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CPNP 2022 Annual Meeting Poster Abstracts

Research Trainee Award Finalists

Practical Approaches to Antidepressant-Associated QTc Prolongation: A Review of Cases

Brittany Weger, PharmD Candidate; Ali Goforth, PharmD Candidate; Alexandra Cunha, PharmD Candidate; Shaina Schwartz, PharmD, BCPP; Julie Cooper, PharmD, BCPS, BCCP

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Type: Original Research. **Background:** Individuals with depression are at an increased risk of cardiovascular disease, which may be further complicated by antidepressant-associated QTc prolongation and Torsades de Pointe (TdP). Currently, there is no consensus guidance on QTc calculation, risk assessment, or post-incident management for such cases. **Objectives:** This review investigates documented cases of antidepressant-associated QTc prolongation and TdP to understand clinical decision-making in these patients. **Methods:** A structured literature search was conducted to identify case reports describing QTc prolongation or TdP in individuals taking an antidepressant. Reports published between January 2000 and March 2021 were eligible for inclusion. Articles describing patients with antidepressant overdose or omitting a diagnosis of depression, baseline QTc measurement, or maximum QTc measurement were excluded except in the event of sudden cardiac death outside the hospital setting. Bazett, Fridericia, Framingham, and Hodges formulas were used to calculate QTc. Mayo, Tisdale, and RISQ-PATH tools were used to calculate risk scores. **Results:** A total of 11 case reports met criteria for inclusion. The average patient was a 53.5-year-old female taking an SSRI with baseline and maximum QTc measurements of 420 msec and 535 msec, respectively. Four patients experienced TdP. The three risk scoring tools agreed in 4/11 (36%) cases. For the remaining 7/11 (64%) cases the Tisdale and RISQ-PATH scores identified risk as "low" whereas the Mayo score identified risk as "high". Only one case specified the QT correction formula utilized. The most common intervention was to stop the antidepressant (45%, 5/11). **Conclusions:** Available case reports demonstrate a lack of consistency regarding QT correction formula used, risk evaluation techniques, and clinical management strategies. The Mayo risk scoring tool was the most conservative while Tisdale was the least conservative. Future research in this area can seek to develop a standardized approach for antidepressant-associated QTc prolongation in patients.

Antidepressant Prescribing Patterns in Transgender Individuals Diagnosed With Gender Dysphoria and Mood or Anxiety Disorders

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Type: Original Research. **Purpose:** Transgender adults are highly stigmatized members of society. Consequently, they are significantly more likely to be diagnosed with mood or anxiety-related disorders compared to cisgender individuals. Research efforts directed towards reducing adverse mental health outcomes are warranted. The purpose of this study was to investigate antidepressant prescribing patterns between gender identities and age groups. **Methods:** In this cross-sectional study, antidepressant prescribing data were collected from adults diagnosed with gender dysphoria (GD) during a 17-year timeframe between January 1, 2005 and October 31, 2021. Eligible patients had a concomitant diagnosis for mood or anxiety-related disorder at the time of their GD diagnosis. Patients with bipolar or obsessive-compulsive disorder were excluded. The primary outcome was to compare classes of antidepressants and number of prescriptions at the time of GD diagnosis between transgender females (MtF), transgender males (FtM), and non-binary (NB) individuals. Secondary outcomes included age group differences in prescribing patterns and gender identity differences in prevalence of comorbid psychiatric illnesses. **Results:** Of 131 patients who met inclusion criteria, 43% (n = 56) were identified as MtF, 41% (n = 54) as FtM, and 16% (n = 21) as NB. The most common concomitant diagnoses were mood disorders (n = 96, 73%) and generalized anxiety disorder (GAD) (n = 67, 51%). Approximately 37% (n = 48) of patients did not have an active antidepressant prescription at the time of GD and mood and/or anxiety disorder diagnosis. There was no significant difference in number of psychotropic prescrip-

tions between gender identities ($P = .357$) or age group ($P = .378$). However, MtFs were prescribed bupropion at significantly higher rates than FtM and NB patients (16%, 11%, 0%, $P = .046$). Moreover, the prevalence of GAD was significantly greater among FtMs ($P = .044$) and those $\leq$ 40 years old ($P < .001$). **Conclusions:** Although there was no observable difference in the number of antidepressant prescriptions between gender or age groups, a staggering 37% of patients were not prescribed any antidepressants at time of their GD and mood and/or anxiety disorder. This serendipitous finding elucidates a potential gap in mental healthcare treatment among transgender adults. The study presents a potential opportunity for clinicians to address these health disparities faced by the highly marginalized population of transgender individuals.

Innovative Practices Award Finalists

Describe and Evaluate the Role of a Clinical Psychiatric Pharmacist in a Gender Health Program

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Type: Innovative Practices. **Background:** According to the 2015 US Transgender Survey, respondents reported experiencing serious psychological distress and attempting suicide at a rate significantly higher than the general population (39% vs 5% and 40% vs 4.6%, respectively). Identified barriers of care included costs of service, fear of being mistreated, and being refused care entirely. Psychiatric pharmacists provide a unique opportunity to deliver comprehensive care to these stigmatized individuals. To the best of our knowledge, there is no current literature describing the impact of a psychiatric pharmacist in an interdisciplinary gender health program. **Description of Innovative Service:** The Gender Health Program was established in March 2016 and provides primary and specialized care to transgender and nonbinary patients of all gender identities. A board-certified psychiatric pharmacist joined the team in May 2020 through a collaborative practice agreement. The pharmacist conducts patient interviews, medication management, laboratory monitoring, referrals to other healthcare providers, and a safe space for patients. Appointment types include mental health assessment and screening, mental health medication management, hormone therapy assessment and adjustment, and human immunodeficiency virus pre-exposure prophylaxis. Referrals to the pharmacist are made by the psychiatrists, psychiatry residents, family medicine providers and residents, a family medicine nurse practitioner, and mental health therapists. **Impact on Patient Care:** The pharmacist sees patients independently up to 15 hours per week. The clinical psychiatric pharmacist has seen a total of 94 patients, with a total of 158 appointments from May 2020 to December 2021. Patients ranged from 19 to 57 years of age. Depression and anxiety were the principle diagnosis discussed with patients (78% and 69%, respectively). Further data analysis will include baseline demographics, appointment details (eg, duration, medication changes, laboratory orders), and billing information. **Conclusion:** The gender diverse population experiences significant psychological distress and stigmatization in and outside of the healthcare setting. Given the high rate of depression, anxiety, and other mental health conditions, psychiatric pharmacists can provide positive health outcomes related to mental health assessments and medication management for this community. Dissemination of the details and impact of this innovative service will provide other institutions a roadmap to reproduce this service in their own health systems.

Optimizing the Role of the Clinical Pharmacist Practitioner in Collaborative Buprenorphine Management to Improve Rural Access

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Type: Innovative Practices. **Background:** Despite the well-known morbidity and mortality benefit of buprenorphine for opioid use disorder (OUD), prescribing restrictions minimize widespread utility and disproportionally affect rural areas of the country. At a rural VA hospital, the outpatient mental health clinic had only two X-waivered psychiatrists to manage an increasing number of patients on buprenorphine. Psychiatric clinical pharmacist practitioners (CPP) had successfully helped the facility close the psychiatrist shortage gap before, thus an innovative collaborative approach was designed to expand CPP services into buprenorphine management. **Practice Description:** In June of 2020 they hired a psychiatric CPP to treat substance use disorders under a scope of practice with prescriptive authority. Existing buprenorphine patients were transferred to the CPP, where they took over primary management of all mental health conditions, medications, referrals, and lab monitoring. Patients see the X-waivered psychiatrist at least annually but are discussed after each CPP visit and buprenorphine prescription orders are placed for the psychiatrist's signature. New patients wishing to start buprenorphine are seen by the CPP in urgent access appointments and then staffed with an available X-waivered psychiatrist.

Impact on Patient Care: From date of hire to December 31, 2021 the CPP has cared for over 80% (n = 53) of the facility's patients with OUD, of whom 34 received buprenorphine and the remaining received extended-release naltrexone injection or no longer needed medication. Those requesting urgent access appointments (n = 13) for buprenorphine assessment were on average seen same-day, compared with historically an average of about 6 days. Not all patients seen for assessment were appropriate for buprenorphine, representing an opportunity to avoid unnecessary psychiatrist intakes and prevent delays in care as wait time is currently 13.5 days. Psychiatrist time is saved by the CPP managing these buprenorphine patients, which allows them to focus on more complex patients or those needing diagnostic clarification. **Conclusion:** A collaborative approach to buprenorphine management utilizing a psychiatric CPP as the primary provider improved access to care at this rural facility. While collaboration decreases time burden for X-waivered psychiatrists, care could be more efficient and timely if a CPP could independently prescribe buprenorphine.

Therapeutic Case Report Award Finalists

Successful Electroconvulsive Therapy After Failed Pharmacotherapies in an Older Female on Hemodialysis With Bipolar Mania

Ian McGrane, PharmD[1,2]; Robert Munjal, MD[2]; Shelby Skauge, PharmD Candidate[1]; Jason Molinaro, MD[2]

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Type: Therapeutic Case Report. **Background:** Bipolar disorder (BD) may be considered "late-stage" when the burden of disease is more treatment resistant and may require clozapine or electroconvulsive therapy (ECT). A common scenario is when a patient with BD had a preferential response to lithium, but can no longer take it due to end-stage renal disease. In this case, there are essentially three options – a) trial and error of novel or previously failed mood stabilizer or antipsychotics, b) cautious retrial of lithium, and c) ECT. **Patient History:** Our patient is a 75-year-old female who had her first episode of depression in her late twenties and episodes of mania in 2001, 2017 and 2020. These episodes of mania included grandiose and hyper-religious delusions. The patient had largely maintained psychiatric stability without psychiatric admissions while on lithium; but developed end-stage renal disease and required dialysis since 2018. Combination treatments of lamotrigine/quetiapine, divalproex/risperidone, and divalproex/olanzapine where previously attempted before she convinced her outpatient provider she did not have BD, and was treated with fluoxetine. Subsequently, she became manic and was admitted to our inpatient psychiatric hospital. We attempted combination treatments with quetiapine/divalproex, followed by quetiapine/lithium, and finally asenapine/lithium. Divalproex at 875 mg per 24-hour period yielded a pre-dialysis concentration of 57 mcg/mL. Quetiapine 300 mg nightly yielded a pre-dialysis concentration of 16 ng/mL. While taking 600 mg of lithium after dialysis and 300 mg on all other days except Sunday, pre- and post-dialysis lithium concentrations were 0.81 and 0.22 mmol/L, respectively. Mania was minimally abated, and after 46 days of hospitalization, bilateral ECT was initiated. After ECT #11 the patient was psychiatrically stable for discharge. She received weekly, then biweekly, and eventually monthly maintenance ECT until 2.5 months post-discharge for an additional 6 treatments. **Review of Literature:** An extensive PubMed search was performed to identify best practices for pharmacologic management of BD mania during hemodialysis. Our report reviews relevant literature surrounding these therapies and therapeutic drug monitoring. **Conclusion:** There is not a treatment guideline for BD in patients on hemodialysis and pharmacotherapy is challenging. This is the first report of ECT being effective in these patients.

Original Research Award Finalists

Determining the Impact of High-Density Lipoprotein Cholesterol Levels and Their Influence on Movement Disorders in Patients Taking Antipsychotics

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Type: Original Research. **Background:** Recent studies have shown an association between a low level of high-density lipoprotein cholesterol (HDL-C) levels and increased risk for Parkinson disease, but it is unknown if lower HDL-C levels have the potential to increase Parkinsonian symptoms or other movement disorders in patients taking antipsychotics. Low HDL-C levels can impact the brain through different mechanisms including reduced myelin function, damage to the blood brain barrier, and potential cognitive impairment. However, it is unclear how this impacts movement disorders for patients taking antipsychotics. The objective of this study is to determine if low HDL-C levels lead to a higher risk of

movement disorders in an inpatient state psychiatric facility. **Methods:** Adult patients at an inpatient state psychiatric facility were evaluated to determine if lower HDL-C levels were associated with more Parkinsonian symptoms or movement disorders. Patients were included if they were at the inpatient state psychiatric facility on August 31, 2021 and were taking at least one antipsychotic, had at least one HDL-C level, one history and physical, and at least one Abnormal Involuntary Movement Scale (AIMS) score. Patients were excluded if they had a criminal procedure law designation. Using a two-tailed t-test with unequal variance, patients were assessed to determine if low HDL-C levels influenced both movement disorders shown on initial physical exam, progress notes, and AIMS scores over a one-year period. **Results:** Of the 89 patients included in the study, there were eight patients with an AIMS score greater than zero and 34 patients with a low HDL-C level of less than 40 mg/dL for men and 50 mg/dL for women. There was no significance when comparing a patient's movements, AIMS scores, and HDL-C levels to suggest that lower HDL-C levels lead to more movement disorders in patients taking antipsychotics. **Conclusion:** From the results of this study, there is no clear association between patients with lower HDL-C levels and increased movement disorders or AIMS scores. Some of the patients were taking medications for movement disorders, which might have influenced their presentation, but in those patients, there was not a significant change in AIMS scores throughout their inpatient stay.

Utilization of Droperidol Versus Haloperidol for Acute Agitation in Psychiatric Patients Within the Emergency Department

Christie Costello, PharmD, BCPS; Caroline Crites, PharmD Candidate; Christine Rarrick, PharmD, MBA, BCPS, BCPP; Sophie Robert, BPharm, PharmD, BCPP; Erin Weeda, PharmD, BCPS

Medical University of South Carolina (MUSC) Health, Charleston, SC

Type: Original Research. **Purpose:** Droperidol is a butyrophenone antipsychotic used off-label to manage agitation. A black box warning emerged secondary to reports of corrected QT (QTc) interval prolongation and torsades de pointes causing a decrease in utilization. Droperidol was recently added to our institutional formulary for the management of agitation in the emergency department (ED) and usage has since increased. Patients commonly receive haloperidol, a similar butyrophenone antipsychotic, in combination with lorazepam and diphenhydramine at our institution. Lack of consensus exists regarding which agent to use based on effectiveness and safety in this patient population. **Methods:** A retrospective chart review was conducted of patients $\geq$ 18 years of age who presented to the ED from July 1, 2020 to June 30, 2021 with a psychiatric consult and received either parenteral droperidol or haloperidol. The primary outcome was to assess the efficacy of droperidol versus haloperidol in acute agitation based on additional medications required for sedation within 120 minutes. Secondary outcomes included the need for restraints, QTc $>$ 500 milliseconds within 240 minutes post-administration, hypotension (systolic blood pressure $<$ 90 and/or diastolic blood pressure $<$ 50), respiratory depression (respiratory rate $<$ 12), or bradycardia (heart rate $<$ 60) post-administration. **Results:** A total of 298 patients were included (149 in each group). More patients presented with a chief complaint of psychosis in the droperidol group compared to haloperidol (33% vs 26%, respectively). The median doses of droperidol and haloperidol were 3.75 mg and 5 mg, respectively. There were more co-administered medications for agitation within 5 minutes for haloperidol (74%) compared to droperidol (44%) ($P <$ .001). This largely included lorazepam and diphenhydramine for haloperidol and midazolam for droperidol. Patients requiring additional medications for sedation within 120 minutes were higher in the droperidol group (34%) than the haloperidol group (15%) ($P <$ .001). There were no statistically significant differences in secondary outcomes. **Conclusions/Future Directions:** Patients in the droperidol group required further medications for sedation within 2 hours, however more patients in the haloperidol group received co-administered medications, likely driven by our institutions long-standing practice of combination agents with haloperidol. There were no differences in QTc prolongation or other adverse effects.

CPNP Foundation Strategic Goals Award Finalists

Understanding Pharmacy-Related Barriers to Care in Medication-Assisted Treatment Therapy: Perspectives From Peer Recovery Coaches

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Type: Original Research. **Purpose:** This study aims to understand how pharmacies and their personnel interact with medication for opioid use disorder (MOUD) current care practices by identifying barriers, facilitators, and opportunities through the perspective of peer recovery coaches. **Methods:** Ten peer recovery coaches were included, with five working in a rural or rural/mixed county in Indiana and five working in an urban county. A

semi-structured interview was conducted individually with each participant. General topics covered in the interview were perspectives on their current role in MOUD therapy, their experiences at prescriber offices as well as at pharmacies regarding MOUD therapy, and how current MOUD care practices in those two settings could be improved upon. After all interviews were conducted, the data was analyzed using preconceived deductive codes as well as inductive codes that evolved with the project. One coder analyzed all ten transcripts, of which three were additionally analyzed by a second coder separately to confirm intercoder reliability. When the list of inductive codes was finalized after all transcripts were initially analyzed, each transcript was analyzed a second time to ensure all inductive codes were applied consistently. **Results:** Participants had been in recovery for a median of 4 years (range 1.6724) and had been working as a peer recovery coach for a median of 1.38 years (range 0.54). All peer recovery coaches identified themselves as facilitators in MOUD care. Within MOUD current care practices, frequent barriers identified included a lack of treatment standardization, stigma at the pharmacy, access to care, insurance or cost obstacles, and negative attitudes of society. All peer recovery coaches interviewed stated that the public considered using MOUD in one's recovery as trading one addiction for another. Peer recovery coaches viewed interactions with community pharmacies as either neutral or negative, as most participants were unsure of or not confident in pharmacists' knowledge of MOUD. **Conclusions and Future Directions:** There are many opportunities for community pharmacies to better engage in MOUD care practices. In the future, interviews will be conducted with community pharmacists and prescribers to obtain additional perspectives of those involved in MOUD practice.

Prevalence of Impostor Phenomenon Among Graduate Students in Pharmacy and Counseling Psychology

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Type: Work in Progress. **Background:** Mental health and wellbeing are increasingly recognized as important areas of emphasis for student support. Pharmacy and other graduate students are at increased risk of experiencing mental and emotional distress during their professional studies, including anxiety, depression, and academic concerns. Impostor phenomenon (IP) in higher education, also associated with generalized anxiety and depression, has been documented in the literature. Impostor phenomenon is associated with a lack of self-confidence and frustration due to inability to meet self-imposed standards of achievement. Furthermore, worsened physical health and diminished academic and professional success have been correlated with IP, potentially impacting healthcare professionals' ability to provide paramount patient care. **Objectives:** (1) Evaluate the degree of IP experienced by PharmD and graduate counseling psychology students. (2) Determine whether certain demographic variables correlate with IP. (3) Compare prevalence and degree of IP between PharmD and graduate counseling psychology students. **Methods:** Participants will be recruited from a public university, being eligible if currently enrolled in either the PharmD program or a graduate degree in counseling psychology and being $\geq$ 18 years old. Eligible students will receive an email inviting them to participate in an online survey including demographic data, the Clance Impostor Phenomenon Scale (CIPS), a validated IP instrument, the Perceived Stress Scale (PSS-10), and GAD-7. Responses will be anonymous. **Outcomes:** Reported outcomes will include degree of IP among respondents as average scores and number (%) of respondents falling within each of four intensity levels defined by the CIPS: "Few," "Frequent," "Severe," and "Intense." Pearson correlation analyses will be utilized to identify the relationships between CIPS score and variables including academic program, race/ethnicity, gender identity, PSS-10 score, GAD-7 score, and class year. Data collection has been completed among pharmacy students (182 respondents). Preliminary analysis revealed no statistical correlation in degree of IP and age, gender identity, or class year (P1 to P4). Non-White students had significantly lower scores on the CIPS, indicating fewer IP feelings (mean CIPS score 67.4 vs. 74.0, $P = .002$). Both an elevated PSS-10 and GAD-7 score were associated with higher CIPS scores (Pearson's $r = .588$ and .629 respectively; $P < .001$). Data collection is ongoing among counseling psychology students.

Original Research Abstracts

A Pilot Study Assessing Client Understanding and Use of Fentanyl Test Strips for Harm Reduction

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Type: Original Research. **Background and Purpose:** The CDC has reported a sharp increase in overdose deaths from illicitly manufactured fentanyls (IMFs) occurring between April 2020 and April 2021 in the US. Approximately four in ten deaths involved stimulants. Fentanyl

testing strips (FTS), when used to directly test drug product, can be a powerful harm reduction tool, promoting safer drug use behaviors and reduced overall overdose risk. This pilot study assessed treatment-seeking service users' knowledge and understanding of IMFs and motivation to use FTS as a method of harm reduction to prevent overdose. **Methods:** Clients actively engaged in residential-based or office-based treatment for a substance use disorder were recruited from a community mental health center in the midwestern US to complete a harm reduction-focused survey. With permission, survey questions were adapted from research conducted at Brown School of Public Health. Eligibility criteria included clients age 18 to 89 years of age with self-reported drug use in the past year (eg, heroin, cocaine, methamphetamine). A 20-question survey was administered verbally by a student investigator both in-person and via phone. Institutional Review Board (IRB) approval was obtained from both SIUE and Places for People. **Results:** Thirty clients completed the survey during the fall of 2021. Of respondents, 80% agreed that in Missouri, IMFs cause more overdoses than heroin. Seventy-three percent indicated concern about a friend overdosing due to IMFs, but only 47% expressed concern about personal risk for overdose. Most (73%) would like to be able to detect if there is fentanyl in their drug before use, but only 17% indicated that they feel confident in their ability to use FTS. **Conclusions:** Many respondents who were receiving services for past-year substance use lacked understanding of how to use FTS for harm reduction. Clients who primarily use non-opioid/stimulant drug products are at even greater risk for IMF overdose and would likely benefit the most from increased access and education surrounding use of FTS. Our healthcare system must rapidly continue to explore and expand upon overdose prevention efforts, including access to FTS, as urgent action is needed to reduce the continued rise in overdose deaths in the US.

A Qualitative Report of Fentanyl Exposure Among People Who Use Drugs in Austin, Texas

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Type: Original Research. **Background:** Deaths involving synthetic opioids in Texas have historically been lower compared to other US states because of the type of heroin available, black tar heroin, a tacky, tar-like substance. However, from 2020 to 2021, overdose deaths due to synthetic opioids increased in Texas by 170%. Little is known about the emergence of fentanyl in states where black tar heroin predominates and such research could yield valuable information to direct future harm reduction efforts. The purpose of this report was to understand the impact of increased fentanyl presence on the black tar heroin market in Austin, Texas. **Methods:** Adult patients accessing harm reduction services at two mobile outreach syringe services programs (SSP) in Austin, TX were invited to participate in an assessment interview examining their substance use. Potential participants were screened to determine if they met inclusion criteria, which required heroin or fentanyl use in the week prior. Data was collected from July 16, 2021 to July 23, 2021 from 30 participants via a semi-structured interview lasting 4 to 13 minutes and all participants received a $20 local grocery store gift card. Responses were analyzed using a deductive (via NVivo 12.0) and inductive hybrid approach to identify overarching themes discussed by participants. **Results:** Survey participants identified as male (n=17), female (n=10), and nonbinary (n=3) with a median age of 41.7 years. A majority identified as White (n=15) and were unhoused (n=16) or in temporary/transitional housing (n=4). Emerging themes discussed by participants included unintentional exposure to fentanyl, methods of detecting and identifying fentanyl in their drug supply, and harm reduction strategies to mitigate risks. Many respondents reported being able to identify fentanyl through use of fentanyl test strips, physical inspection, or by experiencing increased effects. **Conclusions:** Despite the predominance of black tar heroin in this region, people who use drugs in Austin, Texas report increased unintentional exposure to fentanyl. This emergence calls for public health initiatives that aim to reduce associated harms for people who use drugs. Initiatives that support SSPs and increase naloxone and fentanyl test strip access may be beneficial in this patient population.

An Assessment of Injection Site Reactions and Injection Site Pain of Once Every 6-Month and 3-Month Long-Acting Injectable Formulations of Paliperidone Palmitate

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Type: Original Research. **Background:** Paliperidone palmitate 6-month (PP6M) long-acting injection was recently approved for the treatment of adults with schizophrenia. Dorsogluteal injection volumes range from 3.5 mL to 5 mL. **Objective:** Given the differences in formulation and injection volume of available paliperidone palmitate preparations, this post hoc analysis of a double-blind

(DB) noninferiority study evaluated injection site reactions and pain following dorsogluteal injections of PP6M and paliperidone palmitate 3-month (PP_3M). **Methods:** Following screening and an open-label transition and maintenance phase, clinically stable patients receiving "moderate/high" doses of paliperidone palmitate 1-month ([PP1M] 156 mg/mL; 234 mg/1.5 mL) or PP_3M (546 mg/1.75 mL; 819 mg/2.63 mL) were randomized 2:1 to corresponding dorsogluteal injections of PP6M (1,092 mg/3.5 mL; 1,560 mg/5 mL) or PP_3M (546 mg/1.75 mL; 819 mg/2.63 mL) during a 12-month DB phase. Patients receiving PP6M injections received alternating matching placebo injections every 3 months between active doses to maintain blinding. **Results:** In the DB phase, injection-site–related treatment-emergent adverse events (TEAEs) were reported in 59/478 (12.3%) PP6M patients and 11/224 (4.9%) PP_3M patients, with injection site pain most common (37 [7.7%]) and 9 [4.0%], respectively). All other injection-site–related TEAEs, including induration, redness, and swelling, occurred in $<$2% of patients in both treatment groups. None of the injection-site–related TEAEs were reported as serious, resulted in treatment discontinuation, or required dermatological consultation. Mean [SD] patient-rated visual analog scale scores for injection site pain decreased from DB baseline to endpoint for subjects in both groups (PP6M: 17.22 [20.86] to 5.41 [10.76]; PP_3M: 14.98 [18.98] to 4.54 [8.93]). Of the 895 active injections within the PP6M group, 2 instances of incomplete injections were reported. Both were related to increased resistance during injection; neither resulted in an adverse reaction. One instance was possibly related to insufficient shaking before administration. **Conclusions:** During the DB phase of a noninferiority study, injection-site–related TEAEs associated with PP6M injections up to 5 mL and PP_3M injections up to 2.63 mL were mild to moderate in severity; none were reported as serious, resulted in treatment discontinuation, or required dermatological consultation.

Analysis of Psychiatric Care and Prescribing Patterns for Patients With PTSD Treatment in a Federally Qualified Health Center

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Type: Original Research. **Purpose:** Psychotherapy remains the mainstay treatment recommendation within posttraumatic stress disorder (PTSD) guidelines. Consistency of pharmacotherapy treatment recommendations is lacking. The intent of this retrospective study is to explore PTSD pharmacotherapy prescribing patterns at a federally qualified healthcare center (FQHC). **Methods:** SIUE Institutional Review Board approval was obtained prior to project initiation. The FQHC selected for this project serves as a practice site for a psychiatrist, psychiatric pharmacist (BH providers), 25 primary care providers, and 18 family medicine residents (non-BH providers). Prescriber, prescribing data (from July 12, 2020 to July 12, 2021), patient demographics, and ICD-10 codes for depression, PTSD, and substance use disorders were extracted from the electronic health record. Psychiatric medication prescribing patterns were further analyzed based on concurrent diagnoses and type of prescriber (non-BH vs BH). **Results:** Within this FQHC, 490 patients receiving treatment over a one-year period had a diagnosis of PTSD. Depression (21%) and nicotine use disorder (20%) were the most common co-occurring psychiatric conditions. During this year, BH providers prescribed 430 psychiatric medications and non-BH prescribed 752 psychiatric medications. Selective serotonin reuptake inhibitors made up 11% of the 430 BH prescribed medications and 20% of the 752 non-BH prescribed medications, with sertraline used most frequently. Atypical antidepressants (mirtazapine, bupropion, duloxetine, and trazodone) made up 27% for BH and 17% for non-BH, with mirtazapine prescribed most frequently by BH. Quetiapine and aripiprazole were the most common antipsychotics and prescribed at comparable rates. Benzodiazepines made up 9.6% for non-BH and 6.7% for BH, with clonazepam prescribed most frequently. Prazosin was the most common medication for sleep-related PTSD symptoms, making up 8.1% for non-BH and 6.5% for BH. **Conclusions:** While PTSD guidelines lack consistency for pharmacotherapy, they all recommend SSRI treatments. The results of this study are likely reflecting the integrated healthcare model of this FQHC, in that non-BH providers are encouraged to initiate more common first-line treatments, while BH providers will often treat patients with more refractory symptoms. In this way, non-BH provider prescribing more closely matched current treatment guidelines. This study also demonstrated the need to reinforce the de-prescribing of benzodiazepines by non-BH providers.

Antipsychotic Efficacy of KarXT (Xanomeline-Trospium): Analysis of Positive and Negative Syndrome Scale Categorial Response Rates, Time Course of Response, and Symptom Domains of Response in a Phase 2 Study

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Type: Original Research. **Background:** KarXT (xanomeline–trospium) is an M_1/M_4-preferring muscarinic receptor

agonist with no direct dopamine D_2 receptor activity currently in phase 3 studies as a potential treatment for patients with schizophrenia. In a 5-week, randomized, double-blind, placebo-controlled, phase 2 study of acute psychosis in inpatients with schizophrenia (EMERGENT-1; NCT03697252), KarXT was associated with significantly greater reduction in Positive and Negative Syndrome Scale (PANSS) total score at week 5 compared with placebo as well as improvements on other key secondary efficacy measures. This current report provides additional information pertaining to PANSS categorical response rates, time course of response, and broader 5-factor PANSS symptom subdomains (positive symptoms, negative symptoms, disorganized thought, uncontrolled hostility, and anxiety/depression). **Methods:** Post hoc analyses included using categorical thresholds of PANSS total score reductions of $\geq$ 20%, $\geq$ 30%, $\geq$ 40%, and $\geq$ 50% between baseline and study end. Number needed to treat (NNT) for each categorical threshold was calculated. The proportion of KarXT- and placebo-treated patients achieving each response threshold at weeks 2, 4, and 5 was assessed. "Marder" 5-factor analysis of PANSS assessed response with KarXT across symptom domains. **Results:** A total of 83 patients in the KarXT group and 87 patients in the placebo group were included in the modified intent-to-treat analysis. Response rates with KarXT ranged from 59.0% for a $\geq$ 20% threshold to 15.7% for a $\geq$ 50% threshold. All response rates with KarXT were significantly higher than in the placebo arm, with NNTs ranging from 3 ($\geq$ 20% improvement) to 11 ($\geq$ 50% improvement). KarXT was associated with a higher response rate relative to placebo as early as 2 weeks for $\geq$ 20%, $\geq$ 30%, and $\geq$ 40% thresholds and 4 weeks for the $\geq$ 50% threshold. Each of the Marder 5-factor PANSS subdomains showed significant differences favoring KarXT over placebo by 2 weeks, which continued through week 5 (endpoint Cohens d effect sizes, 0.48-0.63). **Conclusions:** KarXT provided clinically meaningful responder rates on PANSS total score compared with placebo at each response threshold, providing further support of the successful primary and secondary endpoints. Response was demonstrated as early as 2 weeks relative to placebo. KarXT demonstrated improvements vs placebo in all 5 factors.

Assessing the Mental Health, Physical Health, and Well-Being of Doctor of Pharmacy Students

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Type: Original Research. **Introduction:** Student well-being is a growing area of interest, though existing literature assessing multiple areas of well-being is lacking. This study aimed to evaluate the well-being of pharmacy students corresponding to three well-being domains (physical health, mental health, and personal well-being and burnout) and identify characteristics associated with these well-being domains in an attempt to gain a more well-rounded perspective of well-being and risk factors in pharmacy students. **Methods:** An online survey was disseminated to pharmacy students from 10 pharmacy programs. The survey was adapted from various instruments, including the Physical Health Measurements: Medical Outcomes Study Short Form-20 (SF-20); Patient Health Questionnaire-2 (PHQ-2); Generalized Anxiety Disorder-2 (GAD-2); World Health Organization Alcohol, Smoking and Substance Involvement Screening Test (WHO-ASSIST); Well-being Index (WBI); and a non-proprietary, single-item burnout measure. Survey responses were compared using basic descriptive statistics and Pearson's χ^2 was used for association analyses. **Results:** Students (N = 836) from 10 pharmacy programs responded to the survey (response rate 14.4%). For physical health, 59.3% of students reported sleeping $<$ 7 hours per night and 60.4% reported exercising 1 to 5 hours per week. For mental health, 24.8% of students screened positive for depression and 42.1% screened positive for anxiety. Lastly, 65.9% of students were at risk for decreased well-being and 63.1% were at risk for burnout. Based on association analyses, "gender" and "pharmacy year" were associated with screening positive for anxiety and burnout ($P = .001$ and $P = .044$, respectively), while "gender" was associated with decreased well-being ($P < .001$), and "relationship status" was associated with screening positive for depression ($P = .015$). **Conclusion:** This study revealed pharmacy students are at risk for lack of sleep and exercise, depression or anxiety, decreased well-being, or burnout. In addition, several characteristics were found to be associated with these negative well-being outcomes. These findings help increase awareness about student well-being and inform pharmacy programs supporting well-being by better understanding student areas of concern.

Assessing the Use of Valproic Acid, Carbamazepine, Paroxetine, and Topiramate in Women of Childbearing Age

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Type: Original Research. **Background:** Women are the fastest growing group in the veteran population. Mental illnesses often occur during a woman's reproductive years, adding a complicating factor to treatment. Optimally,

patients would have been taking a preferred pharmacological agent prior to pregnancy, but for women who decide to continue a potentially teratogenic medication the risks should be discussed. This study will focus on the use of valproic acid, carbamazepine, paroxetine, and topiramate. **Objectives:** (1) To examine the use of potentially teratogenic psychotropics in female veterans of childbearing age, including awareness of risks and contraceptive medication use. (2) To provide education and document contraceptive medication use as necessary. **Methods:** A report was generated for female veterans below the age of 50 years with active valproic acid, carbamazepine, paroxetine, or topiramate prescriptions within a portion of the Veterans Health System. Using the Computerized Patient Record System (CPRS), listed patients were assessed for use of these medications. Patient profiles were evaluated for documented history of infertility due to hysterectomy, tubal ligation, or menopause. These women were excluded from the study. Included women were contacted, surveyed, and educated. **Results:** Three patient lists were generated, no women of childbearing age were prescribed carbamazepine at the time. The number of female veterans assessed in each group were as follows: 39 on valproic acid, 48 on paroxetine, and 98 on topiramate. A total of 76 women were excluded and of the included women, 72 were able to be contacted, surveyed, and counseled. The majority of women reported being aware of the teratogenic risks of their medication but 44% were unaware. None were planning for pregnancy within the next year. Despite 68% of the women reporting use of contraceptive medication, only 45% were documented in the medication list. A total of 27 contraceptive medications were documented. The other 23 women not taking contraceptive medication were encouraged to and informed of the options available. **Conclusions:** Overall this study shows that there is a gap in teratogenicity awareness which may be lessened with routine discussion of risks, assessment of reproductive plans, and encouragement of effective contraceptive use.

Assessment of Oral Overlap With Antipsychotic Long-Acting Injectables Initiated in an Inpatient Setting

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Type: Original Research. **Background:** Long-acting injectable (LAI) antipsychotics are promising solutions to combat issues related to nonadherence. Prior to starting LAIs, oral antipsychotic overlap is used to establish tolerability and dose. After initiation of a LAI, oral overlap is continued to achieve therapeutic concentrations. Providers may prescribe additional overlap based on the presentation of the patient or misunderstanding of appropriate overlap. This may result in increased risk for polypharmacy, side effects, relapse, and nonadherence. **Objectives:** The aim of this study is to assess the appropriateness of oral overlap with LAIs. Additionally, this study aims to identify gaps in care with LAIs and how we can improve current prescribing practices. **Methods:** This retrospective, chart review will assess patients who were initiated on a LAI while admitted to the acute inpatient psychiatric unit from January 1, 2016 to December 31, 2019. Demographic variables were collected. Secondary outcomes include adherence to oral overlap, discontinuation of LAI within 4 months, and reason for discontinuation of LAI. Statistical analysis was completed using χ^2 test for nominal variables and *t*-tests for continuous variables. **Results:** A total of 62 patients were included, 40 (65%) had appropriate overlap and 22 (35%) had inappropriate overlap. The most common LAI was paliperidone (82%, n = 50) and risperidone was the most common inappropriately used oral overlap (91%, n = 20). Patients were adherent to oral overlap in the appropriate (67%, n = 6) and inappropriate group (85%, n = 17). Discontinuation of a LAI in 4 months was in the appropriate group (48%, n = 19) and inappropriate group (41%, n = 9). Reasons for discontinuation of oral overlap include lost to follow-up, side effects, no injection visit scheduled, and inefficacy. There were no significant differences in secondary outcomes when comparing adherence to oral overlap ($P = .26$), discontinuation of LAI within 4 months ($P = .62$), and reason for discontinuation ($P = .69$). **Conclusions and Future Directions:** This study identifies gaps in our transitions of care process and whether prescribers are appropriately providing overlap to patients. This provides a new area of care where pharmacists may be instrumental in transitioning the patient from an inpatient setting to an outpatient setting.

Assessment of the Continuation Versus Discontinuation of Newly Initiated Antipsychotics for Delirium Treatment in Hospitalized Patients

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Type: Original Research. **Purpose:** Delirium occurs in up to 30% of hospitalized patients and 80% of critically ill patients. Antipsychotics are utilized for delirium treatment and have been associated with prolonged hospital stays and worse outcomes. This study evaluates patterns of newly initiated oral antipsychotics for the treatment of delirium and continuation upon discharge. **Methods:** A descriptive report identified 948 patients from multiple sites with routinely scheduled, newly initiated, oral antipsychotics and a concurrent diagnosis of delirium,

altered mental status, or encephalopathy between January 1, 2020, and December 31, 2020, via the electronic health care record. Patients were excluded if they were admitted to hospice or a psychiatric care facility upon discharge, utilized an alcohol withdrawal order set, had an antipsychotic on their prior to admission medication list, or an antipsychotic prescribed by a psychiatrist. Two hundred patients were analyzed for antipsychotic utilization patterns, psychiatry consults, readmission within 30 days, reason for readmission, exposure to dexmedetomidine, opioids, or benzodiazepines, and utilization of the delirium prevention order set. **Results:** Demographics indicate the majority of patients who received antipsychotics were geriatric (n = 125) and male (n = 108). The documented indication for continued therapy upon discharge included acute metabolic encephalopathy (n = 41), delirium (n = 13), altered mental status (n = 10), and agitation (n = 9). Continuation was associated with prolonged duration of therapy, increased antipsychotic dose, and exposure to opioids. Newly initiated antipsychotics were discontinued 60% of the time. Factors that may have aided discontinuation were psychiatric consult (n = 42), use of the delirium protocol (n = 9), or admission to the stepdown unit (n = 17). In both groups, quetiapine (62.5%) was the most frequently prescribed antipsychotic with hospitalists (n = 137) as the most common prescriber. There were no significant differences found in readmission rates between groups. **Conclusion:** This study is limited due to the small sample size and inability to define a causal relationship. However, we can address trends throughout our health system, including a high rate of geriatric orders, prolonged duration of therapy, and increased dose with antipsychotics continued upon discharge. We identified our current safety tools are highly underutilized. Implementation of a medication discontinuation checklist upon discharge may increase accuracy, safety, and cost for patients.

Buprenorphine/Naloxone Film and Naloxone Nasal Spray Pharmacy Deserts in Harris County, Texas and Philadelphia County, Pennsylvania

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Type: Original Research. **Background:** Persons with opioid use disorder (OUD) must be able to obtain buprenorphine/naloxone films (BUP/NX) and naloxone nasal spray (NNS) in a timely manner to reduce risk for recurrence of use, morbidity, and mortality. This study was a focused assessment in two highly populated and demographically diverse counties in states where availability of BUP/NX and NNS was previously evaluated. **Methods:** A randomly selected 30% of community pharmacies in Harris County (n = 300) and Philadelphia County (n = 130) were audited via telephone from April 1, 2021 to September 30, 2021. Interviewers followed a standardized script to assess availability of BUP/NX and NNS. Primary outcomes included availability of a one-week supply of generic BUP/NX 8/2mg and a single unit of NNS overall and by pharmacy type. Secondary outcomes included willingness to order BUP/NX if unavailable and estimated timeframe to do so. Pharmacies were excluded if unreachable after three attempts, refused to disclose information, or were not a community pharmacy. **Results:** Forty-five pharmacies were excluded and 28 were non-responders, resulting in an 83% response rate. Data from 248 pharmacies in Harris County (145 chain, 103 independent) and 109 pharmacies in Philadelphia County (53 chain, 56 independent) were included in the final analyses. Overall, 89 (24.9%) had a one-week supply of generic BUP/NX and 131 (36.7%) had a single unit of NNS. Philadelphia County had greater BUP/NX availability compared to Harris County (38.5% vs 19.0%, $P < .001$), while Harris County had greater NNS availability (40.3% vs 28.4%, $P = .032$). Independent pharmacies were significantly less likely to have BUP/NX than chain pharmacies (17.6% vs 30.8%, $P = .004$) and NNS (16.4% vs 53.0%, $P < .001$). Of 268 pharmacies with generic BUP/NX unavailable, 97 (36.2%) indicated willingness to order with a median order time of 3 days. **Conclusions:** Few pharmacies in these metropolitan counties are prepared to dispense BUP/NX and NNS, with greater deficiencies in independent pharmacies. Further research is needed to identify underlying factors and effective solutions.

Characteristics of Inpatients Prescribed Dopamine Receptor Blocking Agents

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Type: Original Research. **Purpose:** Dopamine receptor blocking agents (DRBAs, also known as antipsychotics) are frequently used in hospitalized patients. These medications carry a significant risk of side effects and should be used judiciously. This purpose of this study was to examine patient, disease, and medication characteristics associated with the use of DRBAs in the inpatient setting in order to better understand current prescribing patterns and opportunities for optimization. **Methods:** A

retrospective review of medical records was conducted at a moderately-sized non-profit community health network located in the Southeastern US. Those eligible for inclusion were inpatients $\geq$ 18 years of age with at least one DRBA medication order placed between January 1, 2018 and December 31, 2019.. Statistical testing was used to assess for relationships between patient characteristics (gender, ethnicity, marital status, health insurance type), disease characteristics (psychiatric diagnosis), and medication characteristics (DRBA, route of administration, adverse effects, medication non-adherence). **Results:** The study population (N = 17,224) contained those with (71.0%) and without (29.0%) psychiatric diagnoses, and the mean number of DRBA medications for each patient was 2.4 $\pm$ 1.1. The characteristics of single, male, government-sponsored health insurance, movement disorder, DRBA adverse effects, and medication non-adherence were associated with significantly greater mean total DRBA medications prescribed. Medication non-adherence and prescription of a long-acting injectable DRBA were greater in single and male patients, while suicidality was more likely in those with a movement disorder or DRBA adverse effect. Specific agents were also significantly associated with cardiovascular disease and metabolic disorder diagnoses. **Conclusions and Future Directions:** Based on the findings of this study, several patient, disease, and medication characteristics are related to the use of DRBAs in the hospital setting. It is important to further explore these associations in order to determine the appropriateness of DRBA prescribing and identify areas for improvement.

