



2017 - 2018

Postgraduate Pharmacy Resident Research Projects

COLLEGE OF PHARMACY



UNIVERSITY OF MINNESOTA

Postgraduate (PGY-1) Pharmacy Residency Program

JOELLE AYOUB

COBORN'S PHARMACY LITTLE FALLS

Improving Quantifiable Outcomes in Uncontrolled Diabetes Patients through Pharmacist Intervention in a Rural Primary Care Setting

Type 2 diabetes is a prevalent chronic disease which requires medication adherence and dedication to diet and lifestyle changes in order to maintain control of the disease. The Minnesota D5 community measures aims to control blood pressure, lower cholesterol, maintain goal blood sugar, be tobacco-free and take aspirin daily. The Family Medical Center (FMC) in Little Falls, Minnesota has historically shown below-average ratings on diabetes care. FMC was targeting patients with uncontrolled diabetes who have been lost to follow up. The pharmacist resident contacted patients and conducted a comprehensive medication and diabetes review for 21 patients in total. The interventions included increasing blood sugar monitoring, diet and lifestyle changes, recommendation of immunizations and medication changes with approval from the primary care provider. Follow up included additional meetings with the patient, telephone calls, and A1C testing after three to six months. The average reduction in A1C was 1.3%. This study showed that by the pharmacist spending dedicated time with the patient to provide education on medications and disease states, adherence and lifestyle were improved, and therefore patient outcomes for diabetes care also improved.

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BRITTANY BAILEY

AVERA MARSHALL

Hospital to home: Implementing face-to-face discharge counseling for adult patients transitioning home following a hospital admission

The purpose of the project was to incorporate pharmacists into the discharge process to improve patient understanding of medications. The primary objective was to increase the percentage of patients that received medication discharge counseling by a pharmacist. The secondary objective was to increase HealthStream survey outcome scores for questions regarding patient understanding of medication purpose and possible side effects.

A quality improvement project was conducted at a single critical access hospital from October 1, 2017 to April 30, 2018. Patients were provided with medication discharge counseling by a pharmacist. This interaction was documented on an Excel spreadsheet and on the patient's hospital visit record as a pharmacy note. A monthly report of all patients discharged from the general medical floor was generated to determine percentage of patients counseled. Patient survey data from HealthStream was collected quarterly.

A total of 92 patients were counseled with an average session length of 10.7 minutes. The average percentage of patients counseled each month was 16%. The percentage of patients who marked "always" for "communication of possible side effects of new medicines" increased 24%. The percentage of patients who marked "strongly agree" for the statement "understood purpose of taking medications post-discharge" was 75% during October-December 2017 and 74% during January-March 2018.

Initiation of discharge counseling has been successful while also showing significant room for growth in the future. Discharge counseling improved patient's knowledge of medications, per survey results. Future direction of the project should be on further increasing the percent of patients counseled to reach the goal of at least 50% of patients. This must be accomplished before considering expansion of services to other areas such as behavioral health patients.

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COURTNEY CHRISTOPHER

GOODRICH PHARMACY

Optimizing asthma control in adults via pharmacist intervention, monitoring, and follow up

The literature has established that including pharmacists on patient care teams can help promote positive outcomes. Utilizing an existing collaborative practice agreement (CPA) to help manage adult patients with asthma at the HealthPartners Riverway Clinic in Anoka, this project looked to increase the number of patients with asthma meeting their clinical goals. This included conducting an asthma control test (ACT) and having a current asthma management plan (AMP) on file-both based upon MN Community Measurement goals. Initially, provider education and discussion was utilized to increase pharmacy medication therapy management (MTM) referrals for patients with asthma. The project expanded to include the HealthPartners Riverway asthma registry to help identify patients in need of assessment or those not achieving therapeutic goals.

The percentage of asthma patients meeting defined goals rose from 54.7% to 61.08% in five months. Although overall referral numbers were low throughout the project, pharmacist intervention was still able to reflect positive outcomes on clinical parameters. Defining the pharmacist's role in the treatment management of patients with asthma and utilizing available tools and resources to better serve these patients are both potential areas of focus for future research.

