for pain. Types of pain included were fibromyalgia, joint pain, general pain, and spondylosis. PEG scores decreased for four out of twelve patients with change from baseline of 50%, 11.1%, 100%, and 44% respectively. Six patients have titrated and remain on a stable dose of LDN at the completion of this study. Side effects were reported by two patients of vivid dreams and drowsiness, neither of which required discontinuation of LDN.

Conclusion: The results of this study align with past research to conclude that LDN is a viable, safe, non-opioid alternative for pain, although sufficient time must be given for efficacy. LDN was effective at reducing PEG scores for less than half of the patients studied, many limitations exist in this research including a small sample size and short follow-up period.

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COLTON SHARP

WALGREENS/UMP BETHESDA

Creating the Foundations of a Pharmacist Administration Protocol in a Community Chain Pharmacy: A Continuous Quality Improvement Project

Mental health conditions negatively impact many people. One answer to this problem has been the use of medications, including long-acting injectable antipsychotics (LAIs). Due to adherence issues and lack of access to medication administration, their use is not as widespread as it potentially could be, despite their improvement on adherence and decrease in hospitalization rates. Minnesota legislation allows for pharmacists to inject medications for the use of mental health, but their services are not being utilized to the fullest extent. A survey was designed to evaluate provider interest and prescribing habits of these agents. The aim of this project is to determine the interest in, and feasibility of a pharmacist-led LAIA administration program. The survey was distributed electronically through the Qualtrics platform to providers, who were identified via internal records and through a local health system. Descriptive statistics of trends and answer choices were utilized. Fifteen respondents were recorded for analysis. Fourteen providers (93.3%) indicated they agreed to the notion that their patients would benefit from a medication administration program. Ten responders (66%) indicated that they do not currently prescribe LAIs, nine of which endorsed that medication administration was not offered at their practice site. The main barrier appears to be the lack of availability of administration services, indicated by 60% of respondents. When asked if they would utilize programs such as this, 13 (86.7%) suggested that they would. Thus, interest in this program appears to be present, and prescribers may utilize this service if offered to their patients.

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ELIZABETH TUPPER

ST. CLOUD VETERANS AFFAIRS HEALTH SERVICES

Optimization of Inhaled Corticosteroid Use in Chronic Obstructive Pulmonary Disease at St. Cloud Veteran's Affairs Health Care System

Background/Purpose: Reduce the number of veterans prescribed inhaled corticosteroid (ICS) therapy without concurrent long-acting muscarinic agonist (LAMA) or long-acting beta agonist (LABA) therapy for chronic obstructive pulmonary disease (COPD) by 40% by the end of April 2021.

Methodology: The project team, led by the pharmacy resident, obtained a report from the electronic health record including all veterans receiving prescription medications through the St Cloud Veterans Affairs (VA) who were receiving ICS therapy without concomitant LAMA or LABA therapy. Based on information collected from literature review, discussion with the on-site pulmonologist, and initial chart reviews, the pharmacy resident synthesized a clinical decision tree tool. This tool was aimed to assist the patient-aligned care team (PACT) pharmacists in optimizing ICS therapy. The tool was piloted and validated by an initial group of pharmacists and improvements were made prior to widespread use. PACT clinical pharmacy specialists tracked outcomes of patient encounters while using the tool.

Results: The project team identified 81 patients receiving ICS therapy without concurrent LAMA or LABA therapy. Six patients were excluded due to death. 49 patients were impacted by clinical pharmacy specialist interventions using the clinical tool created during the project. 35 chart reviews were conducted and fourteen telephone visits were completed. Of the 35 chart reviews, ten patients had therapy aligning with guidelines. Thirteen chart reviews resulted in scheduling of a clinical pharmacy specialist visit that had not yet been completed at the time of data collection. Of the fourteen telephone visits completes, twelve resulted in recommendations for therapy modifications. Nine of the twelve patients accepted recommendations. Ten of the fourteen patients will continue to follow up with the clinical pharmacy specialist. Seven of the 49 patients reviewed were found to have asthma/COPD overlap or asthma as the primary therapy-guiding diagnosis. Five of the 49 patients reviewed were found to have other pulmonary disease(s) being treated by ICS therapy. Overall, 49 patients were impacted out of the 75 living patients identified on the COPD dashboard (65%), meeting the project's goal of impacting 40% of patients receiving ICS therapy without concomitant LAMA or LABA therapy.