Comparison of Early Antipsychotic Metabolic Monitoring and the Development of Abnormal Hemoglobin A1c

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Type: Original Research. **Purpose:** Patients treated with second-generation antipsychotics (SGA) are at risk for weight gain and glucose dysregulation increasing their risk of developing type 2 diabetes mellitus (DM2). Current guidelines recommend patients with schizophrenia be assessed for DM2 at baseline, 12 weeks after initiation of a new SGA, and yearly thereafter. In 2006 our institution implemented a clinical reminder to improve SGA metabolic monitoring. This tool includes body weight, blood pressure, lipid panel, and blood glucose, but does not include HbA1c monitoring. This study aimed to determine if early HbA1c monitoring in new start SGAs is a reliable predictor for future metabolic abnormalities. **Methods:** A single-site, retrospective, observational, quality improvement project identified veterans with a mental health diagnosis newly started on SGAs between January 1, 2015 and December 31, 2015. Veterans were followed for 5 years to assess changes in HbA1c. The primary outcome of this study was to compare rate of HbA1c $\geq$ 6.5% at 1-year post-SGA initiation for patients with and without early HbA1c monitoring. Early HbA1c monitoring was defined as baseline HbA1c (within 1 year before starting SGA) and repeat HbA1c 3 to 5 months after SGA initiation. Secondary outcomes include rate of HbA1c $\geq$ 6.5% at 5 years, proportion of days covered (PDC), HbA1c, BMI, and weight changes. Exclusion criteria included baseline HbA1c $\geq$ 6.5%, antidiabetic medication, SGA filled once, or deceased at the time of data collection. **Results:** Twenty-eight patients were reviewed, 14 with early HbA1c monitoring and 14 without. Rates of HbA1c $\geq$ 6.5% at 1-year were not statistically significantly different between early HbA1c vs no early HbA1c monitoring (2/14 [14.28%] vs 0/14 [0%], $P = .482$); or at 5-years (3/14 [21.43%] vs 1/14 [7.14%], $P = .596$). Proportion of days covered, HbA1c, BMI, and weight changes were similar between the two groups. Additionally, rates of early HbA1c monitoring were similar between SGAs considered high risk vs. low risk for metabolic abnormalities. **Conclusions and Future Directions:** Early HbA1c monitoring with initiation of a new SGA was not associated with improved outcomes for metabolic abnormalities for patients newly started on SGAs. Study findings are limited due to small sample size.

Comparison of Pharmacy Operations Across State Psychiatric Hospitals in the United States

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Type: Original Research. **Background:** In recent years, the role of pharmacists in the hospital setting has shifted from drug dispensing to independent medication management. Specifically, in the inpatient psychiatric setting, pharmacists have improved appropriate use of medications and outcomes in a particularly vulnerable population. Services provided by pharmacists vary due to differences in state regulations, billing complications, hospital infrastructure, and nature of pharmacist-prescriber relationships. **Objectives:** The objective of this study was to compare pharmacy operations across state psychiatric hospitals in the US. The main points of interest focused on availability of common medical technologies and specific clinical services offered. **Methods:** A telephone survey of state psychiatric hospitals was conducted from September 1, 2021 to December 31, 2021. Pharmacy contact was obtained from each hospital website or hospital operator. The survey included a total of 20 questions broken into five categories: general facility information, pharmacy structure, staffing model, systems, and clinical services. Survey answers were collected from an available phar-

macist or manager at the time of the call. Collected data were analyzed using descriptive statistics. **Results:** Out of the 33 attempted surveys, 17 were completed, yielding a 51.5% response rate. Of respondents, 70.6% endorsed order processing via computerized physician order entry (CPOE) and 58.8% utilized automated dispensing cabinets (ADCs). Though only 29.4% had designated clinical pharmacists, 64.7% offered clinical services. Services commonly included medication management (82.3%), interprofessional team involvement (82.3%), lab monitoring (58.8%), patient education (58.8%), and committee participation (76.5%). **Conclusion:** Though clinical services were provided by most pharmacies surveyed, specific services varied. This could be due to differences in state laws, budget constraints, hospital infrastructure, pharmacist-provider relationships, and limitations due to COVID-19. Limitations of this study include small sample size, largely due to limited pharmacist availability. Additionally, the western region yielded most responses, therefore the sampling may not accurately represent other regions of the US. Further research should include more effective communication methods and a larger, more diverse sample. Other areas to assess include percentage of accepted pharmacist interventions, intervention documentation methods, rates of prescriptive authority or collaborative practice agreements (CDTMs), and medication error rates using CPOE versus other methods of order entry.

Competence, Concerns, and Readiness Regarding Opioid Overdose Management: A National Cross-Sectional Survey of the US General Public

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Type: Original Research. **Purpose:** Opioid misuse and overdose continue to be major public health issues in the United States. Given strains on healthcare resources during the COVID-19 pandemic, community-level responders are critical. Therefore, the purpose of this study was to better understand the general public's abilities (competence, concerns, readiness) regarding opioid overdose management and naloxone utilization. **Methods:** This cross-sectional survey study represents a sub-set of findings from a larger national survey exploring the general public's perceptions of community pharmacy-based opioid counseling and naloxone services. An Amazon Mechanical Turk (MTurk) online panel was utilized to recruit US adults and to distribute an anonymous electronic survey. Survey questions were adapted from Williams' et al (2013) Opioid Overdose Attitude Scale (OOAS). Outcome measures were assessed using 5-point Likert-type scales (1 = strongly disagree, 5 = strongly agree) and included: (1) competence in managing an opioid overdose (10-items); (2) concerns regarding intervening in an opioid overdose (8-items); and (3) readiness to intervene in an opioid overdose situation (10-items). Data were analyzed using descriptive statistics with Microsoft Excel 2021. **Results:** Approximately 49% of respondents were female and 82% White, with mean age of 43 years (N = 301). Overall, mean [SD] self-reported competence in managing an opioid overdose tended to be low (scale score: 2.61 [0.85]), with only 15.6% of respondents agreeing or strongly agreeing that they would be able to deal effectively with an opioid overdose and 13.6% stating they felt able to administer naloxone to someone who has overdosed. However, mean [SD] concerns regarding intervening in an overdose situation were fairly low/neutral (2.80 [0.66]), and readiness to intervene was high (4.11 [0.63]). Specifically, primary fears/concerns included accidentally hurting someone who has overdosed (50.9%) and doing something wrong in an overdose situation (76.7%). In terms of readiness, 92.0% indicated that they want to be able to help someone in an opioid overdose situation and 74.4% reported that they would do whatever was necessary to save the life of an overdose victim. **Conclusions:** The US general public is ready/willing to intervene in opioid overdose situations, but additional education is needed to increase naloxone administration competencies and allay specific concerns. Addressing these factors may increase community-level opioid overdose responder capacity.

Development of Attribute Statements for a Best Practice Model for Outpatient Psychiatric Pharmacy Practice

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Type: Original Research. **Background:** A 2019 survey identified significant variability of practice characteristics among outpatient psychiatric pharmacists (OPPs), including prescriptive authority. In response to this variability, this project aimed to build consensus and develop practice model statements for psychiatric pharmacists providing direct care in an outpatient setting. Consensus of these attributes will promote a best practice model for

consistent, effective care provided by OPPs. **Objectives:** The objective of this project was to develop attribute statements for a best practice model for psychiatric pharmacists providing direct patient care within the outpatient setting. **Methods:** Members from CPNP were questioned using a 5 phase (P1-5) survey and interview approach. The phases consisted of: (P1) an ideation survey to gather broad feedback; (P2) a 10-person summit to review P1 data and develop draft statements; (P3) a survey of the draft statements for acceptance, revision, or rejection; (P4) a summit to resolve review feedback; and (P5) a survey of CPNP membership to validate the finalized statements. The entirety of the project ran from June 2, 2020 to November 22, 2021. **Results:** Survey results from P1 indicated that attributes such as BCPP certification, PGY2 and/or PGY1 residency training, and years of practice are important characteristics for OPPs. The 143 attributes proposed in that survey informed the 28 statements that ultimately were studied in P5. The respondents of this final survey (n = 74; 6.1%) were licensed pharmacists for an average of 15.6 years (SD = 12.0) and had been practicing as psychiatric pharmacists for an average of 11.3 years (SD = 10.4). Slightly more than half (54.2%) of the respondents reported practicing in the outpatient setting and 74.3% were BCPPs. For each of the 28 statements, at least 90% of respondents either agreed or agreed with minimal reservations. **Conclusions and Future Directions:** With the high degree of agreement on the proposed practice model statements, they will be used as the basis for the Outpatient Psychiatric Pharmacist Best Practice Model. Next steps in developing this model include establishing implementation guidance and determining appropriate metrics for evaluation of these statements in practice. Appropriate field-testing methods will also be established.

Effects of Cannabidiol Products on In Vitro Metabolism of Clozapine

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Type: Original Research. **Background:** Patients receiving clozapine therapy could seek out cannabidiol (CBD) products for its various purported uses, such as anxiety, depression, and insomnia. Additionally, CBD has shown beneficial effects in a randomized controlled trial as an adjunctive therapy in schizophrenia. Concomitant use of CBD and clozapine could result in a potential drug interaction risk since CBD is an inhibitor of CYP1A2 and clozapine is primarily metabolized by this isoenzyme. **Objectives:** The purposes of this study were to determine the extent to which CBD inhibits the in vitro metabolism of clozapine and to determine whether various CBD products have differing effects in this regard. **Methods:** Five over-the-counter CBD products and one prescription CBD product were used in the project. Clozapine at a concentration of 10 μM was incubated with human liver microsomes over the corresponding physiological range of CBD concentrations derived from the recommended dosages of the various products. Each reaction was conducted in triplicate using control samples, containing no CBD. Concentrations of clozapine, norclozapine, and clozapine-N-oxide were measured after 30 minutes of incubation at 37 C° using high-performance liquid chromatography-tandem mass spectrometry. The degree of metabolic inhibition was determined by comparing the change in concentrations of clozapine and its metabolites at each CBD concentration versus control. **Results:** All CBD products over all concentrations tested modulated the in vitro metabolism of clozapine to some measurable degree. The maximum inhibition of clozapine metabolism expressed as the percent decrease in the formation of clozapine's two major metabolites norclozapine and clozapine-N-oxide versus a control reaction were approximately 67% and 79% for CBD #1, 62% and 81% for CBD #2, 59% and 70% for CBD #3, 49% and 42% for CBD #4, 45% and 56% for CBD #5, and 37% and 25% for CBD #6, respectively. **Conclusions:** Cannabidiol inhibits the in vitro metabolism of clozapine, the extent to which varies between individual CBD products. These findings need to be replicated in in vivo studies. Still, the practical implication is that clinicians should inquire about CBD use when patients are receiving clozapine therapy, and they should take appropriate monitoring measures in cases of concomitant use.

Evaluating the Utility of a Required Didactic Mental Health First Aid Training Course Among First-Year Pharmacy Students

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Type: Original Research. **Background:** There is a need for pharmacists to be trained to provide Mental Health First Aid (MHFA) and for students to provide peer support to each other. This research will aid in determining if MHFA should be required. **Objectives:** Evaluate (1) If MHFA training is beneficial. (2) If students find MHFA training valuable. (3) If MHFA reduces stigma and increases confidence in abilities to offer help to those with a mental health diagnosis or crisis. **Methods:** As part of a new curriculum of a PharmD program at a Pharmacy School in North Carolina students were required to participate in MHFA training during the fall (September 13, 2021 to

November 18, 2021) of the first didactic year and study data was collected. The study was Research Review Board approved. The survey was administered anonymously online using Google Forms. The survey consisted of demographic information, questions that assessed stigma, and ability to offer help to those with a mental health crisis. Data were analyzed using IBM SPSS Statistics for Windows, version 26 (IBM Corp., Armonk, N.Y., USA). Descriptive statistics were computed to describe the demographic characteristics. Differences between pre-training and post-training scores were assessed with *t*-tests for significance. Statistical significance was established at an alpha of $P < .05$. **Results:** A total of 69 students completed the pre-training survey, participated in the MHFA training, and 64 students completed the post-training survey. Most of the participants were female (71%) and White non-Hispanic (58%). The results from the pre-test and post-test indicate that the MHFA training had a positive impact on the students as there was increased confidence in ability to start a conversation with someone who may need mental health help ($M = 4.4$, $SD = 0.7$) compared to the confidence level before the training ($M = 3.4$, $SD = 0.9$), $t\ (123) = 6.9$, $P < .001$. **Conclusions:** Students were more confident in their ability to recognize a mental health diagnosis or crisis, felt they had a better knowledge base about options for treating a mental health disorder, and were able to identify stigmatizing words associated with mental health disorders.

Evaluation of Anticholinergic Medication Burden in Patients With Schizophrenia or Schizoaffective Disorder

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Type: Original Research. **Background:** Cognitive impairment is a key disabling feature of schizophrenia, with patients showing significant deficits in attention, learning, memory, executive functioning, and social cognition. Cognitive dysfunction may be further exacerbated by psychotropic medications which often possess strong anticholinergic properties. The Anticholinergic Cognitive Burden (ACB) Scale is available as an online tool that differentiates drugs based on anticholinergic properties to assess a patient's total anticholinergic medication burden. An ACB score of 3 or higher is associated with cognitive dysfunction and a 50% increased risk of developing dementia. **Objective:** The aim of this study was to assess the average anticholinergic medication burden of patients with schizophrenia or schizoaffective disorder at the time of admission to our hospital, using the ACB Scale. We also assessed the change in anticholinergic burden during the inpatient admission and if alternative treatment recommendations could have been implemented to reduce anticholinergic medication burden. **Methods:** This study retrospectively analyzed patients with a previous diagnosis of schizophrenia or schizoaffective disorder who were admitted to our institution between March 1, 2021 and September 30, 2021. Patient demographics, home medications, hospital-administered medications, documented adverse effects, and ACB scores for pre-admission and during admission were documented. All ACB score calculations were conducted by entering medications into an online ACB calculator. Only home medications filled consistently within the last 2 months prior to admission, according to outpatient pharmacy records, were included to account for medication adherence. **Results:** The majority of patients (79%) who met the inclusion criteria had an admission ACB score greater than 3, with the hospital on average increasing a patient's anticholinergic medication burden by 5.14 points. The most commonly administered medications were olanzapine, risperidone, trazodone and haloperidol. Medications with the highest anticholinergic burden were benztropine, diphenhydramine, hydroxyzine, and olanzapine. Anticholinergic adverse effects were not routinely documented. **Conclusion:** Our institution does not currently monitor anticholinergic medication burden while increasing the average patient's burden. Our preliminary recommendation is that all patients receive a baseline ACB score determination, and that patients with an ACB score greater than 3 have more active medication monitoring to assess for alternative therapy options with less anticholinergic burden.

Evaluation of Virtual Academic Detailing on Naloxone Prescribing at the US Veterans Health Administration

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Type: Original Research. **Background:** Academic detailing (AD) has been reported to improve the naloxone prescribing rates among veterans at risk for opioid-related overdose. Conventional AD focuses on delivering educational outreach via in-person interactions. However, it is unclear whether other modes of communication (eg, virtual AD) are as effective. In 2018, a pilot virtual AD program was implemented at three VHA regional networks (VISNs), which provided an opportunity to perform an evaluation to compare virtual to in-person AD on naloxone prescribing rates. **Methods:** A retrospec-

tive quasi-experimental pretest-posttest design was used to compare the impact of virtual AD and in-person AD on naloxone prescribing rates 12 months before and after a naloxone-specific encounter. Providers who received an encounter for the first time between January 1, 2018 and May 31, 2020 were included for analysis. Monthly naloxone prescribing rates (naloxone prescriptions prescribed per 1000 patients) were averaged. Wilcoxon signed rank tests were used to evaluate the naloxone prescribing rates across the pre- and post-periods. Generalized estimating equation (GEE) model was performed to control for provider-level covariates. **Results:** A total of 253 providers were evaluated [in-person (n = 186; 73.5%); virtual (n = 67; 26.5%)]. Among providers who received in-person AD, the 12-month pre-post monthly naloxone rates were 1.9 and 4.0 per 1000 patients, respectively ($P < 0.001$). Among providers who received virtual AD, the 12-month pre-post monthly naloxone prescribing rates were 2.5 and 5.2 per 1000 patients, respectively ($P = 0.004$). In the GEE model, the difference in naloxone prescribing rates between the virtual and in-person AD was not statistically significant (difference in change in naloxone rates = +0.63; 95% CI: -2.23, 3.48). **Conclusions:** Among the three VISNs, significant increases in naloxone prescribing were reported for in-person and virtual AD. However, no differences in the change in naloxone rates were reported between the virtual and in-person AD. This study suggests that providers who received virtual AD have naloxone rate changes that are similar to providers who received in-person AD. As virtual AD expands, academic detailers will be able to reach a wider provider population that are challenging to access in-person.

Glutamatergic Dependence of the Ketamine-Like Rapid-Acting Antidepressant RO-25-6981 and Its Analogs

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Type: Original Research. **Purpose:** Rational design of lead compounds targeting glutamatergic receptors is critical to developing novel therapeutics for treating psychiatric disorders. The ketamine-like glutamatergic antagonist RO-25-6981 exerts both rapid and sustained antidepressant-like activity. The purpose of the current study is to delineate its putative antidepressant mechanisms of NR2B-selective NMDA receptor antagonism and monoamine reuptake transporter inhibition. **Methods:** Heterozygous transgenic mice deficient in NR2B subunit expression of the NMDA receptor (Grin2btm1.1(Grin2a)Bjha)) and wild-type C57BL/6J mice were housed with same-sex littermates and behavioral testing was conducted during the light phase between 12:00 pm and 5:00 pm. To assess antidepressant-like behaviors, the tail suspension test and locomotor activity tests were performed using Ro-25-6981 and its analogs using traditional antidepressant drugs, including the serotonin selective reuptake inhibitor fluoxetine and the tricyclic antidepressant desipramine, as positive controls for monoaminergic reuptake activity. **Results:** In the tail suspension test, four RO-25-6981 analogs (TR-2, TR-4, TR-5, and TR-6) were found to exhibit antidepressant-like activity in wild-type mice following acute administration (30 mg/kg, ip, 30 min) with maximal reductions in immobility by approximately half compared to vehicle-treated controls. By contrast, RO-25-6981 (10 mg/kg, ip, 30 min) reduced immobility by approximately 90%, an effect comparable to that exhibited by the traditional monoaminergic antidepressants fluoxetine and desipramine. However, unlike RO-25-6981, TR-2, TR-4, TR-5 and TR-6 profoundly limited generalized locomotor activity suggesting increased activity in the tail suspension test was related to psychotropic vs generalized drug effects. In contrast, other TR analogs tested showed no antidepressant-like activity in the tail suspension test, despite possessing robust NMDA receptor antagonist activity via mid- to low-nanomolar binding affinity at the NR2B subunit. Interestingly, RO-25-6981 and TR-5 exhibited similar antidepressant-like activity in wild-type and NR2B-deficient mice, despite possessing low-nanomolar NR2B binding. In addition, cellular serotonin transport assays showed functional inhibitory activity of both agents. **Conclusions:** Taken together, these data suggest that the antidepressant-like activity of RO-25-6981 and its analogs does not correlate with the degree of NMDA receptor antagonism. Furthermore, these data point to monoamine reuptake inhibition contributing to the overall antidepressant-like activity of RO-25-6981 in animal models of mood.

Impact of 7-Day Medication Supply Limits on Medication Possession in Veterans Following Assignment of a High-Risk Flag for Suicide

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Type: Original Research. **Background:** The VA suicide prevention guidelines recommend ''reducing access to. . .medications associated with overdose.'' Texas Valley Coastal Bend (VCB) Health Care System policy dictates veterans at high risk for suicide be assigned a high risk flag (HRF), and all dispensed medications be limited to 7-day

supplies for at least 30 days following flag assignment. The purpose of this study is to determine if medication possession differs after initiation of the 7-day supply restriction. To our knowledge, no prior studies have evaluated effects of policy-based supply restriction on medication possession in this patient population. **Methods:** This retrospective study evaluated data extracted from the VA Corporate Data Warehouse (CDW) which identified 146 VCB veterans assigned an HRF for suicide between January 1, 2019 and January 1, 2020. Veterans with HRFs initiated outside of VCB were excluded. Possession of all medications was calculated for 30, 60, and 90 days before and after HRF assignment using 2 distinct methods: a traditional calculation based on timing of fills and a modified calculation accounting for existing supplies of medication. Medication possession before and after assignment of the HRF was compared using paired *t*-tests. Effect size was calculated using Cohen's *d* to quantify the magnitude of any observed difference. **Results:** The majority of VCB veterans included in this study were male (88.4%), Hispanic or Latino ethnicity (75%), with an average age of 44.68 years (95% CI 42.4, 46.9). Medication possession calculated traditionally demonstrated significantly greater adherence before HRF assignment compared to after, at 30 days ($d = .23$, $P < .001$) 60 days ($d = .22$, $P < .001$), and 90 days ($d = .28$, $P < .001$). The modified calculation for medication possession was also significantly greater at 30 days ($d = .13$, $P = .03$) and 90 days ($d = .12$, $P = .02$), but not at 60 days ($d = .09$, $P = .07$). All effect sizes (*d*) were small. **Conclusions:** The analysis found calculated adherence was significantly lower 30 and 60 days after HRF assignment in both adherence measures, and 90 days in the traditional adherence measure only, compared to before HRF assignment. Changes observed corresponded to small effect sizes, indicating an appreciable but limited decrease in adherence to medications following assignment of HRFs.

Impact of Concomitant Buspirone for Behavioral Disturbances Treated With Antipsychotics in a Veterans Affairs Healthcare System (VAHCS) Community Living Center (CLC) Setting

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Type: Original Research. **Purpose:** The VAHCS CLC policies discourage the use of antipsychotics where therapy is not supported by an accepted clinical diagnosis and require regular attempts at gradual dose reduction (GDR). Behavioral disturbances, including dementia-related behaviors, are common among CLC residents and are often treated with antipsychotics despite not being an accepted diagnosis for use. Alternative therapies are needed to mitigate antipsychotic use. This project aimed to evaluate the impact of concomitant buspirone and antipsychotic use when treating behavioral disturbances in long-stay residents at a VAHCS CLC. **Methods:** The medical charts of veterans prescribed concomitant buspirone and any scheduled antipsychotic during long-stay CLC residence from December 1, 2011 through December 1, 2021 were reviewed. Data collected included patient-specific characteristics, changes in antipsychotic and buspirone doses, and trends in the number of behavioral intervention notes (BINs), nursing behavior notes (NBNs), GDR attempts, and fall notes. Antipsychotic doses were converted to chlorpromazine equivalents for comparison. Incidences of events were reported for every month of concomitant use. Both GDR attempts and fall notes were also analyzed during an equal time period when the veteran was on an antipsychotic alone. Matched-pairs test were used to assess for significant changes in these events after addition of buspirone. **Results:** In veterans prescribed concomitant buspirone and antipsychotics for behavioral disturbances ($n = 20$), 40% were successfully tapered off antipsychotics and overall average antipsychotic dose was significantly reduced ($P = .013$). Addition of buspirone did not result in significant changes in frequency of falls, antipsychotic titration, or number of GDR attempts but did show a significant increase in GDR success rate ($P = .04$). The incidence of both BINs and NBNs significantly decreased ($P = .001$, $P = .005$ respectively) in months 3 to 4 after buspirone initiation when expected efficacy begins. **Conclusions:** These findings suggest addition of buspirone to antipsychotics may improve successful GDRs and decrease incidence of behavioral disturbances without increasing the rates of falls. These results will help to inform practice in the CLC during the continued efforts to reduce antipsychotic prescribing for behavioral disturbances. The small, homogenous population of Veterans from one CLC limits generalizability and conclusions. Future studies including CLCs across the VAHCS may validate these results.

Impact of Long-Acting Injectable Antipsychotics on Clinical Relapse and Hospitalization: A Mirror Image Study

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Type: Original Research. **Background:** Antipsychotic medications are a mainstay of therapy for controlling symptoms of many psychotic disorders. Yet nonadherence to these medications and subsequent relapse remain pressing concerns for most patients. Nonadherence has

been linked to increased hospitalization rates, increased relapse rates, and poor long-term prognosis. With advances in formulations, long-acting injectable antipsychotics (LAIs) have emerged as an alternative to oral antipsychotics. By reducing dosing frequency, these medications minimize the daily burden on patients and caretakers. This study evaluated the clinical relapse rates of patients on two emergent formulations, aripiprazole lauroxil 2-month formulation (AL) and paliperidone palmitate 3-month formulation (PP3M). **Purpose:** Determine if there is a statistically significant difference in the number of psychiatric inpatient admissions, the number of psychiatric emergency room (ER) visits, and bed days after initiation of LAI. **Methods:** This study utilized a retrospective observational mirror-image design to determine differences in hospital and ER admissions for patients prescribed LAIs for a period of two years before and two years after initiation of therapy. Utilizing electronic medical record data and inpatient dispensing records, eligible patients were identified. Adult patients who received at least 6 months of either PP3M or AL initiated during an inpatient admission from May 01, 2015 to January 31, 2019 were included. The date of initiation of either PP3M or AL served as the mirror point for the study. All data collected prior to this date were considered pre-intervention, and all data following this date were considered post-intervention. Paired *t*-tests were conducted to evaluate for statistically significant changes in hospitalization, emergency room admissions, and bed days. **Outcomes:** A total of 50 patients were identified who met eligibility criteria. Among these patients, 4 were lost to follow-up. Excluding these patients from analysis, both the number of inpatient psychiatric admissions ($P < .001$, mean decrease 0.76 admissions) and the number of hospital bed days ($P = .003$, mean decrease 9.17 bed days) were significantly reduced post-administration of LAI. Psychiatric ER visits demonstrated a non-significant decrease of 0.5 visits ($P = .123$). **Conclusion:** Administration of either PP3M or AL was associated with decreased inpatient healthcare resource utilization and suggests decreased severity or frequency of relapses.

Influence of Cannabis on Effectiveness of Esketamine and Ketamine for Treatment Resistant Depression

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Type: Original Research. **Purpose:** We are unaware of any literature that examined the relationship between cannabis use and intravenous ketamine or intranasal esketamine efficacy in patients with treatment resistant depression (TRD). Trials of esketamine and ketamine have excluded patients with positive urine drug screens (UDS). Anecdotally, some clinicians suggest that patients with THC+ UDS during esketamine or ketamine treatment may experience smaller treatment responses compared to patients that are THC-. **Methods:** We conducted a retrospective cohort study in patients who received esketamine or ketamine from January 1, 2020 to December 31, 2021 at a VA medical center. Weekly UDS of patients receiving esketamine or ketamine were analyzed and patients with any positive UDS were assigned to the THC+ group and those without to the THC- group. Demographic, treatment, and health service utilization were collected from treatment initiation and through an 8-week observation period. Inferential statistics were used to identify differences in response defined as a $>$ 25% reduction in PHQ-9 score from treatment initiation to week 8, need for psychiatric rehospitalization or emergency room visits due to ketamine or esketamine non-response. **Results:** Our sample consisted of 110 patients: 40 in the THC+ and 70 in the THC- group. Patients in the THC+ group were younger (Mean $\pm$ SD: 44 $\pm$ 12.3 vs 50 $\pm$ 12.7 years, $P = .007$) and less likely to be Caucasian (70% vs 86%, $P = .047$). The groups were similar ($P > .05$) in male gender (65% vs 76%), PHQ-9 score at treatment initiation (19 $\pm$ 4.9 vs 19 $\pm$ 4.6), proportion that received esketamine (65% vs 67%), response rate (48% vs 56%) and rehospitalization rate (8% vs 1%). Mean dose of esketamine for both THC groups was 84 mg at treatment completion. Doses of ketamine in the THC+ and THC- groups were 111.1 $\pm$ 38.8 mg and 99.6 $\pm$ 22.5 mg at treatment completion, respectively. **Discussion:** Presence of cannabis did not influence the effectiveness of esketamine or ketamine for TRD at our facility. Given the resources required to administer this treatment, efforts to identify factors that may modify responsiveness should be explored.

Inpatient Utilization of 21-Day Dosed Invega Sustenna: a Retrospective Cohort Study

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Type: Original Research. **Background:** Long-acting injectable antipsychotics are beneficial for adherence and serum concentration stability; however, breakthrough symptoms can be seen towards the end of a dosing interval. Invega Sustenna is currently approved for 28-day dosing to treat schizophrenia and schizoaffective disorder. **Objectives:** The primary outcome was usage of as needed, or pro re nata (PRN) antipsychotics 30 days after the interval; defined as the first dose of Invega Sustenna administered within 21-days in the intervention group or

28-days in the control group. The secondary outcome was differences of oral overlap of paliperidone or risperidone. **Methods:** A total of sixteen patients were identified who received Invega Sustenna while inpatient at a state psychiatric hospital between January 1, 2018 and September 31, 2021. Eight patients received Invega Sustenna with a 21-day interval and eight received it with a 28-day interval. Data was collected through a standardized chart review including PRN antipsychotic and benzodiazepine use, oral antipsychotic overlap, adverse events, length of stay (LOS), and demographics. The PRN antipsychotic and PRN benzodiazepine usage were measured by average chlorpromazine milligram equivalents (CPZE) and average lorazepam milligram equivalents (LME) per day both within the first 30 days after the interval. **Outcomes:** Demographics (unit, sex, body mass index) were similar between the two groups. Diagnoses of the study population consisted of schizophrenia 25% (n = 4), schizoaffective disorder 68.8% (n = 11), and bipolar I disorder 6.3% (n = 1). There was more utilization of PRN antipsychotics (3.33 vs 0.00 CPZE/day, $P = .142$) and benzodiazepines (0.08 vs 0.00 LME/day, $P = .442$) in the 21-day group. Patients in the 21-day cohort had an overall longer LOS (225.2 vs 202.3 days, $P = .724$) but a shorter LOS post-initiation (52.2 vs 95.0 days, $P = .127$) than in the 28-day cohort. **Conclusions and Future Directions:** Although none of the data provided statistical significance, there were interesting trends that could be significant provided a larger sample size. Of note, the median age of the 21-day cohort trended older than the 28-day cohort. Invega Sustenna 21-day was associated with a non-statistically significant increase in PRN antipsychotic and benzodiazepine use, but a shorter length of stay post-initiation.

Integration of Population Management Tools Into Clinical Practice to Promote Long-Acting Injectable Psychotropic Medication Safety

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Type: Original Research. **Purpose:** The use of long-acting injectable (LAI) psychotropic medications has increased tremendously over the years. Patients on these agents are at risk for adverse drug events due to inappropriate clinical oversight and documentation. Errors that are commonly encountered include: administration without an active clinic order, lack of medication documentation in outpatient profile, inappropriate time intervals between injections, incorrect drug administered, and more. This project aims to utilize a LAI psychotropic medication dashboard to improve documentation, ensure timely administration and identify/prevent medication errors. The objective of this project is to model the integration of a population management tool into the workflow of a mental health clinical pharmacy specialist. **Methods:** Data was pulled weekly from the dashboard between August 20, 2021 and December 20, 2021. Data included all injectable psychotropic medication administrations with the following elements: patient identifiers, drug administered, date of administration, date of prior administration, interval between most recent and prior administration (in days) and date of next anticipated administration. Approximately 3 hours per week was allotted to complete dashboard oversight. **Results:** Chart reviews were completed for a total of 183 patients administered psychotropic LAIs between August 20, 2021 and December 20, 2021. An average of 42 administrations per week were reviewed. Outpatient medication lists were updated for 64 (35%) patients. Provider interventions occurred 17 times, primarily involving alerting prescribers about soon to expire clinic orders. Two provider interventions involved clinical errors (duplication of therapy and mismanaged missed injection). Six medication errors were reported into the Joint Patient Safety Reporting system for injections administered without an active clinic order. Other interventions included: pharmacist education on appropriate completion of prior authorization drug requests prior to verification and nurse education on appropriate documentation of next anticipated injection. **Conclusion:** Pharmacists often encounter medication errors involving psychotropic LAIs after they have occurred. The results of this project exemplify that population management tools are useful to help prevent medication errors. The implementation of routine oversight of LAI psychotropic medications may be proven a valuable assignment for mental health clinical pharmacy specialists. Opportunities exist for psychiatric pharmacists to provide education services in this setting.

Medication Use Evaluation of Buprenorphine Long-Acting Injectable in a Veterans Affairs Hospital

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Type: Original Research. **Purpose:** Opioid use disorder (OUD) is a difficult and undertreated brain disease that is life-threatening. Medications for opioid use disorder (MOUD), including buprenorphine, have been shown to improve outcomes. Buprenorphine long-acting injectable (BUP-LA) was a recent addition to Truman VA options for MOUD. This medication use evaluation (MUE) assessed if FDA-approved dosing and induction strategies were used, prevalence of adverse drug effects (ADE), and changes in OUD behaviors. **Methods:** This retrospective chart review project was deemed quality improvement by Truman VA

Research. Patients who received at least 1 dose of BUP-LA from January 1, 2020 to September 15, 2021 were included. Patients already on BUP-LA upon transfer to Truman VA were excluded. Descriptive statistics and paired *t*-tests with a Bonferroni correction ($P < .002$) were used in the statistical analysis. **Results:** The 24 patients included had an average age of 42 years and all identified as male. The mean dose of BUP at initiation was 11.3 mg with 22 patients (92%) on at least 8 mg of BUP at time of conversion. Twenty (83%) patients received two doses of BUP-LA 300 mg 28 days apart. On average, patients received 3.29 doses of BUP-LA 300 mg and 13 doses of BUP-LA 100 mg. Five patients (21%) received BUP-LA 300 mg as maintenance doses. Most doses were administered at 28 days (total = 100, mean 5.67) followed by 28 to 42 days (total = 65, mean 4.96). Most patients (n = 11, 46%) did not experience any ADE, and injection site pain was the most common ADE reported by six patients (25%). There were no statistically significant differences in symptoms of OUD (opioid use, cravings, withdrawal, overdose), engagement in treatment, or UDS six months before compared to six months after conversion. For opioid risk mitigation, 17 patients (71%) received prescriptions for naloxone in the last year and 16 (67%) had a PDMP check in the last year. **Conclusion:** While the Truman VA followed FDA dosing strategies in most patients initiated on BUP-LA, this MUE revealed a need for further research in tracking and intervening on overdue doses and ensuring compliance with opioid risk mitigation strategies, including naloxone and PDMP checks.

Metabolic Monitoring and Outcomes for Patients Taking Second Generation Antipsychotics: Impact of a Quality improvement Initiative Over 15 Months

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Type: Original Research. **Background and Objective:** Care coordination barriers often impede second generation antipsychotics (SGAs) metabolic monitoring. The original quality improvement project aim was to improve glycated hemoglobin (HbA1c) and lipid monitoring of patients on SGAs co-managed by community mental health (CMH) and family medicine clinic (FMC) providers and FMC medical/pharmacy residents. The interventions were deploying consensus monitoring guidelines and monthly care conferences. **Methods:** Retrospective baseline to follow-up 15-month analyses of metabolic results for patients prescribed at least one SGA who were 18 years of age or older (N = 175). The population subgroups include: Study co-managed (CMH/FMC) n = 26: [SCMG]; Control co-Managed (CMH/FMC) n = 20: [CCMG]; and Control FMC n = 129: [CFMG]. Analyses includes the combined total groups sub-stratified to either diabetic (n = 45) or nondiabetic (n = 130). Training in-services on SGA monitoring were provided and monthly care-conferences of SCMG patients included reconciliation of diagnoses/medications, ordering labs, and updating treatment plans by interprofessional medical and pharmacy providers from CMH and FMC clinics. Approximately 2 to 3 SCMG patients were discussed during each monthly 75-minute care conference from January 31, 2019 to April 30, 2020. **Results:** The combined total patient groups had significant changes ($P = .042$) in HbA1c monitoring: 33.7% (59/175) increased and 21.7% (38/175) decreased monitoring with adherence to established guidelines. The combined total patient groups had significant ($P < .001$) changes in lipid monitoring: 42.3% (74/175) increased, and 17.1% (30/175) decreased monitoring with adherence to established guidelines. Results of any significant HbA1c monitoring changes including results nonadherent to guidelines: The combined 3 patient groups (27.4%, 48/175 increased, and 11.4%, 20/175 decreased, $P = .001$); CFMG (26.4%, 34/129 increased and 7%, 9/129 decreased, $P < .001$); and all nondiabetic patients (31.5%, 41/130 increased and 12.3%, 16/130 decreased, $P = .001$) with most nondiabetics in the CFMG group (n = 99, $P < .001$). **Discussion and Conclusion:** Major findings are increased HbA1c and lipid monitoring observed in all patients and nondiabetic patients. Observed significantly improved follow-up monitoring of both HbA1c and lipids within established guidelines among the combined patient groups. The quality improvement initiative improved the metabolic monitoring, beyond the original aim, to the combined patient groups on SGAs. This study exemplifies positive change and interprofessional collaboration across separate mental health and medical health systems to improve patient care.

Once-Monthly Paliperidone Palmitate Adherence During the COVID-19 Pandemic

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Type: Original Research. **Background:** In May 2020 clinic operations were suspended due to the COVID-19 pandemic with the exception of the long acting injectable (LAI)

antipsychotic clinic. The LAI antipsychotics offer a solution to patients who are noncompliant with oral antipsychotics. However, LAI antipsychotics still require sufficient adherence to be successful and can be affected by several barriers to care. Of the available LAI antipsychotics, paliperidone palmitate is the most commonly prescribed in this clinic. **Objectives:** (1) Assess the adherence of patients receiving paliperdone palmitate LAI during the COVID-9 pandemic. (2) Assess the hospitalization rate of this patient population due to exacerbation of symptoms. **Methodology:** Single-center, IRB approved, retrospective chart review in patients receiving LAI injections from March 1, 2020 to May 31, 2021. Data collected include shot appointment date, appointments missed, hospitalizations due to exacerbations, gender, age, comorbidities, ethnicity, diagnoses, weight, concomitant medications, and dose of LAI. **Results:** Of the 37 patients analyzed in this study, 21 were adherent with their LAI resulting in an adherence rate of 57%. Of the 16 patients (43%) who were non-adherent, 5 were hospitalized one or more times during the study period (31%). Of the 21 patients who were adherent, 2 patients were hospitalized one or more times during the study period (9.5%). **Discussion/Conclusion:** Overall, 57% of patients prescribed paliperidone palmitate were adherent to their regimen during the study period. Although it is often assumed patients receiving LAIs are adherent, barriers to care often arise such as transportation issues, and cost, which may have been exacerbated during the COVID-19 pandemic. Compared to other studies, the percentage of patients in our study who were adherent to their LAI regimen was markedly lower. Further, our study found an increased incidence of hospitalizations due to exacerbations in patients who were not adherent (31%) compared to patients who were adherent (9.5%) which is consistent with other studies. These findings expose the need for further research on how LAI adherence affects hospitalization rates. Low adherence rates can be affected by external factors which warrant further investigation.

Opioid Prescription Dispensing Patterns Among Patients With Schizophrenia or Bipolar Disorder

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Type: Original Research. **Background:** Patients with schizophrenia (SZ) or bipolar disorder (BD) may have an increased risk of overdose or opioid use disorder from prescribed opioids. We compared prescription opioid dispensing among patients with SZ or BD vs controls over 5 years (2015 to 2019). **Methods:** This retrospective, observational study analyzed claims data from the IBM® MarketScan® Commercial and Multi-State Medicaid Databases. Individuals aged 18 to 64 years with $\geq$ 1 inpatient or $\geq$ 2 outpatient claims for SZ or BD diagnoses during the year preceding the analysis years 2015 to 2019 were included, with age- and sex-matched controls. Baseline characteristics, comorbidities, and medication use were assessed. Opioid dispensing was defined as chronic ($\geq$ 70 days over a 90-day period or $\geq$ 6 prescriptions annually) or nonchronic ($\geq$ 1 prescription, chronic definition not met). **Results:** In 2019, the Commercial and Medicaid databases contained 4,773 and 30,179 patients with SZ and 52,780 and 63,455 patients with BD, respectively. Patients with SZ or BD had a higher prevalence of comorbidities, including pain, vs controls in each analysis year. From 2015 to 2019, among commercially insured patients with SZ, chronic opioid dispensing proportions decreased from 6% (controls: 3%) to 2% (controls: 1%), and, for patients with BD, from 11% (controls: 3%) to 6% (controls: 2%). Chronic opioid dispensing proportions declined in Medicaid-covered patients with SZ from 15% (controls: 15%) to 7% (controls: 6%), and, for patients with BD, from 27% (controls: 12%) to 12% (controls: 5%). Among commercially insured patients with SZ, nonchronic opioid dispensing proportions decreased from 15% (controls: 16%) to 11% (controls: 11%) and, for patients with BD, from 26% (controls: 17%) to 20% (controls: 12%). In Medicaid-covered patients with SZ, nonchronic opioid dispensing proportions declined from 23% (controls: 24%) to 15% (controls: 13%), and, for patients with BD, from 32% (controls: 26%) to 25% (controls: 14%). **Conclusions:** From 2015 to 2019, chronic or nonchronic prescription opioid dispensing decreased for patients with SZ or BD and controls in the Commercial and Medicaid databases. The proportion of individuals dispensed chronic or nonchronic opioids each year was similar between commercially and Medicaid-insured patients with SZ vs controls but was consistently higher for patients with BD vs controls.

Opioid Requirements 48 Hours Postoperatively in Patients on Chronic Buprenorphine With Buprenorphine Continued Versus Held

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Type: Original Research. **Purpose:** Buprenorphine (BUP) is a partial opioid agonist used to treat opioid use disorder

(OUD). Due to its high affinity for the mu receptor, it has been theorized to prevent opioid agonists from effectively treating acute pain. One retrospective study has evaluated this hypothesis. This current study aims to identify on a larger scale whether patients on BUP for OUD have higher opioid requirements if their BUP is continued vs held during the 48-hour post-operative period. **Methods:** A retrospective chart review was conducted of patients with a history of BUP treatment and a hospital admission with an operation room encounter between July 1, 2020 and October 31, 2021. Patients were excluded if prescribed non-OUD approved formulations of BUP, if no active outpatient BUP order, if discharged prior to 48-hours post-op, or if a diagnosis of sickle cell/active cancer was present. The primary outcome was to compare 48-hour post-operative morphine milligram equivalent (MME) requirements for patients with BUP continued vs held. Secondary outcomes included length of stay, opioid prescription at discharge, and discharge MMEs. **Results:** Fifty-seven patients in two cohorts were included: BUP continued (n = 37) and BUP held (n = 20). Common reasons for exclusion were patients not having an active outpatient BUP order or a non-OUD approved formulation. Baseline demographics did not significantly differ except for patients who had BUP continued were more likely to undergo a procedure with low anticipated opioid requirements (n = 28 (75.7%) vs n = 8 (40%)). Patients who had BUP continued had lower 48-hour MME requirements compared to patients who had BUP held (158 mg vs 365 mg, $P < .001$). Hospital length of stay and discharge MMEs were not significantly different between groups. **Conclusions/Future Directions:** Our results suggest that acute post-op pain management may be associated with lower opioid requirements if BUP is continued. It must be noted that due to differences in anticipated opioid requirements between groups, the generalizability of our results may be limited. Our findings also suggest that BUP continuation does not increase hospital length of stay due to uncontrolled pain, however, we did not collect pain data which could be useful in future studies.