ROBERTA DUME

GUIDEPOINT PHARMACY

Pharmacist impact on glycemic control in patients with type 2 diabetes in the assertive community treatment setting

This was a retrospective, quality improvement study that assessed how effective pharmacist-led comprehensive medication review (CMR) would be on improving glycemic control as measured by a change in HbA_{1c}. The participants included in this study were patients with severe and persistent mental illness receiving behavioral health services on an Assertive Community Treatment (ACT) team. Concomitant mental health conditions included schizophrenia and bipolar disorder. All patients were diagnosed with either type 2 diabetes or prediabetes. The intervention provided was a CMR led by a pharmacist and specifically providing diabetes education during the encounter. Four patients were included in this study. Three out of the four patients showed a decrease in HbA_{1c} following the pharmacist intervention. The average decrease in HbA_{1c} amongst all four patients was 0.75%. Based on the results of this quality improvement study, there may be a benefit to pharmacists providing CMR services to patients managing comorbid psychiatric and chronic diseases.

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ELI EGGEN

MINNESOTA COMMUNITY CARE (FORMERLY WEST SIDE CHS)

Improving quality of asthma care at a Federally Qualified Health Center (FQHC) through pharmacist interventions

Introduction: Effectively managing asthma primarily involves the use of inhaled medication therapies. Pharmacists are in perfect position to improve patient outcomes in this disease state given their pharmacotherapy expertise and familiarity with treatment options and inhaler devices.

Objective: The quality initiative aimed to improve the percentage of asthmatic patients achieving a score of ≥ 20 on the Asthma Control Test (ACT) from 25% to $>60\%$ by the end of May 2018, through pharmacist interventions at a Federally Qualified Health Center (FQHC).

Methods: Asthmatic patients utilizing the FQHC's dispensing pharmacies were given an ACT form at time of prescription pick-up and offered a Medication Therapy Management (MTM) appointment if their ACT scored <20 . MTM interventions were consistent with standards of care outlined in the National Heart, Lung and Blood Institute (NHLBI) asthma management guidelines.

Results: 347 adults with asthma were included in this study and 25% (n=87) had an ACT score of ≥ 20 at baseline. Only 44 eligible patients filled a prescription during the one-month study period, but all returned their ACT forms reflecting 100% capture rate. The percentage of ACT scores ≥ 20 improved to 28.2% (n=98) by the end of the study. Three patients were seen for MTM and all had improved ACT scores at follow-up, while two had follow-up ACT scores ≥ 20 .

Conclusion: Although only minimal improvement in percentage of ACT scores ≥ 20 was observed, this study further supports the benefit of pharmacist involvement in asthma care.

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KIRSTIN GRAMITH

ESSENTIA HEALTH

Effectiveness of a pharmacist recommendation in managing potentially inappropriate proton pump inhibitors in the elderly

Objective: This study was designed to evaluate the effectiveness of a pharmacist-led deprescribing algorithm to deprescribe potentially inappropriate proton pump inhibitor (PPIs) in the elderly.

Methods: This descriptive case series study evaluated implementation of a PPI deprescribing algorithm in a single ambulatory clinic from November 1st, 2017 to February 28th, 2018. Potentially inappropriate PPIs were identified by a comprehensive medication review and discontinued via a pharmacist-led tapering initiative by the implementation of a PPI deprescribing algorithm. Effectiveness was determined by comparing initial PPI doses to those at four- and eight-weeks post taper initiation. Control of gastrointestinal symptoms was assessed every 2 weeks via telephone.

Results: Five patients were included in this study, all of whom were on a PPI deemed to be potentially inappropriate for excessive treatment duration. A clinical indication for therapy was documented in the electronic medical record for all patients, most commonly gastroesophageal reflux disease. Four of the five patients were able to stop (n = 2) or reduce the dose (n = 2) of their PPI. Four of the five patients had return of gastrointestinal symptoms. One patient experienced dysphagia during the taper and returned to the original PPI dose at eight-week follow-up.

Conclusions: A pharmacist-led initiative involving a comprehensive medication review and implementation of an evidence-based PPI deprescribing algorithm resulted in successful deprescribing of potentially inappropriate PPIs.

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KRISTIN HOWLETT

PARK NICOLLET HEALTH

Reaching Asthma Goals and Improving Health Equity: Adding Primary Care Pharmacists to the Team

Purpose: The purpose of this quality improvement project was to show an improvement in optimal asthma control of 10% from baseline across the various departments of the primary care intervention site while recognizing and closing the gap in care between those self-identified as “non-white” and “white.”

Methods: The setting of this quality improvement project was Park Nicollet Brookdale Clinic in Brooklyn Center, Minnesota. This project was a series of Plan-Do-Study-Act (PDSA) cycles which included patient outreach and engagement, care team education, workflow process improvement and direct pharmacist interventions.