Conclusion: The St Cloud VA identified use of ICS therapy that does not align with GOLD guideline recommendations as an area for practice and quality improvement. Following completion of the resident's one-year quality improvement project, PACT pharmacists can utilize population management time to evaluate patients receiving ICS therapy for COPD to ensure appropriate utilization, using tools and information provided from the residency project. A clinical tool to help manage COPD patients will improve quality of care provided with the goal of decreasing the number of inappropriate ICS therapy prescriptions.

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ALEXANDRA VECCHIA

FAIRVIEW PHARMACY SERVICES

Pilot Study of a Pharmacogenetics Testing Service within Primary Care

Purpose: Design and implement a pharmacogenetics (PGx) testing service in primary care in order to enhance provider knowledge of PGx, standardize testing, and increase pharmacist involvement in result interpretation.

Methods: Education was presented to providers, pharmacists, and clinic support staff. Education focused on clinical utility of PGx testing, identifying patients that may benefit from testing, testing workflow, and interpreting results. Workflow began with providers identifying patients for PGx testing and placing an order utilizing a SmartSet within the electronic health record. Once the test was completed, a pharmacist met with each patient to explain the results and make medication changes if necessary.

Results: Thirty-four providers participated in live or pre-recorded education sessions for PGx training. Of these, 12 completed a pre-survey and 9 completed a post-survey regarding the education. Providers' confidence in identifying patients that may benefit from PGx testing increased from a median of 2.5 to 4 on a Likert scale of 1 to 5 (1 being not at all confident and 5 being extremely confident). Twenty orders for PGx testing were placed. Ninety percent of the tests were related to a mental health diagnosis. Medication changes were made by the pharmacist or suggested to the provider for 12 of the 20 patients.

Conclusions: Providers' knowledge of PGx testing was increased through live and pre-recorded education sessions, and providers expressed satisfaction with the training. Mental health concerns continue to be a driving force for PGx testing within primary care clinics, although utilization of PGx testing remains low.

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BRIDGET WILLIAMS

ALLINA HEALTH

Impact of Health-Related Social Needs in Identifying Patients for Pharmacist-Led Comprehensive Medication Reviews

Objective: Integrate significant health-related social needs (HRSNs) into Allina Health's Medication Therapy Management patient case-finding tool to increase the monthly number of patients identified for comprehensive medication review (CMR) services by 10% by May 2021.

Methodology: Medicaid-insured adult patients who completed an HRSN screening questionnaire and received a pharmacist-led CMR between June 2018 and March 2020 were included in an initial retrospective analysis to determine the impact of HRSNs on the number of medication therapy problems (MTPs) documented during a CMR. Five HRSNs were examined: housing instability, food insecurity, transportation need, interpersonal safety, and utilities need. HRSNs with a statistically significant effect on number of MTPs were incorporated into the patient case-finding tool. The number of additional patients identified with HRSN factors was compared to the current monthly patient lists generated for targeted CMR outreach.

Results: Housing instability and food insecurity had a significant impact on the number of MTPs documented during CMRs. When housing instability and food insecurity were incorporated into the parameters used to sort patients for outreach for pharmacist-led CMR, an additional 85, 2, and 26 unique patients were identified in March, April, and May 2021, respectively. On average, approximately 37 new patients were identified monthly for outreach.

Conclusions: Incorporating HRSNs into the case-finding tool identified additional patients who would benefit from CMR services to optimize chronic disease management and prevent adverse health outcomes. Current algorithms for identifying patients for CMR outreach may be inadequate in considering socioeconomic factors and their impact on individual and population health.

Postgraduate Pharmacy Resident Research Projects

COLLEGE OF PHARMACY

ATUOBINANA YIADOM

CENTRACARE – PAYNESVILLE

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

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