Outcomes of Paliperidone Palmitate Initiation at a County Psychiatric Hospital

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Type: Original Research. **Background/Purpose:** Paliperidone palmitate (PP) is frequently utilized in a county-funded psychiatric hospital (CPH) to reduce future psychiatric emergency care and hospitalizations. Two initiation doses of PP separated by 4-11 days are required to achieve lasting therapeutic serum concentrations. However, patients at CPH are frequently discharged before the second loading dose of PP is administered. This study aimed to characterize the relationship between PP initiation and emergency psychiatric encounters (EPEs) within a CPH. **Methods:** This single-center, retrospective chart review identified all patient encounters where PP was initiated between January 1, 2021 and October 31, 2021. Patient demographics, PP administrations, length of hospital stay (LoS), discharge disposition, outpatient follow-up, and EPEs post-discharge were collected via county-wide electronic health records. Encounters were excluded if PP was a continuation of an outpatient regimen or if the patient was discharged to a non-community setting. The primary outcome was to compare EPEs occurring within 30 days post-discharge between individuals who received a partial vs full initiation of PP (1 dose vs 2+ dose, respectively). Secondary outcomes include evaluation of outpatient psychiatric follow-up and continuity of care. **Results:** Of the 165 encounters that met inclusion criteria, 80.6% (n = 133) received 1 dose of PP and 19.4% (n = 32) received 2+ doses. Baseline characteristics were similar between groups except LoS, which was significantly longer in the 2-dose group (median 12.1 vs 3.2 days). An EPE within 30 days post-discharge was documented in 35.3% (n = 47) patients who received 1 dose of PP compared to 18.8% (n = 6) who received 2+ doses. Median time to EPE post-discharge was 10 and 37 days in the 1-dose vs 2-dose groups, respectively. Outpatient follow-up within 30 days post-discharge was completed by 25.5% (n = 42) of patients who received 1 dose of PP, during which only 38.1% (n = 16) patients received the second initiation dose within the appropriate administration timeframe. **Conclusions and Future Directions:** Within a CPH, full initiation of PP was associated with a reduced incidence of EPEs compared to partial initiation. These results will help guide local PP prescribing practices and implementation of a pharmacist-led transitions of care program to improve patient outcomes and continuum of care.

Patient Specific Factors Associated With Low Dose Induction of Buprenorphine

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Type: Original Research. **Purpose:** Opioid use disorder (OUD) affects over 16 million people worldwide. Medications for opioid use disorder (MOUD), including buprenorphine, are gold standard treatments for patients with OUD. Traditional buprenorphine induction

requires patients to experience withdrawal before initiating therapy. A novel low dose buprenorphine induction has been proposed to initiate buprenorphine in patients who are taking full opioid agonists without the risk of precipitated withdrawal. The objective of this study is to determine patient specific factors associated with a successful low dose induction of buprenorphine. **Methods:** Patients seen by the Addiction Medicine Consult Service (AMCS) in a large academic medical center and started on buprenorphine using a low dose induction between May 1, 2021 and July 30, 2021 were included in this study. Low dose buprenorphine induction was conducted using a transdermal buprenorphine patch followed by sublingual buprenorphine/naloxone. The primary outcome was successful induction of buprenorphine determined by greater than or equal to 24 hours on maintenance buprenorphine dose. Secondary outcomes included morphine milliequivalents (MME) in 24 hours prior to start of induction, MME during each day of induction, time for induction, final daily maintenance dose of buprenorphine, and taper of full opioid agonists during induction period. **Results:** A total of 21 patients with OUD were included in the analysis. The initial transdermal buprenorphine patch dose was 20 mcg in 19 (90.5%) of 21 patients. Of the 21 patients, 19 (90.5%) successfully completed low dose buprenorphine induction and were started a buprenorphine maintenance dose. Average MME utilization in the 24 hours prior to induction was 131.8 MME. Average MME requirements during each day of induction were 119.97 MME, 91.87 MME, 52.38 MME, 61.87 MME and 80.44 MME on days 1 through 5 respectively. The average time for induction was 4.6 days. There was no apparent association between average MME utilization in the 24 hours prior to induction and time for induction. **Conclusion:** Transdermal buprenorphine patch followed by sublingual buprenorphine/naloxone resulted in a high success rate for low dose buprenorphine induction. There does not appear to be an association with baseline MME requirement and days of induction.

Persistence of Vesicular Monoamine Transport 2 Inhibitor Therapy for Tourette Syndrome and Chronic Tic Disorders

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Type: Original Research. **Purpose:** Tourette Syndrome and other chronic tic disorders are debilitating conditions that can impact an individual's quality of life. Traditional pharmacotherapy, including antipsychotics and alpha agonists, have side effects that can limit their tolerability. Vesicular monoamine transporter 2 inhibitors (VMAT2i) are approved for movement disorders such as tardive dyskinesia and their use is being explored for other conditions. However, tolerability data for VMAT2i in adult tic disorders is insufficient. This study will examine VMAT2i persistence rates in naïve patients with a chronic tic disorder. **Methods:** A single-center, retrospective cohort study was conducted including adult patients diagnosed with a chronic tic disorder newly initiated on VMAT2i between January 1, 2018 and December 31, 2020. Data were collected from electronic health records. The primary outcome was VMAT2i persistence rate at 12-months post-initiation. Secondary outcomes included the time to and reason for treatment discontinuation and rate of adverse effects experienced while on treatment. Descriptive statistics were used to summarize the data; categorical variables were presented as frequencies and percentages, and continuous variables as medians and interquartile ranges (IQR). **Results:** Of the 25 patients screened, 11 were excluded (prior VMAT2i use: 8, VMAT2i started after study period: 2, no tic disorder diagnosis: 1). Of the 14 patients included, baseline characteristics were 57% male, 100% White, median age 37 years (IQR 32, 44), and median failure of 3 (IQR 2, 4) prior medications for tics. Half (50%; n = 7) of patients were persistent through the 12-month follow-up period. Patients who discontinued treatment were on therapy for a median of 54 days (IQR 26, 94). Patients discontinued due to lack of efficacy and adverse effects (n = 3) or adverse effects alone (n = 4). The most common adverse effects reported across all patients were drowsiness (16%), depression (8%), and fatigue (8%). **Conclusion:** In the first 12 months of VMAT2i therapy, 50% of patients discontinued treatment. The high rate of discontinuation suggests that the impact of adverse effects or lack of efficacy may outweigh potential benefits provided by VMAT2i therapy in this medication-refractory patient population. However, further studies are needed with larger sample sizes to further research these outcomes.

Pharmacokinetic Drug Interactions With Oral Haloperidol: Dose Correction Factors From a Combined Weighted Analysis

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Type: Original Research. **Background:** The last comprehensive review of haloperidol drug-drug interactions (DDIs) was published in 1999. Haloperidol can also inhibit

Cytochrome P-450 (CYP) 2D6. **Objectives:** Provide updated recommendations for haloperidol dosing using a systematic review, weighted analysis, and calculation of dose-correction factors for when oral haloperidol is combined with inducers, inhibitors, smoking tobacco, and CYP2D6 substrates. **Methods:** We performed three PubMed searches. The first search was to determine oral haloperidol as a victim of DDIs, which considered 47 articles for the systematic review, and had a total of 1,931 patients enrolled or reported. The second and third searches were to determine oral haloperidol as a perpetrator for DDIs, which included 7 articles, of which 2 were in vitro studies and 5 were clinical studies. Subjects were included if (1) haloperidol steady-state concentration was ensured before and after the comedication was added or removed; (2) there were no confounding timing issues with laboratory draws; and (3) there were no other reasons to believe the therapeutic drug monitoring (TDM) was inaccurate. Changes of haloperidol concentration/dose (C/D) ratios from off-on comedications were used to estimate dose-correction factors following previous TDM systematic review methodology. **Results:** The weighted correction factors for inducers were 4.8 for phenytoin, 3.3 for rifampin, 3.3 for carbamazepine, and 1.9 for phenobarbital. The weighted correction factors for inhibitors were 0.61 for fluvoxamine, 0.65 for itraconazole, and 0.77 for fluoxetine. Correction factors for inhibitors with single studies were 0.46 for promethazine, 0.59 for ketoconazole and paroxetine, 0.62 for valproate, 0.74 for homochlorcyclizine, and 0.78 for sertraline. The weighted correction factor for smoking in general was 1.2. We cannot rule out that heavy smoking may be more relevant since smoking more than 20 cigarettes/day provided a correction factor of 1.49 versus 1.17 in those smoking more than 10 cigarettes/day. Studies with different designs suggest haloperidol itself can be a weak CYP2D6 inhibitor. **Conclusions:** After an inducer or inhibitor is added to haloperidol, the haloperidol dose should be multiplied by the correction factor to account for this DDI. Our recommendations are limited since they are based on data from small studies and haloperidol metabolism is complex.

Prevalence of Psychotropic Drug Use in Children Aged 6-17: NHANES 2013-2018

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Type: Original Research. **Background/Purpose:** According to the Centers for Disease Control and Prevention, an estimated 5 million children aged 5 to 17 receive treatment for mental health problems each year in the United States. The most recent study that evaluated the overall use of prescribed psychotropic drugs among children in the United States used data from 2011 to 2012. The objective of our study was to provide an updated evaluation of the use of psychotropic medications among children aged 6 to 17, and to evaluate the association of psychotropic medication use and healthcare utilization. **Methods/Methodology:** This was a secondary database analysis using the National Health and Nutrition Examination Survey (NHANES) 2013 to 2018 biannual cohort years using IBM SPSS. Children aged 6 to 17 at the time of the survey interview were included in the study. The primary exposure variable was defined as the use of psychotropic drugs. Count and percent were used to describe medication and healthcare use. The association of psychotropic medication use across biannual cohort, select sociodemographic and healthcare use variables were evaluated using uni- and multi-variable logistic regression models. Multi-variable models adjusted for age, race, and gender as covariables. Crude and adjusted odds ratios with 95% confidence intervals were used to report these associations. Alpha was set at .05. **Results/Conclusions:** Our results showed that 421 (8%) participants were on psychotropic drugs. Psychotropic drug use was significantly associated with all healthcare utilization variables. Overall, we found that psychotropic drug use in children aged 6 to 17 years in the US did not significantly change over time. Non-Hispanic White male children were disproportionally more likely to be on psychotropic drugs than other races/ethnicities, and females. Access to healthcare plays a key role in the use of psychotropic drugs as our results showed significant correlation to health visits, overnight hospital stays, insurance status, and mental health professional visits. Our results would provide the groundwork for future studies that will examine the change in psychotropic drug use in children during the COVID-19 pandemic.

Real-World Evaluation of Treatment Patterns Following Initiation of Medication for Alcohol Use Disorder (MAUD) Among Veterans

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Type: Original Research. **Purpose:** Veterans Affairs/Department of Defense guidelines recommend treatment with medications for alcohol use disorder (MAUDs) for the management of moderate-to-severe

AUD (alcohol dependence, AD), a chronic, relapsing disease. Although initial adherence to MAUDs is low, limited data on subsequent resumption of MAUDs exist to inform long-term management of AUD. **Methods:** We conducted a retrospective study of veterans aged $\geq$ 18 years with new or incident AD who received extended-release naltrexone (XR-NTX), oral naltrexone (NTX), acamprosate, or disulfiram from August 1, 2014 to November 30, 2018. Patients were followed for one year after MAUD initiation (index date). Patients with opioid use disorder or initiation of multiple MAUDs on the index date were excluded. Discontinuation was defined as a 45-day gap in index MAUD coverage following the first day of supply. Treatment patterns, including time to MAUD discontinuation and initiation of subsequent MAUDs, were summarized by descriptive statistics and pairwise comparisons of XR-NTX with the other MAUDs. **Results:** Of 31,384 patients meeting study criteria, 1.4% received XR-NTX; 79.9%, oral NTX; 12.0%, acamprosate; and 6.7%, disulfiram. Over 94% of patients discontinued index MAUD treatment during the one-year follow-up period, but average [median] times to discontinuation were longest for the XR-NTX cohort (92^{62} days vs $55\text{-}59^{31\text{-}34}$ days for the other MAUDs, $P < .001$ for all). About half of patients initiated subsequent treatment. For all cohorts, the most frequently observed treatment following index MAUD discontinuation was resumption of the index MAUD (XR-NTX, 61.6%; oral naltrexone, 82.5%; acamprosate, 78.3%; disulfiram, 72.5%). Average time from discontinuation to index MAUD resumption ranged from 69 days (XR-NTX) to 80 days (oral NTX), but median times were substantially lower – 38 days for XR-NTX and 51 to 53 days for the other MAUDs. Median times from discontinuation of oral MAUDs to XR-NTX initiation ranged from 14 to 21 days. **Conclusions and Future Directions:** While discontinuation and subsequent resumption of index MAUD treatment among AD patients is common, the time to discontinuation was longest for XR-NTX relative to other MAUDs. Future research should explore risk and protective factors for MAUD continuation.

Retrospective Evaluation of Ketamine for the Management of Acute Agitation in the Emergency Department

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Type: Original Research. **Purpose:** Acute agitation is commonly managed in the emergency department (ED) with the goal of preventing patients from hurting themselves and others. Although ketamine has the potential to produce quicker sedation due to its rapid onset of action, it has various adverse effects including blood pressure fluctuation, respiratory depression, and emergence reactions that often limit its use. This project was designed to evaluate the safety and efficacy of ketamine for the management of acute agitation in the ED. **Methods:** This was a retrospective chart review approved by the IRB. The study included patients at least 18 years of age who received one or more doses of ketamine for the management of acute agitation in the ED between January 1, 2019 and December 31, 2020. The primary endpoint was the incidence of adverse effects (blood pressure deviation of 20 mm Hg or more, respiratory secretions, intubation, and emergence reactions) within 3 hours of ketamine administration. The secondary endpoints were time from ketamine administration to restraint removal and the use of additional medications after ketamine administration to control acute agitation. Descriptive statistics were used to analyze the primary and secondary endpoints. **Results:** Out of 107 patients screened, 27 were eligible for inclusion in the study. These 27 patients received a total of 33 doses of ketamine. Twelve patients (44.5%) had a positive urine drug screen and 9 patients (33.3%) had an elevated serum ethanol level. The most common cause of agitation was substance use or withdrawal with alcohol being the predominant substance. Nine patients (33.3%) experienced a blood pressure deviation of 20 mm Hg or more. No patients experienced respiratory secretions, intubation, or emergence reactions. The mean time from ketamine administration to restraint removal was 2.4 hours. Fifteen patients (55.6%) were administered an additional parenteral medication after ketamine to control acute agitation. **Conclusion:** Ketamine is a safe option for patients presenting to the ED with acute agitation. Additional prospective studies comparing ketamine to the current standard of care are necessary to further evaluate its place in therapy.

Rural Access to Mental Health Clinical Pharmacy Services

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Type: Original Research. **Background:** Access to mental health care in rural areas is a growing concern; however, pharmacists may play a role in improving access. The purpose of this study was to characterize trends in access to mental health clinical pharmacists for rural versus urban veterans. **Methods:** This retrospective observational study

used national Veterans Health Administration (VHA) data to identify 1,865,955 veterans engaged in mental health care during 2011 and 2,417,066 in 2019. Multivariable logistic regression was used to estimate the independent effects of veteran residence (urban vs rural) and site of care (medical center, urban clinic, vs rural clinic) on the likelihood of receiving a mental health clinical pharmacist service (MH-CPS) including adjustment for demographic and clinical characteristics. **Results:** In 2011, rural residents were less likely to receive a MH-CPS compared to urban residents (OR = 0.75; 95% CI: 0.72-0.79). However, this trend had reversed by 2019, where rural veterans were more likely to receive a MH-CPS (OR = 1.15; 95% CI: 1.12-1.17). In 2011, veterans receiving care at a rural clinic (OR = 0.30; 95% CI: 0.26-0.33) or urban clinic (OR = 0.46; 95% CI: 0.44-0.48) were much less likely to receive a MH-CPS compared to medical centers. These differences decreased somewhat over time but persisted in 2019 for both rural (OR = 0.57; 95% CI: 0.55-0.59) and urban (OR = 0.65; 95% CI: 0.64-0.66) clinics. **Conclusion:** The access gap for MH-CPS in VHA diminished for rural residents from 2011 to 2019. However, veterans receiving mental health care through a VHA clinic, including those located in rural and urban areas, remained substantially less likely to receive a MH-CPS compared to medical centers. These findings indicate that the type of facility where veterans receive their mental health care is more important than residence in determining their access to a clinical pharmacist.

Variability Between Clinical Pharmacogenetics Implementation Consortium (CPIC) Guidelines and a Commercial Pharmacogenetics Laboratory in Genotype-to-Phenotype Interpretations

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Type: Original Research. **Background:** The application of pharmacogenetics (PGx) in psychiatry is increasing, and many providers who order these tests utilize commercial pharmacogenetic laboratories. In 2018, our ambulatory psychiatry pharmacy team began completing consults that reviewed test results and offered medication recommendations following Clinical Pharmacogenetics Implementation Consortium (CPIC) guidelines, when available. Multiple genotypes are interpreted differently by our most commonly used commercial laboratory and CPIC, which often leads to significant differences in medication recommendations between the consult team and the commercial laboratory. This study was undertaken to describe how frequently our consult team noted genotype-to-phenotype interpretation differences in genes coding for cytochrome P450 enzymes CYP2C19 and CYP2D6. **Methods:** Participants in our health system were included in this study if they had a completed PGx consultation following pharmacogenetic testing intended to guide psychotropic use. The CYP2C19 and CYP2D6 star alleles and phenotypes assigned by the commercial lab were recorded, and the study team described where there was deviation from CPIC phenotype calls. **Results:** We identified 205 patients who met our inclusion criteria. Conflicting phenotype assignment were noted for 28.8% of CYP2D6 and 32.2% of CYP2C19 star allele calls when the commercial laboratory phenotype interpretation was compared to CPIC guidelines. The most common area of disagreement between the commercial lab and CPIC with respect to CYP2C19 was for patients carrying the *1/*17 genotype (24.4% of patients). While CPIC would identify this phenotype as rapid, the commercial lab would identify this genotype as normal. For CYP2D6, the single most common difference was for homozygotes of the *2A allele, which the commercial lab identified as an ultrarapid metabolizer, and CPIC identified as a normal metabolizer (7.3% of patients). **Conclusions:** Many institutions value the systematic reviews and expert guidelines created by CPIC to guide PGx implementation. When commercial labs have significant differences in genotype-to-phenotype conversions, important therapeutic options may be discounted that could otherwise improve patient medication response. These results indicate an important area for provider education in institutions where PGx implementation relies on commercial laboratories, and an opportunity for pharmacists to improve patient care.

Weight and Metabolic Outcomes in Patients With Schizophrenia Receiving Up to 25- or 52-Week Treatment With Aripiprazole Lauroxil

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Type: Original Research. **Background:** The efficacy and long-term safety of the long-acting injectable antipsychotic aripiprazole lauroxil (AL) was initially evaluated in patients with schizophrenia receiving up to 25 and 52 weeks of AL treatment in the ALPINE and 003EXT studies, respectively. This analysis examined weight and metabolic outcomes in these studies. **Methods:** In ALPINE (NCT03345979), adults with an acute exacerbation of schizophrenia were randomized to 25 weeks of double-blind treatment with AL (1064 mg every 2 months) or paliperidone palmitate. In 003EXT (NCT01626456), stable adults with schizophrenia who completed the 12-week

pivotal AL study or enrolled de novo while receiving stable doses of an oral antipsychotic were assigned to 52 weeks of open-label treatment with AL (441 mg or 882 mg monthly). Proportions of patients with clinically significant increases ($\geq$ 7%) from baseline in body weight at any post-baseline assessment and mean changes from baseline in glucose, hemoglobin A1c (HbA1c; both studies), and lipids (003EXT only) at last on-treatment assessment (ALPINE, fasting or nonfasting; 003EXT, fasting) were evaluated. Results were summarized by study. **Results:** Ninety-nine patients in ALPINE and 478 patients in 003EXT were administered $\geq$ 1 dose of AL and analyzed. Mean age and body mass index at baseline were 43.5 years and 28.2 kg/m^2 in ALPINE and 39.4 years and 27.0 kg/m^2 in 003EXT, respectively. Clinically significant increases in baseline body weight were observed in 13/97 (13.4%) ALPINE patients and 88/478 (18.4%) 003EXT patients. In ALPINE, mean (SD) changes from baseline in glucose and HbA1c were +1.6 (31.30) mg/dL and –0.02 (0.26), respectively. In 003EXT, mean (SD) changes from baseline in metabolic parameters were glucose, +1.1 (27.51) mg/dL; HbA1c, +0.07 (0.56); total cholesterol, –3.3 (35.84) mg/dL; high-density lipoprotein cholesterol, +1.0 (12.27) mg/dL; low-density lipoprotein cholesterol, –2.6 (30.40) mg/dL; and triglycerides, –5.3 (101.86) mg/dL. **Conclusions:** Changes in body weight and metabolic parameters in patients with schizophrenia who received up to 25 and 52 weeks of treatment with AL were generally consistent with those reported in the short-term (12-week) pivotal study. Mean changes from baseline in metabolic parameters were small, with no accumulation of cardiometabolic risk despite different AL drug doses and exposures.

Encore Presentation Abstracts

A Structured Benefit-Risk Assessment to Evaluate a Combination of Olanzapine and Samidorphan for the Treatment of Schizophrenia and Bipolar I Disorder

Brittany Roy, MPH[1]; David McDonnell, MD[2]; Bei Yu, PhD[1]; Christine Graham, PhD[1]; Ying Jiang, PhD[1]; Sergey Yagoda, MD PhD[1]; Vasudev Bhupath, MSc[1]; Lauren DiPetrillo, PhD[1]

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Type: Encore Presentation. **Previously Presented:** ASCP, June 1-4, 2021; ICPE, August 23-25; US PSYCH, October 29-November 1, 2021; NEI, November 4-7, 2021 Submitted to SIRS 2022 Congress; awaiting notification

Acetylcholine as a Regulator of Dopamine Pathways: Rationale for Selective Muscarinic Agonists as Candidates for Antipsychotic Drug Development

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Type: Encore Presentation. **Previously Presented:** Submitted to SIRSApr 6-10, 2022

Adjunctive Lumateperone (ITI-007) in the Treatment of Bipolar Depression: Results From a Randomized Clinical Trial

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Type: Encore Presentation. **Previously Presented:** APAAnnual MeetingMay 1-5, 2021; ISBD Annual ConferenceMay 13-15; 2021; ASCPAnnual Meeting June 1-4, 2021; ECNP October 2-5, 2021; Psych Congress;October 29-November 1, 2021;NEI November 4-7

Antipsychotic Quetiapine Induces Resistance to Multiple Antibiotics in Escherichia Coli via Loss-of-Function Mutations in MarR

Lori Ellezian, MC; Yasuhiro Kyono, PhD; Kanella Eliadis, Stephanie A. Flowers, PhD, PharmD

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Type: Encore Presentation. **Previously Presented:** University of Illinois at Chicago Research Fellowship Symposium August 6, 2021

Assessing the Mental Health of the Hispanic/Latinx Population in the Bay Area During COVID-19 Pandemic

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Type: Encore Presentation. **Previously Presented:** California Society of Health Systems Pharmacists (CSHP) Seminar, November 2021

Dose Patterns for Long-Term Deutetrabenazine Treatment in Patients With Tardive Dyskinesia by Baseline Abnormal Involuntary Movement Scale Item 8 Score

Hadas Barkay, PhD[1]; Stacy Finkbeiner, PhD[2]; Amanda Wilhelm, PhD[2,5]; Jessica Alexander, PhD[3,5]; Nayla Chaijale, PhD[2]; Mark Forrest Gordon, MD[4]

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Type: Encore Presentation. **Previously Presented:** Psych Congress; October 29–November 1, 2021

Efficacy and Safety of a Long-Acting Subcutaneous Antipsychotic (LASCA) Agent (TV-46000) in Patients With Schizophrenia: A Phase 3, Randomized, Double-Blind, Placebo-Controlled, Relapse Prevention Study (RISE Study)

John M. Kane[1-3]; Eran Harary[4]; Orna Tohami[4]; Roy Eshet[4]; Avia Merenlender-Wagner[4]; Nir Sharon[4]; Mark Suett[5]; Kelli R. Franzenburg[6]; Christoph U. Correll[1-3,7]

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Type: Encore Presentation. **Previously Presented:** Psych Congress; October 29–November 1, 2021

Efficacy and Safety of AXS-05, an Oral NMDA Receptor Antagonist With Multimodal Activity, in Major Depressive Disorder: Results From the ASCEND Trial

Amanda Jones[1]; Mark Jacobson[1]; Dan V. Iosifescu[2,3]; Herriot Tabuteau[1]

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Type: Encore Presentation. **Previously Presented:** APA Annual Meeting 2021

Efficacy and Safety of AXS-05, an Oral NMDA Receptor Antagonist With Multimodal Activity, in Major Depressive Disorder: Results From the GEMINI Trial

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Type: Encore Presentation. **Previously Presented:** APA Annual Meeting 2021

Incidence of Adverse Events Associated With Deutetrabenazine for the Treatment of Tardive Dyskinesia and Chorea Associated With Huntington Disease

Karen E. Anderson, MD[1]; Hubert H. Fernandez, MD[2]; Stewart A. Factor, DO[3]; Robert A. Hauser, MD, MBA[4]; Joohi Jimenez-Shahed, MD[5]; Hadas Barkay, PhD[6]; Amanda Wilhelm, PhD[7,12]; Jessica Alexander, PhD[8,12]; Nayla Chaijale, PhD[7]; Juha-Matti Savola, MD, PhD[9,12]; David Stamler, MD[10,12]; Mark Forrest Gordon, MD[11]; Maria Chen, MD, PhD[11]

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Type: Encore Presentation. **Previously Presented:** Psych Congress October 29–November 1, 2021

Long-Term Efficacy and Safety of Deutetrabenazine in Patients With Tardive Dyskinesia by Concomitant Dopamine-Receptor Antagonist Use

Robert A. Hauser, MD, MBA[1]; Hadas Barkay, PhD[2]; Hubert H. Fernandez, MD[3]; Stewart A. Factor, DO[4]; Joohi Jimenez-Shahed, MD[5]; Nicholas Gross, MS[6]; Leslie Marinelli, BS[7]; Amanda Wilhelm, PhD[8,12]; Mark Forrest Gordon, MD[9]; Juha-Matti Savola, MD, PhD[10,12]; Karen E. Anderson, MD[11]

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Type: Encore Presentation. **Previously Presented:** Psych Congress October 29–November 1, 2021

Medication Regimen Complexity and Deprescribing in ADRD: A Review of Clinical Psychiatry Guidelines

Caroline Leeflang, PharmD Candidate; Joshua Brown, PharmD, PhD; Golnoosh Alipour Haris; Carmen Hernandez Zengotita, PharmD Candidate

University of Florida College of Pharmacy, Orlando, FL

Type: Encore Presentation. **Previously Presented:** University of Florida College of Pharmacy Research Showcase, April 2021

Mental Health of Students on Experiential Rotations During the COVID-19 Pandemic

Shadi Doroudgar, PharmD, APh, BCPS, BCGP, BCPP[1,2]; Yesenia Revuelta-Ozuna, PharmD Candidate 2022[1]; Lucinda Chan, PharmD[1]

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Type: Encore Presentation. **Previously Presented:** California Society of Health Systems Pharmacists (CSHP) Seminar, November 2021

Multiple Sclerosis and Use of Medical Cannabis: A Retrospective Review of a Neurology Outpatient Population

Michelle Rainka PharmD; Traci Aladeen PharmD; Anna Mattle, PharmD, MS; Emily Lewandowski, PharmD; Denis Vanini, PharmD; Katelyn McCormack, NP; Laszlo Mechtler, MD

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Type: Encore Presentation. **Previously Presented:** AAN 2019, Consortium of Multiple Sclerosis Centers (CMSC) 2018

Network Meta-Analysis of Cohort Studies Involving Oral and Long-Acting Injectable Antipsychotic Agents: Administration Frequency and Incidence Rate or Odds of Hospitalization in Schizophrenia

Christoph U. Correll[1,2,3,4]; Erin E. Cook[5]; Fan Mu[5]; Rajeev Ayyagari[5]; Joshua Young[5]; Ha Nguyen[5]; Sanjay Gandhi[6]; Marko A. Mychaskiw[6]

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Type: Encore Presentation. **Previously Presented:** SIRS April 6–April 10, 2022

Patient and Healthcare Professional Preferences and Treatment Experiences With TV-46000, a Long-Acting Subcutaneous Antipsychotic (LASCA) Risperidone Formulation

Delbert G. Robinson[1,2]; Mark Suett[3]; Amanda Wilhelm[4,8]; Nayla Chaijale[4]; Kelli R. Franzenburg[5]; Sanjay Gandhi[6]; Blaine Cloud[7,8]; Marko Mychaskiw[6]

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Type: Encore Presentation. **Previously Presented:** SIRS April 6–April 10, 2022

Recognizing the Role of Socioeconomic Geography in the Distribution of Waivered Providers

Sabrina Gaiazov, MPH[1]; William Mullen, PA-C, MPH[1]; Christian Heidbreder, PhD[1]; Aris Persidis, PhD[2]

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Type: Encore Presentation. **Previously Presented:** AAAP National Conference

Safety and Tolerability of Flexible-Dose Brexpiprazole as Maintenance Treatment in Adolescents With Schizophrenia: A Long-Term, Multicenter, Open-Label Study

Marianne Dragheim, MD[1]; Nanco Hefting, MSc[1]; Fan Wang, MD, PhD[1]; Caroline Ward, PhD[2]; Anne de Jong-Laird, MD, MSc[2]

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Type: Encore Presentation. **Previously Presented:** USPsych 2021

Serdexmethylphenidate/d-Methylphenidate (SDX/d-MPH) Capsules for Children With ADHD: Effects on SKAMP-C Evaluated Over 13 Hours in a Randomized, Double-Blind,

Placebo-Controlled Laboratory Classroom Study

Lance Lewis, PharmD[1]; Andrew C. Barrett, PhD[2]; Rene Braeckman, PhD[2]; Sven Guenther, PhD[2]

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Type: Encore Presentation. **Previously Presented:** Annual International Conference on Attention-Deficit/Hyperactivity Disorder (CHADD) November 4, 2021

The Intersection of Race, Mental Illness, and COVID-19: Reducing Barriers to COVID-19 Vaccine Uptake Through a Pharmacy Driven Culturally Sensitive Patient Medication Education Group (PMEG)

Sarah Gamcsik, PharmD Candidate[1]; Aliyah Cruz, PharmD Candidate[1]; Ina Liu, PharmD, MS, BCPS[2]; Suzanne C. Harris, PharmD, BCPP[1,2]

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Type: Encore Presentation. **Previously Presented:** ASHP Midyear, December 2021

The Safety and Tolerability of Lumateperone 42 mg for the Treatment of Bipolar Depression: A Pooled Analysis of 2 Randomized Placebo-Controlled Trials

Susan L. McElroy, MD[1]; Suresh Durgam, MD[2]; Susan G. Kozauer, MD[2]; Micah Lands, PharmD, MPharm[2]; Richard Chen, PhD[2]; Lakshmi N. Yatham, MD[3]

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Type: Encore Presentation. **Previously Presented:** APA May 1-5, 2021; ISBD May 13-15, 2021; ASCP June 1-4, 2021;Psych Congress; October 29-November 1, 2021; NEI November 4-7, 2021

Trends in Antipsychotic Prescribing for Approved and Unapproved Indications to Medicaid-Enrolled Youth in Philadelphia, Pennsylvania Between 2014 and 2018

Molly Candon, PhD[1,2]; Siyuan Shen, MUSA[1]; Oluwatoyin Fadeyibi, PharmD, MPH[3]; Joseph Smith, PhD, MPH[1,4]; Aileen Rothbard, ScD[1,2,5]

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Type: Encore Presentation. **Previously Presented:** Candon et al. BMC Psychiatry. 2021;21:524.

Zuranolone in Major Depressive Disorder: Results From the Phase 3, Multicenter, Randomized, Double-Blind, Placebo-Controlled WATERFALL Study

Anita H. Clayton, MD[1]; Robert Lasser, MD, MBA[2]; Colville Brown, MD[2]; JungAh Jung, PhD[2]; Stephen J. Kanes, MD, PhD[2]; Mona Kotecha, MD[3]; James Doherty, PhD[2]

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Type: Encore Presentation. **Previously Presented:** European College of Neuropsychopharmacology Hybrid CongressOctober 2-5, 2021; Psych Congress October 29–November 1, 2021; American College of Neuropsychopharmacology December 5–8, 2021; and Psych Congress EuropeFebruary 23–25, 2022

Work in Progress Abstracts

'Can We Order a Lipid Profile?' a Pharmacist-Led Metabolic Monitoring Protocol for Patients Prescribed Antipsychotics in an Inpatient Psychiatric Hospital

Aaron Salwan, PharmD, MPH[1]; Hindy Taubenfeld, PharmD Candidate[2]; Michael Levy, MD[1]

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Type: Work in Progress. **Background:** Individuals with psychiatric disorders are at an increased risk for cardiovascular disease and metabolic syndrome. Research has shown a high prevalence of metabolic syndrome in patients with serious mental illness, particularly in patients with schizophrenia. A 2015 meta-analysis indicated the prevalence of metabolic syndrome is 58% greater in patients with psychiatric illnesses compared to the general population (Vancampfort et al. 2015). Additionally, antipsychotics are often associated with increased weight gain and changes in insulin sensitivity and lipid metabolism (Newcomer 2007). A recent study found that individuals with schizophrenia and bipolar disorder have a higher propensity to die due to undiagnosed cardiovascular disease, despite frequent contact with their primary care providers and specialists (Heiberg et al. 2019). Early identification of cardiovascular risk factors is a key concept of secondary prevention and allows healthcare professionals to prevent the progression of disease (Karunathilake et al 2018). Therefore, increased monitor-

ing is warranted to prevent downstream consequences associated with metabolic syndrome among patients with psychiatric illnesses. **Purpose:** The purpose of the proposed research is to assess the utility and effectiveness of a pharmacist-led metabolic monitoring protocol in patients prescribed antipsychotics on an inpatient psychiatric unit at a community hospital. **Methods:** In this study, a pharmacist-led metabolic monitoring protocol will be implemented for patients prescribed antipsychotics to identify risk factors for metabolic syndrome. The metabolic monitoring protocol will allow for pharmacists to order a HbA1c and lipid profile for antipsychotic naïve patients initiated on antipsychotic therapy or those continuing antipsychotics while admitted without documented laboratory values within the past year. We will then perform a retrospective chart review to compare the frequency of metabolic monitoring laboratory test orders before and after protocol implementation. Patients eligible to be included will be at least 18-years old and prescribed an antipsychotic for at least 3 days while hospitalized. Other patient demographics will be collected. **Outcomes:** The primary outcome of this study will be to assess the appropriateness of metabolic monitoring of patients prescribed antipsychotics before and after protocol implementation. Secondary outcomes will evaluate if further actions to reduce risks of metabolic syndrome occurred.

A Comparison of the Efficacy of Long-Acting Injectable Versus Oral Naltrexone During Acute-Phase and Maintenance Alcohol Cessation

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Type: Work in Progress. **Background:** Alcohol consumption is associated with 88,000 US deaths, 2.5 million years of potential life lost, and $223.5 billion in alcohol-related costs each year. Naltrexone, one of four medications indicated to treat alcohol use disorder (AUD), is a non-selective opioid receptor agonist available in daily oral and monthly injectable formulations, both of which have shown statistically significant reductions in alcohol consumption and binge drinking. On discharge from our facility, veterans are offered the option between these; if adherence concerns are present, the injectable may be preferred. However, it remains unclear if injectable naltrexone offers superior efficacy or adherence compared to the oral formulation, the medication cost of which is a fraction of that of injectable naltrexone. **Objectives:** The primary objective is to evaluate the efficacy of and adherence to the long-acting intramuscular (IM) depot formulation of naltrexone compared to the oral formulation in patients issued naltrexone for alcohol cessation or reduction on discharge. Secondary objectives include comparative duration of retention, avoidance of readmission, and total medication cost. **Methods:** A retrospective data evaluation will be performed utilizing the electronic health record system to identify patients discharged with a naltrexone prescription between January 1, 2017 and December 31, 2021. Targeted variables will be recorded for each patient as available: dates of admission and discharge, admission Alcohol Use Disorders Identification Test (AUDIT-C) score, nature of any prior cessation attempts, naltrexone formulation and dose, date(s) of subsequent refills or injections, therapy duration, therapeutic goals (if documented), adverse effects, and medication cost. **Outcomes:** Descriptive statistics will be used to assess and communicate the comparative efficacy of and adherence to the two naltrexone formulations. Additional correlations ascertained will be provided in order to aid in identifying patients more likely to benefit from one formulation over the other. Cost-benefit analyses will be performed and presented to guide future clinical recommendations for naltrexone prescription on discharge.

Access to Inclusive and Culturally Sensitive Mental Healthcare in Pharmacy Students and Residents

Esha Thakkar, PharmD Candidate[1]; Sarah Hall, PharmD Candidate[1]; Shana Katz, PharmD Candidate[1]; Cat Liu, PharmD Candidate[1]; Katie Marks, PharmD Candidate[1]; Kalynn Hosea, PharmD Candidate[1]; Suzanne Harris, PharmD, BCPP[1,2]; Ina Liu, PharmD, MS, BCPS[2]

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Type: Work in Progress. **Background:** Inequities in mental healthcare accessibility are cited as a public health concern by the World Health Organization (WHO) and National Alliance on Mental Illness (NAMI). These disparities are further exacerbated in racial and ethnic minority groups and are especially concerning in health professional training settings such as Doctor of Pharmacy (PharmD) programs and postgraduate residency training where mental illness rates are high. **Objectives:** To determine baseline access to culturally sensitive mental healthcare and how to improve such access for racially and ethnically minoritized pharmacy students and residents at an accredited pharmacy program and an academic teaching hospital. **Methods:** This IRB-exempt study includes 60-minute focus groups conducted in person or online from November 2021 to February 2022. Eligible participants include PharmD students at an accredited pharmacy program in their first, second, third, and fourth-year or pharmacy residents at an academic

teaching hospital completing a postgraduate year 1 (PGY1) or PGY2 who identify as Black, Indigenous, or Person of Color (BIPOC). Interview protocol and questions were developed based on previous literature on barriers to mental healthcare and explore barriers to mental healthcare in those who identify in racially and ethnically minoritized communities and potential strategies to improve access to care. Participant responses will be transcribed and analyzed using an open coding system with two individual reviews, followed by collaborative and intentional discussion, and, as needed, an external audit of the coding by a third research team member, to reach a consensus on themes. **Significance and Originality:** Students and residents who identify as BIPOC face multiple barriers that limit both the access to and quality of culturally sensitive treatment. Data on mental healthcare disparities in other health professional trainees implicate a need to identify and address such disparities in mental healthcare access and the quality of such care in BIPOC pharmacy trainees. The anticipated results will improve understanding of barriers to accessing culturally sensitive mental healthcare and recommendations for mitigating these gaps and this group. To our knowledge, there is no literature that addresses barriers to access to mental health treatment for BIPOC pharmacy trainees.

Agitation Medication Treatment Practices in Obese Patients Admitted to Emergency Department

Connie Kang, PharmD; Andy Williams, PharmD, BCPP, BCGP; Niyati Butala, PharmD, BCPP
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Type: Work in Progress. **Background:** Patients with medical or psychiatric conditions frequently present to the Emergency Department (ED) in an agitated state. Guidelines recommend verbal de-escalation first, followed by medication (oral preferred), with intramuscular (IM) injections used as a last resort. Weight is a factor that may influence medication requirements, although, to our knowledge, no clinical studies have evaluated agitation medications in the obese population. The objectives of this study are to assess for the need of weight considerations for dosing of emergency medications for patients with agitation and to assess prescribing patterns in agitated patients. **Methods:** This study was a retrospective chart review comparing subjects with a BMI less than 30 with those with a BMI at least 30. Study subjects were identified using electronically generated reports of IM injection orders for antipsychotics or benzodiazepines in the ED from October 1, 2021 through September 30, 2021. Subjects were included if they were adults aged 18-years or older and received at least one administration of an antipsychotic or benzodiazepine for agitation within 24 hours of presentation. Key exclusion criteria included age less than 18-years, no height or weight documented within three months, and administration of an antipsychotic or benzodiazepine for an indication other than agitation. The primary outcomes were total antipsychotic and benzodiazepine doses within 24 hours (in chlorpromazine equivalents and lorazepam equivalents, respectively). Key secondary outcomes included antipsychotic and benzodiazepine doses used for first administration, incidence of repeat administration within 24 hours, time to next administration, time between oral and IM administrations (if applicable), and number of repeat administrations within 24 hours. **Results:** Preliminary results (n = 50 in each arm) showed similar baseline characteristics (age, sex, substance use, history of antipsychotic use, comorbidities, and inmate status), though there were more White subjects in the obese arm. Both groups had similar 24-hour antipsychotic usage (median of 200 mg chlorpromazine equivalents; $P = .79$) and 24-hour benzodiazepine usage (median of 0 mg lorazepam equivalents; $P = .73$). All secondary outcomes were statistically nonsignificant as well ($P > .05$). **Conclusions:** Preliminary results do not demonstrate higher agitation medication requirements, increased need for repeat dosing, or shortened duration to repeat dosing in the obese population.