Results: Four months after the inception of this project, the percent of patients meeting optimal asthma control was 55.8% (an increase of 2.1%) in adult internal medicine, 44.4% (no change) in adult family medicine, 53.0% (no change) in the pediatric department, and 50.7% (an increase of 4.4%) in children in family medicine. The gap in care between patients self-identifying as “non-white” was 2.8% in adult internal medicine, 1.8% in adult family medicine, -1.2% in the pediatric department, and 4.5% in children in family medicine.

Conclusion: The data at the completion of this project show that there is still a need for continued efforts in asthma care. Given the new momentum around this multi-faceted initiative, change management and process flow, the objective measures did not come to fruition at the completion of this project. This project reinforces the need for a collaborative team based approach to achieving optimal asthma control including using the pharmacist as a resource.

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LOGANE KIEHNAU

ALLINA HEALTH

Improving Pharmacist Efficiency by Creating a Customized Patient Data Summary Tool within the Electronic Health Record

As the volume of patient and population health data continues to grow there is an increased need for filtering of information for both clinicians and patients. Tools are available to help filter this information, but smaller groups of clinicians can struggle to customize a department or role specific tool. The objective was to create a snapshot tool that could filter patient data and display information requested by medication therapy management (MTM) pharmacists in order to reduce the time pharmacists spend reviewing patient charts by 25%. An initial survey was used to determine what patient information would be most useful to include on the snapshot. Based on these results a beta snapshot was built in the electronic health record (EHR). Another survey was used to gather feedback on the new snapshot. Additionally, both surveys asked the pharmacists to track time spent working up patients. On average MTM pharmacists were able to reduce time spent reviewing patient charts by 26% by utilizing the snapshot tool. They also reported subjective increases in efficiency and satisfaction. The creation of a custom snapshot within the EHR improved objective and subjective measures of efficiency for MTM pharmacists at Allina Health.

JACOB LENZMEIER

CENTRACARE HEALTH ST. CLOUD

Integrating Ambulatory Pharmacy Services in a Health-System Nephrology Department

The purpose of this project was to evaluate interventions made when providing comprehensive medication management for patients with renal dysfunction in the ambulatory clinic setting and an outpatient hemodialysis unit. Secondary outcomes included an estimation of potential revenue generation and patient satisfaction with the services provided. Revenue data was assessed based on Minnesota Department of Human Services (DHS) HIPAA-compliant Medication Therapy Management Services Current Procedural Terminology (CPT) codes. Patient satisfaction data utilized a condensed version of a survey published by the Health-System Alliance for Integrated Medication Management. A total of 51 patients were included in this project and 191 medication-related problems (MRPs) were identified throughout these encounters. The most common MRPs identified among hemodialysis patients were unnecessary drug therapy and adherence; while ambulatory patients had a higher incidence of dose too high and dose too low. An estimated total of \$6,516 may have been generated through these encounters over six months based on a pharmacist operating at 15-20% capacity. Among patients completing surveys, a high level of patient satisfaction was achieved. Renal disease patients are at increased risk for experiencing MRPs and are likely to derive a clinical benefit from comprehensive medication management services. These encounters are likely to achieve high levels of service warranting greater reimbursement and further supporting the sustainability of this service.

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D E M A M O H A M M E D

CUHCC

Development and Implementation of an Opioid and Benzodiazepine Taper Protocol at the Community-University Health Care Center (CUHCC)

Introduction: Opioids and benzodiazepines may have benefits in short-term use; however, when used long-term and/or in higher doses, they are associated with many risks including addiction, overdose and death. This project sought to develop and implement a team-based opioid and benzodiazepine taper management protocol in a community clinic in Minneapolis, Minnesota.

Methods: A 16-question anonymous survey was emailed to providers at the Community-University Health Care Center (CUHCC) to gauge current opioid and benzodiazepine practices and levels of experience. A literature review was completed to develop the first draft of the opioid and benzodiazepine taper management protocol and reviewed by medical and psychiatry providers to establish the final protocol.

