A Certified Nurse Practitioner (CNP) expanded her clinical services to include a project called Senior Transitions (ST). The CNP visited assisted living facilities in the area and conducted rounds on each of the facility’s patients participating in the ST program. The CNP had collaborated with pharmacists in her prior practice setting and wanted to continue doing so in her new practice setting. A pharmacy resident was assigned to participate in co-visits with the CNP at a local assisted-living facility and consulted on any medication-related questions regarding long-term care facility patients which were followed by the practitioner. While conducting co-visits and assessing each patient’s medication list, the resident identified and tracked drug therapy problems. Data collected from September 26, 2018 to April 15, 2019 were reviewed, the number of drug therapy problems resolved for patients seen in the previous 30 days, with the aim to resolve 90% of identified drug therapy problems. With the goal of the study evaluating the impact of pharmacist intervention on medication lists and resolved drug therapy problems, a total of 36 patients were assessed with 89% of drug therapy problems (N=127) being qualified as resolved by April 15, 2019.
Demonstrating the Value of Comprehensive Medication Management Services to Stakeholders

The purpose of this research is to identify and describe the key considerations for pharmacist administrators to attain knowledge about and utilize when demonstrating the value of pharmacist-delivered comprehensive medication management (CMM) services in the ambulatory care setting to stakeholders. Qualitative interviews of expert pharmacists with established and successful CMM practices were conducted. Four core themes and nine sub-themes with key consideration statements were identified during the interviews. The leading sub-themes with the most discussion content were Health System Leaders, Measures: Financial and Collaboration: Providers with 26%, 21.2% and 19.9% content coverage during the interviews, respectively. Future research will include refined description of the key consideration and determination of the relative importance.
Impact of Peak Inspiratory Flow Device on Medication Therapy Management Clinical Decision Making in Asthma and COPD: A Pilot Study

**Background:** A challenge of uncontrolled asthma and chronic obstructive pulmonary disease (COPD) is proper inhaler technique. Drug delivery actuation and inhalation is dependent on inhaler coordination. Poor technique is associated with poor outcomes. Medication therapy management (MTM) pharmacists can be an integral member in improving asthma and COPD management.

**Purpose:** The objective of this study is to identify the impact of incorporation of the InCheck DIALTM, a peak inspiratory flow (PIF) measurement tool, on clinical decision making in MTM practice for asthma and COPD management.

**Method:** In the questionnaire study, pharmacists completed a post-implementation survey after assigned to incorporate the InCheck DIALTM into asthma and COPD visits. The primary outcome was number of pharmacists who found the device improved asthma and COPD management. Secondary measures included PIF rate, visit outcomes, barrier and duration to use, and pharmacist desire to have the device in practice.

**Result:** The study included 16 primary care sites and 13 individual MTM pharmacists and data was collected from December 1, 2018 to April 15, 2019. The device was utilized in 21.4% of asthma and COPD visits. In the survey, 38.5% of pharmacists agreed, 53.8% were neutral, and 7.7% disagreed the device improved asthma and COPD management. The desire to have the device for future asthma and COPD visits was agreed upon by 69.2% of the pharmacists.

**Conclusion:** The majority of the pharmacists did not find the InCheck DIALTM to improve asthma and COPD management. However, majority of the pharmacists reported desire to continue utilizing the device.
Is an Additional Pharmacist Consultation Call at Two Weeks for Antidepressant Medications More Effective in Improving Adherence?

**Objective:** The purpose of this study is to determine if the implementation of an additional New to Therapy (NTT) call at two weeks for antidepressant medications will improve patient adherence as demonstrated by continuous refills within six months.

**Methods:** This prospective study was conducted at four different community pharmacies that are a part of the same retail chain. Data was collected from a computerized dispensing system from October 2018 to April 2019. The design included two control pharmacies and two intervention pharmacies. The control pharmacies continued the standard practice of calling NTT patients within a few days of picking up their new antidepressant medication. The intervention pharmacies performed all aspects stated in the control pharmacies with the addition of a second follow-up call two weeks after the new antidepressant was dispensed by utilizing a newly created “Two Week Follow-up Script.” The primary outcome was antidepressant therapy persistence between the patients in the control stores versus intervention stores within the six month timeframe based on refill history.