Analysis and Follow-Up of a Long-Acting Injectable Standard Operating Procedure Implementation at a Veterans Affairs Medical Center

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Type: Work in Progress. **Background:** Long-acting injectable (LAI) medications allow for the slow release of the medication into the body through a single injection and negate the need for daily oral medication administration. Benefits of LAI medications include prevention of non-adherence and relapse, simplification of medication regimens, and reduction of medication burden. Missed and incorrect doses, missing documentation, and general incorrect timing of injections all are errors that can happen from gaps in care. A standard operating procedure (SOP) for LAI medications utilized by all personnel involved in outpatient care was found to be imperative to ensure optimal care and subsequently was developed by study investigators through several meetings with nursing, providers, and pharmacy. **Objectives:** (1) Evaluate implementation of the LAI psychotropic medication note template on appropriate documentation of LAI psychotropic medications. (2) Assess safe and timely administration of LAI psychotro-

pic medications at the Veterans Affairs Medical Center (VAMC) and associated Community-Based Outpatient Clinics (CBOCs) following SOP implementation. **Methods:** The investigators will conduct electronic chart reviews six months prior to and after implementation of the LAI SOP and note template on April 1, 2021. The VA Database was queried for all patients with orders for LAI psychotropic medications at the VAMC and associated CBOCs from October 1, 2020 to October 1, 2021. Information collected will include patient demographics, LAI medication information (indication for use, medication name/strength, dosing frequency), utilization of the note template, dates of administration, number of days early or late an injection was given, documentation errors, and errors in administration of LAI psychotropic medications. **Outcomes:** The primary outcome will be the percentage of LAI medications administered utilizing the appropriate note template for documentation. Secondary outcomes will include number of missed doses before and after implementation of SOP, number of patient safety events reported before and after implementation of SOP, assessment of the number of days an injection is given before or after the intended due date, and the number of note templates containing a documentation error.

Anticholinergic Burden Among Patients Admitted to the Hospital With a Psychiatric Diagnosis

Aleksandra Spektor, BA, PharmD; Aaron Salwan, PharmD, MPH
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Type: Work in Progress. **Background:** People with psychiatric illness are likely to be prescribed medications that have anticholinergic activity. When medications with anticholinergic activity are combined, there is a greater anticholinergic burden that can lead to more pronounced adverse effects. Anticholinergic effects can occur peripherally, including dry mouth, constipation, blurred vision, increased heart rate, and urinary retention, or centrally, causing sedation, confusion, dizziness, and even cognitive impairment (West et al. 2013). A systematic review conducted by Stewart et al. analyzed the fall risk in elderly patients with high anticholinergic burden. Their findings showed a correlation between higher anticholinergic burden and increased risk for falls in elderly (Stewart et al. 2021). Recently, it has been noted that those who have severe COVID-19 infections have increased risk of pneumonia when taking anticholinergic agents, especially antipsychotic agents (Mckeigue et al. 2021). **Purpose:** The purpose of the proposed research is to evaluate the anticholinergic burden among patients who have been admitted to the hospital with a mental disorder. Findings will be applied towards constructing a new protocol detailing the reduction of anticholinergic burden in patients prior to discharge. **Methods:** In this retrospective observational study, data will be collected from an electronic medical record. Data collected will include baseline characteristics of patients such as demographics, medication list, length of stay, admission diagnosis, and chronic disease states. Medication lists will be further analyzed using an Anticholinergic Burden Score; medications with anticholinergic properties will receive a score of 1, 2, or 3 based on the anticholinergic affect as prespecified by the scale (Welsh et al. 2018). Patients who are eligible for the study are at least 18-years old and admitted to the hospital with a psychiatric diagnosis. An analysis of the correlation between anticholinergic burden and length of hospital stay as well as need for bowel regimen will be conducted. **Outcomes:** The primary outcome of the study will be the incidence of anticholinergic burden in hospitalized patients with a psychiatric disorder during hospitalization. The secondary outcomes of the study are to determine if higher anticholinergic burden led to increased length of stay and whether a bowel regimen was added.

Anticholinergic Use and Antipsychotic Initiation in Dementia: An Evaluation of Prescribing at a Veterans Affairs Medical Center

Jaclyn Kawsky, PharmD, BCPP; Alexander Corboy, PharmD; Andrew Daugherty, PharmD

Type: Work in Progress. **Background:** Dementia, a progressive neurodegenerative disorder, has a possible modifiable risk factor of medications. Per the Beers Criteria, medications with strong anticholinergic activity should be avoided in those 65-years old or older. Anticholinergic agents can affect cognition, and potentially worsen decline. Behavioral and psychological symptoms of dementia can present in 50-90% of individuals. There are multiple studies that investigated anticholinergic use in those with dementia, as well antipsychotic use in this patient population. However, there are no studies evaluating anticholinergic use and possible influence on antipsychotic initiation in those with dementia. **Objectives:** (1) Assess the average daily anticholinergic exposure of veterans from the date of dementia diagnosis to time of antipsychotic prescribing or 10-year period, whichever comes first. (2) Correlation of antipsychotic prescribing per anticholinergic exposure score category, based on the most up to date Anticholinergic Cognitive Burden scale. **Methods:** The electronic medical record will be used to identify patients within the Columbia VA Healthcare System. Subjects will

be included if they are diagnosed with dementia between April 1, 2000 to April 1, 2010. Exclusion criteria includes those with schizophrenia or bipolar related disorders, depressive disorders, Parkinson's disease, restless legs syndrome, traumatic brain injury, human immunodeficiency virus, Huntington's disease, Lewy body disease, substance use disorders (except tobacco and marijuana use disorder), antipsychotic use on or prior to index date, first antipsychotic use after hospice care initiated, or use of carbidopa/levodopa, benzodiazepines, dopamine agonists, or stimulants. The date of dementia diagnosis will be the index date. The end of evaluation period will be 10 years from index date, or death, whichever is first. **Outcomes:** Descriptive and inferential statistics will be used to report demographic data. Nominal data will be analyzed using χ^2 or Fisher's Exact test. Ordinal data and continuous data (not normally distributed) will be analyzed using Kruskal-Wallis test. Continuous data (normally distributed) will be compared using Student t test and analysis of variance (ANOVA). Spearman rank correlation coefficient will be utilized to determine associations of prescribing. Anticholinergic burden will be analyzed by calculating the average daily dose of anticholinergic(s) for participants based on the Anticholinergic Cognitive Burden scale.

Assessing the Impact of Mental Health First Aid (MHFA) Training on Health Profession Students' Attitudes Towards Mental Health and Mental Health Literacy

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Type: Work in Progress. **Background:** Mental Health First Aid (MHFA) is a program designed to train participants to identify, understand and respond to significant mental illness and substance use disorder. Specifically, it provides the skills for attendees to offer initial help and support to those in crisis until appropriate help can be coordinated. In similar studies, MHFA training among medical students and pharmacy students improved MHFA intentions and decreased stigmatizing attitudes towards mental health. While literature describes the impact of MHFA on pharmacy and medical students, there is less literature amongst other health profession students. **Objectives:** (1) To determine the impact of MHFA training on health profession students' attitudes towards mental health conditions and mental health literacy. (2) To compare baseline attitudes and literacy scores based on profession of study, gender, and personal contact with mental health conditions. **Methods:** Healthcare students (nursing, occupational therapy, physical therapy, physician assistant, pharmacist) will be recruited to participate in the virtual MHFA training. Grant funding of $1500 per CPNP Defining the Futures will be utilized to support training for 70 students. Validated survey tools of the Mental Illness Clinicians' Attitudes Scale and Mental Health Literacy Scale will be employed to assess the impact of the training on attitudes and mental health literacy, respectively. Demographic information will be collected: gender, degree program, and personal contact with mental health conditions. Students who enroll in the virtual training will be asked to complete a pre-survey prior to completion of training. A post-survey will also be conducted two weeks after training. Surveys will have a one-week reminder sent to non-responders. Students will not be mandated to participate in the surveys. In order to maintain confidentiality, students will create login keys to correspond each student with their respective surveys. Wilcoxon Signed Rank tests will be utilized to assess differences in baseline scores of the validated survey tools, as well as the demographic information. **Outcomes:** We will report the results of the Wilcoxon Signed Rank tests and its accordance with the Mental Illness Clinicians' Attitudes Scale, Mental Health Literacy Scale, and demographic information.

Assessing the Need for Gender Diverse Care Education Amongst Practicing Community Pharmacists: Phase II

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Type: Work in Progress. **Background:** Accessibility of pharmacists as healthcare providers sets a precedence for their role in addressing and diminishing barriers to care faced by the gender diverse community. For the purpose of this study, gender diversity is described as gender identities that demonstrate a diversity of expression beyond the female or male binary framework, including transgender, transexual, and gender nonconforming persons. For phase I of this research project, 300 community pharmacists participated in a telephone based-survey to assess previous participation in gender diverse care training, interest in such training programs, and preferred delivery format for such training programs. **Objectives:** This phase II state-specific needs assessment explores: (1) Gender diverse persons prior experiences with community pharmacists and pharmacies; (2) Important topics to be included in future continuing education training; and (3) Recommendations for improvements in gender diverse healthcare experiences. **Methods:** This study received approval through Purdue University's IRB

and was funded by a Defining the Future grant from the College of Psychiatric and Neurologic Pharmacists Foundation. Ten students were selected and trained to administer a telephone-based survey to members of the gender diverse community. To recruit survey participants, Transgender Resource, Education and Enrichment Services (TREES), GenderNexus, and the LGBTQ Center at Purdue University were approached. With permission from respondents, interviews were recorded for subsequent transcription. Each individual who participated in the survey received a $10 Amazon gift card for their time. **Outcomes:** A team of pharmacists and student pharmacists are reviewing resulting transcripts to identify predominant themes across responses. Results from this study, as well as a previous study evaluating the perceived needs of community pharmacists for education in gender-affirming care, will be used to inform the development of curricular content for continuing education for community pharmacy personnel and the Purdue University College of Pharmacy. To date, 12 people in the gender diverse community have completed the telephone-based interview. Our results will inform efforts to establish crucial topics of focus for future continuing education training and improvement in healthcare experiences.

Assessment of College Students' Attitudes and Knowledge on Opioid Overdose and Naloxone Education and Evaluating the Effectiveness of a New Naloxone Distribution Program at the University of Southern California

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Type: Work in Progress. **Previously Presented:** University of Southern California (USC) School of Pharmacy - Scholarly Project Symposium March 25, 2022. **Background:** The opioid overdose epidemic has worsened in recent years with approximately 100,000 overdose deaths (a 22% increase) being reported in the past 12 months. Compared to other age groups, college-aged adults are more likely to engage in opioid misuse. From 2015 to 2016, opioid overdose rates for 15- to 24-year-olds have increased by 28%. This study implemented a naloxone distribution program (NDP) on a college campus to provide naloxone and fentanyl test strips to students. **Objectives:** The primary objective of this study is to assess college students' attitudes and knowledge on opioid overdose and naloxone education based on the NDP. The secondary objective is to evaluate the effectiveness of the NDP. **Methods:** A naloxone training program was implemented for undergraduate and graduate students. Students were given the option to attend a 1-hour training workshop via Zoom or watch a training video at their own time. Validated tools to assess knowledge and attitudes of opioid overdoses were administered via the Opioid Overdose Knowledge and Attitude Scales (OOKS and OOAS). Responses from the OOKS and OOAS are reported descriptively after completing the training program. To assess the efficacy of the NDP, self-report of naloxone administration or fentanyl testing is encouraged through an anonymous survey. **Preliminary Results:** One-hundred ninety-two students attended the training workshop, 174 (90.6%) students completed the post-training surveys, 158 met inclusion criteria for analysis (142 graduate and 16 undergraduate students), and 114 and 133 students completed the OOKS and OOAS surveys, respectively. Over 140 naloxone kits with fentanyl test strips have been distributed through the NDP. Out of 11 post-distribution survey responses, there was 1 report of survival in someone that was revived by naloxone and no reports of substances testing positive for fentanyl.

Assessment of Naloxone Use in Individuals With Opioid Use Disorder

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Type: Work in Progress. **Background:** Opioids have been cited to be the main cause of drug overdose deaths in the United States. Patients with opioid use disorders visit the Emergency Department more frequently and are more likely to die from a fatal opioid overdose. Naloxone is considered the mainstay treatment for life threatening Central Nervous System and respiratory depression secondary to opioid overdose. However, consistent possession of naloxone has been cited as a gap in effective health outcomes amongst those with opioid use disorder (OUD). **Objectives:** (1) To assess the use of naloxone among patients with OUD. (2) To evaluate the degree of knowledge on naloxone among patients with OUD. (3) To assess access to naloxone among patients with OUD. **Methods:** Participants will be recruited from the Electronic Medical Records (EMR) system of an academic health center in Washington, District of Columbia. Eligible participants will be 18-years old or older and have an ICD-10 diagnosis of OUD. A 5- to 10-minute survey will be conducted by phone or email. The survey will be used to assess participants knowledge of naloxone products, access to naloxone and barriers to accessing naloxone products. Basic demographic data (age, gender, race, education), social history, use of prescribed and over-the-counter medications, co-morbid-

ities, scores on standardized opioid withdrawal tools (Clinical Opioid Withdrawal Scale [COWS]) will be collected. **Significance of project:** In the District of Columbia (DC), male individuals of African American decent appear to be disproportionately affected by the opioid crisis. In 2019, approximately eighty percent of opioid overdoses were among African American adults between ages 40-69. Seventy-three percent of these overdoses were among men in wards seven and eight. Despite recent efforts to increase access to naloxone through education and awareness training, consistent possession of naloxone has been cited as a gap in effective health outcomes amongst those with OUD. This project will help identify gaps in knowledge of naloxone and create a baseline for an opioid overdose education and naloxone distribution program.

Association Between SSRI and SNRI Use and Worsening of Parkinson Disease in a Veteran Population

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Type: Work in Progress. **Background:** Serotonin reuptake inhibitors (SSRIs) and serotonin-norepinephrine reuptake inhibitors (SNRIs) are commonly used to treat depression in patients with Parkinson's Disease (PD). However, these medications have also been associated with movement abnormalities including parkinsonism. Clinical trials of SSRIs/SNRIs for patients with PD are often limited to 8-to12-week periods which may limit observation of long term adverse effects. Given the high correlation between PD and depression and the common use of SSRIs/SNRIs in this setting, further evaluation of SSRI/SNRI use in patients with PD is necessary. **Objectives:** (1) To evaluate changes in motor or non-motor symptoms and/or signs of PD after exposure to SSRIs or SNRIs. (2) To study the co-existence of PD and depression in veterans and identify factors that may be associated with worsening of PD symptoms. **Methods:** This study will be a single-center, retrospective cohort study of US military veterans who are diagnosed with PD and have a comorbid diagnosis of depression or posttraumatic stress disorder (PTSD). Patients with any drug-induced movement disorder will be excluded. The patients will then be separated into 3 groups: patients who received SSRIs, SNRIs, or neither. Patient charts will be reviewed from when the patient's SSRI/SNRI was started to 1 year after or until the SSRI/SNRI is discontinued. For patients who received neither SSRIs or SNRIs, the chart will be reviewed for the 1-year period starting from when the patient was diagnosed with depression or PTSD. The primary outcome will be documented worsening of PD motor or non-motor symptoms based on Unified Parkinson's Disease Rating Scale (UPDRS) and Hoehn and Yahr Scale (HYS) scores, changes in PD medications due to worsening, or a clinician's evaluation. Additional variables that will be collected to study the secondary objectives include the choice, dose, duration of exposure, and medication possession ratio of the prescribed SSRI/SNRI. This study is still pending IRB approval and may require additional amendments to the protocol. **Outcomes:** Results will be reported at the CPNP 2022 Annual Meeting. We will report any differences between groups in worsening of PD as well as any potential confounding variables.

Association Between Substance Use Disorders (SUD) Severity and COVID-19 Vaccination Status and Beliefs

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Type: Work in Progress. **Background:** Coronavirus disease 2019 (COVID-19) has claimed over 800,000 lives in the United States. Vaccination is thus integral to effective risk mitigation. Substance use disorders (SUDs) affect over 20 million Americans aged 12 and over and 9.5 million adults over the age of 18 have both a substance use disorder and a co-occurring mental health diagnosis. Individuals with SUDs often exhibit undercontrol, social non-conformance, antisociality, and suboptimal health behaviors due to risky lifestyle. This is further compounded by poor housing conditions (including incarceration) which may exacerbate the probability of contracting COVID-19 and amplify severity of consequences. Thus, it is important to elucidate whether there is covariation between SUD severity and the likelihood of COVID vaccination. The aim of this study is to examine the association between severity of SUD and COVID-19 vaccination status and beliefs. In addition, the impact of providing screening, brief intervention, and referral to vaccination (SBIRV) to individuals who have not been fully vaccinated was elevated in relation to SUD severity. **Objectives:** (1) Elucidate the covariation between SUD severity and likelihood of COVID-19 vaccination. (2) Evaluate the association between SUD severity and beliefs about COVID-19 vaccine efficacy and safety. (3) Provide SBIRV to individuals who have not been fully vaccinated. **Methods:** Patients will be recruited during admission to an inpatient dual diagnosis unit. All patients admitted from December 20, 2021 to April 30, 2022 with diagnosis of SUD were asked to complete a survey querying their attitudes and beliefs about COVID-19 vaccination, along

with demographic information (sex, gender, race, ethnicity, and age) and COVID-19 vaccination status. Patients who screened 'no' to vaccination further underwent brief intervention and referral to vaccination. Severity of SUD was quantified on an interval scale using two-parameter item response theory (IRT) model accounting for all co-occurring DSM-5 SUDs and psychiatric diagnoses. The IRT-derived severity score is thus unbiased and mathematically precise. **Outcomes:** We will report the association between SUD severity, COVID beliefs, and COVID-19 vaccination status. SUD severity will also be correlated with effects of SBIRV in unvaccinated individuals.

Barriers to Treatment With Psychiatric Medications Among People Who Are Incarcerated

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Type: Work in Progress. **Background:** Among those with psychiatric conditions who are incarcerated, lack of medication access can result in decompensation, disciplinary action, increased victimization, and placement in solitary confinement. Barriers to healthcare for those incarcerated with psychiatric conditions has been previously documented, but there is a lack of evidence regarding medication access. Characterizing the barriers related to psychiatric medications would provide opportunities to aid in transitions of care for those transferring in and out of the criminal justice system. **Objectives:** (1) Characterize the barriers to receiving psychiatric medications for people who are incarcerated. (2) Compare the barriers to receiving psychiatric medications for people who are incarcerated before competency restoration to after competency restoration. (3) Characterize psychiatric medication formularies of jails. **Methods:** This study will include county jails in Missouri and will be a prospective survey completed between October 2021 and February 2022 by available medical department personnel, nurses, or the person responsible for medication oversight at each jail. Jails will be contacted by email or telephone with additional contact information collected as needed to ensure the survey is completed by someone who is knowledgeable regarding the medication administration policies at each facility. Following completion of the survey, a request will be made for a copy of the jail formulary, if applicable, to be faxed to the primary researcher. Information collected from the survey and the obtained formularies will be compiled into a secure excel sheet and utilized to aid in transitions of care. Objectives 1 and 3 will be analyzed using descriptive statistics to characterize barriers to medication access and content of formularies across county jails in Missouri. Objective 2 will be analyzed using χ^2 test for categorical variables and Mann-Whitney U for ordinal data to compare differences in barriers to medication access based on competency restoration status. **Outcomes:** We will report the percentage of the occurrence of specific barriers to psychiatric medication access, characteristics and trends of barriers, the difference in barriers based on competency restoration status, and characteristics and trends of psychiatric medication formularies across county jails in Missouri.

Calcitonin-Gene Related Peptide Monoclonal Antibodies as a Substitute for Botulinum Toxin in Chronic Migraine During the COVID-19 Pandemic at a Veterans Affairs Healthcare System

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Type: Work in Progress. **Background:** Botulinum toxins have proven useful in refractory migraine; however, these neurotoxins require patients to physically present to clinic every three to four months for administration. In March 2020, the COVID-19 pandemic led to temporary closure of botulinum clinics, therefore leading to a need for alternate therapy in patients with refractory migraine. Erenumab, a self-administered agent used for the preventive treatment of migraine, was the agent selected for substitute therapy. The purpose of this evaluation is to assess changes in headache trends and ultimate preferred regimen of patients who underwent conversion from botulinum toxin to erenumab during the COVID-19 pandemic. **Objectives:** (1) Utilize population health dashboards to identify patients converted from a botulinum toxin to erenumab during the COVID-19 pandemic. (2) Assess if veterans had appropriate follow-up after converting to erenumab. (3) Evaluate headache trends and ultimate preferred regimen within the study population. **Methods:** This retrospective evaluation was exempted by Institutional Review Board as a quality improvement project. Patients with a diagnosis of chronic migraine or post-traumatic headache of migraine phenotype at a Veterans Affairs (VA) Healthcare System who were receiving botulinum toxin and agreed to try conversion to erenumab due to the pandemic, as recommended by their neurologist, were included. Patient demographics collected included age, sex, diagnosis, medication list and medication history. Collected treatment related information included erenumab starting dose, date of initiation and duration of therapy, and

erenumab dose at end of follow-up. Outcome measurements included safety concerns related to erenumab, changes in headache trends within three months of erenumab initiation, the use of other prophylactic and abortive medications within 3-months of initiation, and the proportion of patients remaining on erenumab versus returning to botulinum toxin clinic at 6 months, including reason for change back to botulinum if applicable. **Outcomes:** Data collected will be analyzed to determine whether appropriate follow-up was performed in patients converted from a botulinum toxin to erenumab as a result of the COVID-19 pandemic in efforts to evaluate headache trends and ultimate preferred regimen of patients in this population.

Cataloguing the Impact of Psychiatric Pharmacists Through Literature

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Type: Work in Progress. **Background:** There is a wealth of evidence regarding pharmacist practices and their impact on individuals living with psychiatric disorders. Pharmacists practicing across a wide variety of healthcare settings with a focus on psychotropic medication management significantly improved patient-level outcomes, such as medication adherence, disease control, and avoidance of hospitalization. Review articles published in the Mental Health Clinician (Goldstone 2015 and Werremeyer 2020) highlight the impact of psychiatric pharmacists in improving medication-related outcomes. Additionally, articles published from April 1, 2019 to December 31, 2020 were evaluated in a poster summarizing the results presented at the CPNP 2021 Annual Meeting. It is valuable to identify historical and recently published literature to document the litany of currently available outcomes data on a continuous basis. **Objectives:** The purpose of this project is to identify, review, and evaluate primary literature that highlight the value of psychiatric pharmacists as part of the health care team in improving medication-related outcomes using the PubMed database. **Methods:** A systematic search of literature published from January 1, 1967 to December 31, 2021 was conducted using PubMed due to its linear and systematic search process. Publications describing patient-level outcome results associated with pharmacist provision of care to individuals living with psychiatric disorders or in relation to psychotropic medications will be included. Literature that contained the following outcome measures was included: treatment response, adverse outcomes, resource utilization, satisfaction/attitude/adherence, retention/referral, or cost, medication or time-based measures. The search excludes articles published in a language other than English; pain conditions without psychiatric comorbidity; lacking an active interventional role by a pharmacist; only describing training exercises, simulations, or changes in perceptions/attitudes; limited to economic evaluations, commentary, or feasibility; review articles; or only reporting numbers or types of pharmacist interventions without associated patient-level outcomes. **Outcomes:** We will report on literature describing patient-level outcome results associated with pharmacist provision of care to individuals with psychiatric disorders or in relation to psychotropic medications published from January 1, 1967 to December 31, 2021. A summary of study design and outcomes will be presented as an update to Werremeyer 2020 and the poster presented at the CPNP 2021 Annual Meeting.

Characterizing the Relationship Between Exposure to Long Acting Benzodiazepines and Barbiturates, Alcohol, and Death

Hannah Van Ochten, PharmD, MPH[1,2]; Barry Zevin, MD[1]; Curtis Geier, PharmD, BCCCP[2]; Luke Rodda, PhD[3]; Michelle Geier, PharmD, BCPP[1]

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Type: Work in Progress. **Background:** Historically long acting benzodiazepines have been the standard of care for alcohol withdrawal syndrome (AWS). Drug shortages and practice changes have increased the popularity of long acting barbiturates (eg, phenobarbital) in AWS regimens. The long-term effects of these regimens have not been identified. Since 2016, this county has performed annual death case reviews of their unsheltered patients and have noted patients passing with elevated alcohol levels and presence of long-acting benzodiazepines or barbiturate metabolites. **Objectives:** This study aims to identify if patients are dying after exposure to long acting benzodiazepines/barbiturates for the treatment of AWS in this city's emergency departments (EDs). The primary objective will be identifying if an ED visit preceded the death of this population within the prior 45 days. Secondary objectives will include identifying sources of barbiturates and benzodiazepines. Additionally, the study will identify factors around this population's death, including recent ED admissions, time from ED discharge to death, types of benzodiazepines and barbiturates used and ED utilization in the year prior to their death. **Methods:** This will be a

retrospective case series review of adult patients with a medical examiner report showing alcohol $\geq$ 0.05 g/dL and any benzodiazepine or barbiturate metabolite. Any patients who passed in the ED or hospital will not be included. The data collection will identify if an ED visit preceded their death in the 45 days prior. Secondary outcomes will include if the source of their benzodiazepine or barbiturate can be identified, time between ED discharge and death, ED admission diagnosis, type of benzodiazepine/barbiturate received in ED, number of ED visits in the past year and number of sobering center visits in the past year. **Results:** Results are currently pending and will be included at the poster session.

Co-Administration of Intramuscular Olanzapine or Haloperidol With Parenteral Benzodiazepines in the Emergency Department

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Type: Work in Progress. **Background:** First-generation or second-generation antipsychotics combined with benzodiazepines are commonly used in the emergency department (ED) in patients with acute agitation when other de-escalation tactics fail. However, these combinations may be associated with increased risks. Olanzapine in particular carries a warning for cardiorespiratory depression when administered intramuscularly with a parenteral benzodiazepine. In contrast, there is less evidence for cardiorespiratory depression following the co-administration of intramuscular haloperidol and benzodiazepines. Therefore, our study seeks to compare the incidence of cardiorespiratory depression in patients receiving intramuscular olanzapine or intramuscular haloperidol in combination with parenteral benzodiazepines. **Objectives:** (1) Evaluate the percentage of patients who meet predefined cardiorespiratory endpoints within 2 hours following the co-administration of intramuscular olanzapine or haloperidol with parenteral benzodiazepines. (2) Identify risk factors associated with an increased risk of cardiorespiratory compromise in this population. **Methods:** This is a single-center, retrospective study using electronic medical record data. Patients 18-years of age and older who visited the ED from February 1, 2016 to February 3, 2021 and were co-administered intramuscular olanzapine and a parenteral benzodiazepine or intramuscular haloperidol and a parenteral benzodiazepine within 2 hours will be included in the study. Given the larger sample size of the haloperidol arm, patients will be selected randomly to match the number of patients in the olanzapine arm. The composite primary endpoint will assess the occurrence of cardiorespiratory compromise and will include episodes of hypoxia, hypotension, bradycardia, bradypnea, and cardiac arrest within 2 hours. Secondary endpoints include cardiorespiratory compromise within 30 minutes and desaturations or cardiac arrest outside the 2-hour window. For Objective 1, a χ^2 test comparing cardiorespiratory endpoints between the olanzapine/benzodiazepine group and the haloperidol/benzodiazepine group will be reported. For Objective 2, a χ^2 test will be used to report factors associated with increased risk of cardiorespiratory compromise. **Outcomes:** We will report the proportion of patients that experienced changes in cardiorespiratory status within 30 minutes and within 2 hours following co-administration of intramuscular olanzapine or haloperidol with parenteral benzodiazepines. We will also perform subgroup analyses to identify patient factors associated with increased risk.

Comparison of Alpha Agonist Versus Antagonist for Posttraumatic Stress Disorder (PTSD) Nightmares in Pediatric Patients

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Type: Work in Progress. **Background:** Posttraumatic stress disorder (PTSD) consists of symptoms that are organized into four clusters including negative alterations in cognition, avoidance of stimuli, alterations in arousal and reactivity, and intrusion symptoms. Intrusion symptoms include flashbacks and nightmares of the traumatic event. Studies on the pathophysiology of PTSD suggest that noradrenergic hyperactivity in the central nervous system is linked to intrusion symptoms. Based upon this pathophysiology, medications such as alpha agonists and antagonists have been utilized to target nightmares. Currently, pediatric treatment of PTSD-related nightmares is based on data from adult studies and there is no guidance indicating preferred pharmacologic treatment in children and adolescents. There have been small studies, case reports, and case series looking at individual alpha agonists and antagonists in pediatric patients for efficacy. However, to our knowledge, there have been no direct studies comparing the two classes of medications. **Objectives:** The primary objective of this study is to evaluate the effectiveness and safety of alpha agonists compared to an alpha antagonist for the treatment of PTSD-related nightmares in pediatric patients. Additionally, dosing in pediatric patients will be characterized due to the lack of dosage recommendations. **Methods:** This project will be conducted as a retrospective medical record review from January 1, 2015 to September 30, 2021. Patients aged 5 to 17 years with a diagnosis of PTSD, trauma or stress related disorder, or unspecified

anxiety disorder are eligible for inclusion. Additionally, initiation of an alpha agonist (clonidine, guanfacine) or alpha antagonist (prazosin) during the hospitalization. Pregnancy and use of clonidine, guanfacine or prazosin prior to admission are exclusionary unless agents were switched during the admission with at least a one-week washout period. **Outcomes:** Preliminary analysis indicates no significant difference between groups in reduction of nightmares. However, within the alpha agonist group, clonidine was statistically significant compared to guanfacine (1.59 days + 1.06 vs 3.18 days + 1.74, $P = .004$) in time to reduction of nightmares. Numerically guanfacine shows a larger percent of patients to have a decrease in flashbacks and/or intrusive thoughts. Final analysis will include clinically significant hypotension and/or bradycardia, 30-day readmission rates, initial and final dose of medication during hospitalization.

Comparison of Aripiprazole Dosing in Mood Disorders When Co-Prescribed With Interacting Medications

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Type: Work in Progress. **Background:** Aripiprazole is a second-generation antipsychotic FDA-approved for acute manic and mixed episodes associated with bipolar I disorder and augmentation in major depressive disorder (MDD), among other psychiatric indications. Despite aripiprazole's various indications and favorable side effect profile, drug-drug interactions are of concern. Aripiprazole is primarily metabolized by cytochrome (CYP) 2D6 and 3A4. The package labeling recommends aripiprazole be initiated at 50% of the usual dose if co-prescribed with strong CYP2D6 or CYP3A4 inhibitors and at 25% of the usual dose if co-prescribed with both types of inhibitors. Conversely, when co-prescribed with strong CYP3A4 inducers it is recommended to double aripiprazole dose over 1 to 3 weeks. Prescribing an appropriate dose of aripiprazole with known interacting medications is imperative for an appropriate medication trial and to limit adverse effects. **Methods:** This quality improvement project is a retrospective electronic health record (EHR) review assessing adults prescribed aripiprazole for MDD or bipolar disorder treatment in the outpatient setting at an academic medical center from July 2019 to June 2021. Exclusion criteria includes schizophrenia or psychotic disorder, long-acting injectable aripiprazole, dementia, autism spectrum disorder, Tourette's or tic disorder, post-traumatic stress disorder, pregnancy, and prisoners. Patient demographics (ie, age, sex, race) and clinical data (ie, prescriber specialty, aripiprazole indication, number of previous medication trials, interacting medication, multiple psychotropic prescribers, and select co-prescribed psychotropic medications) will be collected. **Outcomes:** The primary outcome will assess if the optimal maximum dose of aripiprazole was prescribed based on co-prescribed medications. Secondary outcomes include if the initial aripiprazole dose was optimal based on co-prescribed medications, duration of aripiprazole therapy, discontinuation of interacting medication(s), and reason for aripiprazole discontinuation. Dose comparison will be reported. Safety outcomes will assess akathisia incidence and interventions to treat akathisia. **Conclusions:** Data collection and analysis is in progress, and results will be presented. The goal of this study is to identify potential opportunities for both prescribing education and potential prescribing alerts to add to the EHR.

Comparison of Inpatient Psychiatric Medication Management in Gender Diverse Youth With Cisgender Peers

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Type: Work in Progress. **Background:** Gender diverse (GD) youth, such as transgender and non-binary identities, are at an increased risk for psychiatric illness and healthcare disparities compared to their cisgender peers. Literature has shown GD youth have increased psychotropic prescribing. Research suggests mental health outcomes for GD patients are improved when offered early access to gender affirming therapy. Optimal medication management of GD youth, particularly in the inpatient psychiatric setting, has not been evaluated. **Objectives:** The primary objective of this study is to determine if GD youth receive different psychotropic prescribing compared to cisgender peers. Secondary objectives include evaluation of readmission rates within six months and the effect of gender affirming therapy on psychiatric outcomes in transgender patients. **Methods:** A retrospective chart review will be conducted in hospitalized inpatients aged 5- to 17-years-old who identify as GD and compared to a matched control patient. Patients will be matched based on age, primary discharge diagnosis and year of admission. Exclusion criteria include patients identifying as GD prior to the study period and those without clear documentation of gender identity. Data collected will include psychotropic medications prior to admission, discharge prescriptions, baseline demographics, length of stay, time to readmission and total number of readmissions within 6 months. Use of gender affirming therapy will also be documented. Statistical tests used will be the Student *t* test for continuous data and χ^2 test for nominal data. An a-priori alpha of 0.05 will be used. **Outcomes:** We will

evaluate whether GD patients receive different psychotropic prescribing patterns from cisgender peers. We hypothesize that GD patients will receive more psychotropic medications and have higher readmission rates than their peers. Additionally, we anticipate the use of gender affirming therapy will decrease psychotropic prescribing in the transgendered population.

Comparison of Patient Outcomes With Long-Acting Injectable Paliperidone Versus Oral Risperidone Antipsychotic Treatment in Early Psychosis

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Type: Work in Progress. **Purpose:** The purpose of this study is to compare patient outcomes with long-acting injectable paliperidone versus oral risperidone antipsychotic (AP) treatment in veterans with early psychosis. The primary outcome is the difference in the number of hospitalizations in each group after initiation of either long-acting injectable paliperidone or oral risperidone. Secondary outcomes include patient engagement (number of follow-up visits, number of no-shows, and medication compliance), outcomes or baseline data points, adequately dosed antipsychotic medication, and side effects. **Methods:** This single-center study is Institutional Review Board approved and is to be conducted at the VA North Texas Health Care System (VA NTX HCS). The electronic medical record system will identify patients who were admitted to the inpatient mental health unit, diagnosed with either schizophrenia or schizoaffective disorder, experiencing early psychosis (defined as diagnosis within the past 2 years), and prescribed either oral risperidone or long-acting injectable paliperidone from January 1, 2010 to December 31, 2019. The following data will be collected: age, gender, race, BMI, HbA1c, lipid panel, abnormal involuntary movement scale (AIMS) assessment scores, psychiatric hospitalizations prior and after initiation of AP therapy, dose of medication, number of mental health follow-up visits attended or no-shows, medication adherence, side effects, and other prescribed mental health medications (ie, mood stabilizers). All veteran data will be deidentified and maintained confidentially. Descriptive statistics using χ^2 test will be utilized to compare primary and secondary outcomes between the comparison groups. Baseline characteristics will be compared using percentage, median, and interquartile ranges where applicable. **Results:** Results from this study will be used to assist in maximizing patient care and providing optimal pharmacotherapy choices for our veteran population. **Conclusion:** The results of this study may provide guidance in utilizing long-acting injectable antipsychotics earlier in treating psychosis and improve clinical decision making for our veteran population.

Developing a Patient Experience Instrument for Patient Medication Education Groups

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Type: Work in Progress. **Background:** Patient medication education groups (PMEGs) are healthcare professional-led sessions that provide patients with information about medications. While PMEGs are a common method for delivering medication information, their conduct varies between providers and there is little evidence regarding the experience of participants. The lack of a validated patient experience instrument precludes comparisons between PMEGs. The optimal method for conducting PMEGs is currently unknown, and is currently derived from a combination of expert opinion, training, experience, and tradition. **Objective:** The primary objective is to develop and validate a patient experience instrument for assessment of PMEGs. **Methods:** This multisite study will employ a mixed-method approach involving the development and implementation of a quantitative patient experience instrument and the use of memoing for qualitative assessment of PMEG techniques. The investigators represent a diverse group of pharmacists that regularly conduct or supervise the conduct of PMEGs. Through interrogation of the latent construct of the "patient experience of PMEGs", the investigators identified 3 key facets (motivated to take medications, informed about medications, and experiencing a professional group leader) and developed a 9-item (3 items per facet) preliminary instrument using 5-level Likert items. This instrument will be subjected to patient focus groups and a stakeholder feedback survey and will be remodeled based on these findings. The final patient experience instrument will be implemented at each site for 6 months during the course of regularly scheduled PMEGs led by pharmacy personnel. Qualitative assessment of PMEGs

will accompany the instrument via contemporaneous memoing of the PMEG experience by study investigators. **Outcomes:** Quantitative analysis of final instrument data will include a summative score of patient experience and subscores for each of the 3 facets of patient experience. Demographic data (ie, age, sex, ethnicity, race, and education) will be collected to characterize the sample. Qualitative analysis of memoing data will include identification of themes that describe the phenomenon. Analysis of instrument scores by PMEG themes may provide insights into maximizing the patient experience of PMEGs.

Development of an Ambulatory Alcohol Detoxification Clinic

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Type: Work in Progress. **Background:** In 2020, the average daily cost of a Veterans Affairs (VA) inpatient psychiatry admission was $2601 (Tran. HERC Inpatient Average Cost Data. 2014). Outpatient treatment for patients with mild to moderate alcohol withdrawal syndrome (AWS) is generally safe, effective, and less expensive than inpatient treatment (Muncie et al. Am Fam Physician. 2013;88(9):589-95.). Additionally, it may allow for less interruption with work and family. Overall, the Chillicothe VA Medical Center has a large number of psychiatric admissions for alcohol withdrawal. Certain individuals with mild to moderate AWS may benefit from the development of an ambulatory alcohol detoxification protocol. **Objectives:** The safety and success of the implemented protocol will be assessed through a variety of measures. (1) Evaluate the number of patients with mild to moderate AWS who meet criteria for ambulatory detoxification and are referred for care with the Medication Assisted Treatment (MAT) Clinic psychiatric mental health nurse practitioner (PMHNP). (2) Evaluate the number of patients who complete ambulatory detoxification. (3) Examine days to relapse and days without drinking. (4) Assess type and frequency of complications. **Methods:** Upon presenting to Urgent Care, veterans with a chief complaint of AWS will be screened by a provider to assess appropriateness for ambulatory detoxification. In addition, veterans presenting to primary care appointments who express interest in alcohol cessation would be screened and assessed for ambulatory detoxification. Veterans deemed to meet qualifications would be transferred to the MAT clinic PMHNP for medication assessment. The Clinical Institute Withdrawal Assessment for Alcohol (CIWA) scale will be used to assess extent of withdrawal symptoms. **Outcomes:** We will report the number and percentage of referred individuals that meet criteria for ambulatory detoxification. We will also report the number and percentage of participants who complete the ambulatory detoxification program. For those who participate in the program, we will monitor days to relapse and days without drinking while assessing type and frequency of complications.

Did the More Stringent Prescription Drug Monitoring Program (PDMP) Requirement Change the Way Benzodiazepines Are Prescribed at a Large Veteran Affairs Health Care System?

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Type: Work in Progress. **Background:** For most individuals, the risk of chronic benzodiazepine use outweighs the benefit. There is a risk of developing dependence which increases after 2 to 4 weeks of use. Some individuals may misuse or divert their prescriptions. Benzodiazepines have an increased risk of fatal overdose, especially in combination with opioids. In posttraumatic stress disorder (PTSD), benzodiazepine use also inhibits progress when engaging in trauma-focused psychotherapy treatment, and therefore recovery. Given that PTSD prevalence is more common in veterans and the potential risks posed by benzodiazepine use, the use of benzodiazepines may not be ideal for most of our patient population at our facility. A possible way to mitigate risk of overdose, misuse, diversion, and potential inappropriate use is using the state prescription drug monitoring program (PDMP) prior to prescribing benzodiazepines. However, the evidence is the literature is mixed on the potential benefit of the state PDMP use. Recently, Texas passed a law requiring more stringent checking of PDMP prior to prescribing certain controlled substances, including benzodiazepines. This quality improvement project aims to assess the influence of the PDMP use requirement on benzodiazepine-related outcomes at one Veterans Affairs facility. **Objectives:** (1) Evaluate whether the PDMP requirement changed benzodiazepine prescribing habits in the outpatient setting. (2) Assess whether the automated PDMP query button was associated with changes in benzodiazepine prescribing habits. (3) Assess whether the VA system's newly implemented automated PDMP query button was associated with changes in PDMP documentation. **Methods:** This quality improvement project will be a single site, retrospective electronic medical record review of a cohort of patients prescribed chronic benzodiazepines in the outpatient setting for at least 30 days with refills 6 months before PDMP mandate.

Information collected includes demographic variables, benzodiazepine prescription information, and PDMP documentation information at three points in time: before PDMP requirement, after PDMP requirement (March 1, 2020), and after PDMP query button (February 17, 2021). **Outcomes:** Descriptive statistics will be reported. This quality improvement project will report benzodiazepine prescribing and associated documentation habits in the outpatient setting.

Dosing Patterns and Outcomes in Older Adult Patients Initiated on Long-Acting Injectable Antipsychotics

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Type: Work in Progress. **Introduction:** Limited evidence is available about the use of long-acting injectable antipsychotics (LAIAs) in patients over the age of 60; however, situations arise when their use in the older population is warranted. LAIAs may be used for this population when treating psychiatric disorders such as schizophrenia, schizoaffective disorder, or bipolar disorder, among others. LAIAs are also desirable for their potential positive impact on adherence. **Objectives:** (1) Characterize common indications and dosing patterns of LAIAs in older adult patients and (2) Assess safety outcomes and identify markers for efficacy. **Methods:** A retrospective, single-center chart review will be performed to evaluate patients $\geq$ 60-years of age that were discharged between July 1, 2014 and June 30, 2021 from an inpatient psychiatric admission and received any of the following LAIAs during their inpatient admission or on the date of discharge at our PharmD injection clinic: haloperidol decanoate, fluphenazine decanoate, risperidone microspheres, aripiprazole lauroxil, paliperidone palmitate, and aripiprazole monohydrate. Patients will be excluded if they received the same LAIA therapy in the 90 days prior to admission. For objective (1), manual chart review will be performed to determine the number and percentage of LAIAs by indication, patients who received oral overlap, patients who received a loading dose of LAIA, and median maintenance dose of LAIA for each agent. For objective (2), number and percentage of patients with reported extrapyramidal symptoms (EPS) within 90 days of injection, patients who received an anticholinergic medication or beta blocker to treat side effects within 90 days of injection, patients who had a medication regimen change from LAIA, and psychiatric readmission within 90 days will be collected through manual chart review and automated reporting. **Outcomes:** We will report the real-world dosing strategies of LAIAs at our institution, the number and percentage of patients experiencing EPS, receiving treatment for side effects and undergoing medication regimen changes within 90 days of initial LAIA injection.