Results: The survey was sent to 48 medical and behavioral health providers at CUHCC; 27 providers (56%) completed the survey. Of those who responded, the majority (63%) of providers indicated that 10-25% of their patients were on chronic opioids/benzodiazepines. Most providers indicated that they felt "somewhat confident" identifying patients/situations in which opioid/benzodiazepine taper was indicated (44%). Eight percent of providers indicated that they felt "not at all confident" implementing an opioid/benzodiazepine taper plan on their own whereas none reported feeling "not at all confident" with implementing an opioid/benzodiazepine taper plan through a protocol. After review of the literature of opioid and benzodiazepine taper strategies and guidelines, a draft of the Opioid and Benzodiazepine Taper Management Protocol was created, reviewed, and approved for implementation at CUHCC.

Discussion & Conclusion: An opioid and benzodiazepine taper protocol was designed using a literature review and provider survey. Implementation of the protocol is underway. Further studies are necessary to indicate whether the protocol is beneficial for providers and patients at CUHCC.

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COURTNEY MURPHY

ESSENTIA HEALTH

Pharmacist/physician co-visits may enhance interprofessional collaboration in a family medicine residency program

Interprofessional collaboration promotes cooperation and shared decision-making to create stronger patient care teams and can improve patient health outcomes. During training, healthcare providers must be prepared for team-based care. The purpose of this project was to conduct co-visits to improve first year family medicine residents' understanding of roles and responsibilities of ambulatory care clinical pharmacists to enhance pharmacist/physician collaboration in primary care. The study employed a pre/post-survey and included pharmacist/physician co-visits. Surveys assessed family medicine residents' understanding of the pharmacist's patient care process and ambulatory care clinical pharmacists' roles and responsibilities in patient care. Results showed that family medicine residents' self-rated knowledge of pharmacist roles and responsibilities increased. Family medicine residents were also able to correctly identify more services offered by a pharmacist following co-visits. All residents reported that they would be more likely to refer patients to see a pharmacist in the future. After co-visits, first year family medicine residents had improved understanding of roles and responsibilities of ambulatory care clinical pharmacists. Conducting co-visits may enhance pharmacist/physician collaboration.

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DANIELLE ODENTHAL

WALGREENS/UMP BETHESDA

Deprescribing Unnecessary Proton Pump Inhibitors

Background: Proton pump inhibitors (PPIs) have significant adverse drug reactions when used long-term, such as fractures, kidney disease, community acquired pneumonia, clostridium difficile infection, dementia, hypomagnesemia, and death, but they can be difficult to discontinue due to rebound acid hypersecretion. Additionally, gastroesophageal reflux disease (GERD) without esophagitis can effectively be treated with histamine₂-receptor antagonists.

Objectives: The primary objective of this study was to determine the rate of successful deprescribing of unnecessary PPIs in a family medicine clinic after implementation of a clinical pharmacist-initiated program that includes detailed tapering instructions, patient education, and follow-up. Potential predictors of successful discontinuation were also assessed.

Methods: Data was collected from October 1st, 2017 to March 1st, 2018. Patients were eligible if at least 18 years of age and taking a PPI for GERD without esophagitis. Each morning, the clinical pharmacist generated a report in the electronic medical record that identified patients with appointments who were currently prescribed a PPI. The pharmacist determined if each patient was a candidate for a PPI taper based on chart review. If so, a focused visit with these patients was conducted. If the patient agreed to attempt to discontinue their PPI, a tapering schedule and prescriptions were provided and a follow-up was scheduled for 8 weeks.

Results: Of patients assessed (n=126), 60% were excluded, 19% were unable to be seen, and 21% were willing to attempt the taper and discontinue their PPI. Nineteen (73%) patients who started the PPI taper discontinued completely, one (4%) was unsuccessful due to physical discomfort, and four (15%) were lost to follow-up.

Conclusion: Deprescribing long-term PPI therapy can be successful in a family medicine clinic when utilizing a clinical pharmacist-initiated program that includes detailed tapering instructions, patient education, and follow-up.

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THAKUL RATTANASUWAN

CENTRACARE HEALTH PAYNESVILLE

Pharmacist-led approach to minimize medications errors by medication reconciliation and post- discharge follow up

Background: Many hospitals already have pharmacists or pharmacy staff responsible for completing the admission medication list. Unlike their clear role in admission medication reconciliation, pharmacists have not been as recognized in the discharge process.

Objective: To measure effectiveness of pharmacy services upon discharge medication reconciliation and post-discharge follow-up.

Method: Pre-post quasi-experimental study was performed. Any patient discharged between December 1, 2017 to March 31, 2018 were included in the intervention group. Retrospective chart review of patients being discharged during December 1, 2016 to March 31, 2017 was performed as the control group as provided by site coordinators patient list.