**Results:** The intervention group showed a higher antidepressant therapy persistence of 77.2% compared to the control group within the six month refill timeframe. Additionally, the intervention group was more likely to have continuous refills (defined by more than one refill) of an antidepressant medication (79.2%) than the control group (51.4%). The average PDC for the control group (66.9%) was lower than the average of the intervention group (78.9%) by 12.0%.

**Conclusions:** Patients were more likely to continue antidepressant therapy when a second follow-up call was implemented.
George Cullina
Cashwise Clinic Pharmacy Willmar

Using a Collaborative Practice Agreement and an Automated Clinical Program to Increase Naloxone Access for Appropriate Purposes

**Purpose:** To implement a process of identifying appropriate patients for naloxone rescue therapy at Cash Wise Clinic Pharmacy in Willmar, MN with a goal of successfully dispensing naloxone to 90% of identified patients by May 2019.

**Methods:** The study began with the creation of an automated clinical process within the pharmacy’s electronic management system to identify appropriate patients, as defined by the Center for Disease Control’s (CDC) recommendations, for naloxone use. This process flagged patients that would likely be at an increased risk of an opioid overdose. The pharmacist would then screen the patient’s profile, and if appropriate, discuss naloxone rescue therapy and dispense it to the patient.

**Results:** The automated process identified 36 individuals who met the criteria for being at an increased risk for opioid overdose. Of these 36 patients, 33 (92%) accepted naloxone while three (8%) patients refused.

**Conclusion:** This study demonstrated that community pharmacies can have a major role in increasing patients’ access to naloxone rescue therapy.

Elise Durgin
Goodrich Pharmacy

Community pharmacy implementation of pharmacogenetic testing for mental health

Pharmacogenomics has the potential to improve outcomes related to mental health medications by reducing adverse drug events and increasing drug efficacy through selection and dosing based on a patient’s genetic makeup. Community pharmacists are uniquely positioned to provide this innovative care to patients, as accessible members of the healthcare team. While evidence-based guidelines exist for the use of several mental health medications based on a patient’s pharmacogenetic makeup, little guidance exists for applying a pharmacogenetic testing service in a community pharmacy setting. The goal of this project was to determine the feasibility of implementation of a community pharmacy-based pharmacogenomic testing service, and to identify the barriers that exist to providing this service to patients. In an eight-month implementation project, a total of thirteen patients were provided pharmacogenetic testing services and test interpretation as a part of a medication therapy management appointment. Referrals were generated by creating partnerships with mental health providers in the community. A total of 26 drug therapy problems were identified. Significant barriers to implementation and sustainability were identified throughout the data collection period. Though pharmacogenetic testing may be beneficial to patient care, current payment models do not make it a sustainable service for the community pharmacy setting.
Navigating Change in Primary Care: Update in Chronic Obstructive Pulmonary Disease Management

Chronic obstructive pulmonary disease (COPD) can lead to significant morbidity and mortality, and is associated with healthcare costs due to exacerbations and hospitalizations. Due to the negative impact on patients and healthcare systems nationwide, COPD has been identified as a focus for quality improvement efforts. The focus of the Global Initiative for Chronic Obstructive Lung Disease (GOLD) 2019 guidelines has shifted to treatment based on symptoms, which highlights the need for a validated symptom-based tool, such as the COPD Assessment Test (CAT). There is now a need for implementing the CAT into clinic settings in order to optimize management of COPD. The aim was to determine symptom control for at least 50% of patients with COPD via CAT completion at the CentraCare Health – River Campus Internal Medicine Clinic by June 2019. All patients with a diagnosis of COPD were chart reviewed for spirometry diagnostic criteria. Spirometry results were evaluated via chart review for post-bronchodilator FEV₁/FVC ratio < 0.7 as required for diagnosis. The CAT was administered via telephone by a pharmacist and patients with a CAT score ≥ 10 were referred to a pharmacist for comprehensive medication management. The secondary purpose of this study was educating providers on the 2019 GOLD guidelines. A survey was administered following the training to assess for changes in provider knowledge. Of 98 CAT scores completed, 60 patients reported CAT scores ≥ 10 and were offered a referral to a pharmacist. Provider education occurred across two clinics with an increase in knowledge post-education. Implementation of the CAT score and continual provider education are important steps to improving management of COPD in ambulatory care settings.
Benjamin Hierlmeier  
Park Nicollet Health  

Identifying Appropriate Patients for Comprehensive Medication Management Services in a Population Health Model  

Comprehensive medication management (CMM) services can be of tremendous benefit to patients and healthcare organizations seeking to reduce cost of care and improve outcomes, but only when the optimal patients are being seen for CMM. This quality improvement project aimed to increase the percentage of patients targeted appropriately for CMM to 80%, through the implementation of an improved selection process.