Effect of a Buprenorphine-Based Opioid Withdrawal Protocol on Rates of AMA Discharge

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Type: Work in Progress. **Background:** Against medical advice (AMA) discharges contribute to poor outcomes for patients including a significant increase in mortality at one year. Patients who discharge AMA are significantly more likely to have substance use disorders. Poor inpatient withdrawal management contributes to this high AMA discharge rate. The appropriate use of the partial mu opioid receptor agonist buprenorphine in hospitalized patients experiencing opioid withdrawal will likely decrease AMA discharges related to withdrawal mismanagement. A standardized protocol for buprenorphine use in opioid withdrawal is one strategy for improving withdrawal management. Little data exists on the impact of initiating a standardized withdrawal protocol and the optimal protocol has not been established. **Objectives:** (1) Examine the impact implementation of a standardized buprenorphine withdrawal protocol had on AMA discharge. (2) Conduct subanalyses to examine the impact of the protocol on pregnant patients, those with polysubstance use, and patients with a history of AMA discharge. (3) Examine the protocol's impact on hospital length of stay. **Methods:** The study focuses on two cohorts: those experiencing opioid withdrawal before initiation of the health system's buprenorphine protocol, and those whose opioid withdrawal was treated with the protocol. Patients in the pre-protocol trial arm were hospitalized between January 1, 2018 and June 30, 2019, had a urine drug screen positive for an opioid and had a diagnosis of opioid use disorder, opioid withdrawal, non-medical use of opioids, or related disorder noted on admission or discharge. Patients in the protocol arm were hospitalized between January 31, 2020 and July 31, 2021 and were ordered the institutional buprenorphine protocol for withdrawal management. **Outcomes:** The primary outcome of the research study is the rate of AMA discharge. The protocol's impact on the primary outcome in pregnant, polysubstance use, and history of AMA discharge patient subgroups will also be analyzed. Secondary outcomes include length of stay, supportive care medication requirements, and severity of withdrawal as measured

by clinical tools such as the Clinical Opiate Withdrawal Scale (COWS).

Effect of a Mindfulness Intervention on Burnout of Pharmacists in a Safety Net Health Care System

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Type: Work in Progress. **Background:** Burnout is defined as a combination of exhaustion, cynicism, and perceived inefficacy resulting from long-term job stress. Excessive time at work, additional tasks unrelated to clinical work such as excessive paperwork, and insufficient compensation may lead to burnout. According to a nationwide pilot survey sent to members of the American College of Clinical Pharmacy, it is estimated that over 60% of pharmacists in the health-systems setting experienced burnout in 2017, largely due to emotional exhaustion. Given the prevalence, there is a need to identify interventions that may improve burnout among pharmacists. Our study aims to quantify the impact of a wellness intervention on pharmacist burnout at a safety net health-system. **Objectives:** (1) Evaluate the change in burnout in pharmacists who undergo a mindfulness intervention. (2) Evaluate the prevalence of burnout among pharmacists based on area of work. (3) Determine the incidence of burnout one month and three months post-intervention. **Methods:** This is a single-center, prospective quasi-experimental study. Participants will be recruited from Denver Health Medical Center and Denver Health associated clinics and pharmacies. All 102 pharmacists who have worked $\geq$ 0.5 full time equivalents for greater than one month will be eligible for participation. A targeted enrollment of $\geq$ 50 participants will be set. Demographic variables including age, gender, time spent in operations, clinical, or administrative work, and type of clinical pharmacy will be collected. A survey will be used to assess participants' potential sources of burnout outside of work and to collect responses to the Maslach Burnout Inventory: Human Services Survey (Medical Personnel). The Maslach Burnout Inventory will be licensed from Mind Garden, Inc to assess burnout prior to the intervention, as well as one- and three- months post-intervention. The mindfulness intervention will be provided by Upstream Mindfulness, LLC at no cost to the participants. **Outcomes:** We will report and evaluate responses to the Maslach Burnout Inventory: Human Services Survey (Medical Personnel) and additional questions at baseline, one and three-months post-intervention in pharmacists included in the study. These will be analyzed on an individual basis as well as among groups of pharmacists based on clinical specialty area.

Effect of Pharmacist-Led Tobacco Cessation Efforts in Patients With Severe Mental Illness Prescribed Varenicline

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Type: Work in Progress. **Purpose:** Studies have shown that patients with severe mental illness (SMI) are more successful in tobacco cessation when provided a longer duration of pharmacotherapy and provided a patient-centered treatment approach, but remission is not maintained after 12 months likely due to limitations such as participants being underdosed. There are no current studies that observe efficacy of smoking cessation efforts made by a pharmacist in comparison to other health care providers. The purpose of this study is to compare the effectiveness of pharmacist-led tobacco cessation efforts using varenicline to usual care by all other health care providers in patients with SMI. **Background:** Prevalence of smoking in the SMI community remains 2-3 times higher than in the general population today. It is often assumed that smoking relieves depression/anxiety in patients with SMI, such as schizophrenia and bipolar disorder, but actually, smoking contributes to the general poor physical health in this population. It is well known that patients with SMI die 20-25 years earlier than those without SMI. Smoking is the most important modifiable risk factor for this inequality. Pharmacists can play a key role in providing medication education and assisting with adjusting nicotine replacement therapy or varenicline dosing based on efficacy for patients with SMI. They can also play a vital role in adjusting dosing of other medications such as antipsychotics that may be affected by smoking. **Methods:** This is a single center, retrospective cohort study. It includes adults with severe mental illness that are prescribed an antipsychotic or mood stabilizer and actively smoking cigarettes. The primary outcome is the patient's smoking status at 3, 6, and 12 months after initiation of varenicline. Efficacy measures include changes in tobacco use for those who did not quit smoking, changes in antipsychotic medication regimen, and reports of neuropsychiatric events after initiating varenicline. Subjects followed by a pharmacist will be compared to those that are managed by other healthcare providers. **Results:** Data is being collected at this stage. Results are expected by April 1, 2022. **Conclusion:** Conclusions are pending completion of data analysis.

Effect of Pharmacogenomic Testing on Clinical Outcomes of Patients With Major Depressive Disorder

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Type: Work in Progress. **Background:** Pharmacogenomic testing may better predict patient response to antidepressants, allow for more individualized treatment and theoretically, better clinical response of depressive symptoms. The aim of this study is to evaluate patients with major depressive disorder (MDD) who had pharmacogenomic (PGx) testing completed and determine if testing led to medication changes and improved outcomes. This study was conducted at MetroHealth Medical Center, a tertiary teaching hospital in Cleveland, Ohio. Pharmacogenomic testing is not routinely utilized but is available for providers to use at their discretion for patients poorly responsive to or intolerant of antidepressants. This study was developed to investigate the impact and future usability of PGx testing for MDD patients. **Objectives:** (1) Determine if medication changes as a result of PGx testing led to a significant reduction in Patient Health Questionnaire-9 (PHQ-9) scores among MDD patients from baseline to endpoint. (2) Secondary objectives will evaluate the time to medication changes after PGx testing, percentage of patients in MDD remission after PGx testing, and evaluate side effects after PGx testing. **Methods:** This pilot study is a retrospective review of MDD patients 18-years or older who received PGx testing between January 1, 2018 to December 31, 2020. PGx patients will be matched to a control group and the study will include 60 patients, 30 in each group. The primary outcome variable, the change in PHQ-9 scores from baseline to endpoint, will be compared using Student *t* test. Cohen's d effect size estimate will be determined for the difference in the change from baseline between study groups. The time to medication change will be determined for the PGx testing group and summarized via Kaplan-Meier curve with median and quartile estimates. Other secondary outcomes will be summarized using frequencies and percentages for the PGx study group. All statistical testing will be two-sided with $P < .05$ considered significant. **Outcomes:** PHQ-9 scores pre and post-PGx testing will be reported. The PGx intervention group will be compared to the control group and analyzed for statistical differences in depression outcomes as a result of medication changes, genetic congruency with medications, length of time to medication change, and percentage of patients reaching remission.

Efficacy and Safety of Intramuscular Olanzapine Versus Intramuscular Haloperidol for Acute Agitation and Aggression at a Pediatric Hospital

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Type: Work in Progress. **Introduction:** Acute agitation and aggression is the primary reason for hospitalization in youth. The 2019 Best Practices for Evaluation and Treatment of Agitated Children and Adolescents (BETA) Consensus Statement provides recommendations for medication choice based on etiology of agitation and patient specific factors. Despite the availability of this guidance, general agreement regarding a first line intramuscular (IM) antipsychotic for acute agitation and aggression in youth is lacking. At our institution, there is a high utilization of IM haloperidol for agitation in medically and psychiatrically hospitalized youth despite the lack of data comparing its efficacy to second-generation antipsychotics, like olanzapine. **Objectives:** The purpose of this study is to compare the efficacy and safety of IM haloperidol and IM olanzapine for the management of acute agitation and aggression. Outcomes will be utilized to determine if olanzapine is associated with fewer side effects and a similar efficacy profile compared to haloperidol. Additionally, data from this study will help drive the creation of an institutional-specific pathway for the treatment of acute agitation and aggression. **Methods:** This is a retrospective, non-interventional chart review utilizing data from an electronic medical record at a large tertiary academic medical center from October 1, 2019 to October 31, 2021. Tableau Software will be utilized to identify patients who received at least one dose of IM haloperidol or IM olanzapine for acute agitation and aggression while admitted to a children's hospital. The study protocol was reviewed and approved by the Institutional Review Board. **Results:** We will report primary efficacy data as defined by the use of a second IM medication (eg, antipsychotic or benzodiazepine) within 60 minutes after study medication administration. Secondary safety outcome data will include occurrence of vital sign changes (eg, hypotension and tachycardia), extrapyramidal side effects, and QTc prolongation documented in the electronic medical record. Efficacy and tolerability comparisons between IM olanzapine and IM haloperidol will also be discussed. **Conclusion:** Conclusions will be submitted within final poster.

Efficacy of Combination Therapy Using Naltrexone With and Without Acamprosate in the Management of Alcohol Use Disorder in Veterans

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Type: Work in Progress. **Background:** The American Psychiatric Association recommends naltrexone or acamprosate as first-line agents for patients with

moderate to severe alcohol use disorder (AUD). Because naltrexone and acamprosate have different mechanisms of action, it's been suggested that their combined use may lead to greater improvements in drinking outcomes such as relapse and alcohol abstinence compared to monotherapy. With an estimated 40% of veterans having a lifetime history of AUD and the lack of studies focusing on this specific population, the purpose of this study is to assess the effects of combination treatment vs naltrexone monotherapy in reducing alcohol use-related hospitalization or emergency department (ED) visits among veterans. **Objectives:** (1) Evaluate the proportion of alcohol use-related hospitalization and ED visits in veterans prescribed combination therapy compared to monotherapy within 1 year. (2) Evaluate time to first alcohol-use related hospitalization or ED visit. (3) Assess medication adherence by comparing the medication possession ratio (MPR) of veterans in combination therapy vs monotherapy. **Methods:** This retrospective cohort study will include veterans who are greater than 18-years-old, diagnosed with AUD based on DSM-5 criteria, and were prescribed a combination of acamprosate and naltrexone or naltrexone monotherapy from January 1, 2013 through January 1, 2020. Patients will be excluded if they had a diagnosis of opioid use disorder based on DSM-5 criteria, a positive drug test for benzodiazepines, barbiturates, and opiates before initiation of treatment, impaired kidney function, or liver enzymes $\geq$ 5x upper limit of normal. Acamprosate or naltrexone must be initiated within a 60 day period from the other agent to be included in the combination group. A medication possession ratio (MPR) will be calculated for each trial of acamprosate and naltrexone. Patients with MPR scores $\leq$ 0.80 will be categorized as nonadherent. Inferential statistics will be used to detect demographic, clinical, health service utilization, and medication usage differences between the groups. **Outcomes:** We will report the effects of combination therapy vs monotherapy on medication adherence, ratio, and time to first alcohol use-related hospitalization and ED visits.

Efficacy of Liraglutide in Comparison to Metformin for the Management of Antipsychotic-Induced Weight Gain

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Type: Work in Progress. **Background:** Antipsychotics are the backbone of schizophrenia management and important in the management of mood disorders. Although effective, they are notoriously associated with adverse metabolic effects. Antipsychotic-induced weight gain (AIWG) has negative implications on patient health outcomes and poses major management problems for clinicians. Metformin is commonly considered first-line for the management of AIWG. Existing literature suggests that when compared to metformin, glucagon-like peptide 1 (GLP-1) agonists are superior in average weight reduction. There is increased interest for the use of GLP-1 agonists in the management of AIWG, but existing evidence for this indication is limited. This study will allow us to assess the efficacy of liraglutide in comparison to metformin for the management of AIWG in patients at the Dallas County Jail. **Objectives:** (1) Evaluate reduction in weight from baseline in patients treated with liraglutide or metformin for AIWG. (2) Evaluate change in BMI from baseline in patients treated with liraglutide or metformin for AIWG. (3) Assess change in weight and BMI in patients treated with liraglutide compared to patients treated with metformin. **Methods:** This will be a retrospective chart review. A CIPS (Correctional Pharmacy Software) report will be generated to identify patients prescribed metformin or liraglutide for the management of AIWG. Demographics such as age, sex, race, ethnicity, baseline weight, baseline BMI, psychiatric illness, antipsychotic prescribed, antipsychotic dose, duration of antipsychotic and weight loss agent prescribed, and any dose adjustments will be documented. Safety parameters include liver function tests, HbA1c, and any reason for therapy discontinuation. For objective 1, change in weight from baseline to follow-up will be reported for patients treated with either liraglutide or metformin. For objective 2, change in baseline and follow-up BMI will be reported for patients treated with liraglutide or metformin. For objective 3, total weight and BMI change in patients treated with liraglutide will be compared to those treated with metformin. **Outcomes:** We will report weight reduction in patients at the Dallas County Jail treated with liraglutide or metformin for the management of AIWG and analyze the efficacy of liraglutide in comparison to metformin for this indication.

Enhancing Psychiatric Care in the COVID Era Through Pharmacy-Based Long-Acting Injectable Delivery Training

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Type: Work in Progress. **Background:** Utilization of long-acting injectable (LAI) medications has proven to increase treatment adherence and reduce hospitalization rates in patients with bipolar disorder, schizoaffective disorder, and schizophrenia. However, as the COVID-19 pandemic has evolved, patients in Central Texas have been disadvantaged by reduced access to LAI providers due to clinic closures, telehealth transitions, and decreased psychiatric hospital admission

allowances. Pharmacists are able to administer LAIs and current expansion of this healthcare service is limited by lack of training regarding LAI administration. As the healthcare provider that is most accessible to patients, pharmacists are in a strong position to play an influential role on the interdisciplinary mental health-care team. This pilot project which will assess the impact of a collaborative continuing education program on pharmacists' knowledge and provision of LAI medications in the treatment of bipolar disorder, schizoaffective disorder, and schizophrenia. **Objectives:** (1) Evaluate pre- and post-training comfort, perceived barriers, and knowledge pertaining to LAI management. (2) Evaluate change in LAI practice behaviors 12-weeks post-training. **Methods:** Participants were recruited voluntarily via email to community and independent pharmacies in the state of Texas. Participants completed a series of three self-paced online modules followed by attending a live webinar which occurred November 18, 2021. Learning outcomes were assessed through the following process: Learners took a pre-survey and pre-test to establish a baseline measurement of current practice behaviors, comfort, perceived barriers, and knowledge pertaining to LAI management. The same learning assessment tools were administered at the completion of the self-paced modules and live-webinar. Lastly, a final survey will be administered 12-weeks after completing the full training program to assess the degree to which the pharmacist has begun to implement, or plans to implement, skills acquired during the training. **Outcomes:** Collection and analysis of pre- and post-survey and test data is ongoing. The 12-week follow-up survey will be disseminated February 18, 2022. We will report the number and percentage of participants who completed the educational programming, in addition to changes in current practice behaviors, comfort, perceived barriers, and knowledge pertaining to LAI management. We will also report challenges and areas for improvement for future iterations.

Establishing the Feasibility of Enhanced Myocarditis Monitoring During Clozapine Initiation

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Type: Work in Progress. **Background:** Clozapine is a second-generation antipsychotic reserved for treatment resistant schizophrenia. Despite being effective in the treatment of patients who have failed antipsychotic therapy, clozapine is often underutilized due to safety concerns. Clozapine has five black-box safety warnings, and one of those is myocarditis. This titration-dependent side effect typically occurs within the first 40 days of clozapine initiation. Over the past 30 years, more than 1500 cases have been reported to the FDA with 85% reported within the last 5 years. In our institution, five cases have been reported over the last two years. Clinical monitoring for myocarditis consists of observing for signs of flu-like symptoms and chest pain, as well as monitoring for tachycardia and fever. Elevated troponin and C-reactive protein (CRP) have also been linked to clozapine-induced myocarditis. This pilot project aims to determine the feasibility of enhanced monitoring for myocarditis in an urban inpatient psychiatric hospital. **Methods:** This is a prospective, single-center study focusing on patients aged 18-years and older admitted to an inpatient psychiatric hospital beginning August 1, 2021. Patients who were newly initiated or reinitiated on clozapine therapy will be included in the analysis. In addition to requirements regarding absolute neutrophil count (ANC) monitoring, troponin and CRP monitoring will occur at baseline and days 7, 14, 21, and 28. Daily vital signs will be monitored in accordance with hospital policy. For those patients who develop signs or symptoms of unidentified illness, heart rate $>$ 120 beats per minute (BPM) or increased by $>$ 30 BPM, CRP 5-10 mg/dL, or mild elevation in troponin ($\leq$ 2 ULN), clozapine therapy will continue, and troponin and CRP will be monitored daily. If the patient develops troponin $>$ 2 ULN or CRP $>$ 10 mg/dL, an ECG will be obtained, and cardiology will be consulted. **Outcomes:** We will report on clozapine prescribing patterns within our institution including clozapine titration schedules as well as the laboratory and clinical outcomes data for patients who underwent enhanced monitoring for myocarditis including troponin and CRP levels and myocarditis diagnoses.

Evaluating Clozapine Toxicity Following COVID-19 Vaccination

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Type: Work in Progress. **Background:** Clozapine is currently the most effective antipsychotic, but it is underutilized due to the risk for adverse effects and potential for toxicity. The symptoms of clozapine toxicity include agitation, cardiac arrhythmias, delirium, excessive sedation, hypersalivation, hyperthermia, myoclonus or seizures, orthostatic hypotension and respiratory depression. Clozapine is primarily metabolized by CYP1A2, and to a lesser degree CYP3A4 and CYP2D6. Studies suggest active infection or inflammation decreases the activity of CYP1A2, leading to decreased metabolism of clozapine and thereby may increase

concentrations. While the literature is limited, there are some reports that vaccinations, including COVID-19 vaccines, can have similar effects on the immune system and the ability to alter CYP450s. **Objective:** To describe the risk of clozapine toxicity in patients receiving COVID-19 vaccination. **Methods:** This study is a multi-site retrospective chart review that includes adult inpatients on clozapine treatment who received at least one dose of COVID-19 vaccination while hospitalized between December 1, 2020 and January 31, 2022. Data collected includes patient demographics (age, sex, ethnicity, primary psychiatric diagnosis, medical comorbidities, smoking status), clozapine dose and duration of treatment at time of vaccination, presence of symptoms of clozapine toxicity (agitation, delirium, excessive salivation, fever [$>$ 37.5° C], hypotension, myoclonus/seizures, oversedation, slurred speech, tachycardia [$>$ 110 bpm], or unsteady gait) within 14 days post-vaccination, interacting medications, and laboratory levels (clozapine, norclozapine, absolute neutrophil count, and C-reactive protein). Descriptive statistics will be utilized to determine the proportion of patients experiencing clozapine toxicity following COVID-19 vaccination. Other statistical analyses include Student *t* test or Wilcoxon Rank Sum for continuous data, χ^2 test or Fisher's Exact test for categorical data, and multi-variable logistic regression to determine the risk factors associated with clozapine toxicity. **Outcomes:** We will report the number and percent of participants with symptoms of clozapine toxicity following COVID-19 vaccination and analyze clozapine serum levels, time to onset of toxicity, and risk factors associated with clozapine toxicity.

Evaluating the Association of Montelukast Use on Neuropsychiatric Outcomes in Patients Hospitalized for COVID-19

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Type: Work in Progress. **Introduction:** The declaration of COVID-19 as pandemic on March 11, 2020 prompted interest in identifying effective treatments. Montelukast, a leukotriene-receptor antagonist, may be effective against SARS-CoV-2 for pulmonary and extrapulmonary manifestations due to its anti-inflammatory and antiviral properties. However, montelukast received a boxed warning for neuropsychiatric events on March 4, 2020 raising questions about its utility in COVID-19. Hospitalization due to COVID-19 alone has been shown to increase risk for psychiatric events, including new anxiety and mood disorder diagnoses. To date, there are no studies reporting the incidence of neuropsychiatric events in patients with a history of COVID-19 hospitalization and concurrent montelukast use. This retrospective observational cohort study seeks to understand the association between neuropsychiatric events associated with montelukast and its prevalence in veteran patients who were hospitalized for COVID-19. **Methods:** This retrospective observational cohort study will include hospitalized patients ages 18 and older with prior montelukast use defined as having filled at least one 30-day prescription in the past 90 days or two prescription fills in the past 180 days across a nationwide Veterans Health Administration (VHA) database from January 1, 2020 through July 1, 2021. The treatment group will include those hospitalized for COVID-19 while the control cohort will include those hospitalized for reasons unrelated to COVID-19. Pregnant or breast-feeding patients, or patients without healthcare system contact within the past two years of hospitalization will be excluded. Data will be extracted from the VA's corporate data warehouse, a data repository of electronic medical records developed by the VA Informatics and Computing Infrastructure (VINCI). **Outcomes:** The primary outcome is a combined endpoint defined as new onset of the following within 90 days post-hospitalization discharge: new diagnosis of depression or newly started antidepressants. Additional outcomes will include psychiatry-related hospitalizations. We will also evaluate the number of mental health appointments 180 days before, and after, hospitalization for COVID-19. Baseline characteristics between matched cohorts will be compared using an independent sample Student *t* test (or Mann-Whitney-U-test for non-parametric data). The primary outcome will be assessed via logistic regression to calculate the odds ratio.

Evaluating the Effectiveness of Buprenorphine E-consults and the Impact on Opioid Use Disorder Treatment Services

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Type: Work in Progress. **Purpose:** While there is an increased rate of hospital admissions due to opioid misuse and overdose, many patients are not connected with treatment for opioid use disorder (OUD). However, studies show that continuous OUD treatment and follow-up from inpatient to outpatient setting improve treatment outcomes. The Veterans Affairs Portland Health Care System (VAPORHCS) initiated a buprenorphine e-consult service to streamline a referral process for veterans to receive follow-up and treatment for OUD. We predict that utilization of e-consults will improve treatment outcomes across various settings within inpatient and outpatient at VAPORHCS. **Purpose:** The purpose of this retrospective review is to evaluate the impact of the buprenorphine e-

consult in connecting veterans to buprenorphine treatment services at VAPORHCS. **Methods:** A retrospective chart review of veterans who have been referred for review of buprenorphine treatment via buprenorphine e-consult will be conducted. Data collection will be performed on those referrals that occurred between August 1, 2020 and July 31, 2021. Descriptive statistics will be used to analyze, assess, and interpret findings of the primary endpoint and stratified analysis will be used to compare the secondary endpoints. All e-consults that were placed for veterans with a diagnosis of opioid use disorder and appointment with an outpatient buprenorphine clinic will be included in this review. Exclusion criteria will include e-consults that were placed for veterans prior to the start of the data collection period, e-consults that were entered in error, and e-consult responses for which referral and follow-up in clinic was not recommended. The primary endpoint will be time to first substance use disorder appointment after consult was addressed, and secondary endpoints will include service that placed the consult, type of clinic patient was referred to based on severity of established diagnosis, total number of follow-up appointments, efficacy, adverse events, adherence of buprenorphine maintenance dose, concomitant benzodiazepine use, urine drug screen results, and prescription drug monitoring program results. **Results:** Data collection is currently ongoing and results are pending.

Evaluating the Impact of a Medication Access Program in Underserved Mental Health Patients

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Type: Work in Progress. **Background:** Medication non-adherence has been shown to have a profound impact on patient outcomes and health care costs. Non-adherence rates among mental health patients have become a major public health concern which has prompted exploration of various approaches to improve medication compliance. Medication access programs, such as Dispensary of Hope (DOH), have been created in an effort to increase access to affordable medications to reduce not only medication non-adherence, but also hospital readmissions for uninsured patients. **Objectives:** (1) Analyze cost avoidance resulting from utilization of the medication access program DOH at a psychiatric hospital. (2) Analyze the amount of Health System Foundation dollars spent on discharge prescriptions. (3) Evaluate 30-day readmission rates pre- and post-DOH implementation. (4) Compare prescription fill and refill data pre-and post-DOH implementation. **Methods:** This retrospective, single-center, cohort study will evaluate the impact of DOH at a psychiatric hospital. An electronic medical record system will be used to identify uninsured patients prior to DOH implementation and those that qualified for DOH services after its implementation that had discharge prescriptions transmitted to an onsite outpatient pharmacy. Demographic variables (age, gender, ethnicity) will be collected as well as number of prescriptions (DOH vs non-DOH) transmitted and sold upon patient discharge, amount of Health System Foundation dollars spent per discharge, number of patients re-admitted within 30 days of discharge date, and number of prescriptions (DOH vs non-DOH) refilled post-discharge. **Outcomes:** This study will evaluate the impact of a medication assistance program in uninsured mental health patients through evaluation of cost avoidance, readmission rates, and program utilization data pre-and post-implementation at a psychiatric hospital in conjunction with an onsite outpatient pharmacy.

Evaluating the Impact of Involuntary Medication Orders on a Patient's Length of Stay at a State Forensic Psychiatric Hospital

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Type: Work in Progress. **Background:** Competency restoration programs in forensic state hospitals often include the use of pharmacologic interventions to manage symptoms interfering with a patient's ability to stand trial. While many patients elect to take medications as prescribed, some will refuse treatment. When patients that pose a danger to themselves and/or others refuse their medications, the treating psychiatrist may petition for an involuntary medication order. Psychiatric medication adherence through an involuntary medication order has been shown to improve patients' contact with reality as well as safety for themselves and others. Refusal of medications, alternatively, has been shown to lead to serious health risks, social consequences, and longer hospital stays that prevent other patients from receiving treatment. This study will evaluate if involuntary medication orders reduce the length of stay (LOS) for patients admitted to a state forensic psychiatric hospital. **Objectives:** (1) Determine if there is a difference in the LOS between patients with and without involuntary medication orders. (2) Compare the LOS to the length of time to obtain an involuntary medication order after admission. **Methods:** This retrospective chart review will include a minimum of 50 adult patients that were found incompetent to stand trial and admitted to the hospital between

March 1, 2017 and March 1, 2020. Patients will be excluded from this study if they are under 18-years-old, adherent to medication, under a Sell order, admitted to a long-term treatment program, or admitted after March 1, 2020. Patient demographic data (age, sex, race), type of criminal offense, psychiatric diagnoses, medications, length of time from admission to receiving an involuntary medication order, and LOS will be collected and analyzed. For each patient with an involuntary medication order, a patient with similar baseline characteristics will be matched for comparison. LOS comparisons between patients with and without involuntary medication orders and length of time to obtain involuntary medication orders after admission will be analyzed using paired Student *t* test. Baseline demographics data will be reported using descriptive statistics. **Outcomes:** The LOS for patients with and without involuntary medication orders and time to obtain involuntary medication orders after admission will be reported.

Evaluation of a VA Medical Center's Care Coordination Processes With Long-Acting Injectable Antipsychotics

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Type: Work in Progress. **Background:** Long-acting injectable (LAI) antipsychotics have become increasingly more common as it is suggested that they improve adherence and, therefore, clinical outcomes for patients. The Veterans Affairs (VA) Pharmacy Benefits Management Services provides national guidance on assessing appropriateness of therapy with LAI antipsychotics, which require approval by a pharmacist via a prior-authorization process. Beyond this, the remaining coordination procedures for care may differ between facilities. This, along with barriers in transportation, funds, resources, or experience, may result in issues within this process, hindering the system's ability to provide safe and effective therapy with LAIs. The identification of such barriers can help systems better target these issues to improve their processes and patient care. This retrospective, descriptive, quality-improvement project will evaluate VA Boston's care coordination process for patients on LAI antipsychotics. **Objectives:** (1) Evaluate the care coordination process for LAI antipsychotics within the VA Boston Healthcare System. (2) Identify prevalent themes within the data, with the goal of implementing an intervention based on these findings for process improvement. **Methods:** Data will be collected via chart review and will include demographics, specific LAI antipsychotic initiated and indication, setting initiated, established clinic, campus at which the majority of injections are administered, appropriate follow-up time of injections, and whether provider was alerted to discrepancies. Patients included in the project will be those who received a LAI antipsychotic between January 1, 2020 and December 31, 2021. Patients will be excluded if they died during the study period, are receiving a LAI at another facility, or if receiving other LAI medications. Analysis will be descriptive in nature to recognize common themes among the data related to the care coordination process for LAI antipsychotics. **Outcomes:** The primary outcomes will be time until established in the injection clinic and percent of patients that received a follow-up injection of their antipsychotic. Secondary outcomes will be the number of patients in which a prior-authorization drug request was placed and completed prior to first administration of injection and presence of documentation regarding education provided, administration of injection (to include dose and site of injection), and reason for discontinuation if applicable.

Evaluation of Agitation Events Treated With an 'As-Needed' Medication in Patients Diagnosed With Schizophrenia and Schizoaffective Disorder Receiving Typical Versus Atypical Antipsychotics

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Type: Work in Progress. **Background:** Agitation is a feeling of irritability or severe restlessness which is common in patients with schizophrenia and schizoaffective disorder. This can lead to a lack of behavioral control, damage to property, or assault to self/others. Risk factors for agitation include increased length of stay or readmission in the inpatient psychiatric setting, prior history of impulsivity/hostility, and/or diagnosis of a psychotic disorder. The standard of care begins with verbal de-escalation strategies, but when failed, prompts the use of tranquilizing or sedating 'as-needed' pharmacological medications in addition to the maintenance antipsychotic. This study will compare data between the number of agitation events in patients on maintenance atypical versus typical antipsychotics in schizophrenia and schizoaffective disorder. **Objectives:** (1) Evaluate and compare the number of agitation events treated with an 'as-needed' medication in patients diagnosed with schizophrenia or schizoaffective disorder receiving typical versus atypical antipsychotics. (2) Assess the number of agitation events treated with an 'as-needed' medication between medications in the atypical antipsychotic class in patients diagnosed with schizoaffective disorder. (3) Assess the number of agitation events treated with an 'as-needed' medication between medications in the atypical antipsychotic class in patients diagnosed with schizophrenia. **Methods:** Medical records of patients diagnosed with schizophrenia and schizoaffective disorder with adminis-

tration of an 'as-needed' medication for the treatment of agitation at a state psychiatric inpatient facility from October 1, 2020 to November 30, 2021 are being reviewed, and patients will be excluded if they have another psychiatric disorder as their primary diagnosis, are on more than one maintenance antipsychotic, or if they have not taken one antipsychotic for a minimum of 30 days at a target/maintenance dose. Age, gender, primary diagnosis, generic name and dose of maintenance antipsychotic medication, and generic name, dose, formulation, and date/time of the 'as-needed' medication administered with the indication of agitation will be collected. Descriptive statistics and χ^2 test will be used to evaluate the outcomes to determine if a difference exists between antipsychotic medications and their correlation to the use of 'as-needed' medications for agitation. **Results:** Results to be presented.

Evaluation of Buprenorphine/Naloxone Micro-Induction Protocol and Treatment Retention in Veterans Positive for Fentanyl

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Type: Work in Progress. **Background:** The Colorado Health Institute (CHI) identified the COVID-19 global pandemic as a catalyst for a markedly increase in drug overdose deaths in the state of Colorado. In 2020, Colorado recorded the most overdose deaths the state has ever seen at 1477; marking a 38% increase from 2019. Specifically, the number of overdose deaths due to opioids, including prescription opioids, heroin, and fentanyl, increased by 54%. Furthermore, 68% of all opioids deaths were attributed to fentanyl. As a potential solution to the rise in fentanyl overdose cases in Colorado, the Rocky Mountain Regional VA Medical Center (RMR VAMC) Substance Use Disorder Clinic (SUD Clinic) has begun a micro-induction protocol of buprenorphine/naloxone for veterans who are positive for fentanyl at the time of induction. **Objective:** Evaluate the effectiveness of a buprenorphine/naloxone micro-induction protocol in veterans positive for fentanyl at the time of initiation. **Methods:** A retrospective chart review for all veterans at RMR VAMC who underwent buprenorphine/naloxone micro-induction after a positive confirmatory urine drug screen (UDS) for illicit fentanyl will be performed. Patient characteristics that will be gathered include demographics, duration of illicit fentanyl use, and opioid withdrawal symptoms measured by COWS (Clinical Opiate Withdrawal Scale). **Outcomes:** Primary outcomes will include rate of opioid withdrawal symptoms during induction phase as measured by COWS. Secondary outcome will include treatment retention at 6 months post-induction of buprenorphine/naloxone, and opioid abstinence at 6 months. Treatment retention is defined as an active buprenorphine/naloxone prescription or a follow-up medical visit. Abstinence is defined as negative UDS for non-prescribed opioids at each medical follow-up appointment. **Significance:** This retrospective chart review will help evaluate the efficacy and safety of buprenorphine/naloxone micro-dosing in veterans with positive confirmatory UDS for illicit fentanyl. It will also serve as a potential solution to the rise in fentanyl-related overdoses.

Evaluation of Changes to a Telephone Tobacco Treatment Clinic on Patient Access and Encounter Documentation

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Type: Work in Progress. **Background:** Telephone visits within the Tobacco Treatment Clinic (TTC) at a Midwest VA facility are primarily facilitated by a psychiatric clinical pharmacy specialist, who is limited to 16 hours per week for TTC. Demand increased for telephone appointments in early 2020. The telephone clinic wasn't able to schedule new patients within 30 days which led to changes to improve efficiency, implemented on April 1, 2021. Changes included simplification of note templates and optimizing clinic time. This quality improvement project will assess changes made to further optimize clinic proficiency and provide more opportunities for patients. **Objectives:** (1) Assess how changes made with scheduling structure and note templates in the TTC affected efficiency in clinic. (2) Assess how changes made in the TTC enhanced workload capture. **Methods:** Data was collected via chart review from the Computerized Patient Record System (CPRS). Veterans were identified based on having encounters in the TTC phone clinic in two time periods. The first time period assessed data prior to changes, ranging from October 15, 2020 to January 28, 2021. The second time period assessed data after changes were made, May 1, 2021 to August 11, 2021. The primary endpoint data consists of the total number of new patients and follow-up visits in each time period. Secondary outcome data will involve average number of visits per patient during the defined time periods, average time per visit, PharmD tool workload (specifically, total health factors, health factors most often used, and average number of health factors per visit), and determining how many patients were able to quit for at least 14 days. **Outcomes:** The primary outcome will report the numerical difference in number of patient encounters for both new and follow-up patient encounters. Preliminary data for first time period includes 35 initial and 73 follow-up visits. The second time period includes 38 initial and 122 follow-up visits. Secondary outcomes will report:

average number of visits per patient during the defined time periods, numerical differences in workload capture and average time per visit, numerical difference in PharmD tool workload capture, and further analysis of patients able to quit for at least 14 days. Data will be presented at CPNP 2022 Annual Meeting.

Evaluation of Clinicians' Willingness to Prescribe Buprenorphine-Based Products to Veterans With Opioid Use Disorder

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Type: Work in Progress. **Background:** Buprenorphine-based products are used for the treatment of opioid use disorder (OUD). Buprenorphine is a partial mu-opioid receptor agonist that produces ceiling effects on respiratory depression and euphoria which makes it safer compared to full opioid agonists. In efforts to destigmatize and improve access to medications for OUD (MOUD), the Veterans Health Administration has put forth efforts to offer pharmacotherapy for OUD across various levels of care beyond substance use disorder clinics. However, limited training and education along with legal, regulatory, and institutional barriers often restrict access to care. Currently within our facility, the majority of patients are prescribed buprenorphine-based products through the Substance Treatment and Recovery (STAR) clinic. Similar to the trend seen nationally, the number of x-waivered clinicians with authority to prescribe buprenorphine-based products for the treatment of OUD is limited at our facility and of those with the capacity to prescribe, not all choose to do so. This quality improvement project will seek to understand clinicians' perspectives on MOUD, identify barriers to buprenorphine-prescribing, and provide a solution-focused educational session to reduce these barriers. **Objective:** To evaluate clinicians' willingness to prescribe buprenorphine-based products for OUD after addressing the common barriers to prescribing and discussing strategies to overcome the barriers. **Methodology:** An electronic survey was sent out to clinicians in primary care, mental health, pain, and emergency medicine at our facility to explore their perspective on MOUD and identify potential barriers to prescribing buprenorphine-based products for OUD. An education session will be held to specifically target and discuss potential methods to address the barriers identified. A second survey will then be sent to those who attended the educational session to determine the clinicians' willingness to prescribe buprenorphine-based products for OUD treatment. **Outcomes:** We will report the number of clinicians who are willing to prescribe buprenorphine-based products after attending the education session that addresses the identified barriers. We will also assess the willingness to prescribe if pharmacy consult services were available, the willingness to conduct buprenorphine home-inductions, and will compare the results of the clinician surveys across each level of care.

Evaluation of Methadone Usage at a Tertiary Care Facility

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Type: Work in Progress. **Background:** Opioid use disorder (OUD) affects over 2 million individuals in the United States annually. The DSM-5 outlines the diagnostic criteria for OUD. Patients presenting in the acute setting are often seeking continuation of OUD maintenance therapy or opioid detoxification. Two primary strategies for detoxification include abstinence-based treatment or medication-assisted treatment (MAT). Two commonly utilized medications for MAT include buprenorphine-containing products and methadone. The purpose of this study is to evaluate utilization trends of methadone for patients with OUD discharged from an inpatient facility, behavioral healthcare facility, or an emergency department (ED). **Objectives:** The primary objective was to identify different trends in methadone usage. Secondary objectives include identification of: utilization of division/corporate order sets, differences in ED versus inpatient utilization, trends with discharge planning. **Methods:** This study was a retrospective chart review conducted between the dates of January 1, 2019 and December 31, 2019. Orders for patients were included if they were between ages 18 and 89 years, and if the administration was by mouth. Orders for patients were excluded if they were administered for chronic pain ordered by a hematologic/oncologic physician. Data used for analysis was extracted from a centralized data warehouse, as well as a clinical decision support tool. **Outcomes:** We will report utilization trends based on location within the hospital, specifics to methadone orders (eg, dose, frequency, duration), and indication for methadone.

Evaluation of Mood Stabilizer Use During Acute Episodes of Agitation in Patients With Schizoaffective Disorder

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Type: Work in Progress. **Background:** Schizoaffective disorder is a psychiatric disorder affecting approximately 0.3% of the population but can be a challenging diagnosis. Patients with schizoaffective disorder have symptoms that include psychotic symptoms similar to schizophrenia and the possible depressive or manic symptoms similar to bipolar disorder. Patients with schizoaffective disorder are prone to experiencing symptoms such as agitation, but the maintenance treatment differs by the addition of a mood stabilizer, more commonly used in bipolar disorders. While not all patients with schizoaffective disorder are prescribed a mood stabilizer, this class of medications may be beneficial in reducing positive symptoms associated with mania, such as agitation and hostility. The standard of care for agitation in the inpatient setting begins with verbal de-escalation strategies, but when failed, prompts the use of tranquilizing or sedating 'as-needed' pharmacological medications along with maintenance medication(s). This study will compare data looking at the number of agitation events in patients with schizoaffective disorder and whether or not they were being treated with a maintenance mood stabilizer. **Objectives:** Evaluate the number of agitation events treated with an 'as-needed' medication between patients diagnosed with schizoaffective disorder being treated with and without a mood stabilizer. **Methods:** Medical records of patients diagnosed with schizoaffective disorder with administration of an 'as-needed' medication for the treatment of agitation at an inpatient state psychiatric facility from October 1, 2020 to November 30, 2021 are being reviewed, and patients will be excluded from the analysis if they have another psychiatric disorder as their primary diagnosis, are on more than one maintenance antipsychotic, or if they have not taken one antipsychotic for a minimum of 30 days at a target/maintenance dose. Age, gender, generic name and dose of maintenance antipsychotic medication, generic name and dose of maintenance mood stabilizer medication, and generic name, dose, and formulation of the 'as-needed' medication administered will be collected. Descriptive statistics and χ^2 tests will be used to evaluate the primary outcome to determine if a difference exists between mood stabilizer medication use and their correlation to the use of 'as-needed' medications for agitation. **Results:** Results to be presented.

Evaluation of Pharmacist Prediabetes Education in Patients Prescribed Antipsychotics

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Type: Work in Progress. **Background:** Patient counseling is something that pharmacists are well trained to complete. There is currently no data regarding prediabetes counseling in patients receiving antipsychotics. Many of the first- and second-generation antipsychotics are associated with weight gain and insulin resistance, both of which can lead to prediabetes and diabetes. This study will provide data regarding the impact of prediabetes education on outcomes in patients prescribed antipsychotics. **Objectives:** (1) To determine the impact of pharmacists in prediabetes education in patients prescribed antipsychotics. (2) To determine if patients understand ways to prevent diabetes after being identified as at-risk and counseled on prediabetes. **Methods:** Patients prescribed antipsychotics with a HbA1c in prediabetes range (5.7-6.4%) will be offered education by a pharmacist or pharmacy student during hospitalization on the psychiatry unit of an academic medical center. To be eligible patients must be at least 18-years-old, admitted to inpatient psychiatry, and prescribed an antipsychotic. Patients with a diabetes mellitus diagnosis, unable to consent, or currently pregnant will be excluded. Target enrollment is 100 participants between February 1, 2020 to March 1, 2022. A survey consisting of five multiple choice questions will be administered, counseling on prediabetes will occur, and a post-survey with the same five questions and two additional questions regarding patient perception of counselling utility will be given. Descriptive statistics will be used to compare the results of the pre- and post-surveys. Patient demographics, psychiatric diagnosis, weight, BMI, HbA1c, and antipsychotic(s) prescribed will be collected by retrospective chart review. **Outcomes:** Results will include demographics, the difference in prediabetes understanding by patients before and after education, and patient perception of the counseling value.