Results: After excluding the patients who declined the service or met the exclusion criteria, we included 80 patients: 40 patients as the intervention group and 40 patients as the control group. During pharmacist-led discharge intervention, 22 medication error events and drug-related problems (DRPs) were identified from occurring during the discharge process, but the medication error rate was not significantly different between control and interventional group (OR 1.11, 95% CI 0.45-2.66). Upon follow-up visit with pharmacist, only 8 patients completed post-discharge visit with the pharmacist and reported 11 events of DRPs during the post-discharge visit. For secondary outcomes, pharmacist-led interventions decreased risk of 30-day readmission by 43% (RR 0.57, 95% CI 0.18-1.80; $p=0.518$) and estimated cost saving \$33,660 per year. Pharmacists spent an average of 15 minutes to complete discharge medication reconciliation per one patient and spent 10 minutes on counselling.

Conclusion: Pharmacists could help identify medication errors upon discharge. However, benefit on readmission rate were inconclusive.

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KRISTEN ROSS

FAIRVIEW PHARMACY SERVICES

Improving drug therapy problem resolution for comprehensive medication management transitions of care visits

Objective: This quality improvement study aims to increase the drug therapy problem (DTP) resolution rate for transitions of care comprehensive medication management (CMM) visits by enhancing communication within the electronic medical record (EMR).

Methods: Twenty-six pharmacists conducted transitions of care CMM visits utilizing three different EMR functions in order to communicate recommendations with providers. The retrospective comparator cohort utilized CC'd charts. The prospective intervention cohorts utilized telephone encounters and staff messages. Three hundred CMM visits were randomly selected for analysis, one hundred CMM visits for each cohort. The primary outcome was DTP resolution rate within 30 days of CMM visit. Secondary outcomes included: average time for DTP resolution and CMM pharmacist survey regarding perceived burden and effectiveness.

Results: The primary outcome of DTP resolution rate was 73% for CC'd charts, 93% for telephone encounters, and 97% for staff messages. The average time for DTP resolution was 2.8 days for CC'd charts, 2 days for telephone encounters and 2.5 days for staff messages.

According to the survey results, pharmacists in the staff message group responded with greater perceived effectiveness and less perceived burden than pharmacists in the telephone encounter group.

Conclusions: Staff messages and telephone encounters were associated with greater DTP resolution rates compared to CC'd charts. This enhancement in EMR communication between CMM pharmacists and providers may further the previously recognized impact of CMM in reducing hospital readmissions within the transitions of care population.

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NATALIE ROY

PHARMACEUTICAL CARE LEADERSHIP YEAR 2 – MHEALTH NUEROLOGY

Beyond motivational interviewing: introducing student pharmacists to health coaching

Submitted for publication.

HANNAH SCHMIDT

WEILA HEALTH (FORMERLY FIRSTLIGHT HEALTH)

Impact of Education and Electronic Intervention on Reducing Inappropriate Fluoroquinolone Utilization in Inpatient and Outpatient Settings of a Rural Community Health System

Background: Antimicrobial stewardship is a vital component of ensuring patient and public safety by reducing broad spectrum antibiotic use and multi-drug resistant organisms. Fluoroquinolones (FQ) in particular, are often used as first-line agents for less severe infections despite numerous warnings, presenting a threat to patient safety and public health.¹

Objective: The aim is to improve antimicrobial stewardship and patient outcomes by reducing inappropriate FQ utilization at FirstLight Health System. Specifically, to improve appropriate FQ use by 30% for pneumonia [43.2% to 56.2%], chronic obstructive pulmonary disease (COPD) [27.7% to 36%], uncomplicated urinary tract infections (UTIs) [15.4% to 20%], bronchitis [50% to 65%], and sinusitis [33% to 42.9%] for adult patients by March 31, 2018.

Methods: A comparative pre- and post-intervention retrospective review of FQs was performed. Appropriateness and total utilization of FQs was assessed for pneumonia, COPD, UTIs, bronchitis, and sinusitis. Interventions were implemented electronically through order set deprioritization, and education to health system professionals. Additionally, penicillin skin testing was implemented to reduce overall broad-spectrum antibiotic use due to false allergies.