A novel CMM risk tool was developed to appropriately target and stratify patients for CMM services. The most recent version of the tool uses 20 criteria with data from insurance claims and the electronic health record to assign points. A risk score was calculated for 147,268 patients and chart reviews for 3 primary care clinics were used to assess the percent of targeted patients who were appropriate.

Baseline assessment showed that the prior targeting process resulted in 38.8% of patients targeted for CMM being appropriate. After implementation of the risk score, chart review of targeted patients shows that the proportion of appropriate patients is 79.7%. Post-CMM visit analysis shows that patients targeted by the risk score tool had medication therapy problems identified 88.2% of the time.

Stephanie Keller  
Coborn’s Pharmacy Little Falls  

Implementation of a standardized electronic referral process for comprehensive medication management services  

Current literature has suggested that comprehensive medication management (CMM) services may lower healthcare costs, improve therapeutic and safety outcomes, and increase patient satisfaction. There was previously no standardized process for providers and other staff members at St. Gabriel’s Health Family Medical Center (FMC) to refer patients to the clinical pharmacist for CMM services. The purpose of this study was to improve the utilization of the clinical pharmacist by implementing the use of a standardized electronic referral process. The goal was to increase referrals from two per month to six per month by May 2019. Providers and other staff members identified patients that would benefit from CMM services. Referrals were placed using an electronic referral in EPIC, which was routed to the pharmacist via an in-basket message. The criteria used to determine eligibility and proper utilization of the electronic referral was communicated through various educational materials and training sessions. The results showed that the number of CMM referrals increased with the implementation of this standardized referral process with the final month of data meeting the goal of six referrals per month. Additional investigation for the benefits of automatic methods, such as alerts or reminders for providers, may support sustainability.
SARAH MEDINA
MINNESOTA COMMUNITY CARE (FORMERLY WEST SIDE CHS)

**Igniting a Fish Oil Deprescribing Initiative at Minnesota Community Care**

Over the past year, there have been multiple, well-designed studies published evaluating the efficacy of fish oil supplementation in patients for the primary prevention of cardiovascular disease (CVD). All studies concluded that fish oil supplementation did not produce any clinical or statistical benefit for primary prevention of CVD. Despite these new findings, fish oil continues to be prescribed on a regular basis at West Side Community Health Services (now known as Minnesota Community Care). The purpose of this project was to evaluate if giving an inservice presentation on fish oil, would affect prescribing practices by decreasing the number of prescriptions prescribed for fish oil. On February 7, 2019, a 10-15 minute presentation outlining current literature on the efficacy of fish oil was delivered to prescribers. Results from three randomized controlled trials were presented. Fish oil prescribing practices were evaluated 3 months leading up to the presentation and then re-evaluated for a period of 3 months after the presentation was given to determine if the frequency of new fish oil prescriptions were reduced. Despite this intervention, there was a rise in the number of fish oil prescriptions being written during the months of March through May 2019. Alternative strategies to decrease fish oil prescribing should be further investigated.
KIRSTEN MILLER
WELIA HEALTH (FORMERLY FIRSTLIGHT HEALTH)

Treatment of Perioperative Pain in Patients Receiving Medication-Assisted Treatment (MAT) for Opioid Use Disorder (OUD)

Background: In current practice, there is not a standardized treatment protocol guiding practitioners to provide optimal perioperative pain management in patients receiving medication-assisted treatment (MAT) with buprenorphine, methadone, or naltrexone for opioid use disorder (OUD). As the patient population receiving MAT is growing, a treatment algorithm to guide therapy is warranted.

Objective: The goal of this quality improvement project is to develop a tool that may be implemented as a protocol and utilized in management of perioperative pain in patients receiving MAT.