Evaluation of Prescribing Rates of Selective Serotonin Reuptake Inhibitors (SSRIs) During the COVID-19 Pandemic: A Retrospective Review of US Community Pharmacy Data

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Type: Work in Progress. **Background:** Since the beginning of the COVID-19 pandemic in the US, many studies have reported an increase in psychological distress both in the general population as well as in healthcare workers. However, it is unclear if this distress warrants a new diagnosis of a mental disorder and subsequent medication therapy. Antidepressants like selective serotonin reuptake inhibitors (SSRIs) are mostly used for psychiatric disorders.

A statistically significant increase in prescribing of SSRIs medications may be associated with significant increase in Americans experiencing increasing rates of depression. This study will examine these prescribing rates. **Objectives:** The goal of this study is to review and analyze the prescribing pattern of the commonly prescribed antidepressant class of drugs, SSRIs, within selected community pharmacies in the United States. Specifically, the objectives are to (1) Determine the percentage change in the prescribing pattern of SSRIs from 2016 to 2021; and (2) Determine if this percentage change stayed the same, increased or reduced during the COVD-19 pandemic. **Methods:** Records of approximately 200,000 patients from January 1, 2016 through December 31, 2021 will be evaluated. Inclusion criteria will include new start of SSRI agents where new start will be defined as a first fill of the class of drugs with no previous SSRI fill noted in the past six months. Rates of these fills along with basic demographic information, such as age and gender, will be evaluated. The Cochrane Armitage Test will be used to perform a comparison analysis using SAS. **Outcomes:** We will report the percentage change in the prescribing pattern of SSRIs from 2016 to 2021 and state if this percentage change has stayed the same, increased or reduced during the COVID-19 pandemic, describing the rates of these changes.

Evaluation of the Efficacy of Long Acting Injectable Antipsychotics Initiated Earlier in Treatment

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Type: Work in Progress. **Background:** Long acting injectable antipsychotics (LAIA) are a novel treatment for schizophrenia and bipolar disorder. Repeat episodes of psychosis negatively affect patients and increase incidence of relapse. LAIAs have been utilized for patients who are non-adherent, leading to their use later in treatment. Several studies have shown benefits of LAIAs in reducing time to treatment failure after a first episode of psychosis. The purpose of our study is to determine the efficacy of initiating LAIAs earlier in a patient's treatment regimen compared to later initiation in terms of reducing length of stay and readmission rates. **Objectives:** (1) Evaluate increased utilization of LAIAs earlier in treatment. (2) Evaluate other secondary outcomes between patients on LAI vs oral antipsychotics. (3) Increase patient and provider knowledge about LAIAs. **Methods:** This study will take place at RWJBarnabas Health Behavioral Health Center, a 100-bed acute-care inpatient psychiatric hospital. Patients will be included if they are admitted to any unit of the hospital, over the age of 18-years-old, and diagnosed with any mental health disorder. Patients already on an LAIA prior to admission will be excluded. Participants in the prospective group will receive medication education through pharmacy run groups as well as individualized consultations. Additionally, these patients will be advocated for by pharmacy and discussed with each provider to recommend initiating LAIAs earlier in treatment after the patients have successfully trialed the oral equivalent of each respective antipsychotic. Additionally, there will be two separate retrospective cohorts. The first retrospective cohort will include patients meeting inclusion criteria between May 1, 2019 to May 31, 2021 and received an LAIA prior to our pharmacy intervention. The second retrospective group will contain patients who were admitted during the same period, but received an oral antipsychotic instead of injection. A Student *t* test with 95% confidence intervals will be used to determine the statistical significance of the primary outcome. **Outcomes:** We will report and analyze the number of LAIAs administered, length of stay, readmission rates, frequency of patient-sitters, use of physical restraints, assaults on medical staff, and frequency of as needed medications.

Evaluation of the Impact of COVID-19 on a Pharmacist-Led Tobacco Cessation Clinic at Providence Veterans Affairs Healthcare System

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Type: Work in Progress. **Background:** Veterans have significantly higher rates of tobacco use compared to the general population. Additionally, the COVID-19 pandemic has been associated with negative changes in both physical and mental health, including increased tobacco use. Within the Providence Veterans Affairs Healthcare System (VAPHCS), the pharmacist-led tobacco cessation clinic is a primary source for tobacco cessation medications, as well as the only clinic where varenicline is prescribed. As a result of the COVID-19 pandemic, numerous changes have been made to the clinic, including closure of group classes and walk-in appointments, transitioning to telephone-only appointments, and implementing direct transfers from behavioral health to the clinic telephone line. **Objectives:** (1) Identify the change in percentage of smoke-free patients within 6 months of first clinic visit pre- and mid-pandemic. (2) Assess change in patients achieving significant reduction in tobacco use. (3) Assess change in patient retention. (4) Assess change in number of new clinic consults. (5) Identify the change in number of tobacco cessation medications prescribed. **Methods:** A retrospective chart review of patients who established care within the tobacco cessation clinic between March 2019 and April 2021 will be completed. Patients will be divided into two cohorts: pre-pandemic

(first visit prior to September 2019) and mid-pandemic (first visit after April 2020). Cohorts will be compared for changes in tobacco cessation rates and significant reduction in tobacco use (defined as a 50% reduction at 6 months) using a Fisher's exact test. The number of clinic visits per patient and number of each medication prescribed will be reported as descriptive statistics. The number of new tobacco cessation consults and number of unique pharmacist interventions documented per month will also be reported. **Outcomes:** We will report change in tobacco cessation rates pre- and mid-pandemic. We will also report changes in patients achieving a 50% decrease in tobacco use, pharmacist interventions, new tobacco cessation consults, patient retention, and medications prescribed.

Evaluation of Treatment Outcomes Among Veterans With Type II Diabetes Mellitus and Severe Mental Illness Taking Oral Versus Long-Acting Injectable Antipsychotics

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Type: Work in Progress. **Background:** Patients with severe mental illness (SMI), such as schizophrenia-spectrum disorders and bipolar disorder, are at higher risk of developing metabolic syndrome and diabetes. Second-generation antipsychotics (SGAs) are effective treatments for SMI, but are associated with metabolic adverse effects. Evidence is conflicting regarding clinical advantages of the long-acting injectable antipsychotics (LAIA), which carry similar risk of adverse effects to their oral counterparts. However, LAIAs are particularly advantageous regarding adherence. There is evidence suggesting that adherence to an oral antipsychotic regimen indicates better adherence to non-psychiatric medications and decreased diabetes hospitalization rates. However, there is little to no evidence comparing metabolic control and adherence in patients with LAI SGAs vs their oral counterparts. **Objectives:** (1) Evaluate whether veterans with SMI receiving LAIAs have better diabetes control via year 1 HbA1c than veterans taking oral SGAs. (2) Evaluate whether veterans receiving LAIAs have better outcomes regarding metformin and antipsychotic adherence, hospitalization rates, and mortality. **Methods:** Patients with SMI and type II diabetes mellitus (T2DM) with first-fills of long-acting injectable or oral SGAs will be identified within the Veterans Integrated Services Network 12 between January 1, 2009 to January 1, 2020 within the Computerized Patient Record System. The year of 2009 will be used to confirm new starts in 2010. Baseline age, gender, race, comorbidities, and medication doses will be collected. Inclusion criteria are age 18-years or older, diagnosis of SMI through ICD-10 or ICD-9 codes, diagnosis of T2DM or HbA1c $>$ 6.5% without insulin, prescriptions filled within the Veterans Affairs health system, antipsychotic filled for at least 90 days, and HbA1c at year 1 (10-14 months post-first fill). Outcomes will be analyzed by one-way and repeated measures ANOVA. General linear models and/or general linear mixed models will provide comparisons adjusted for baseline characteristics. **Outcomes:** The primary outcome is the comparison of the average HbA1c at year 1 among veterans receiving LAIAs vs oral antipsychotics. Secondary outcomes include adherence to antipsychotics and metformin through interval-based prescription days covered at year 1, all-cause hospitalization rates, and all-cause mortality.

Expansion of Pharmacist-Conducted Suicide Risk Screenings in a Veterans Affairs Primary Care Clinic

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Type: Work in Progress. **Background:** According to Veterans Affairs (VA) suicide prevention efforts from January 2019, upwards of 900,000 veterans underwent a standardized risk screening for suicide intent, with over 30,000 of these veterans requiring more complex evaluation following a positive initial screen. Of the estimated 17.2 veterans who died by suicide in 2019, 6.8 had received treatment, not inclusive to mental health, at the VA in 2018 or 2019. Addressing suicide with patients remains an uncomfortable topic for many primary care practitioners. An informal survey of VA primary care clinical pharmacist practitioners (CPPs) identified a knowledge gap with pharmacists' ability to recognize risk factors and warning signs of suicide and how to appropriately manage patients with a positive suicide risk screen in a primary care setting. These findings identified an opportunity for improvement in addressing barriers associated with effectively assessing veterans who may be at risk of suicide. **Objectives:** (1) Develop targeted training material for CPPs to apply when addressing suicide risk in veterans. (2) Evaluate knowledge and comfortability with the suicide screening process following education. (3) Assess impact of training on clinical practice. **Methods:** A voluntary survey was conducted among twenty CPPs involved in direct patient care for medication management in the primary care setting. Elicited responses from participants were utilized to develop a continuing education program to serve as additional suicide risk assessment training. Following an educational intervention, a post-intervention survey will be used to evaluate

changes in the knowledge and comfortability of the CPPs in performing suicide risk assessments. To assess changes in clinical practice following training, a survey will be utilized for CPPs to indicate whether they have implemented a change in their practice. **Outcomes:** The expected outcome of this project is for the CPPs working in primary care to have a better comprehension of warning signs of suicide in veterans, to improve upon the comfortability of performing suicide risk assessments, and to have a better understanding of how to appropriately manage patients with a positive suicide risk screen. Ultimately, this project will help improve upon conducting more suicide screenings outside a mental health setting.

Factors Associated With COVID-19 Vaccination for Patients in an Inpatient Forensic Psychiatric Hospital

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Type: Work in Progress. **Background:** Over the past year, the Center for Disease Control and Prevention (CDC) and other organizations have strongly recommended all eligible people receive the coronavirus disease 2019 (COVID-19) vaccine to reduce the spread and severity of COVID-19. Certain conditions have been identified as risk factors for severe illness with COVID-19, including a mental health diagnosis. This study will assess additional factors associated with COVID-19 vaccination acceptance or declination in patients with a mental health diagnosis. Understanding these factors may help guide targeted interventions for populations less likely to accept a vaccine. **Objectives:** (1) To assess factors associated with COVID-19 vaccination in patients in an inpatient forensic psychiatric hospital. (2) To compare vaccination rates of the COVID-19 vaccine to the influenza vaccine in patients in the same population. **Methods:** This is a retrospective chart review evaluating factors associated with COVID-19 vaccination for patients residing in two inpatient forensic psychiatric hospitals. Patients admitted from January 1, 2021 through February 28, 2022 at two different inpatient forensic psychiatric hospitals will be reviewed. Data will be collected through electronic medical records utilizing MetaCare Enterpriseand secure facility computer drives, individual patient paper charts, and Missouri's vaccination records database, ShowMeVax. Variables including vaccination status with COVID-19 and influenza for the most recent and current influenza year, primary psychiatric or neurologic diagnosis, comorbid diagnosis associated with higher risk for more severe illness with COVID-19, highest level of education achieved, age, race, sex, BMI, competency status, class of psychiatric medications patient was prescribed, involuntary medication order at the time of COVID-19 vaccination acceptance or declination and if incentives were offered for vaccines will all be collected for analysis. **Outcomes:** This study will report factors that are associated with COVID-19 vaccination acceptance or declination and compare vaccination rates of the COVID-19 vaccine and the influenza vaccine in an inpatient forensic psychiatric hospital.

Follow-Up Evaluation of Opioid Safety Initiative Patients: Focus on Early Adopter Outcomes and Suicide

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Type: Work in Progress. **Background:** The opioid crisis continues to be a major public health concern within the United States. The Department of Veteran Affairs (VA) introduced an Opioid Safety Initiative (OSI) in fiscal year 2013 to optimize appropriate opioid use. As of fiscal year 2018 the VA has seen a decrease of opioid dispensing from 17% to approximately 10%. Little is known about patient outcomes following tapering or discontinuation of opioid therapy, including suicidal ideations as well as suicide attempts. **Objectives:** (1) To identify the presence of suicidal thoughts, suicidal attempts during opioid taper, and incidence of overdose in Safety Initiative (OSI) veterans with a $>$ 90 morphine equivalents daily dose (MEDD). (2) To determine if selected predictors significantly affect the presence or absence of suicidal ideation, suicidal attempts and overdoses. **Methods:** This a study is a multisite, retrospective chart review between fiscal year (FY) 17 and FY20. The cohort will be identified by Pharmacy Benefits Manager VAMedSAFE using veterans from the OSI dashboard. VAMedSAFE will generate and upload patient lists into site-specific folders on a secure SharePoint site for chart review by local voluntary site participants. A maximum number of records for review by each facility is estimated to be 200. Veterans of the Tuscaloosa Veteran Affairs Medical Center who were initially on chronic opioids greater than or equal to 90 MEDD with subsequent opioid discontinuations will be evaluated. The primary objectives includes the following: the presence of suicidal thoughts, suicidal attempts during taper, and incidence of overdose. All data will be recorded without patient identifiers and maintained confidentially. As a secondary objective, a logistic regression analysis will be performed to determine if selected predictors significantly affected the presence or absence of suicidal ideation, suicidal attempts and overdoses. **Significance:**

This study will identify the prevalence of suicidal ideation among veterans and descriptively inform clinicians who may be at risk for suicide during an opioid taper or discontinuation. **Outcomes:** We will report the number and percent of veterans with suicidal thoughts, suicidal attempts during taper, and the incidence of overdose, as well as descriptively characterize veterans who are at greater risk for suicide.

Frequency of Stimulant-Induced Mood Instability in Bipolar Disorder

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Type: Work in Progress. **Background:** Bipolar disorder is a psychiatric disorder that can impair an individual's social and occupational function if inadequately treated. While psychotropic medications are the mainstay for the treatment of bipolar disorder, some classes have been associated with unwanted outcomes. The use of stimulants in bipolar depression is controversial due to potential induction of mood instability. A literature review reveals the incidence of treatment-emergent mania and hypomania in bipolar disorder, precipitated within 3 months of stimulant use, ranged from 7% to 40% with a grand mean of 13.7%. Understanding the incidence and risk factors of stimulant usage in bipolar patients can improve safety and clinical decision making. **Objective:** Calculate the rate and identify factors associated with mania or hypomania following prescription of stimulants in patients with bipolar disorder. **Methods:** This retrospective chart review study will consist of veterans with a diagnosis of bipolar disorder who are prescribed a stimulant (methylphenidate, amphetamine/dextroamphetamine, dextroamphetamine, dexmethylphenidate, lisdexamfetamine, atomoxetine, modafinil, armodafinil, guanfacine) for the first time between January 1, 2013 through January 1, 2020 from our facility. Patients with a lifetime history of drug-induced mood disorder will be excluded. Demographic and clinical information at the time of stimulant initiation for each patient will be recorded. Medication parameters such as type and dose will also be collected. Patients who experience a worsening or emergence of manic or hypomanic symptoms requiring an unscheduled psychiatric hospitalization, emergent clinic visit, or an adjustment in their bipolar disorder pharmacologic treatment plan within 6 months of stimulant initiation will be categorized as having mood instability. Inferential statistics will be used to identify demographic, clinical and medication use differences between patients who experience mood instability compared to those who do not. **Results:** To date, we have identified 103 patients who meet our inclusion criteria and will be included in our analysis. **Discussion:** Our study may influence treatment planning in patients with bipolar disorder. For example, the prescription of stimulants in patients at higher risk of mood instability may require additional monitoring and enhanced patient education.

Healthcare Student Perceptions of Substance Use Disorder Pre/Post Elective Courses

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Type: Work in Progress. **Introduction:** Substance use disorder (SUD) is a chronic relapsing condition associated with widespread bias and stigma. Studies suggest healthcare worker perceptions about SUD can affect attitudes and ultimately impact healthcare outcomes. Integration of SUD education into healthcare curricula is important for developing the knowledge, skills, and attitudes essential for providing effective care to patients with SUD. The goal of this study is to determine if education is an effective tool that can impact perceptions of SUD, by measuring perceptions among healthcare students before and after receiving SUD education. **Methods:** This is a retrospective cohort study designed to determine if education on SUD and stigma/bias training provided to healthcare students can change perceptions of people with SUD. Survey data from the 2020 to 2022 academic years at the University of California, San Diego will be analyzed for pharmacy students taking either of two elective courses, Special Topics in Psychiatry or Prescription Drug Abuse Prevention. Both courses place an emphasis on stigma toward those with SUD that can result in healthcare professional bias. Baseline characteristics collected include age, gender, year in pharmacy program, previous enrollment in either course, and having a personal relationship with someone with SUD. Perceptions will be measured via the Illness Perception Questionnaire for addiction (IPQ-A) administered electronically by Qualtrics to students before and after receiving education on SUD. The primary outcome is the change in matched IPQ-A scores measured before and after didactic education on SUD. The secondary outcome is the difference in baseline IPQ-A scores between students who knew and did not know someone with SUD. Descriptive statistics will be used for demographics, the Wilcoxon signed rank test will be used to compare the change in matched IPQ-A scores, and Student *t* test will be used to compare difference in baseline IPQ-A scores between students who knew someone with SUD. **Key Takeaways:** Findings from this study can provide evidence for adoption of SUD education

and stigma training across health professional institutions. We can determine if didactic education is an effective tool that can impact perceptions of SUD as well as the impact of knowing someone with SUD on students' perceptions.

Home Antidepressant Prescribing During Hospitalization

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Type: Work in Progress. **Background:** Antidepressants are among the most frequently prescribed medication classes as first-line therapy for depressive and anxiety disorders and are prescribed for several additional indications such as chronic pain and insomnia. A decline in physical health requiring hospitalization and the associated financial, social, and other stressors can trigger or contribute to worsening depressive symptoms. Risk for depressive episode recurrence may be increased even further if prior to admission (PTA) antidepressant medications are discontinued during this time. Preliminary data suggests almost 50% of patients with an outpatient antidepressant prescription are not receiving antidepressant therapy during inpatient hospitalization at a large academic medical center. The indication and rate of in-hospital interruption of antidepressant therapy are not well documented in the literature. **Objectives:** (1) Determine the incidence of and most common reasons for PTA antidepressant therapy interruption during hospitalization. (2) Describe discharge antidepressant plans (PTA therapy restarted, discontinued, or changed to an alternative therapy). (3) Assess appropriateness of PTA antidepressant interruptions during hospitalization. **Methods:** This is a single-center, retrospective exploratory analysis of patients 18-years and older with an outpatient antidepressant prescription admitted to Michigan Medicine University Hospital from January 1, 2018 through December 31, 2018 (available Surescripts medication data current through August 2019) who did not receive antidepressant therapy during admission. Patients admitted to inpatient psychiatry will be excluded. Outpatient antidepressant prescription information will be obtained via Surescripts and limited to six months prior to admission. Inpatient medication administration data will be obtained from the electronic medical record. Electronic Medical Record Search Engine (EMERSE) and manual chart review will be utilized to determine interruption reason and appropriateness. **Outcomes:** Descriptive statistics will be used to report demographics, admitting service, incidence of in-hospital antidepressant interruption, and documented reasons for interruption. Appropriateness of interruption and discharge antidepressant therapy plan will be assessed. Results will be used to guide development of education for health care professionals to promote optimal antidepressant medication management across transitions of care.

Impact of a Pharmacist-Lead Psychopharmacology Consult Service for Veterans With Treatment-Resistant Depression

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Type: Work in Progress. **Background:** With the evolving and expanding role of clinical pharmacists, the utility of these providers is being recognized in new areas, including consulting services. Psychiatric pharmacists have specialized training in psychopharmacology. With a deep understanding of pharmacokinetics, pharmacodynamics, pharmacogenomics, and drug interactions of psychiatric medications, psychiatric pharmacists can be a valuable resource for treatment selection in complex patients. This evaluation highlights the impact of recommendations made by psychiatric pharmacists through a psychopharmacology consult service for patients with treatment-resistant depression. **Description of Service:** Mental health providers within our outpatient clinics may consult psychiatric pharmacists for several services, one of which includes requesting treatment recommendations for patients with treatment-resistant depression. The definition of treatment-resistant depression varies widely across the literature, but is most commonly described as poor response to at least two trials of antidepressants of adequate dose and duration in those with a diagnosis of major depressive disorder. Consulted pharmacists perform a thorough chart review of these patients and provide a number of recommendations that the provider may implement at their discretion. **Impact on Patient Care:** We will be evaluating psychopharmacology consults for treatment-resistant depression from July 15, 2020 to July 15, 2021. **Objectives:** (1) Determine the number of recommendations made by pharmacists via psychopharmacology consults for treatment-resistant depression enacted by consulting providers within 6 months of consult completion. (2) Determine the frequency of each type of intervention enacted (adjust dose or frequency of current medication, discontinue a medication, change to a different medication, initiate new medication, manage an adverse drug reaction related to a mental health medication, or nonpharmacologic intervention). (3) Determine provider satisfaction with the psychopharmacology consult service. Provider satisfaction will be evaluated by survey. **Conclusion:** Psychiatric pharmacists can be a valuable resource for determining treatment selection in those with treatment-resistant depression. This analysis will evaluate the impact of a pharmacist-lead psychopharmacology consult service on patient care. Full results of

this evaluation will be presented at the 2022 CPNP National Meeting.

Impact of a Pharmacist-Led Transgender Male Health Education Group on Hormone Therapy and Mental Health Disparities Among Veterans

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Type: Work in Progress. **Background:** Transgender patients experience a multitude of mental and physical health disparities, especially within the veteran population. To address disparities and provide comprehensive care, a Transgender Health Clinic with an inter-professional team was created at the VA Loma Linda Healthcare System (VALLHS) in 2011. However, limited resources and lack of cultural competence from providers still exists which contributes to hesitations to fully transition. Thus, many veterans have been resistant to starting or continuing gender-affirming therapy with a higher pattern seen in transgender males. Therefore, a pharmacist-led Transgender Male Health Education Group consisting of 10 sessions integrating gender-affirming and mental health education topics was created. **Objectives:** (1) To evaluate the impact of a pharmacist-led transgender male health education group on willingness to start or continue hormone therapy. (2) To evaluate the impact of the group on mental health barriers to receiving care. **Methods:** This study was a pre-post telephone survey consisting of the same 6 questions on a 5-point Likert scale on the veteran's willingness to start or continue hormonal therapy, whether they find hormone therapy is beneficial for transitioning, their knowledge and understanding of hormone therapy, whether they find the transgender male health education group beneficial with regards to transitioning, whether they find the transgender male health education group beneficial with regards to hormone therapy knowledge, and whether they believe limited cultural awareness from providers affects their care. All veterans who identified as transgender male, who received care in the Transgender Health Clinic at the VALLHS, and who provided informed consent were included in the study. Veterans were asked for baseline demographics prior to receiving the telephone survey. Statistics that will be used to analyze non-demographic data include a paired Student *t* test, the Wilcoxon Signed-Rank test, and the McNemar test. P-value will be set at 0.05 for statistical significance. Data will be analyzed from May 11, 2021 to July 13, 2021 which includes 10 weekly transgender health education group sessions. **Outcomes:** We will report pre-post survey outcomes on the impact of pharmacist-led transgender male health education group on willingness to start or continue hormone therapy and on mental health barriers to receiving care.

Impact of Early Re-Initiation of Psychotropic Medications on ICU Delirium in Patients With Underlying Psychiatric Disorders

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Type: Work in Progress. **Background:** Delirium and confusional states are frequently occurring mental states in patients with medical illness, particularly those in Intensive Care Units (ICU). These states are complex and widespread, but poorly understood. Recommendations for evaluation and treatment are based primarily on clinical observation and expert opinion. In patients with underlying psychiatric disorders, there has been an increased incidence of delirium in the general hospital population, but few studies have reviewed those within the ICU setting. Even fewer studies reviewed the re-initiation of previously prescribed psychotropic medications and its impact on ICU delirium. **Objectives:** The primary objective of this study is to evaluate the incidence of ICU delirium in patients with underlying psychiatric disorders re-initiated on previously prescribed psychotropic medications compared to those that were not. The secondary objectives of this study consists of assessing time to initiation of previously prescribed psychotropic medications, assessing duration of mechanical ventilation and sedation requirements, and assessing the length of ICU stay in patients in this population. **Methods:** A retrospective chart review will be conducted in a large acute care facility containing eight ICU units. A comparison of 100 patients 18-years of age and older with underlying psychiatric disorders re-initiated on previously prescribed psychotropic agents and those that did not will be reviewed. Additionally, duration of mechanical ventilation, sedation requirements, and ICU length of stay will be assessed. Analysis of the electronic medical record will include patient demographics, race, length of stay, duration of ICU status, length of time intubated, psychiatric history, Confusion Assessment Method in the ICU score, Richmond Agitation-Sedation Scale scores, sedation agents, psychiatric medication history, and death. The time interval for chart analysis will be from September 1, 2019 to September 1, 2021. Descriptive statistics will be calculated for all demographic and baseline characteristics. Chi-squared test will be used to evaluate differences in delirium events and medication initiation time. Pearson's correlation coefficient will be used to determine relationships between medication initiation and delirium. **Outcomes:** We will report time to medication

re-initiation and instances of ICU delirium in this population as well as analyze gathered data to generate standardized medication practices in similar patients.

Impact of Participation in an Adolescent Medication Education Group on Intern Psychotropic Medication Knowledge

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Type: Work in Progress. **Background:** In 2019, the Centers for Disease Control and Prevention (CDC) estimated that 13.6% of children 5 to 17 years of age received mental health treatment in the United States, with 8.4% prescribed a psychotropic medication. In a recent study, up to 40% of adolescents were classified as not completely adherent to their psychotropic medication. Given high rates of non-adherence in this population, implementation of patient medication education groups (PMEG) has been evaluated given their role to improve medication-related outcomes and patient satisfaction. Additionally, interest exists in evaluating the role of pharmacy interns in PMEG. Previous research demonstrates involvement in PMEG improves intern self-efficacy, mental health attitudes/stigma. At this time, little is known about the impact of PMEG participation on pharmacy intern knowledge of psychotropic medications, particularly among pediatric populations. The Psychiatry Pharmacy Intern Shift (PPIS) was created summer 2019 at a Children's Hospital to optimize psychotropic medication-related outcomes and to provide early exposure for pharmacy students to child and adolescent psychiatry. PPIS is a weekly, one-hour PMEG on the inpatient adolescent psychiatry unit. During PMEG, medication-themed games (eg, Jeopardy, Jenga) are utilized to review psychotropic medication clinical pearls and enhance adolescent engagement. Following PMEG, pharmacy interns discuss psychotropic medication interventions with the psychiatric pharmacist and document progress notes. **Objectives:** Evaluate the impact of participation in PPIS on pharmacy intern psychotropic medication knowledge. **Methods:** Prior to involvement in PPIS (baseline) and post-training (time-point 1), pharmacy interns completed an online survey comprising three domains: (1) mental health attitudes/stigma; (2) psychotropic medication knowledge; and (3) PMEG self-efficacy. Psychotropic medication knowledge was assessed through 21 survey questions, prepared by the psychiatric pharmacist, with specific assessment of common side effects, pediatric-specific side effects, role in treatment, and onset of therapeutic effect. Anonymous survey data was delivered, stored, and interpreted via RedCap. **Outcomes:** Descriptive statistics will be used to report demographic data, including previous experience working with individuals with mental illness and interest becoming a psychiatric pharmacist. Pertinent statistical tests will be used to compare baseline and time-point 1 knowledge assessment data.

Impact of Pharmacist Interventions on Psychotropic Medications Prescribed in the Geriatric Population at a Veterans Affairs Hospital

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Type: Work in Progress. **Background:** Psychotropic drug use in the geriatric population may expose patients to serious risks, including worsened cognitive function, increased falls, harmful drug interactions, or death. Utilizing a psychiatric pharmacist to review the use of these medications may improve patient safety and outcomes in the geriatric population. Currently, the Carl Vinson VA Medical Center (CVVAMC) does not utilize a psychiatric pharmacist service in the community living centers (CLC). **Objectives:** The objective is for 75% of the pharmacy resident's recommendations to improve psychotropic medication use to be accepted and implemented by the providers in the CLC settings at CVVAMC. **Methods:** The Psychotropic Drug Safety Initiative (PDSI) dashboard, a nationwide VA quality improvement performance dashboard that identifies actionable patients 65 years or older who may be inappropriately prescribed psychotropic medication, was reviewed in September 2021 and identified actionable geriatric patients at the CVVAMC. A project proposal was drafted to improve the overall use of psychotropic medications within the geriatric population in the CLC. The Pharmacy and Therapeutics Committee approved the project on September 17, 2021. The psychiatric pharmacy resident conducted chart reviews on patients identified through the PDSI to confirm clinical indications and appropriate use of medications, and the CLCs were alerted to recommendations by a note placed in the electronic record system. Interventions will be tracked using an encrypted excel spreadsheet. A retrospective chart review will be conducted after the four-month intervention period to record the number of accepted interventions. Descriptive statistics will be utilized to report the findings. **Outcomes:** This project aims to establish a psychiatric pharmacist service to improve the safe use of psychotropic medication prescribed in the geriatric population at the CVVAMC.

Impact of Pharmacist Led Training on Nurses' Knowledge and Confidence in Administration of Second Generation Long-Acting Injectable Antipsychotics (SG-LAIAs)

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Type: Work in Progress. **Background:** Many feel that long-acting injectable antipsychotic (LAIA) administration improves adherence; however, current literature is mixed. This led to a retrospective review of patients discharged in 2019 from Minnesota Direct Care and Treatment. This review found that one-year readmission rates were almost double for those discharged on second generation long-acting injectable antipsychotics (SG-LAIAs) compared to the equivalent oral formulations. It was concluded that the reason for readmission is likely multi-factorial, including patient-controlled and systems-based factors. Minimizing system-based variables will help determine factors contributing to increased readmission rates for patients prescribed LAIAs. Each LAIA has unique preparation and administration techniques that are not always explicitly stated in order instructions. Inappropriate preparation and/or administration could be detrimental to a patient's psychiatric stability as the patient may not receive a complete dose. A standardized training protocol across all facilities may be beneficial in controlling for these systems-based variables and help further delineate reasons for higher readmission rates among patients prescribed SG-LAIAs versus equivalent oral formulations. **Objectives:** (1) Evaluate the impact of a pharmacist-led education and training program on nursing knowledge and confidence in preparing and administering SG-LAIAs. (2) Develop a standardized training on SG-LAIA administration to implement across the state health care system. **Methods:** The subject population will include all nursing staff from six community behavioral health hospitals in the state, estimated 40 participants. An initial skills assessment survey of baseline knowledge will be distributed and collected. A pharmacist will lead a virtual training on preparation and delivery techniques of SG-LAIAs which will include practice with device trainers. Each participant will complete the training and have access to device trainers. A skills assessment survey and an anonymous demographic survey will be distributed immediately following the training. A final skills assessment survey will be distributed 4 to 6 weeks following the training to assess knowledge retention. The survey scores from the three assessments will be compared to determine changes in knowledge and confidence on SG-LAIA administration. **Outcomes:** We will report the number of nurses who completed trainings and the accompanying surveys. Survey data will be analyzed to assess for changes in knowledge of and confidence in SG-LAIA administration.

Impact of Pharmacist-Led Benzodiazepine Taper via e-Consult Service

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Type: Work in Progress. **Background:** Benzodiazepine deprescribing is an initiative of the Department of Veterans Affairs (VA) along with other healthcare institutions and organizations. There are many risks associated with long-term benzodiazepine use including cognitive decline in the elderly, worsening of PTSD symptoms, risk to fetal health and survival, and the potential for abuse and addiction among a few. Given that veterans have a large population of elderly patients and those with PTSD, it stands to reason that the Veterans Health Administration has many patients for whom benzodiazepines are not appropriate. Withdrawal symptoms from benzodiazepines can be significant and serious. Similar to alcohol withdrawal symptoms, abrupt cessation of benzodiazepines can cause seizures, delirium tremens, and even death. Due to these serious risks, benzodiazepines should be tapered gradually. **Objectives:** The primary objective of this analysis is to describe outcomes of a pharmacist-led benzodiazepine e-consult service. **Methods:** This project is a retrospective single-center chart review to be completed. All patients with a benzodiazepine taper e-consult in the study time period will be included. Data extraction will be performed manually via chart review and data warehouse extraction. **Outcomes:** The primary outcome of this analysis will be the number of benzodiazepine prescriptions discontinued within six months of the benzodiazepine e-consult. Secondary outcomes include time (in days) from the e-consult placement to benzodiazepine discontinuation and change in average dose (in diazepam equivalents) six months following e-consult placement. Further secondary outcomes will aim to characterize study patients and their course of benzodiazepine treatment.

Impact of Pharmacist-Led Medication Education in Reducing Use of Benzodiazepines in Veterans of High-Risk Groups

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Type: Work in Progress. **Background:** Despite its effectiveness in providing immediate relief for anxiety symptoms, benzodiazepines are associated with significant adverse effects which limits their recommended use to $<$ 2 weeks. High-risk populations ($>$ 65 years old, diagnosis of PTSD or substance use disorder, or

concurrent use of opioids) are at an increased risk for falls, cognitive impairment, and worsened mood symptoms among others. During a 6-month period at VA Loma Linda Healthcare System (VALLHS), a total of 266 patients were identified as possible candidates for benzodiazepine use reduction. This project aims to incorporate a two-step, pharmacist-led approach to improve patient care and reduce long-term risks among this subgroup. **Objectives:** (1) Determine effectiveness of education sessions on patients' understanding of benzodiazepine risks. (2) Determine number of patients who discontinue or start benzodiazepine tapers after pharmacist-led benzodiazepine education session. (3) Evaluate prescriber feedback on intervention helpfulness and effectiveness. **Methods:** Data was extracted from the corporate data warehouse to identify patients who met inclusion criteria: received benzodiazepine prescriptions for $>$ 14 days from a mental health provider at VALLHS between March 1, 2021 and August 31, 2021; medication possession ratio $>$ 80%; and part of $>$ 1 high-risk category. Individuals were excluded if they were currently flagged for high suicide risk or diagnosed with cancer, malignancy, seizure, or epilepsy. Phase I included comprehensive chart reviews assessing appropriateness for tapering or discontinuation. Prescribers were alerted to the findings and had the option to refer patients to a pharmacist-led benzodiazepine education session. Virtual and telephone sessions, either one-on-one or group, were the focus of Phase II. Patients completed a pre- and post- education session survey that included assessment of barriers and readiness for a benzodiazepine taper. The discussions were relayed back to the prescribers for informational purposes and follow up as needed. A final survey was sent to prescribers for feedback on the interventions. **Outcomes:** We will report the impact on patients' understanding of the risks of benzodiazepines and readiness to reduce use. We will also provide data on the number of patients who initiated benzodiazepine tapers or discontinuations. Lastly, any other significant survey data will be reported.

Impact of Social Determinant of Health on Medication Management in a Mental Health Clinic During the COVID-19 Pandemic

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Type: Work in Progress. **Background:** Evidence has shown that social determinants of health (SDOH) including income inequality, discrimination, social exclusion, and underemployment can lead to disproportionally poor health outcomes in patients with severe mental illness. Furthermore, medication management in patients with severe, chronic mental illness can be challenging as psychiatric medications are often complex with many associated side effects. Medication adherence over 12 months among patients taking antipsychotic medications has been estimated at only 50%, which adds another layer of complexity in medication management for this patient population. In combination with the COVID-19 pandemic, these patients are at higher risk for mental health decompensation such as stress and anxiety, which may further worsen the clinical outcomes of patients with existing chronic mental illness. Additionally, the pandemic disproportionally affects patients of lower socioeconomic status as they are less able to quarantine, social distance, and be identified and treated for COVID-19 infections. Clients receiving psychiatric care at a federally qualified health center (FQHC) are likely to fall in both of these marginalized groups; therefore, these clients are amongst the hardest hit with the highest risk of negative outcomes due to the pandemic. **Objectives:** (1) Assess COVID-19 pandemic impact on medication adherence, the Columbia-Suicide Severity Rating Scale (C-SSRS), Clinical Global Impression-Severity (CGI-S), and the Clinical Global Impression-Improvement (CGI-I) scores. (2) Identify how SDOH impacts medication adherence and patient outcomes. (3) Determine if the COVID-19 pandemic is correlated with higher rates of psychiatric emergency services use, hospitalization, and new substance use disorder diagnosis. **Methods:** This is a retrospective chart review of 100 psychiatric clients at least 18 years of age treated at a FQHC from June 1, 2019 to June 1, 2022. Demographic variables (eg, age, gender, race, ethnicity, education level, employment status, housing status, insurance coverage), clinical outcomes (eg, C-SSRS, CGI-S, CGI-I), medication adherence measured by prescription fill history, psychiatric emergency services use, psychiatric admissions, and new substance use disorder diagnosis will be collected. **Outcomes:** Descriptive statistics and linear regression between groups will be conducted. Results and conclusions will be presented.

Implementation of a Multi-Disciplinary Overdose Review Team

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Type: Work in Progress. **Background:** Drug overdose death rates in the United States remain high despite past efforts to mitigate this risk. Many hospitals across the country have implemented overdose fatality review teams as a means to address the opioid crisis. The goal of these teams is to identify missed opportunities to prevent future overdose fatalities. Tennessee Valley Healthcare System

(TVHS) is an early adopter of implementing an Overdose Review Team (ORT) that collaboratively reviews all overdose incidents regardless of if the incident resulted in a fatality. Data describing ORT processes and outcomes are currently lacking. **Objectives:** The primary objective is to characterize overdose events and team interventions/recommendations, as well as identify areas where the process could be improved. Secondary objectives include describing the development and implementation of a multi-disciplinary ORT including team membership, the review process, and workload. **Methods:** This will be a single-center, observational, retrospective review of all patients reviewed by the ORT from August 19, 2019 to August 19, 2021. **Outcomes:** Primary outcomes include characterization of recommendations made by the ORT. Secondary outcomes include description of innovative practice and workflow. Data collection will include baseline characteristics (date of birth, gender, race), previous overdoses, whether or not the overdose was fatal or had suicidal intent, what medication the patient overdosed on, repeat suicidal behavior or overdoses within three months of treatment team review, time to first addiction treatment services or mental health follow-up, number of naloxone kits and medication assisted treatments that were recommended by ORT and then prescribed within three months of the event, and the number of times a reduction in medication supply was recommended and implemented within three months of the event.

Implementation of a Pharmacy Student Medication Reconciliation Program for a Psychiatric Medicine Service

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Type: Work in Progress. **Background:** At this health care system, the interdisciplinary team performs medication reconciliation with an admitted patient. A program in which pharmacy students perform the medication reconciliation on the inpatient psychiatry unit at this site has never been trialed. **Objective:** The main objective is to evaluate if student-led medication reconciliation on the inpatient psychiatry unit will increase the number of clinical encounters performed by the inpatient mental health Clinical Pharmacy Specialist (CPS). Characterization of the impact of student-led medication reconciliation on this unit will provide guidance on the value of this programming and improvement of mental health CPS workflow. **Methods:** This prospective observational project will evaluate clinical encounters performed by a mental health CPS on the inpatient psychiatry floor before and after student-led medication reconciliation is implemented. Students will perform the medication reconciliation and record their findings in the electronic health record, Computerized Patient Record System (CPRS). The mental health CPS will then review the documentation and make recommendations as appropriate, afterward entering clinical encounters into the Pharmacists Achieve Results with Medications Documentation (PhARMD) tool. Data will be included if the veteran was admitted to the inpatient psychiatry floor from December 27, 2021 through March 18, 2022. This data will then be compared to the data of 102 days prior to implementation. All data will be collected from CPRS and the PhARMD tool. The PhARMD tool is an electronic tool created by the VA that is used by pharmacists to log their interventions. **Outcomes:** The primary outcome is the difference between the number and type of clinical encounters performed by the mental health CPS on the inpatient psychiatry floor, before and after implementation of this program. Secondary outcomes will include the number of medication reconciliation interventions before and after implementation and the number and type of discrepancies found via medication reconciliation (based on patient home use versus taking as prescribed). The clinical encounter and PhARMD tool data will be inspected through summary statistics.

Implementation of a Quality Improvement Process for Long-Acting Injectables (LAIs) at Community Based Outpatient Clinics

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Type: Work in Progress. **Background:** Adherence to oral medications is often a significant challenge for patients with psychiatric disorders. Non-adherence to medications is linked to poor clinical outcomes and high resource utilization. Current guidelines recommend long-acting injectables (LAIs) for maintenance treatment of psychiatric disorders to improve patient compliance. The New Mexico VA has 13 Community Based Outpatient Clinics (CBOC) providing various services to rural areas including administration of LAIs. However, CBOC facilities do not currently have a standardized way of documenting administration of LAIs. Inconsistencies in documentation may therefore exist. In addition, nursing staff may be unaware of what information to include in notes or be uncomfortable gathering specific mental health information. **Objectives:** The primary objective of this project is to improve documentation of LAI administration at outpatient rural health clinics through integration of a standardized note template. The secondary objective is to improve the level of comfort among CBOC nursing staff in regard to LAIs and mental health care. **Methods:** A template for LAI administration will be created through the computerized patient records system (CPRS). This

template will be dispersed to all CBOC nursing staff allowing for a standardized way to document drug administration. A chart review will be conducted to evaluate the number of patients whose LAI administration was documented using the standardized process. The New Mexico VA Health Care System (NMVAHCS) electronic medical record will be examined for medical history, progress notes, type of LAI administered, and patient demographics. Patients will be included if they are older than 18 years of age and receive an LAI from January 1, 2021 to March 31, 2022. Patients receiving a LAI at CBOC contract clinics will be excluded. Data regarding nursing attitudes will be collected from electronically distributed surveys. **Outcomes:** The results of this study will identify the effectiveness of integrating a standardized template into CBOC workflow for sustained improvements in documentation. Through this process, we expect advances in medication monitoring, patient safety, and continuity of care.