Results: Analysis of appropriateness of FQ utilization yielded a greater than 30% improvement for pneumonia [43.2% to 58%], COPD [27.7% to 50%], uncomplicated UTIs [15.4% to 30.8%], and sinusitis [33% to 55%]. There was also a reduction in total utilization for pneumonia [39.8% to 16.3%] and COPD [14.4% to 7%].

Conclusion: Health system awareness through education and pharmacist order set availability contributed to an improvement in appropriateness of fluoroquinolone utilization, except for bronchitis, and reduced overall utilization for pneumonia and COPD.

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MORGAN STOA

CUHCC

Time Within Therapeutic Range of Warfarin Patients Managed by Pharmacists at themCommunity University Health Care Center to Assess Quality of Pharmacist Lead Warfarin Management and Identify Patients with Suboptimal Warfarin Management

Time within therapeutic range (TTR) is a measure used to determine quality of warfarin therapy. At Community University Health Care Center (CUHCC), a team of pharmacists are currently managing a panel of approximately 40-50 patients on warfarin therapy. This study evaluated the quality of warfarin management from August 1, 2016 to August 1, 2017 to identify patients who would be better served with direct oral anticoagulant (DOAC) therapy while also aiming to identify patient trends that are associated with lower TTR. Patients' TTR was determined using the Rosendaal method and patients were further analyzed into subgroups based on their Medical Home Model Tier, gender, INR goal, age, home health nurse (HHN) status. The results showed that male patients were more likely than female patients to have a TTR of greater than 65%. Patients with INR goals of 2-3 were more likely to have optimal TTR compared to patients with INR goals of 2.5-3.5, although the average TTR was higher for patients with goals of 2.5-3.5. Additionally, not having a home health nurse, older age, and a language other than English as the patient's preferred language tended to have higher TTR. This data helped identify patients who could benefit from DOAC therapy due to suboptimal warfarin management and identified trends to consider when initiating anticoagulant therapy in patients at CUHCC. This study identified that standardized training and a protocol should be developed for the management of warfarin therapy at CUHCC.

CAITLIN STRAND

MINNESOTA COMMUNITY CARE (FORMERLY WEST SIDE CHS)

Identifying Barriers to Medication Adherence - A Quality Improvement Project

The purpose of this study was to determine the medication adherence barriers that patients at West Side Community Health Services face and whether a conversation about barriers improved self-reported adherence using a quantitative scale. A patient survey was created to measure adherence using the 4-question Morisky scale (a validated tool for assessing medication adherence) and allow patients to self-identify barriers to medication adherence. Using a plan-do-study-act (PDSA) structure, the study encompassed three cycles. Twenty-four patients participated in the study. The two most identified barriers to adherence were "I take too many medications" (n = 8) and "I do not know how to take my medications" (n = 6). Morisky scores improved for patients who participated in cycles two (conversation with pharmacist) and three (conversation with provider). While more investigation is required to determine the most effective methods to address patient medication concerns at West Side Community Health Services, this project has helped uncover areas of opportunity to improve medication adherence.

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STEPHANIE SWANSON

PHARMACEUTICAL CARE LEADERSHIP YEAR 2 – NORTH MEMORIAL

Resident Perceptions of a Resilience Curriculum in a Postgraduate Year 1 (PGY-1) Pharmacy Residency Program

Background and purpose: Burnout is a growing concern among healthcare professions. Efforts to prevent burnout and promote wellbeing and resilience have been a focus of some medical training programs. Some interventions have been able to show a reduction in stress and burnout among residents, however none have looked at specific factors that are considered most valuable to residents. This study addressed the gap in literature by evaluating the promotion of resilience in pharmacy residents and identifying valuable components of an implemented resilience curriculum.

Educational activity and setting: Twenty-eight PGY-1 pharmacy residents participated in a resilience curriculum that consisted of nine sessions throughout the residency year. Residents were surveyed at four points throughout the year to gather the level of perceived value of the curriculum, the most valuable components of the curriculum, factors that would make the curriculum more valuable, and key takeaways from the sessions.

Findings: On the final survey, 90% of residents rated the resilience curriculum as highly or extremely valuable. Residents most frequently commented that a sense of community and taking time for reflection were the most valuable components of the curriculum. To improve the value of the curriculum, residents most frequently stated that increasing the opportunity to share thoughts and ideas, and more time dedicated to sessions would be beneficial. The most noted key takeaways from residents included self-care, balance, and knowing they were not alone as they moved throughout their residency year.