Methods: A survey was developed and distributed to the providers of FirstLight Health System to evaluate baseline knowledge regarding pain management in patients receiving MAT, to gauge current involvement in pain management in this population, and assess provider opinion of the relevance of this project. Published data was then researched regarding perioperative management of pain in the presence of MAT, in order to develop a treatment algorithm.

Results: Analysis of the survey resulted in concern that appropriate management of perioperative pain in patients receiving MAT is not fully understood health system-wide, while provider involvement in treatment of this patient population is increasing.

Conclusion: Appropriate treatment of perioperative pain in patients receiving MAT is not universally understood, so implementation of an algorithm providing guidance would be beneficial.
HALEY PALS
GUIDEPOINT PHARMACY

Implementing Routine Monitoring Strategies for Tardive Dyskinesia in an Outpatient Mental Health Center

Tardive dyskinesia (TD) is a movement disorder characterized by involuntary, repetitive movements of the orofacial region and extremities. Antipsychotic medications that block dopamine D2 receptors can lead to TD, with the first generation of antipsychotics having a higher prevalence than second generation. It is important to monitor patients for movement disorders while on these medications utilizing tools such as the Abnormal Involuntary Movement Scale (AIMS), Dyskinesia Identification System: Condensed User Scale (DISCUS), and the Simpson-Angus Scale (SAS). With the production of new medications to treat TD, the AIMS has emerged as the preferred method of monitoring in clinical practice. This study was completed at a community mental health center where there is no established method of this monitoring and limited resources for integrating screening tools into the electronic health record. The goal of this project is to improve use of an electronic AIMS form from no implementation (0%) to full implementation into the EHR (100%) by April 2019. To understand the current utilization of TD screening tools, a retrospective chart review of patients being prescribed antipsychotics revealed 15.6% had a current DISCUS and no patients had a documented AIMS or SAS score. Discussion with providers led to an agreement to use AIMS going forward and education sessions will be coordinated to ensure they are comfortable with this assessment. Tools to assist providers with consistent documentation will be implemented such as automatic care alerts, electronic AIMS forms, and education on monitoring and treatment algorithms for TD.

SWETHA PRADEEP
CUHCC

Therapeutic drug monitoring of lithium and valproate: the development and implementation of a new clinical protocol

The primary goal of the project was to develop a standardized, interprofessional protocol for appropriate and timely lithium and valproate monitoring in patients of Community-University Health Care Center (CUHCC). To create a successful protocol, another goal was to identify the perceived value of therapeutic drug monitoring, the learning needs of providers, and the existing workflows that could support therapeutic drug monitoring. A chart review of patients currently prescribed lithium or valproate between December 7, 2017 and December 7, 2018 was completed. The chart review identified the number of patients taking these medications, the current frequency of completed monitoring labs, patients’ preferred languages, patients’ primary insurance, and comorbidities present in patients taking these medications. Another aspect of the project was to review current attitudes and behaviors for therapeutic drug monitoring among providers at CUHCC. A survey was completed by both medical and psychiatry providers. This survey revealed barriers to completing recommended monitoring labs and tools to assist with therapeutic drug monitoring. Finally, current practice guidelines were reviewed. All of this information was synthesized to create an interprofessional protocol that will be adopted by clinical staff at CUHCC to ensure safe and effective medication use for patients.
ANJOLI PUNJABI

PHARMACEUTICAL CARE LEADERSHIP YEAR 2 – FUHN

Establishing Operational Benchmarks to Support Maturation of Comprehensive Medication Management Practice in Ambulatory Care

The process of benchmarking in healthcare can be defined as “a continuous process by which an organization can measure and compare its own processes with those of organizations that are leaders in a particular area”. \(^1\) Benchmarking tools are often created based on voluntary and active collaboration among several organizations to create a spirit of competition and apply best practices. \(^2\) While operational benchmarks have been established to compare industry indicators for physicians in family medicine, pharmacists in a dispensing role, and many other sectors of healthcare, the operational benchmarks for CMM practice have not yet been established on a national level. Three focus groups were conducted with CMM program managers to identify the operational benchmarks that are most important to the practice community for growth and sustainability of CMM services. The identified themes were utilized to create a survey to collect operational benchmarking data on a national scale. The results from the national survey will be utilized to create an online resource to allow practices to compare their operational performance to those of top performers in order to promote efficiency and maturation of their practice.
Community pharmacists’ response to anaphylaxis: an assessment of epinephrine administration knowledge