Implementation of an Educational Pharmacy Service in an Outpatient Mental Health Clinic and Its Effects on Medication Related Education Satisfaction and Overall Psychotropic Medication Adherence

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Type: Work in Progress. **Introduction:** Patients in the mental health clinic at the Battle Creek VA Medical Center are not satisfied with the education they receive regarding their psychiatric medications: reason for being prescribed the medication, how to take it, side effects of the medication, and how to get in touch with a mental health provider if there are questions about the medication. Why is this important? Medication adherence is a common barrier to desired therapeutic outcomes. Previous studies have shown that patient education and communication play a direct role in medication adherence. This quality improvement project aims to develop and implement a process to provide patients in the mental health clinic a way to receive more information and support regarding their psychotropic medications. **Objectives:** Evaluate patient satisfaction with medication education after psychotropic medication education session with a mental health pharmacist. **Methods:** Health professionals within the mental health clinic were asked to refer patients who struggled with their psychiatric medications to receive further education about their medications. That includes patients with polypharmacy, psychotropic medication adherence concerns, medication hesitancy, medication questions, or those naïve to psychotropic medications. Patients within the mental health clinic were also encouraged to self-refer to receive education and support with regard to their mental health medications. The pharmacist will meet with the referred patients once to address their medication concerns and provide education about the medication's mechanism of action, when and how to take the medicine, when to expect benefit, side effects, and what to monitor for while being on the therapy. Pharmacist contact information will be shared with patients to follow-up on an as-needed basis. A satisfaction survey with regard to medication education will be administered at the beginning and end of the pharmacist-patient encounter and adherence information will be collected as well. The pharmacist will then reach out to the patient three months after their initial appointment to re-evaluate adherence to the psychotropic medications. **Outcomes:** The primary outcome will evaluate changes to patient satisfaction with education they receive regarding their psychiatric medications.

Improving Access and Identifying Barriers to Pharmacologic Treatment for Bipolar Disorder

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Type: Work in Progress. **Background:** Untreated bipolar disorder can result in increased psychosocial stressors including family interpersonal conflicts, job and school related problems, and development of substance use disorders. Individuals with bipolar disorder have higher utilization of health-care services, incur increased costs associated with medical treatment, and have more work impairment compared to those with depression or other chronic medical conditions. Suicidal behavior is common in individuals with bipolar disease and the greatest protective factor of suicide is treatment with mood stabilizers or select atypical antipsychotics. Guideline-driven pharmacological treatment with these agents is recognized to be the most effective treatment strategy in bipolar disorder to prevent recurrence of manic episodes. In order to promote appropriate treatment of bipolar disorder the Veterans Affairs Administration has created a patient report that identifies bipolar disorder patients not receiving treatment with a mood stabilizer or atypical antipsychotic. **Objectives:** (1) Identify barriers to access for treatment for bipolar disorder. (2) Increase the number of veterans receiving evidenced-based pharmacologic care for bipolar disorder. **Methods:** Participants were selected if they had a bipolar encounter diagnosis or an inpatient diagnosis of bipolar disorder from October 1, 2020 to October 1, 2021 and no active prescription for a mood stabilizer or antipsychotic. For objective one, a retrospective chart review was performed including expired prescriptions, documented intolerances or adverse drug reactions, scheduled follow-up with a mental health

prescriber, ICD-10 bipolar diagnosis, length of bipolar diagnosis, and qualification of mental health prescriber. Results from the chart review were used to formulate an intervention addressing objective two. Education will be provided to providers addressing the impact of inaccurate diagnoses as well as the recommendation to facilitate ICD-10 diagnosed bipolar disorder patients to a mental health prescriber. Following provider education, a second chart review will be performed on the original patient cohort to obtain the number of patients treated with an active mood stabilizer or atypical antipsychotic and scheduled follow-up with a mental health prescriber. **Outcomes:** We will report the percent decrease in number of veterans not receiving pharmacologic treatment for bipolar disorder 6 weeks after provider education.

Improving Documentation and Patient Education on Psychotropic Drug-Drug Interactions in an Adult Psychiatry Clinic at an Academic Medical Center

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Type: Work in Progress. **Background:** Recognition, monitoring, and education on drug-drug interactions (DDIs) are essential duties of psychiatric providers. Evidence suggests approximately one-third of patients are prescribed three or more psychotropics chronically, increasing the potential for DDIs and their adverse outcomes. Effective DDI management requires novel strategies to mitigate patient risks. While numerous studies demonstrate the value of targeted drug interaction surveillance programs, an improved approach includes equipping providers and patients to prevent DDI-related adverse events. There are currently no studies examining the impact of an educational intervention on documentation surrounding DDIs in an adult psychiatric clinic. **Objectives:** (1) Identify psychiatric medication combinations with potential for significant DDIs in a caseload of approximately 1100 adults treated for psychiatric diagnoses at an academic medical center. (2) Assess documentation of DDI and associated patient education in medical record before and after educational intervention on DDIs. (3) Determine factors associated with changes in DDI documentation through analysis of resident pre- and post-survey results. **Methods:** Current patients of the clinic will be screened for prescription of pre-defined, high-alert medications at the clinic. Charts will be evaluated for the presence of a potential DDI and at least one instance of associated documentation since the assumption of care by the current provider. Types of documentation to be assessed include mechanism and potential outcome of the DDI, management parameters, and patient education. An educational intervention by a PGY2 psychiatric pharmacy resident will take place and include a review of significant psychotropic DDIs and the documentation expectation. Residents will be surveyed prior to the intervention and three months after to assess for knowledge, confidence, and behaviors related to DDI documentation. Finally, a retrospective analysis of the documentation data and the resident survey results will determine what factors are associated with changes in knowledge, confidence, behaviors, and changes in documentation. **Outcomes:** The number of potential DDIs in patients' drug regimens and the type of DDI documentation related to these potential DDIs before and after the educational intervention will be assessed and presented. Factors related to changes in documentation revealed by the survey will be discussed.

Improving Student Access to Counseling and Psychiatric Services (CAPS)

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Type: Work in Progress. **Background:** The COVID-19 pandemic has disrupted all aspects of society and contributed to rising rates of mental health issues in the United States. The plethora of changes that surfaced as a result of the times, along with the fear and uncertainty felt by many has magnified the importance of mental health, according to the World Health Organization. At our university, multiple anecdotal reports from students highlight opportunities for improved access to and quality of care at the Counseling and Psychological Services (CAPS) on campus. **Objectives:** (1) Survey the university student body on their perceptions and experiences with CAPS and identify student needs. (2) Conduct an assessment of mental health resources in the greater community area to develop a resource for providers and students. (3) Utilize student volunteers to implement an outreach campaign on campus, educating students on the mental health resources accessible in the area. **Methods:** The university College of Psychiatric and Neurologic Pharmacists (CPNP) Student Chapter in collaboration with our Center for Health Equity and Innovation (CHEql) are currently disseminating a uniform survey for data collection across campus on student experiences. That data will then be analyzed for systemic discrepancies as well as gaps in support for marginalized and vulnerable populations. **Originality of Project:** Though studies of mental health in college students have been conducted, limited information exists about how to improve access to mental health services on college campuses, specifically

among college students of ethnically and racially diverse populations. **Significance of Project:** Given current rises in mental health detriments on college campuses it is vital to assess the individuality of student needs on a campus-wide basis. Gathering data on current methods of care will allow for both evolution of the system in place as well as further person-centered care in campus resources through the acknowledgement and use of student experiences. As pharmacists we take an oath to advocate for outstanding patient care and improving mental health accessibility and advocating for students and proper mental health access and resources holds true to that promise.

Increasing Access to Buprenorphine/ Naloxone in the Inpatient Setting

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Type: Work in Progress. **Background:** Opioid use disorder (OUD) continues to be prevalent in the United States with more than two million people estimated to have OUD as of 2019. Of these, an estimated 138,000 are veterans. Unfortunately, it is estimated that four to seven years is the delay between onset of OUD and receipt of initial medication for opioid use disorder (MOUD). Opioid agonist treatment has shown to reduce overdose and all-cause mortality by over half with the additional benefits of reducing opioid associated infectious disease transmission and criminal behavior. Reasons for this delay in initiation of treatment may, in part, be due to institutional and educational barriers as noted in surveys of waivered buprenorphine prescribers. Hospitalization provides the opportunity to reach vulnerable patients with OUD and ensure that indicated care is provided. The aim of this project is to increase ease of access to buprenorphine/naloxone in the inpatient setting by providing education and developing an inpatient order set and a nurse-driven process for buprenorphine/naloxone delivery. **Objectives:** (1) Decrease educational barriers associated with buprenorphine/naloxone utilization. (2) Decrease institutional barriers associated with buprenorphine/naloxone utilization. (3) Increase access to buprenorphine/naloxone on inpatient units. (4) Evaluate buprenorphine/naloxone prescribing pre- and post-implementation of the buprenorphine/naloxone order set and nurse-driven process for appropriate buprenorphine/naloxone administration. **Methods:** Through collaboration with inpatient psychiatry, nursing staff, and inpatient mental health pharmacists, the inpatient order set and a nurse-driven process for buprenorphine/naloxone is to be implemented. Prior to implementation of the process/ order set, education will be provided to inpatient psychiatrists and nursing staff to in order to ensure understanding. Descriptive statistics will be used for retrospective analysis of suboxone prescribing trends and post-discharge follow-up. **Outcomes:** The primary outcome will be describing how to implement a buprenorphine/naloxone inpatient order set and nurse-driven process for appropriate buprenorphine/naloxone administration. A secondary outcome will be the buprenorphine/ naloxone prescribing trends/post-discharge follow up trends following implementation of order set and nurse-driven process.

Increasing Access to Psychiatric Care During a Global Pandemic Through Clinical Pharmacist Practitioner Services

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Type: Work in Progress. **Background:** The goal of this project is to increase access to behavioral health care at The Free Clinic (TFC) in Hendersonville, North Carolina, amidst a global pandemic. TFC has experienced increased psychiatric needs, especially on off weeks when the twice-monthly psychiatric clinic is not available. A 2020 survey from the World Health Organization (WHO) stated COVID-19 "interfered with mental health services in 93% of countries worldwide while the demand for mental health is increasing". North Carolina allows pharmacists to practice as Clinical Pharmacist Practitioners (CPP) allowing medication adjustment, discontinuation, and ordering necessary laboratory studies under the supervision of a physician in accordance with an agreed-upon written protocol. This study will evaluate the outcomes of adding a CPP to the clinic once monthly. **Objectives:** (1) To evaluate increases in psychiatric care rendered via a CPP. (2) To examine patient-perceived differences between CPP versus psychiatrist provided care. (3) To report CPP interventions. **Methods:** Participants will be recruited from TFC beginning on May 3, 2021 through March 31, 2022, and demographics will be reported. A CPP will offer in-person clinic visits once monthly while two psychiatrists each see patients once monthly. The total number of CPP clinic visits will be reported, and patient satisfaction surveys will be collected to evaluate patient perceptions of CPP-provided care versus psychiatrist-provided care with Likert scale comparisons. CPP-provided care will also be evaluated for differences in clinical response, the number of medication changes, and reported rates of adverse effects. Demographic characteristics, diagnosis, and medication changes will also be reported via descriptive statistics. Data will be analyzed using IBM SPSS Statistics for Windows, version 26 (IBM Corp, Armonk, NY, USA). A *t* test will be utilized to identify

significant differences between patient perceptions of psychiatrist-provided care and CPP-provided care. **Outcomes:** Psychiatric disease states such as anxiety disorders, depression, bipolar disorder, schizophrenia, and drug-induced side effects will be managed by the CPP. All non-controlled psychiatric medications may be evaluated and adjusted, discontinued, or prescribed. Patient satisfaction surveys of CPP-provided care versus Psychiatrist care will be compared.

Increasing the Utilization of Medication for Alcohol Use Disorder Within a Veteran Population

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Type: Work in Progress. **Background:** Per the National Institute on Alcohol Abuse and Alcoholism, alcohol use is considered the third leading preventable cause of death in the United States. Excessive alcohol use is associated with risky behaviors and an increased risk of conditions like heart and liver disease. Alcohol use disorder (AUD) is a chronic condition, and currently there are four FDA approved agents for its treatment: disulfiram, acamprosate, and oral and injectable naltrexone. The 2021 Veterans Affairs/Department of Defense Clinical Practice Guidelines for the Management of Substance Use Disorders additionally includes topiramate as a treatment option for moderate to severe AUD. These medications are underutilized, likely due to stigma surrounding AUD. At VA Northeast Ohio Healthcare System (VANEOHS), the prescribing rate was 9.3% in the 2nd quarter of 2021 compared to a VA national rate of 12.4%. This quality improvement project is designed to assess the current state of medication use for AUD at the VANEOHS so that various process improvement strategies can be identified and implemented to increase utilization. **Objectives:** The primary objective is to increase the prescribing rate of medications for AUD (disulfiram, acamprosate, oral and injectable naltrexone, and topiramate) within VANEOHS from 9.3% to 12.4% by the end of the 2nd quarter of 2022. **Methods:** Lean Six Sigma methodology will be used to complete this quality improvement project. Patients with an encountered AUD diagnosis without a current or previous prescription for any of the above medications listed will be identified through the Veterans Affairs' Psychotropic Drug Safety Initiative: Alcohol Pharmacotherapy Use Dashboard. Data will be collected via chart review and analyzed to evaluate potential defects in the current prescribing process. Through identification and assessment of defects, improvement strategies will be determined and implemented. **Outcomes:** Improvement strategies will be reported and assessed by analyzing the prescribing rate of medications for AUD through prospective data collection.

Increasing Utilization of Pharmacogenetic Testing by Mental Health Clinicians

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Type: Work in Progress. **Background:** Pharmacogenomics (PGx) studies variations in one's genetic makeup to understand how a person responds to a medication. Antidepressants can take up to twelve weeks to receive the full benefit from the medication, which can often present as a barrier to treatment adherence. Many of the enzymes responsible for the metabolism of antidepressants have the potential to be impacted by genetic variability. Understanding how these variations can impact a patient's response to a medication through PGx prior to medication initiation may help to minimize multiple trials. Barriers to incorporating PGx testing into clinical practice have been described previously, including understanding of clinical utility and difficulty interpreting results. This quality improvement project aims to increase utilization of PGx testing by assessing barriers and providing education. **Objectives:** (1) To assess barriers to implementing PGx into clinical practice. (2) Provide education to mental health clinicians to address and overcome perceived barriers. (3) To evaluate the impact of education on PGx test ordering. **Methods:** This will be a retrospective review of the impact of education on the utilization of PGx testing. An educational presentation will be provided to mental health providers at Psychiatry Grand Rounds to review PGx testing currently available at the facility. Additionally, a modified version of the presentation will be given to the psychology department for informational purposes. A brief survey will be administered to mental health providers to evaluate current knowledge and perceived barriers to PGx testing one month before and one month after the educational presentation. To assess the impact of provider education on PGx test ordering, a chart review will be completed to evaluate data on the number of tests ordered three months before and three months after the presentation. Descriptive statistics will be used to describe all objectives. **Outcomes:** The primary outcome of this project will be to describe the percent increase in the utilization of testing among mental health providers. Secondary outcomes include collecting perceived barriers to PGx testing and assessing the impact of education on overcoming these barriers through the pre- and post-survey.

Mental Health Matters: Benefits of Student-Led Interventions

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Type: Work in Progress. **Background:** Mental illness is common in the United States affecting 1 in 5 adults. Young adults aged 18 to 25 years have the highest prevalence of mental illness. Suicide is an increasing cause of death in the United States and is prevalent in students attending undergraduate and graduate level educational courses. Determining specific needs in student populations may ensure access to appropriate mental health resources. The goal of this study is to identify interventions that may be implemented across college campuses to positively impact student mental health. **Objectives:** To evaluate the perceived benefits of the Mental Health Matters event on the mental health of the student population and determine the ideal timeline for implementing future student-led interventions. **Methods:** This pilot study consisted of 34 voluntary committee members (undergraduate students, graduate students, and faculty) and was formed to create a mental health event tailored to the student population. Committee members were encouraged to sign up for a role in the event such as t-shirt and decal designs, advertising, fundraising, etc. Committee members along with student organization presidents were given creative freedom to come up with a topic that they would like to present at the event (eg, suicide awareness, benefits of exercise on mental health). This event included interactive expo booths, peer-to-peer messaging, entertainment, and prizes and giveaways and encouraged students to engage in dialogue about mental health. Once IRB approval is received, data from student questionnaires will be analyzed to determine the effectiveness of the intervention on mental health and identify the optimal time of year to offer the event. **Outcomes:** In conjunction with the school of pharmacy's CPNP student chapter, the investigators plan to accumulate data from students and coordinate the Mental Health Matters event again in Fall 2022. Potential plans to further expand the event to reach more students, faculty, and staff and foster an environment where anyone can speak openly about suicide and mental health in hopes of decreasing stigma will be explored.

Obtaining Prospective Patient Consent to Conduct Retrospective Data Analysis in Psychiatry

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Type: Work in Progress. **Background:** Obtaining informed consent and maintaining patient confidentiality are essential ethical standards when conducting psychiatric research. Investigational Review Boards (IRBs) ensure these standards are met and require informed consent for all prospective studies. Retrospective studies often qualify for a consent waiver if there is a procedure in place to maintain patient confidentiality. De-identifying existing protected health information during data collection is the standard method for maintaining confidentiality for chart reviews in outpatient settings and even some hospitalized settings. De-identifying data is considered insufficient in some states, particularly for involuntary patients. California is one state where IRBs require prospective informed consent for retrospective studies involving involuntarily hospitalized psychiatric patients. The impact of this IRB requirement is not well-described in the psychiatric literature. While informed consent protects a patient's right to decide whether their health information is included in study data analysis, the requirement for prospective informed consent may limit an investigator's ability to obtain sufficient sample size to conduct meaningful retrospective research. Retrospective research can inform practice and lead to improved care for a population. This study serves to analyze the impact of one California IRB's prospective informed consent requirement on sample size in a retrospective study of antipsychotic blood level monitoring. **Objectives:** (1) Evaluate the number of patients who consent to participate in a retrospective study on antipsychotic therapeutic drug level monitoring compared to those who do not consent. (2) Identify barriers to consent. (3) Describe the impact informed consent has on sample size of a retrospective study of psychiatric inpatients. **Methods:** Individuals who had an antipsychotic blood level drawn between May 1, 2021 and May 1, 2022, will be invited to consent to allow investigators to analyze existing chart data regarding how antipsychotic blood levels informed their treatment. Sample size, demographics, and methods of obtaining informed consent (in person or electronically) will be reported and descriptive statistics will be used to compare groups. **Outcomes:** The number and percentage of patients who agreed to consent to data analysis will be compared to those who do not consent.

Outcomes of Antipsychotic Monotherapy Versus Polypharmacy in Patients With Schizophrenia or Schizoaffective Disorder

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Type: Work in Progress. **Purpose:** The purpose of this study is to evaluate outcomes of patients with schizophrenia or schizoaffective disorder prescribed antipsychotic monotherapy (APM) vs antipsychotic polypharmacy (APP). Antipsychotic polypharmacy is the simultaneous use of two or more antipsychotic medications. Antipsychotic polypharmacy is cited as one the most prevalent and least evidence-based practices in psychopharmacology, especially in patients with serious mental illnesses. The results of this study could help guide providers in clinical decision making regarding the safety and efficacy of antipsychotic prescribing practices. The primary outcome of this study is psychiatric rehospitalization. Secondary outcomes include psychiatric emergency department visits, all-cause hospitalization, prevalence of APP, and prevalence of specific antipsychotic combination regimens. **Methods:** This study is a retrospective chart review that will be conducted at the VA North Texas Health Care System (VANTHCS). The study will include patients with schizophrenia or schizoaffective disorder prescribed either APM or APP from September 1, 2016 to September 1, 2021. Protected health information will be collected from the Computerized Patient Record System (CPRS). Investigators will exclude the first 90 days of combination antipsychotic therapy in the APP group to account for cross-titration from one antipsychotic regimen to another. Patients with a diagnosis of dementia will also be excluded due to the increased risk of mortality with antipsychotic use in patients with dementia-related psychosis. The following data will be collected: demographic variables (age, gender, race), psychiatric hospitalizations, psychiatric emergency department visits, all-cause hospitalizations, body mass index, HbA1c, cholesterol panels, psychiatric medication history, APP prevalence rates, specific APP combination rates, and Abnormal Involuntary Movement Scale (AIMS) assessment scores. All patient data will be deidentified and stored confidentially. Investigators will utilize descriptive statistics (ie, χ^2 analyses, averages) to compare primary and secondary outcomes between the APM and APP groups. **Results:** Investigators will report primary and secondary data points pertaining to treatment outcomes in patients with schizophrenia or schizoaffective disorder at VANTHCS. **Conclusions:** The results of this study could provide key clinical guidance on antipsychotic prescribing practices for mental health practitioners.

Outpatient Naloxone Prescribing for Patients With Opioid Use Disorder: Improving the Quality of Providing a Life-Saving Medication

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Type: Work in Progress. **Background:** Provisional data from the Centers for Disease Control indicates an estimated 100306 drug overdose deaths in the United States during the 12-month period ending in April 2021, which is an increase of 28.5% from the same period the year before. Of those, 75673 are due to opioids, an increase from 56064 the year before. A national Veterans Affairs (VA) memorandum from February 2021 requested all veterans with an OUD diagnosis be offered patient education and a prescription for naloxone due to increased national overdose reports as well as increased social isolation over the past year. Current VA Naloxone Rescue Recommendations for Use state naloxone should be offered to all veterans who are at increased risk for opioid overdose. This quality improvement project is designed to review the barriers to providing naloxone to patients with OUD and explore process improvement strategies to overcome these barriers. **Objectives:** The primary objective is to increase the percentage of veterans with OUD that have active outpatient naloxone prescriptions filled in the last year by a relative 25%. The secondary objective is to assess the impact of an increased number of prescribed naloxone kits on the number of patient reported opioid overdose reversals with naloxone. **Methods:** A chart review will be performed on a sample of veterans who receive care at VA Northeast Ohio Healthcare System (VANEOHS), have an active diagnosis of OUD, and do not have an active outpatient naloxone prescription filled in the past twelve months. Veterans will be identified via the Stratification Tool for Opioid Risk Mitigation dashboard. Data will be used to evaluate the current process of prescribing naloxone to these veterans and identify possible areas for improvement. After potential areas of improvement are identified, quality improvement strategies will be implemented to overcome barriers to outpatient naloxone prescribing. **Outcomes:** Prospective data will be collected to assess effectiveness of each implemented process improvement strategy. Effectiveness will be determined by comparing the data pre- and post-intervention implementation, including data regarding patient reported opioid overdose reversals.

Pharmacist Impact on Appropriate Stimulant Prescribing in Veteran Outpatients

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Type: Work in Progress. **Background:** Prescription stimulants are commonly used for the treatment of ADHD. FDA indications for the use of stimulants include

ADHD, narcolepsy and binge eating disorder. Recent trends for stimulant use in the United States show an increased prescribing of stimulants without an FDA indication. From 2006 to 2009, only 34% of stimulant office visits to adults had an ADHD diagnosis, and the off-label treatment was significantly more common for non-psychiatric physicians compared to psychiatrists. Per the Veterans Health Affair (VHA) Psychotropic Drug Safety Initiative (PDSI) Stimulant Dashboard, the VA Northern California Health Care System (VANCHCS) has 67.6% of patients receiving a stimulant with an FDA indication, which is lower than the national average of 80.8%. Given the risks associated with stimulants, it is important to minimize inappropriate prescribing and properly monitor patients that are receiving stimulants to ensure safety. **Objectives:** To examine how VANCHCS is utilizing stimulants in terms of indication and identify areas of improvement and implement new processes to improve appropriate prescribing of stimulants. **Methods:** This project is a single-center retrospective chart review at VANCHCS that includes all patients with an active prescription stimulant in the past year. There are two phases: the chart review phase and the provider education phase. The chart review phase consists of chart reviews on patient cases identified from the VHA PDSI Stimulant Use Dashboard which identifies those without an FDA-approved indication. Recommendations are made to providers on how to appropriately document the FDA-approved indication if present. The second phase of this project is the provider education phase. In this phase, assessments will be made on if prescribers took into account the recommendations in the chart review phase and if the Percentage of Stimulant Patients with FDA Indication improves on the VHA PDSI Stimulant Use Dashboard. Information gathered from the chart review phase will be utilized to structure educational in-service(s) on appropriate stimulant use prescribing. One month following the inservice(s), final data from the dashboard will be collected to show the outcome. **Outcomes:** The primary outcome measure is impact of pharmacist intervention on number of stimulant prescriptions with an FDA indication.

Pharmacist Involvement in Medication Reconciliation at a Forensic Psychiatric Hospital

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Type: Work in Progress. **Background:** In 2005, the Joint Commission added medication reconciliation as a National Patient Safety Goal to mitigate negative patient outcomes associated with medication discrepancies. Although there are many mechanisms to conduct medication reconciliation, there is no data regarding which strategies are most effective. No clinical evidence supports a specific member of the healthcare profession performing a more accurate medication reconciliation; however, there is research that supports improved success of medication reconciliations when pharmacists are involved in the intervention. Currently at Hawaii State Hospital (HSH), pharmacists are not directly involved in medication reconciliation; however, there is support to integrate pharmacists into the current process. **Objectives:** (1) Evaluate the number and type of medication discrepancies that are intervened upon when completing a medication reconciliation for each patient that is admitted to HSH. (2) Measure the amount of time it takes to complete each medication reconciliation and assess how to best integrate pharmacists into the current medication reconciliation process. **Methods:** A medication reconciliation will be completed by the physician and inpatient medications ordered. Once completed, the pharmacist will review and complete an additional medication reconciliation within 72 hours of admission from January 1, 2022 to February 28, 2022. The pharmacist will review the following documents and reach out to the appropriate parties to ensure an accurate medication history has been performed: medication administration records from institutionalization or housing placement, outpatient pharmacy prescription records, patient medication bottles, discharge medication records, and information within the patient chart. Medications will be included that have been prescribed or taken within one month of admission. The physician(s) will be notified of any discrepancies that are found and orders will be clarified to ensure the patient is prescribed the appropriate medications. Any medication error that is identified will be documented on the "Medication Safety Report Form" that is currently used to report medication safety events. **Outcomes:** The number and type of medication discrepancies will be analyzed and reported along with the pharmacy-led interventions and safety events that are assessed. The average amount of time it takes to complete a comprehensive medication reconciliation will also be reported.

Pharmacist-Led Identification of Behavioral Health Transitions of Care Errors and Prevention Initiatives Within a Large Health System

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Type: Work in Progress. **Background:** Transitions of care (TOC) from inpatient to outpatient behavioral health settings increase the risk of medication errors, adverse events, and preventable hospitable readmissions. Pharmacist involvement in TOC, including the medication reconciliation process, has demonstrated a reduction in the frequency and severity of medication errors. There is a need to implement pharmacist-led behavioral health TOC initiatives to help alleviate preventable readmissions, medication errors, and patient non-adherence. **Objectives:** Identify discharge medication reconciliation discrepancies for high-risk psychotropics in a behavioral health setting. Implement pharmacist-led TOC initiatives, including electronic medical record optimizations, to prevent medication errors. **Methods:** A retrospective review will be conducted to assess continuity of long-acting injectable (LAI) antipsychotics and naltrexone on licensed independent practitioner (LIP)-conducted discharge medication reconciliations across the health system. Patients aged 18 to 99 years admitted from January 1, 2020 to December 31, 2020 will be included if they were ordered an LAI during admission and/or were receiving LAI therapy prior to admission. Patients will be excluded if they presented to the emergency department but did not require inpatient admission. The project team will assess if LAIs were continued on discharge, if the correct dose was selected, if oral supplementation was continued appropriately, and if patients were re-admitted to a psychiatric unit within 6 months of initial discharge. A clinical pharmacist will also prospectively identify and intervene on LIP-conducted discharge medication reconciliation discrepancies of high-risk psychotropics on adult psychiatric units. These high-risk psychotropics include LAIs, lamotrigine, clozapine, lithium, and valproic acid derivatives. The pharmacist will categorize the primary areas of discrepancy. These areas include, but are not limited to, missing medications, incorrect dose, incorrect frequency, or adherence or pill burden concern. This prospective aspect will allow for capturing the impact of pharmacist interventions on discharge medication reconciliations including high-risk psychotropics. **Outcomes:** The primary outcome measure is frequency of discharge medication reconciliation errors involving high-risk psychotropic medications. Secondary outcome measures include implementation of TOC-related initiatives, assessing the frequency and type of interventions made, and modifications in LIP-conducted discharge medication reconciliations after pharmacist recommendations are received.

Pharmacy Directed Linkage to Mental Health Resources After Anxiety Screening

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Type: Work in Progress. **Background:** During the COVID-19 pandemic, community pharmacists remained onsite at pharmacies, available to provide care for patients. Their scope of practice expanded during the pandemic to maintain the drug supply chain, provide telehealth services, vaccinations, and point of care testing; all on top of their pre-pandemic defined responsibilities for medication management. Due to social isolation and feelings of uncertainty related to the pandemic, many people were struggling with their mental health. Being an available resource in the community allows for pharmacists to implement mental health services for patients. This research project will implement and evaluate a pharmacist-directed generalized anxiety disorder (GAD) screening process, including linkage to mental health resources in the community. **Objectives:** (1) Evaluate the process of pharmacist-directed GAD screening in various settings. (2) Assess patients' opinions on the usefulness of the resources provided. **Methods:** Participants will be recruited at various community pharmacy settings in Philadelphia while participating in point of care testing, vaccine clinics, or picking up medications at the pharmacy. Participants will complete the GAD-2 questionnaire. Those with a score ≥ 3 will complete the GAD-7. Participants with a score ≥ 7 will be provided a handout with mental health resources and will be followed up monthly via telephone for up to 3 months. The cutoff scores used in this research project have been statistically validated in previous studies. During follow up phone calls, participants will be surveyed about the usefulness of the resources provided. Collected data includes: demographics; setting of survey completion; number of participants enrolled; receiving a score of 3 or higher on GAD-2; receiving a score of 7 or higher on the GAD-7; and number of participants linked to care. Chi-square tests will be performed to analyze the scores from the GAD surveys, along with the Likert scale responses on resource usefulness. **Outcomes:** We will report numbers of completed surveys, both GAD-2 and GAD-7, and how many participants were provided resources and successfully linked to care. Results will also capture what barriers exist for participants to successfully use the mental health resources provided after screening.

Pharmacy Driven Medication Reconciliation for Pediatric Patients With Mental Health Conditions in the Emergency Department: A Pilot Study

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Type: Work in Progress. **Background:** In 2021, The American Academy of Pediatrics, American Academy of Child and Adolescent Psychiatry, and the Children's Hospital Association declared a national emergency regarding pediatric mental health. Data from the National Syndromic Surveillance Program from 2019 to 2021 demonstrated that emergency department (ED) visits across the country rose for pediatric patients experiencing mental health crisis by over 30%, often requiring extended stays in the ED awaiting additional placement and resources, with one study reporting a median time of 54 hours extending up to 10 days or longer. This prolonged time emphasizes the need for additional resources, early intervention, and timely initiation of treatment. The impact of medication reconciliation on reducing medication errors is consistently described in literature. Pediatric patients with mental health conditions are likely to be on more than one medication and are among the highest risk for at least one medication error on hospital admission. Psychotropic medications can be associated with significant adverse effects in pediatric populations. The pharmacy intern ED shift (INED) was created November 29, 2021 at a Children's Hospital to meet this rising need. The purpose of this study is to determine the role and need for early medication reconciliation intervention in pediatric patients with underlying mental health conditions. **Objectives:** (1) Implement INED; (2) Describe medication errors and discrepancies identified by pharmacy interns; (3) Propose next steps for service expansion. **Methods:** INED is a daily (Monday through Friday) pharmacy intern shift supervised by the emergency department pharmacist. During INED the pharmacy intern: (1) performs a medication history; (2) documents the medication history and interventions in the electronic medical record; and (3) communicates interventions to the medical team. Data will be collected via retrospective chart review and analyzed with descriptive statistics. **Outcomes:** Demographics collected include age, gender, race, psychiatric and medical diagnoses, and current medications. Primary outcome is to characterize the type and frequency of medication discrepancies. Secondary outcomes include time to perform medication reconciliation, number of medication reconciliations completed per shift, and the medications and medication classes most involved in discrepancies.

Pharmacy-Driven Intervention for the Appropriate Use of Droperidol in Acute Agitation Management

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Type: Work in Progress. **Background:** Droperidol is a first-generation antipsychotic widely used by psychiatrists, emergency medicine physicians, and anesthesiologists due to its sedative, antiemetic, and anesthetic properties. In 2001, the Food and Drug Administration (FDA) added a boxed warning to droperidol for increased risk of QTc prolongation, thus restricting its use due to requirements for baseline and continuous electrocardiogram (ECG) monitoring. Recently, there has been a nationwide increased usage of droperidol for off-label indications. At Riverside University Health System (RUHS), droperidol is restricted to adults with nausea and vomiting, despite literature supporting off-label use for acute agitation. This study will evaluate current practice and implement policies for off-label use of droperidol for acute agitation. **Objectives:** (1) Identify current issues associated with droperidol usage and to establish policies and procedures for appropriate utilization at RUHS, including ECG monitoring, dosage, and indication. (2) Evaluate off-label use of droperidol for managing acute agitation. (3) Establish an institution-specific algorithm for the treatment of acutely agitated patients. **Methods:** Patients were identified using a pharmacy surveillance software, VigiLanz, for droperidol orders at RUHS Medical Center from December 1, 2020 to December 1, 2021. Orders for patients receiving intramuscular or intravenous droperidol were included unless there was no documented receipt of administration. The primary aim of the study is to identify current issues associated with droperidol usage and to establish policies and procedures for appropriate utilization at RUHS, including ECG monitoring, dosage, and indication. The primary outcome will be measured by increased compliance of appropriate use, as defined as ECG monitoring, indication, dose, and ordering provider. Secondary aims are to evaluate off-label use of droperidol for managing acute undifferentiated agitation to establish an institution-specific algorithm for acute agitation. Secondary outcome measures include incidence of obtaining an ECG before and after droperidol administration, including QTc interval; incidence of labeled and off-labeled indications; and adverse events.

Outcomes: This study will report the number and percent of droperidol orders used for off-label agitation and analyze its appropriateness of use, as defined by ECG monitoring and institution-specific requirements, its place in therapy, and any adverse event associated with its administration.

Phenobarbital Requirements for Patients Using Synthetic Benzodiazepines

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Type: Work in Progress. **Background:** In recent years, new psychoactive substances belonging to the benzodiazepine class emerged in the drug market, primarily online, and are being sold under street names such as 'designer benzodiazepines' or 'synthetic benzodiazepines.' While some of these new substances belong to the benzodiazepine class and have similar pharmacological properties to the FDA approved benzodiazepines, the profiles of most of the current synthetic benzodiazepines are not well understood. Given the limited information, properties like pharmacology and toxicity of these substances, variations in dosage, onset of effects, potency, the use of these substances pose serious health risks to their consumers. At our institution, phenobarbital is used to detoxify patients who have physiological benzodiazepine dependence. In patients who are dependent on FDA-approved benzodiazepines, phenobarbital is initiated based on established phenobarbital/benzodiazepine dose equivalency. Subsequent dosing and dose tapering is then primarily based on objective withdrawal symptoms via Modified Selective Scoring Assessment (MSSA) scores. However, currently there are no established guidelines regarding dose equivalency of synthetic benzodiazepines to FDA-approved benzodiazepines or phenobarbital. **Objectives:** (1) Quantify phenobarbital requirements for patients admitted for synthetic benzodiazepine dependence. (2) Examine if any dose equivalencies for synthetic benzodiazepines to phenobarbital can be determined. **Methods:** A single-center, retrospective, chart review analysis will be conducted. We will identify eligible patients from electronic medical records based on the following: admitted to the Adult Mental Health and Addiction Services unit from January 1, 2020 to December 31, 2020 and received phenobarbital during their admission for designer/synthetic benzodiazepine use. **Outcomes:** We will report the patient-reported substance/synthetic benzodiazepine, the patient-reported amount/daily usage of synthetic benzodiazepine consumed prior to admission, cumulative phenobarbital dose within the first 24 hours, cumulative phenobarbital dose received to complete detoxification, and length of treatment until detoxification is completed.

Prescribing Trends of Psychiatric Medications Within an Adult Burn Center

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Type: Work in Progress. **Introduction:** Psychiatric conditions are common with burn patients due to potentially traumatic circumstances of the injury, the length of recovery, and the debilitating complications post-burn. Appropriately identifying and treating psychiatric disorders in patients with burn injuries is challenging yet critical to both initial and long-term recovery. The current literature describing how to best assess psychiatric disorders in adults with burn injuries is extremely limited. In addition, practice variability exists regarding management of psychiatric medications of inpatients presenting with or without a previous psychiatric diagnosis due to limited guidance. This retrospective case-control study aims to examine the impact of burn injury on psychiatric medication prescribing in adult patients with and without previous psychiatric histories or medications. **Methods:** This retrospective case-control study will evaluate patients 18 years or older admitted to the burn unit at a safety net hospital from January 1, 2019 to December 31, 2019. The primary outcome is prescribing patterns of psychiatric medications at discharge in adult burn patients with and without a baseline psychiatric disorder. Secondary outcomes include the effect of a Psychiatry consult on discharge medications, length of stay, number of psychiatric medications related to specific diagnoses at discharge, prescribing of supplemental medications related to psychiatric diagnoses, and the effects of other patient-specific factors on prescribing (eg, type of burn, reason for burn, percent total body surface area, race, preferred language, gender, and gender identity, etc.). **Clinical Impact:** This study could impact clinical practice in burn settings by helping identify where some patients may be improperly treated and provide additional guidance on how to approach the various psychiatric disorders through pharmacotherapy at this specific institution. This may potentially be extrapolated to other burn centers.

Prevalence of Actionable Pharmacogenomic Phenotypes in Veterans With Major Depressive Disorder (MDD) Receiving Antidepressants

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Type: Work in Progress. **Background:** Depression is a leading cause of disability globally and is estimated to affect greater than 264 million individuals. Antidepressants are effective treatments for depression, most of which are metabolized through hepatic enzymes CYP2C19 and CYP2D6. Thirty to fifty percent of patients display pharmacogenomic (PGx) variability in CYP2C19 and CYP2D6. Variations in these enzymes may lead to reduced efficacy or increased toxicity necessitating therapy modification and delays in depression control. Pharmacogenomic screening can identify this metabolic variability and provide direction in medication selection. Though numerous studies have defined the relationship between response to specific antidepressants and genetic profile, there remains a paucity of evidence regarding the impact of clinical intervention informed by these relationships. This research was supported by the National Center for Advancing Transactional Sciences (NCATS) of the National Institutes of Health (NIH) under award number UL1TR003096. The content is solely the responsibility of the authors. **Objectives:** This project aims to further describe the impact of applying PGx screening within the clinical setting at Tuscaloosa Veterans Affairs Medical Center (TVAMC), targeting patients with major depressive disorder (MDD). **Methods:** Patients with MDD will be identified via the VA depression dashboard. Eligible patients will be those with a prescription for one of the following medications: amitriptyline, clomipramine, desipramine, doxepin, imipramine, nortriptyline, trimipramine, citalopram, escitalopram, fluvoxamine, paroxetine, sertraline, or venlafaxine. Veterans will be recruited through the mailing of informational letters and provider referrals. Patients who provide informed consent will receive a PGx testing kit to collect a saliva specimen which will be mailed to lab for processing. The research team will provide a list of patient-specific PGx recommendations to the patient's primary care and/or mental health care teams. Upon reaching a clinical consensus, the patient will be scheduled for a follow-up visit to discuss current and future pharmacotherapy recommendations. **Outcomes:** We will report the number of veterans identified via dashboard taking a pharmacogenomically-actionable antidepressant, the number of enrolled patients, and the number of patients identified with a CYP2D6 or CYP2C19 phenotype with an actionable recommendation for current and/or prior antidepressant therapies.

Prospective Analysis of the Effect of Pharmacist-Led Medication Groups on Patient Outcomes

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Type: Work in Progress. **Background:** Pharmacists are an evolving and increasingly utilized health care profession. Several small studies have evaluated the effect of pharmacist-led medication education on various patient outcomes with positive results. The results of a systematic review of 16 studies evaluating the impact of pharmacists in mental health were positive, demonstrating improvements in outcomes, prescribing practices, patient satisfaction, and resource use. However, most studies done on this subject are limited to small sample sizes, which limits power and generalizability. Given the demonstrated success of direct pharmacist and patient interaction in mental health care settings, a prospective quality improvement project is warranted. **Objectives:** (1) Assess the feasibility of initiating medication education groups on the inpatient psychiatric unit. (2) Evaluate patients' self-assessment of adherence and side effect management upon admission and prior to discharge. (3) Determine if the direct interaction between patients and pharmacists leads to additional medication changes, Medication Therapy Management (MTM) referrals, or improved outcomes. **Methods:** A prospective, quality improvement-focused study including inpatient psychiatric patients will be performed from November 1, 2021 to February 4, 2022. All patients admitted to specified units during this time will be included. Medication education groups will be scheduled on the units. Data collected will include patient demographics (age, gender, ethnicity), number of groups attended, primary diagnosis, number of medication changes resulted from attending group, potential MTM referrals, readmission rates, and length of hospital stay. A validated survey will be used to evaluate participants' self-assessment of medication adherence and side effect management upon admission and prior to discharge. **Outcomes:** The primary objective is to compare self-assessment of medication adherence and side effect management between patients who attended medication education groups and those who did not. Medication changes that were done resulting from the pharmacist-patient interaction will be compared to the standard of care group. The number of MTM referrals that could be made for these patients if an MTM clinical pharmacist proficient in psychiatric medications were available to them will be tracked. Readmission rates and hospital length of stay will also be evaluated.

Protocol Development for Initiation of Buprenorphine Products in the Emergency Department for Opioid Use Disorder

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Type: Work in Progress. **Background:** Opioid Use Disorder (OUD) and deaths from opioid overdose are major public health concerns. Seeking treatment for a highly stigmatized chronic disease like OUD can be difficult; therefore, it has become increasingly important to meet the needs of patients with OUD in various settings. Emergency Department (ED) providers are often the first point of contact for patients with OUD, which makes this setting optimal for screening and intervention. Buprenorphine is a partial mu receptor agonist and can help with withdrawal symptoms and cravings. Similar to how patients with chronic conditions (eg, hypertension, diabetes mellitus) may present to the ED and be initiated on treatment and transitioned to outpatient care; patients with OUD may benefit from initiation of buprenorphine products in the ED followed by an appropriate transition of care. This project's purpose is to devise a protocol for initiating buprenorphine in the ED. **Methods:** This quality improvement project will devise a method for screening and identifying patients who meet criteria for the initiation of buprenorphine products in the ED. A protocol for the prescribing and dispensing of buprenorphine products in the ED will be outlined and in-services will be provided to educate all stakeholders. This protocol will also outline the process for referring patients for ongoing treatment. Education regarding OUD, treatment options, naloxone education, and harm reduction will be given to eligible patients via counseling and/or educational brochures. This project will utilize the Computerized Patient Record System to collect pertinent demographic and objective data. Veterans Affairs (VA) policy and the Health Insurance Portability and Accountability Act (HIPAA) will be followed to ensure protected health information remains confidential.