Discussion and conclusion: There was clear benefit of the resilience curriculum from the perspective of PGY-1 pharmacy residents. For the future, it will be beneficial to further explore the topics addressed and how this intervention has changed practice or perspective of the residents in their future careers.

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BRITTANY THELEMAN

NEW ULM MEDICAL CENTER

Integration and Contribution of Pharmacists within an Interprofessional Diabetes Care Team in a Rural Primary Care Setting

Objective: The primary objective of this study was to improve diabetes care at New Ulm Medical Center's primary care clinic through pharmacist interventions and demonstrate pharmacist contributions to patient health outcomes.

Methods: Patients of four primary care providers who were on 10 or more medications were called to meet with a pharmacist for a comprehensive medication management (CMM) visit. Patient clinical outcomes were measured as total number of drug therapy problems (DTP) identified and resolved by the pharmacist per patient, as well as classification type of DTP identified (e.g. "Needs additional drug therapy," "Dose too low," etc.). Humanistic outcomes were measured through patient survey results.

Results: A total of 32 patients met with the pharmacist for a CMM visit. There was an average of 4.2 DTPs identified per patient and 3.6 DTPs were resolved by the pharmacist. Of the DTP types identified, the three most common were "Unnecessary drug therapy" (25%), "Adherence" (19%), and "Needs different drug therapy" (16%). Patient survey results found that patients were highly satisfied with the CMM service provided by the pharmacist.

Conclusion: Polypharmacy is common in patients with diabetes. By targeting polypharmacy, pharmacists can impact patient outcomes by identifying and resolving DTPs. This approach can be utilized by clinical pharmacists aiming towards interprofessional team integration and improving patient health outcomes.

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BARBARA TRUSKOLAWSKI

CASHWISE CLINIC PHARMACY WILLMAR

Using a collaborative practice agreement along with community pharmacy data to better comply with statin prescribing guidelines.

Purpose: To utilize a Collaborative Practice Agreement (CPA) to increase statin use and better comply with current practice guidelines

Methods: CPA was presented and approved by clinic administration in November 2017. It was offered to and signed by 4 primary care providers. Patients were screened from diabetes registry, outpatient pharmacy data, and MTM appointments. Only patients qualifying for CPA inclusion and that were not on current appropriate statin therapy were included in the study

Results: At the end of the study duration, a total of 27 patients had qualified for this CPA. 15 (55%) patients were started on a statin by the clinical pharmacist or pharmacy resident. 2 (7%) patients had contraindications to statin therapy, 5 (18%) patients refused, 1 (4%) patient did not qualify for primary prevention, 4 (15%) patients were interested but did not complete lab work.

Discussion: The utilization of outpatient data, along with pharmacist run CPAs allowed in identifying an at risk population and increasing statin use.

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LAUREN TURNER

FAIRVIEW PHARMACY SERVICES

Medication Therapy Management & Care Coordination Referral Enhancement Initiative

Objective: The primary objective of this quality improvement project is to determine whether implementation of referral criteria for Care Coordination and MTM will increase the number of referrals to both service lines. Secondary objectives are to identify, via survey, if Care Coordination and MTM found the referral criteria beneficial to identify appropriate patients for referral placement, and if the educational sessions provided better understanding of each team's roles.

Methods: Referral criteria of Care Coordination and MTM were created. An educational session was presented to Care Coordination and MTM which explained the referral criteria and the respective service line roles within the health system. Referral data was collected pre- and post-implementation of the referral criteria of each service line.

Results: According to the primary objective, an improvement in MTM referral rates from Care Coordination post-implementation of the MTM referral criteria was seen. There were six referrals per month on average pre-implementation of the MTM referral criteria, and eight referrals per month on average post-implementation. There was also found to be an improvement in Care Coordination referrals from MTM post-implementation of the Care Coordination referral criteria. There were three referrals per month on average pre-implementation of Care Coordination referral criteria, and five referrals per month on average post-implementation. Per the secondary objective, survey data suggests Care Coordinators and MTM pharmacists found the referral criteria beneficial to identify appropriate patients for referral placement. *Conclusion:* There was found to be an increase in MTM and Care Coordination referrals post implementation of the respective referral criterion. This information is not considered conclusive due to a limited data collection period. The survey data suggests referral criteria are beneficial for Care Coordination and MTM utilization. Greater clarification on Care Coordination's role and referral criteria definitions as well as appropriate patient examples to refer to Care Coordination would be beneficial to improve future MTM educational sessions.