*Background:* Essentia Health community pharmacies have increased their efforts in vaccinating patients. As vaccine providers, pharmacists are urged to have procedures in place for quick and accurate anaphylaxis management. Epinephrine auto-injectors have become a scarce and costly resource in pharmacies. Therefore, epinephrine vials may be a valid option in case of vaccine-induced anaphylaxis in a community pharmacy setting. The study sought to identify baseline confidence and knowledge of pharmacists with epinephrine vial administration and assess the impact of training.

*Methods:* Fifty-one community pharmacists from a health system were surveyed regarding baseline knowledge and confidence of epinephrine vial administration. A pharmacist resident then conducted a training session at a required all-pharmacist meeting. A post-survey was sent out afterward to analyze the impact of epinephrine training on confidence and knowledge of epinephrine administration.

*Results:* Self-reported baseline confidence among all respondents was low. Paired samples found the education session increased confidence of using the epinephrine vial formulation. The pre-survey revealed pharmacists were knowledgeable about anaphylaxis and epinephrine excluding maximum and total doses. Additionally, the paired samples post-survey revealed a positive trend for knowledge of symptoms of anaphylaxis. After the education session pharmacists were able to identify more correct counseling points to be shared with the patient (p=0.009).

*Conclusions:* When administering vaccines pharmacists should be educating patients on common acute reactions, signs and symptoms of anaphylaxis, and what to do in the event of delayed severe allergic reaction. Comments reported on the surveys may help to better train future hires and provide resources for current community pharmacists.
Expansion of focused anticoagulation visits to comprehensive visits to increase disease states seen by pharmacist in primary care clinic

Clinical training and specialty board certification have elevated the pharmacist’s role in delivering quality patient care through comprehensive medication management (CMM). CMM is a pharmacist-led, patient-centered approach to optimizing medication use and improving patient health outcomes in team-based care settings. Integrating pharmacists into clinical roles increases patients’ accessibility to medication experts; however, more CMM-focused studies are needed to prove the advantage of having a pharmacist as an integral part of the healthcare team. Two clinical pharmacists have a collaborative practice agreement in the primary care clinic at Avera Marshall Regional Medical Center (AMRMC) that allows for warfarin and diabetes management. A process was implemented that aimed to increase the number of disease states seen by the post-graduate year one (PGY1) pharmacy resident by 150% from January 2019 to March 2019. This process evaluated already-established warfarin patients more comprehensively. Using January 2019 as a baseline data collection month, a goal was set to comprehensively evaluate one to two already-established warfarin patients each week throughout the month of March 2019 to allow for comparison of disease states evaluated after implementation of CMM. The primary outcome measure was the number of disease states assessed by the PGY1 pharmacy resident. This process generated an 83% increase in the number of disease states evaluated by the PGY1 pharmacy resident during already-established warfarin patient interactions from January to March 2019. While this did not meet the goal of increasing the number of disease states evaluated by 150%, this process was still successful at overall increasing the number of disease states seen by the PGY1 pharmacy resident.
Improving Care Transitions with Comprehensive Medication Management

Purpose: Reducing preventable hospital readmissions is a priority at the New Ulm Medical Center (NUMC) to improve patient care and lower costs. The purpose of this project was to integrate pharmacists into the transition of care process and prevent readmissions at NUMC. The goal was to resolve 85% of the drug therapy problems (DTPs) identified during a post-discharge comprehensive medication management (CMM) visit.

Methods: Patients hospitalized at NUMC with a primary or secondary diagnosis of chronic obstructive pulmonary disease or congestive heart failure, and discharged to home, were scheduled for a post-discharge CMM visit. The pharmacist reviewed medications for appropriateness, efficacy, safety, convenience, and attempted to resolve all DTPs identified at the CMM visit. The primary outcome was DTP resolution rate while secondary outcomes included hospitalizations or emergency department (ED) visits within 30 days of discharge.

Results: From February through April 2019, nine patients met with the pharmacist for a CMM visit while four patients referred to this service declined. There was an average of 18 medications and two DTPs identified per patient, 84% of which were resolved by the pharmacist. None of the patients with a CMM visit had a hospitalization or ED visit within 30 days of discharge. Two of the four patients who declined CMM had an ED visit within 30 days of discharge.

Conclusion: Pharmacists were successfully integrated into the post-discharge transition of care process at NUMC. Initial results are promising but more data is needed to determine the impact of post-discharge CMM visits.
Background: Missed appointments are a common problem in health care. No show rates and uncompleted appointments for referred patients affect outcomes and productivity. This includes missed and uncompleted appointments among comprehensive medication management (CMM) visits that pharmacists provide. This study aims to improve completed CMM appointment rates.

Methods: This quality improvement project’s aim was to increase completed visit rates from CMM referrals and increase CMM completed visit rates after no show appointments from December 2018 to February 2019. The primary outcome measure was completed CMM appointments from newly referred patients. A secondary measure of completed CMM appointment rate after a no show appointment was also measured.

Results: The primary outcome measure of completed CMM appointment rate was six times more likely with a block intervention compared to sending a letter (odds ratio 6.0; 95% confidence interval [CI], 1.581 to 22.766). Block intervention was a blocked time slot on the pharmacist’s schedule when the patient would be in the clinic next for the pharmacist to attempt to speak to the patient regarding a CMM visit. The primary outcome measure of completed CMM appointment rate was six times more likely via a MyChart message intervention compared to sending a letter (odds ratio 6.0; 95% confidence interval [CI], 1.755 to 20.516).

Conclusion: Patients who were referred for CMM and unable to be reached initially by scheduling coordinators were more likely to schedule and complete a visit if the pharmacist was able to block time on their schedule to speak to the patient when in clinic compared to sending a referral letter. Sending a patient a MyChart message increased completion rates compared to sending a letter.
STEPHANIE WALEK  
ALLINA HEALTH  
Impact of Medication Therapy Management (MTM) on Internal Prescription Capture at a Large Self-Insured Health System  

Allina Health employees are allowed to choose between one of three medical benefit designs that come with different financial, clinical and convenience benefits for beneficiaries. Employees receive several cost, care, and convenience advantages when they choose to fill their prescriptions with Allina Health Pharmacies (AHPs). Despite these offered advantages, the internal prescription capture rate for employees who had a Comprehensive Medication Review (CMR) in 2017 was 67%. The goal of this project is to improve the percentage of employees with Allina Health insurance, seen by the Medication Therapy Management (MTM) pharmacist team for a CMR, who take advantage of their benefits by filling medications with AHPs by 10% from December 1, 2018 through March 31, 2019. A secondary goal is to increase pharmacy revenue. When meeting with employee patients for CMRs, the MTM pharmacist team reviewed their retail pharmacy benefits and, where applicable, assessed whether they would like to switch pharmacies. MTM pharmacists then created an intervention in the medical record to track whether prescription capture rate improved for this population. A total of 101 interventions were documented, and the baseline capture rate for this cohort increased from 69% to 96%. A total of 58 prescriptions were transferred into AHPs, which brought an additional revenue of $1050 to the health system. Reviewing retail benefits with Allina Health Employee Plan (AHEP) patients improved prescription capture and increased revenue for Allina Health.

RACHEL WILHELM  
MINNESOTA COMMUNITY CARE (FORMERLY WEST SIDE CHS)  
Establishing medication reconciliation workflow in an ambulatory care clinic  

The aim of this residency project was to create the most efficient and effective process for medication reconciliation for Minnesota Community Care clinics by May 1st, 2019. The PDSA (Plan-Do-Study-Act) method was utilized and 3 distinct cycles took place. The first cycle was one week in duration and occurred at the Westside Clinic. The second cycle was also one week in duration and took place at the Eastside Clinic. Both of these cycles utilized medical assistants, registered nurses, and a pharmacist to conduct medication reconciliation. The third cycle differed greatly and consisted solely of pharmacists reconciling medication lists for patients that were recently discharged from the hospital. Planning, training, communication, technology, and team member agreement were important themes that emerged with each cycle. It was found that the medication reconciliation training for medical assistants and nurses must take place within a time frame of less than one month prior to incorporating it into their responsibilities. It was also found that documentation in the electronic medical record appears to be more efficient and accurate than paper documentation.