Psychedelic-Assisted Psychotherapy in the Treatment of Anxiety and Trauma-Related Disorders

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Type: Work in Progress. **Background:** In the past few years, there has been a renewed interest in psychedelic-assisted psychotherapy as treatment for a wide array of psychiatric disorders including depression, addiction, trauma-related disorders, and anxiety. Psychedelics, either directly or indirectly, can modulate the serotonergic (5-HT) system of the CNS, a system which has been shown to promote connective changes in neurocircuitry and attenuate dysregulated structures in the brain thought to be responsible for anxiety and trauma-related disorders. Current first-line treatments for these disorders do not provide universal efficacy, and tolerability remains problematic. Psychedelics offer a promising prospect to address these concerns. Recent clinical trials with psychedelic-assisted psychotherapy have yielded positive outcomes in the treatment of anxiety and trauma-related disorders with improved, sustainable efficacy and extremely low toxicity profile. **Objectives:** This paper aims to review and summarize all the current clinical trials of psychedelic modalities including ketamine, LSD, psilocybin, 3,4-methylenedioxy-methamphetamine (MDMA), 5-methoxy-N,N-dimethyltryptamine (5-MeO-DMT), and ibogaine in the treatment of anxiety and trauma related disorders. By doing so, this paper will showcase the current and future landscape of psychedelics. **Methods:** A scoping review was conducted by searching PubMed and Embase databases for articles in English investigating LSD, psilocybin, MDMA, 5-MeO-DMT, and ibogaine. Inclusion criteria contains being a randomized controlled trial or open-label trial involving psychedelic modalities in the treatment of anxiety or trauma-related disorders. There were no exclusion criteria for dates published. 2319 articles were retrieved for abstract screening, with 1955 being excluded. A total of 364 articles are currently pending full-text review. **Outcomes:** To be completed.

Psychiatric Pharmacist Impact on Antipsychotic Polypharmacy Usage and Rehospitalization Rates in a Safety-Net Inpatient Psychiatric Hospital

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Type: Work in Progress. **Background:** Current American Psychiatric Association (APA) schizophrenia treatment guidelines recommend against the routine use of two or more antipsychotic medications simultaneously, also referred to as antipsychotic polypharmacy (APP). The Joint Commission (JACHO) has put out specifications for the appropriate justification for APP: (1) Minimum of 3 failed trials of monotherapy; (2) Plan to taper to monotherapy due to previous use of multiple antipsy-

chotic medications or a cross-taper is in progress; (3) Clozapine augmentation has been trialed. Despite recommendations against it, prevalence of APP remains high, estimated to be 30% to 43% globally. Success of previous psychiatric pharmacy driven quality improvement projects at this institution has expanded the scope of pharmacy services. This study will highlight the increased utilization of psychiatric pharmacy services, as demonstrated by improved APP justification that aligns with current JACHO requirements. **Objectives:** To improve APP rates at this institution and to determine if this optimization coincides with an improvement in patient outcomes, measured via rehospitalization rates. **Methods:** To address the persistent utilization of APP within a safety-net psychiatric hospital, a more aggressive workflow enforcing JACHO criteria was implemented by psychiatric pharmacists on January 1, 2021. This included more extensive medication reconciliations, patient interviews, and encouraging increased documentation at discharge. This retrospective cohort study will evaluate the criteria used to justify the use of APP pre-protocol implementation (August 1, 2020 through December 31, 2020) and post-protocol implementation (August 1, 2021 through December 31, 2021). The study population will include adult patients treated at this campus, discharged on at least one antipsychotic. A sample size of 294 patients in each group was chosen to give a power of 80% between the pre- and post-implementation groups with a one-sided .05 level of significance. A χ^2 test of associations is the statistical procedure that will be used to analyze the data in this study. **Outcomes:** The primary outcomes of the study will be the change in prevalence of appropriate antipsychotic polypharmacy at discharge and rehospitalization rates before protocol implementation compared to post-protocol implementation at endpoint. Secondary outcomes will compare patient factors (eg, age, sex, ethnicity, diagnosis), concurrent medications and side effects in patients receiving antipsychotic monotherapy versus polypharmacy.

Risk Factors Associated With Treatment Failure With SSRI Monotherapy in College Students With MDD

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Type: Work in Progress. **Background:** Major Depressive Disorder (MDD) is one of the most common mental health disorders. Minimal research has been published focused specifically on MDD treatment outcomes in college students. This unique patient population has needs that vary vastly from other populations and many studies overlook the additional functional requirements of college students when considering treatment goals. Evidence has shown mental illness, particularly depression, to be prevalent in college students and it often goes underdiagnosed and under-treated. This retrospective review of college students seeking treatment for MDD at a university health center will aim to identify factors associated with failure of initial SSRI monotherapy in order to optimize medication selection and reduce the number of medication trials needed to achieve remission in this population. **Objectives:** Identify factors associated with treatment failure with SSRI monotherapy in college students with MDD. **Methods:** Of the 359 total psychiatric intake visits from the fall 2020 semester, those associated with ICD-10 codes F32 and F33 will be reviewed in the university health center's electronic medical record. Demographic variables (age, sex, race, and BMI) and social, family, medication, and health histories will be collected. Treatment failure of initial SSRI monotherapy is defined as the addition of or switch to another antidepressant to achieve remission, loss to follow-up, or SSRI intolerability. Frequency distributions will be evaluated for all variables to assess variability and normality. Continuous variables will be summarized as means with standard deviations or median. Mann-Whitney U tests and *t* tests will be used as appropriate. Categorical data will be summarized as frequency and a χ^2 test will be used to determine association. Multiple logistic regression will be performed to identify factors associated with failure of SSRI monotherapy. All statistical tests will be two-sided with significance level set as .05. **Outcomes:** We will report the number and percentages of patients experiencing SSRI monotherapy treatment failure as a function of associated demographic, social, and medical factors.

Safety of Sedating Antidepressants Compared to Benzodiazepine Receptor Agonists for the Treatment of Insomnia in Patients Diagnosed With Bipolar Disorder: A Retrospective Review

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Type: Work in Progress. **Background:** Sleep disturbances are a common comorbidity in patients diagnosed with bipolar disorder, and lack of sleep has the potential to precipitate manic episodes. Sedating antidepressants are commonly used in the treatment of insomnia, however there are potential challenges in this patient population. Antidepressants carry a risk of manic switch in patients diagnosed with bipolar disorder, though there is limited data on this risk with sedating antidepressants. Sedating antidepressants such as trazodone, mirtazapine, doxepin,

and amitriptyline require lower doses to achieve sedating effects compared to higher doses needed to treat depression. It is hypothesized that when used for insomnia, sedating antidepressants may carry a lower risk of manic switch. **Objective:** The objective of this study is to evaluate the safety of sedating antidepressants for the treatment of insomnia in patients diagnosed with bipolar disorder compared to benzodiazepine receptor agonists (BzRA). **Methods:** This is a retrospective chart review of veterans engaged in mental health care for medication management of bipolar disorder and insomnia at Jesse Brown VA Medical Center. Patients receiving a new prescription for a sedating antidepressant or BzRA from March 1, 2015 to March 1, 2020 were identified and reviewed for 12 weeks post-initiation. **Outcomes:** The primary outcome will evaluate the rate of treatment-emergent manic switch within 12 weeks of sedating antidepressant or BzRA initiation. Secondary outcomes include: rate of emergency room visits and hospitalizations due to treatment-emergent manic switch, rate of sedating antidepressant or BzRA discontinuation, and rate of adverse effects.

Stimulant Prescribing Trends Following Implementation of Controlled Substance Ordering Restrictions at a Veterans Affairs Health Care System

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Type: Work in Progress. **Background:** Attention-deficit/hyperactivity disorder (ADHD) is associated with significant impairments, including increased number of suicide attempts, financial problems, increased mortality rates due to home and traffic accidents, increased criminality, early onset of addiction, intimate partner violence, and underachievement at work. Adults with ADHD should be offered a stimulant as first-line pharmacotherapy in the absence of any contraindications. If a patient is unable to tolerate initial stimulant, an adequate trial of alternative stimulant should be attempted before engaging in a trial of second-line treatment such as atomoxetine. In September 2020 the Pharmacy and Therapeutics Committee implemented a more restrictive process to prescribe controlled substances, including stimulants. This process requires documentation of a Prescription Drug Monitoring Program check within the past 12 months, in addition to the provider entering a controlled substance orders note with every prescription. The purpose of this quality improvement project is to assess the impact of this more restrictive process on prescribing patterns for stimulants within a large Veterans Affairs Health Care System. **Objectives:** To evaluate number of patients with ADHD previously treated with stimulants transitioned to atomoxetine following changes in controlled substance ordering note restrictions. **Methods:** This is a retrospective chart review of 111 patients prescribed a stimulant and atomoxetine between September 1, 2020 and September 1, 2021 as identified through use of the Psychotropics Drug Safety Initiative (PDSI) dashboard in addition to DataMart reports. Patient data collected from Computerized Patient Record System (CPRS). **Outcomes:** We will report if patients are being transitioned to second line pharmacotherapy for ADHD without documented indication following implementation of more restrictive controlled substance ordering processes.

The Impact of a Clinical Reminder Order Check and Provider Education on Anticholinergic Prescribing in Older Adults

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Type: Work in Progress. **Background:** Per the National Center for Health Statistics (NCHS), 39% of patients 65 years old or older take five or more prescription medications. Medications commonly used to treat asthma, COPD, urinary incontinence, and psychiatric disorders may cause side effects called ‘‘anticholinergic’’ effects. These effects include, but are not limited to, constipation, dry mouth, dizziness, confusion, sedation, cognitive impairment, delirium, increased risk of dementia, and falls. The Veteran’s Health Administration (VHA) created the Psychotropic Drug Safety Initiative (PDSI) to focus on safe prescribing practices, including anticholinergic polypharmacy. Clinical reminder order checks (CROCs) are commonly used to address clinical problems and appear as an alert to a prescriber upon order entry and require documentation of justification to complete the order. The purpose of these reminders is to reduce the potential for increased risk of side effects. This project will provide information on CROC effectiveness for medication deprescribing. **Objective:** To evaluate the impact of an order check on anticholinergic medication deprescribing, measured by medication discontinuation or dose reduction, in veterans who are 75 years old and older. **Methods:** A pre-existing patient report will be used to identify patients 75 years old and older prescribed anticholinergic medications. Investigators will record total number of patients meeting the PDSI metric and collect patient specific data including anticholinergic medications, doses and indications of these medications, total number of medications, and prescriber group. Initial data collection will occur prior to

implementation of the CROC. Written and verbal communication will be delivered to providers of the VA healthcare system, after which the CROC will be implemented. Matching data will be collected after approximately three months, along with documented justification for override of the CROC provided by prescriber will also be collected. A paired *t* test will be used to analyze the data for medication deprescribing and a χ^2 test will be used to analyze which prescriber group exhibited the greatest deprescribing. **Outcomes:** The percent decrease in the number of patients of the anticholinergic polypharmacy metric will be reported. Secondary outcomes include change in total number of medications prescribed, reasons for override entered into CROC, and prescriber group.

The Use of the Pharmacists' Inventory for Learning Styles (PILS) to Improve Student Learning Outcomes on a Psychiatric Pharmacy Rotation Experience

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Type: Work in Progress. **Background:** The Pharmacists' Inventory for Learning Styles (PILS) was developed by Zubin Austin in 2003 for pharmacy practice and education. It is a validated tool for the assessment of learning styles of practicing pharmacists. Many measures for learning inventories and styles exist, but this one was developed specifically for pharmacists. In this situation it is being used in student pharmacists with the same intent. Student learning in a didactic situation maybe quite different than that of learning in a professional situation, and it may be advantageous to the learner as one enters the other. Those with specific learning styles have commonalities with each other to learning approaches. This then can be helpful in starting and promoting self-reflection on one's learning leading to a life-long process. **Methods:** This inventory is a seventeen-item questionnaire which determines the four areas of learning style a learner may identify. There is a dominant and secondary learning style ultimately determined for each learner who completes the inventory. The four styles of learner include: accommodator, assimilator, converger, or diverger. It empowers students to own their learning during the rotation experience and allows them to express what works best for them. It also can be used to enhance teaching effectiveness. The inventory is used to gather information at the start of the experience, and therefore, it is considered a low stress inducing assessment for practicing and learning. **Conclusion:** This is a descriptive report of the use of the PILS at the beginning of a five-week psychiatric pharmacy rotation experience which has been used during the rotation for the past two years. It has been very helpful in providing the rotation preceptor the potential for formative adaptations to enhance student learning from the start of each experience. Comparisons will be made to results from the use of this inventory in practicing pharmacists as is currently available in the literature. The application of the tool does have some disadvantages when used in this environment which will be discussed as well.

Trends of Discharge Disposition in Re-Hospitalized Patients Prescribed Long-Acting Injectable Antipsychotics

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Type: Work in Progress. **Background:** In patients with schizophrenia, schizoaffective disorder, or bipolar disorder, nonadherence to oral psychotropics has been associated with relapse and re-hospitalizations leading to increased morbidity and economic costs. Rates of oral antipsychotic nonadherence have been reported as high as 50%, complicated by re-exposures to stressors, polypharmacy, and poor insight into their illness. Long-acting injectable antipsychotics (LAIA) provide an alternative to oral formulations to improve adherence, decrease relapse, and reduce re-hospitalizations. Despite studies showing LAIAs decreasing the rates of relapse and hospitalization, breakthrough readmissions continue to pose as a challenge in optimizing psychiatric patient care. Furthermore, data describing discharge disposition after receiving an LAIA from an inpatient psychiatric unit is scarce in relation to readmission rates. Hence, this medication use evaluation will not only analyze appropriateness of LAIA use, but also explore trends in discharge arrangements in re-hospitalized patients with schizophrenia, schizoaffective disorder, or bipolar disorder who were prescribed an LAIA. **Objectives:** (1) Evaluate the appropriateness of LAIA use and administration. (2) Identify trends with LAIA use and discharge disposition. **Methods:** This is a quality improvement medication use evaluation (MUE) that will be conducted in an inpatient psychiatric unit within a community teaching hospital in an urban city. Adult patients diagnosed with schizophrenia, schizoaffective disorder, or bipolar disorder who have received at least one dose of an LAIA and readmitted between January 1, 2021 and June 30, 2021 will be included. Baseline demographics such as age, sex, body weight (kg), current and/or history of LAIA treatments, and number of prior hospitalizations will be obtained. Primary endpoints will include appropriateness of LAIA use and whether the patient was previously discharged to home, group home, or homeless shelter. **Outcomes:** This MUE will report the appropriateness of LAIA use and patients' discharge

disposition to determine if there is a trend between discharge disposition and re-admission rates in re-hospitalized patients prescribed an LAIA for the treatment of schizophrenia, schizoaffective disorder, or bipolar disorder.

Innovative Practices Abstracts

ALTO-ED: Opioid Use Reduction Program in Two Public Health System Emergency Departments

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Type: Innovative Practices. **Background:** Florida's opioid prescription rate exceeded the national average 4 of the last 5 years and had > 6000 deaths secondary to opioid overdose in 2020. Broward County, Florida is the second most populated county in Florida, and can be described as an urban, minority majority community. Broward Health Medical Center and Broward Health North saw over 3100 patients in their emergency departments (ED) for migraine or low back pain (LBP) in 2020. Current guidelines for migraine and chronic LBP do not recommend the use of opioids in their management. The primary goal of this 3-year Substance Abuse and Mental Health Services Administration (SAMHSA)-funded grant program is to reduce opioid ordering for management of migraine and low back pain within the emergency department by implementing evidenced-based alternative regimens. Secondary goals include identification and referral to treatment for patients with co-occurring OUD and/or Mental Health disorders. **Description of Innovative Service:** This pilot program's interdisciplinary team includes a Pain Management Pharmacist and Physician, Emergency Medicine Pharmacist and Physician, and a social worker. Evidenced-based pain management treatment protocols (powerplans) for migraine and LBP were created and approved through the Pharmacy and Therapeutics committee. Treatment protocols include post-discharge referrals to pharmacy and social work for transitions of care. Service began on December 1, 2020. Data on opioid and powerplan utilization, opioid discharge prescriptions, co-occurring diagnoses of interest, and transitions of care are collected on a continuous basis. **Impact on Patient Care:** This is a 3-year grant program and first year results include 9 months of powerplan use. 362 patients were enrolled in the program via use of the powerplan. Opioid ordering for enrolled patients was 14.9%, as compared to non-enrolled patients at 29.2%. For secondary outcomes, 4 patients were identified as having co-occurring OUD and were referred to Medication Assisted Treatment. **Conclusion:** While the current opioid epidemic is almost entirely driven by illicit opioids, evidenced-based prescribing practices for prescription opioids should be utilized to reduce unnecessary opioid exposure. This multi-disciplinary initiative is decreasing inappropriate opioid prescribing in the ED for low back pain and migraine, and successfully identifying and referring co-occurring OUD to treatment.

COVID-5150: Psychiatric Pharmacists Involvement in the COVID-19 Response at a County Psychiatric Inpatient Hospital

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Type: Innovative Practices. **Background:** Studies have identified an increased risk of COVID-19 infection within patients with serious mental illness and living in congregate settings, such as inpatient psychiatric units. Prior to COVID-19, this campus included 4 inpatient units (77 beds) and 2 psychiatric emergency departments. In response to the pandemic, an abandoned juvenile hall was converted into additional 40 psychiatric inpatient beds for patients under investigation and with confirmed COVID-19 infection. Intravenous (IV) administration of medications has been historically impermissible and necessitating a patient transfer to the main medical center. **Description of Innovative Service:** Psychiatric pharmacists serve as the sole provider of pharmacy distributive and clinical services for COVID-19 positive psychiatric units. On June 1, 2021, nurses began offering COVID-19 vaccinations to all adult psychiatric patients. Psychiatric pharmacists verified vaccine histories, coordinated, and prepared vaccines for administration. From December 28, 2021 to January 1, 2022, a COVID-19 outbreak occurred on one unit, resulting in 15 patients testing positive. A multidisciplinary meeting recommended offering IV sitrovimab as a corrective action plan – being the first IV medication to ever be administered at this campus. The day of infusion, the psychiatrist, psychiatric pharmacist, nurse, and internist were present to educate patient, prepare, administer medication, and monitor for adverse reactions. **Impact on Patient Care:** Since initiation, 259 patients received orders for a COVID-19 vaccine, with 123 patients ultimately receiving an injection during admission. Fifteen patients

were identified as candidates to receive sitrovimab at the psychiatric hospital. Of these patients, four patients gave medical consent to receive the infusion. One patient was unable achieve IV-line access. The three remaining patients successfully received sitrovimab, despite one of these patients ripping out his IV line upon completion of the infusion. These three patients received the medication with no adverse drug reactions reported while remaining with therapeutic milieu of the inpatient psychiatric unit. **Conclusion:** Consistent COVID-19 vaccination and this multidisciplinary response to confirmed COVID-19 infection within the psychiatric hospital allowed for whole person care to occur within the psychiatric campus, without the need for mass relocation of patients. The psychiatric pharmacy team is central to the successful implementation of these novel therapeutic workflows at this campus.

Development of a Resource Referral Tool for a Community Pharmacy Suicide Prevention Gatekeeper Training Program

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Type: Innovative Practices. **Background:** As pharmacists are considered one of the most accessible health professionals, training pharmacy staff to implement suicide prevention techniques is paramount, especially as many people are experiencing mental health difficulties during a mental health provider shortage. Suicide prevention gatekeeper programs train individuals to identify warning signs and communicate with the individual to expedite treatment referral. Rural pharmacy staff located in areas that lack mental health infrastructure have stated that a list of referral sources would help them refer individuals with non-urgent mental or behavioral health needs. **Objectives:** To create a community mental health resource referral tool to support a continuing education (CE) suicide prevention gatekeeper training program for community pharmacy staff in North Carolina, Tennessee, Georgia, and South Carolina. **Methods:** Using online databases, including the Substance Abuse and Mental Health Services (SAMHSA) and VA treatment locators, a list of local mental health and substance use treatment facilities and providers was compiled. National and state-level resources for urgent crisis, like the suicide prevention hotline and VA resources, were also included. Resources were classified by services provided, population served, and location, with hours and contact information included. If no resources were available for a specific zip code, the referral tool presented resources available in that county and national suicide prevention resources. The referral tool was integrated into a free, online suicide prevention gatekeeper training CE program for community pharmacy staff. After training, pharmacy staff will have continued access to the referral tool to support care for patients who lack a mental health provider and do not need crisis care but may benefit from non-urgent community-based treatment. **Outcomes:** A process for creating a local referral tool was developed which can be replicated in other states to support pharmacists who identify patients who are not displaying warning signs of suicide but may need non-urgent community-based mental health care. The tool has been appended to a suicide prevention gatekeeper training program (Pharm-SAVES) so pharmacists can first consider referral to appropriate crisis lines before accessing the tool to identify community-based providers for non-urgent mental health needs.

Evaluation of the Impact of a Mental Health Pharmacist in a Veterans Treatment Court Team

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Type: Innovative Practices. **Background:** Drug and mental health courts are unique establishments that foster relationships between recovery resources and the criminal justice system in an effort to reduce recidivism and lower costs. The US Department of Veterans Affairs (VA) developed a veteran-specific court that serves veterans with active criminal charges and a mental health or substance use disorder diagnosis. This program aims to ensure individuals receive treatment to address unmet clinical needs. Unfortunately, medical and psychiatric providers are rarely involved in the drug and mental health court process. Given the important role of pharmacotherapy in the treatment of mental health and substance use disorders, there is opportunity for pharmacists to provide valuable services to support recovery and improve access to care. **Description of Innovative Service:** This pilot program integrated a mental health clinical pharmacist practitioner (CPP) into the local Veterans Treatment Court (VTC) team. The CPP met regularly with the Veterans Justice Outreach (VJO) specialists to review available services and help identify appropriate veterans for referral. Once referred to the CPP by the VJO specialist, veterans were contacted by the CPP for a medication management appointment within two business days. Visits were conducted either same day or scheduled for a later time depending on veteran preference and included discussion of pharmacotherapy services such as medication reconciliation, initiation, adjustment, discontinuation, and counseling. Additionally,

the CPP provided care coordination via referrals for mental health prescriber appointments, psychotherapy, treatment programs, and primary care. **Impact on Patient Care:** From February 1 through August 31, 2021, eleven veterans were seen for a total of 21 patient visits. The primary visit diagnosis was most frequently alcohol use disorder (52.4%), followed by stimulant use disorder (23.8%), and depression (9.5%). Encounters resulted in a total of 89 interventions, 50 of which were medication-related (56.1%). The CPP connected eight veterans (73%) with mental health prescribers and submitted seven referrals for additional mental health services. **Conclusions:** CPPs are able to provide unique care to VTC participants by improving access to mental health care, providing medication management, and facilitating care coordination.

Implementation of a Pharmacist-Driven Mental Health COVID-19 Continuation of Care Clinic (MH-CCC) to Improve Psychiatric Symptoms in Post-Infection Patients

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Type: Innovative Practices. **Background:** Studies demonstrate a causal dynamic between coronavirus infection and post-illness psychiatric symptoms. Previous pandemics (2002 and 2012) showed increased rates of depression, anxiety, insomnia, and trauma. With unprecedented viral exposure rates, substantial numbers of post-discharge patients are at risk for mental health concerns. With the current lack of psychiatric providers and limited care access, psychiatric pharmacists are posed to proactively screen for mental health conditions. Development of the Mental Health COVID-19 Continuation of Care (MH-CCC) clinic expands access to mental health services for an increasingly vulnerable population. This service focuses attention on the provision and streamlining of appropriate care and follow-up of mental health consequences of COVID-19 infection. **Description of Innovative Service:** Psychiatric pharmacists at this health system contacted coronavirus-infected patients hospitalized between April 1, 2020 and April 30, 2021, who were discharged after treatment. Phone contacts consisted of mental health screenings and education of available services. Identified patients appropriate for inclusion into clinical services chose scheduled in-clinic or telehealth meetings with psychiatric pharmacists. In collaboration with primary care, psychiatric pharmacists initiated, adjusted, and/or discontinued medication therapy under a pharmacy and therapeutics-approved policy and provided medication counseling for target symptoms and associated side effects. Non-pharmacologic interventions were offered and psychologist therapy referrals were initiated if appropriate. Encounters were documented within the electronic health record and communications were shared with collaborating providers. **Impact on Patient Care:** Between June 1, 2021 and December 31, 2021, psychiatric pharmacists reached 39 English- and Spanish-speaking patients and completed 107 interventions: administering standardized rating tools screening for depression, anxiety, insomnia, and trauma; managing psychotropic and non-psychotropic medications; collaborating with psychiatrists and psychologists for medication and/or therapy initiation; initiating laboratory orders; assisting in substance use disorder treatment; reconnecting patients with internal or family medicine providers; counseling on sleep hygiene; reinforcing medication adherence; reminding patients to complete their coronavirus vaccine series; and offering influenza vaccines. **Conclusion:** Patients who would otherwise not be contacted after hospital discharge from COVID-19 treatment were screened by psychiatric pharmacists for mental health conditions. Clinical interventions and healthcare services offered to surviving patients has the potential to improve individual wellness and public health.

Implementing a Harm Reduction Kit Pilot Program for Unstably Housed Veterans

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Type: Innovative Practices. **Background:** Unstable housing and use of illicit drugs are interrelated, with each increasing risk of the other. Illicit drug use often leads to physical injuries, serious infections, disease transmission, and overdose death. Provision of harm reduction education and supplies, such as sterile syringes, sharps containers, and condoms, can reduce risk for drug-related harms; however, these resources were not available on site for veterans housed in a Housing and Urban Development-Veterans Affairs Supportive Housing (HUD-VASH) program. **Description of Innovative Service:** The goals of this pilot project are to provide education and free harm reduction supplies to veterans residing in HUD-VASH facilities and evaluate feedback for program improvement. The pilot is being conducted in 4 phases: (Phase 1) Assemble harm reduction supplies into kits for hygiene/wound care, safer injection, safer sex, and safer smoking; (Phase 2) Develop education

handouts focused on safer drug use, safer sex, and safer storage/disposal of drugs/use supplies; (Phase 3) Provide veterans with education and harm reduction kits in HUD-VASH facilities; (Phase 4) Evaluate veteran feedback on harm reduction kits via telephone surveys. **Impact on Patient Care:** Four HUD-VASH housing facilities in San Francisco, California, were visited August 25, 2021 through December 29, 2021 by 1-2 pharmacy trainers. A total of 77 veterans were offered education and free harm reduction kits. Total kits provided included: wound care/hygiene kits (n = 33), safer smoking kits (n = 23), safer sex kits (n = 22), and safer injection kits (n = 8). Additional free supplies provided included: intranasal naloxone for opioid overdose reversal (n = 21), kits to test drugs for fentanyl (n = 19), lock boxes to store drugs/use supplies (n = 18), and medication disposal bags (n = 13). Phases 3 and 4 are ongoing. Initial pilot program success led to expansion for veterans in an addiction treatment program and will be offered to veterans re-entering the community after incarceration. **Conclusion:** Meeting veterans where they are in HUD-VASH facilities presents a unique opportunity to increase veteran access to education and harm reduction supplies. Results of veteran feedback surveys will be used to inform future supplies provided. Future initiatives should evaluate additional methods for provision of supplies and impact on illicit drug-related morbidity and mortality.

Life Saving Collaboration: The Pharmacist Practitioner Solution in Substance Use Disorder Treatment

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Type: Innovative Practices. **Background:** Drug related overdose deaths are at all-time highs with a continued nationwide shortage of providers to deliver SUD care. The Department of Veterans Affairs (VA) Clinical Pharmacy Practice Office partnered with Office of Rural Health in 2019 to launch the initiative, Leveraging Clinical Pharmacist Practitioners (CPP) for Rural Veteran Access in SUD (CRVA-SUD). This project funded the hiring of 35 CPPs across VA facilities to expand access to SUD care in mental health, pain, and primary care. In addition, the project supported CPP education and training in SUD. **Description of the Innovative Service:** The CRVA-SUD project leverages the CPP as part of the interprofessional team to improve access to SUD care for rural veterans emphasizing OUD medication treatment and addressing and treating unhealthy alcohol use and AUD. CRVA-SUD fosters advancement of the VA Stepped Care for Opioid Use Train-the-Trainer (SCOUTT), to achieve 'no wrong door' for SUD care across practice settings. In addition to funding, the project implementation structure includes a steering committee, clinical boot camp training, practice launch workshops, consultative visits, dedicated liaisons to support project success, data tracking, marketing materials, mentorship and group coaching, and community of practice webinars. **Impact on Patient Care:** CRVA-SUD CPPs have cared for over 26700 veterans, including more than 6300 veterans with AUD and over 6400 veterans with OUD. CRVA-SUD CPPs have recorded over 68000 patient care encounters (51% rural), with 51% of care delivered via telephone, 16% in-person and 14% video telehealth. Chart consultation encounters (19%) reflects population health outreach with a focus on engaging at-risk veterans in risk mitigation and ensuring SUD treatment retention. (Reference dates: November 2019 to December 2021) **Conclusion:** Integration of CPPs delivering SUD care across the continuum has significantly improved access to SUD care and positively impacted quality metrics. Through implementation of Screening, Brief Intervention, and Referral to Treatment along with comprehensive medication management services, the CPP is a critical member of the care team focused on SUD prevention, treatment and fostering recovery.

Process and Outcomes for Ambulatory Child/Adolescent Clinical Psychiatric Pharmacy Service Expansion Within an Academic Medical Center

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Type: Innovative Practices. **Background:** Prevalence of mental health diagnoses in children/adolescents mirrors prevalence in adults with nearly 1 in 5 children/adolescents having a psychiatric diagnosis in the US annually. Despite continued emphasis on the importance of early intervention and treatment in pediatric mental health studies, children/adolescents face ongoing difficulties accessing specialized services including psychotropic medication management. The integration of clinical psychiatric pharmacists on the interprofessional team adds value by increasing access to care and optimizing medication-related outcomes. **Description of the Innovative Service:** Although clinical pharmacy services were well established within our institution's inpatient psychiatric setting, ambulatory clinical services were limited. With leadership support, expansion of clinical pharmacy services within our child/adolescent ambulatory service line began with a

structured 4-week observational experience across multiple outpatient care settings. Subsequently, program directors and medical directors submitted proposals for clinical pharmacy services for their respective clinical sites. Proposals were reviewed by leadership and pilot services were launched across four initial sites including three outpatient clinics and one partial hospitalization/intensive outpatient program. During the pilot period, clinical pharmacy services continued to evolve based on ongoing clinical needs. Current services include transition of care support for new and returning patients, joint provider visits, medication education groups, direct care follow-up visits, and medication consultation including complex case reviews and evidence-based responses to drug information questions. **Impact on Patient Care/Institution:** During the first quarter of the pilot, the clinical psychiatric pharmacist completed 104 transition of care visits, 73 other direct care visits, and 72 medications consults alongside multiple patient and staff educational initiatives. Clinical psychiatric pharmacist interventions included comprehensive medication management, medication reconciliation, adjusting treatment plans, preventing/correcting adverse drug events, and enhancing understanding of treatment options. Clinical pharmacist services were well-received by requesting providers, patients, and parents. After pilot completion, leadership supported continuation of new clinical pharmacy services and the scope was expanded to an additional partial hospitalization/intensive outpatient program. In addition, clinical pharmacy consultation services were extended across the service line. **Conclusion:** This pilot demonstrated that embedding a clinical psychiatric pharmacist within interdisciplinary ambulatory child/adolescent psychiatry services can expand access, enhance care, and increase provider support in a specialized setting.

Raising Awareness About Substance Use Disorder and Expanding Understanding of Opioid Overdose Through Naloxone Administration and Harm Reduction Training in Undergraduate Student

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Type: Innovative Practices. **Background:** According to the Centers for Disease Control and Prevention (CDC), drug overdose deaths are the leading cause of injury-related deaths in the United States. The misuse of prescription opioids and synthetic opioid contamination of other substances have been significant public health concerns among university students. Research has demonstrated that increased availability of naloxone and overdose education programs decreased the risk of overdose deaths. Community prevention education and availability of necessary resources are key when addressing the public health crisis of opioid-related deaths. Opportunities exist for pharmacy students and pharmacists to provide research-based prevention strategies within their school communities. **Description of Innovative Service:** In response to the increase in use of opioids and related deaths, the Purdue University student chapter has been educating the community on harm reduction to raise awareness and reduce stigma providing training to be a "first responder" to opioid overdoses by teaching the use of naloxone nasal spray. Current training includes introduction to harm reduction, stigma around substance use and mental health disorders, epidemiology of the opioid crisis within Tippecanoe County, pharmacology of naloxone, recognizing signs of opioid overdose, and steps to safely administer naloxone. **Impact on Patient Care:** During the 2020 fall through 2021 spring semester, the Purdue student chapter purchased 300 doses of naloxone and distributed 114 free naloxone inhalers to undergraduate students. From the 2021 fall semester, we provided training sessions and remaining free naloxone inhalers. About 150 students were trained in the fall semester and we are planning to purchase another 300 doses of naloxone in January 2022. In surveys of training, the majority of undergraduate students either strongly agreed or slightly agreed that they were comfortable administering intranasal naloxone after the training. **Conclusion:** Students and communities are facing more challenges in accessing healthcare with mental health and substance use issues. Through community outreach and naloxone training sessions, the CPNP Purdue student chapter gains valuable experience providing education and is a useful resource for Purdue and Tippecanoe County community members.

Therapeutic Drug Monitoring of Psychiatric Medications at a Bariatric Surgery Medication Management Service

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Type: Innovative Practices. **Background:** Bariatric surgery is an effective method for reducing obesity-related morbidity and mortality. There are strong associations between obesity and mental health conditions. Psychiatric drug-related pharmacokinetic properties are not well understood following bariatric surgery. This project allowed clinical pharmacists to obtain pre- and post-surgery therapeutic drug monitoring (TDM) of psychiatric medications in patients who undergo bariatric surgery, as described in a recent guideline. **Description**

of Innovative Service: This pilot program took place at three ambulatory care bariatric surgery clinics between January 1, 2020 and April 1, 2021. Clinical pharmacy specialists who provide direct patient care under established collaborative practice agreements for bariatric medication management at the clinic metabolism center a) identified eligible patients, b) obtained patient consent for TDM, and c) ordered psychiatric medication TDM pre- and post-operatively. The consultant for this project is a school of pharmacy faculty member who is experienced with psychiatric medication TDM. Due to COVID-19, elective surgeries were initially placed on hold, followed by ambulatory patients being primarily seen via tele-health. **Impact on Patient Care:** A total of 17 patients were screened for enrollment and 12 patients consented. Of the 12 consenting patients, eight were excluded due to (a) they did not have TDM performed (n = 6), (b) surgery was denied (n = 1), and (c) other reasons (n = 1). Three patients had pre-operative TDM and 1 patient had post-operative TDM performed. No patient had both pre- and post-operative TDM performed. Only two patients had TDM that we considered potentially interesting. A male yielded an undetectable lurasidone concentration while taking 20 mg daily with dinner prior to a sleeve gastrectomy (SG). Six weeks following SG, a female yielded therapeutic steady-state trough combined venlafaxine and o-desmethyl-venlafaxine concentration of 313 ng/mL and ziprasidone concentration of 101.5 ng/mL while taking ziprasidone 80 mg every morning and venlafaxine 75 mg three times daily. **Conclusion:** We were not successful in accomplishing our program goals due to COVID-19 and low data acquisition. It is of critical importance for pharmacists or other clinicians to expand the use of TDM in patients who undergo bariatric surgery due to lack of pharmacotherapy knowledge in this population.

Therapeutic Case Report Abstracts

Clozapine-Induced Hyperhidrosis: A Case Report and Review of Treatment Strategies

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Type: Therapeutic Case Report. **Background:** Clozapine is the "gold-standard" antipsychotic for treatment-resistant schizophrenia. Despite its efficacy, the use of clozapine has been limited because of infrequent but notable side effects. We present a case of a patient with schizophrenia who was started on clozapine for management of psychosis but developed intolerable adverse reactions with varying responsiveness to standard therapy. Although management of side effects facilitates a maximization of the benefits of clozapine treatment, sometimes the risks outweigh the benefits. **Patient History:** Patient is a 34-year-old female with schizophrenia who was involuntarily hospitalized due to systematized religious delusions involving suicidality by self-starvation. Her symptoms were not responsive to previous trials of monotherapy and combination therapy involving olanzapine, aripiprazole and risperidone. Thus, a clozapine trial was initiated, but titration was paused at 300 mg due to side effects. Patient developed nocturnal generalized hyperhidrosis and tachycardia; however, oral anticholinergic was withheld due to underlying irritable bowel syndrome. These symptoms were unresponsive to propranolol, but the hyperhidrosis and tachycardia nearly resolved with diltiazem. She also developed sialorrhea, which improved with atropine drops. Unfortunately, the patient developed severe constipation that minimally changed despite aggressive bowel regimen. Over the next 3 weeks her psychosis improved and other side effects were controlled, but the constipation remained even after the clozapine dose was decreased to 250 mg daily. Although nocturnal generalized hyperhidrosis, tachycardia and sialorrhea were well-managed, she continued to have severe constipation, and requested to discontinue clozapine for this reason. Following discussion with the multidisciplinary team, and due to concern for long-term follow up, the clozapine was discontinued after a 3-week trial. Patient was switched to long-acting aripiprazole, with subsequent stabilization of symptoms. **Review of Literature:** A review of databases (Pubmed, Medline and Embase) was conducted using the specific keywords "clozapine", "side effects", "hyperhidrosis", for the last 10 years. Data showed that hyperhidrosis can be treated with propranolol, clonidine and biperiden. **Conclusion:** In our case report, clozapine therapy led to generalized nocturnal hyperhidrosis and tachycardia which remained unchanged with propranolol but responded well to diltiazem. However, clozapine was ultimately discontinued due to severe constipation minimally responsive to aggressive bowel regimen.

Efficacy of Lorazepam in the Treatment of Catatonia: A Case Report

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Type: Therapeutic Case Report. **Background:** Catatonia is a neuropsychiatric syndrome characterized by abnormal movements, behaviors, and withdrawal. The paucity of available literature surrounding treatment of catatonia poses another challenge for practitioners. Most studies

involve benzodiazepines, specifically lorazepam, thus they act as first line treatment. **Patient History:** A 40-year-old female with a history of anorexia and recent hospitalization for catatonia is presented. During her previous hospitalization her symptoms were controlled on 2.5 mg of lorazepam four times daily. Due to her starting a slow taper off the medication and possible non-adherence outpatient, the patient decompensated and was brought into the emergency department (ED). After transfer to a psychiatric hospital for admission, the patient had a Bush-Francis catatonia rating scale score of 16 and was restarted on lorazepam 2.5 mg intramuscular (IM) four times daily. The following day the patient had improved to a score of 2 and was switched to the oral tablet. On day 3, the patient collapsed and was taken to the ED. There, she admitted to purging the tablets the prior day. After returning to the psychiatric facility, the patient was started on lorazepam 1 mg three times daily IM and was given haloperidol ordered by weekend staff. The lorazepam was titrated to 3 mg four times daily over the next 5 days. To accommodate the patient's request to take lorazepam orally, the liquid was ordered with the possibility to help absorption if the patient continued to purge. The morning was a challenge to regain control over symptoms. With a score of 26 on day 10, the night and morning lorazepam dose was increased to 4 mg with a strict schedule in place to wake up the patient during the night. By day 13, the patient had improved and discharged. **Review of Literature:** A PUBMED search revealed prior studies and case reports have found lorazepam to be effective. The typical dose was 8 to 24 mg daily given every 4 to 12 hours. This case report supports the previous evidence. Continual efficacy was seen when the patient received adequate doses of lorazepam and return of symptoms was seen when doses were decreased or purged. **Conclusion:** This case report demonstrates lorazepam's effectiveness in catatonia.

Elevated Clozapine Levels After Janssen SARS-CoV-2 Vaccination: A Case Report

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Type: Therapeutic Case Report. **Background:** Previous case studies have demonstrated that both infection with coronavirus disease 2019 (COVID-19) and administration of the Pfizer-BioNTech SARS-CoV-2 mRNA vaccine can be associated with significantly increased clozapine levels. Proposed mechanisms include inflammation from vaccine components, which inhibits the cytochrome P450 system's (CYP1A2) ability to metabolize clozapine. Here we present a case of elevated clozapine levels after administration of the Janssen SARS-CoV-2 mRNA vaccine. **Patient History:** A 29-year-old female with past medical history significant for possible schizophrenia or unknown psychotic disorder diagnosed at unknown date presented with two weeks of catatonic-like state consisting of cessation of activities of daily living, eating, and taking medications. The patient's social history was noncontributory. Patient was initially admitted to medicine floor and given lorazepam 5 mg intravenous (IV) 5 times a day for catatonia symptoms. After 14 days, patient was transferred to psychiatry and given lorazepam 5 mg four times daily for withdrawal prevention along with clozapine 150 mg at bedtime. Clozapine was eventually titrated to 225 mg at bedtime (March 8, 2021) four days before patient received the Janssen vaccine (March 12, 2021). Labs prior to vaccination (March 12, 2021) demonstrated clozapine 282 ng/mL (Reference: 350-600 ng/mL). Labs following vaccination (March 15, 2021) demonstrated increased clozapine 1240 ng/mL. Subsequent laboratory monitoring (March 18, 2021) showed a return to baseline with follow up clozapine level of 532 ng/mL. White blood cell, absolute neutrophil count, and C-reactive protein remained within normal limits during this period. Patient did not experience ay symptoms of clozapine toxicity likely secondary to patient's lorazepam regimen serving as prophylaxis for symptoms in the case of true clozapine toxicity. **Review of Literature:** Pubmed search demonstrated no published case reports regarding clozapine levels after vaccination with the Janssen vaccine. However, one case report addresses increased clozapine levels and toxicity after vaccination with the Pfizer-BioNTech vaccine. Previous studies addressing the role of inflammation on the metabolism of clozapine possibly explain the mechanism of these occurrences. **Conclusion:** Our case report reveals an association between increased clozapine levels and the administration of the Janssen vaccine. With the emergence of COVID-19 variants, it is important that clinicians are aware that vaccinations may cause transient increase in clozapine levels.

Getting de Pointes Across: Methadone and Torsades: A Case Report

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Type: Therapeutic Case Report. **Background:** QTc prolongation is a known adverse event that can occur in patients on methadone which can put them at risk for developing Torsades de Pointes (TdP). For patients with QTC prolongation, management consists of mitigating risk factors and correcting electrolyte imbalances. If patients develop TdP, the treatment of choice is intravenous magnesium. If patient remains in refractory TdP, use of non-selective beta agonist isoproterenol can be considered. **Patient History:** Thirty-two-year-old female presented to the hospital for alcohol withdrawal with a QTc

baseline of 486 milliseconds (ms). She was established in a methadone maintenance program on 190 mg daily for heroin misuse. Her past medical history included anxiety, chronic alcohol/tobacco use, seizure disorder, and QTc prolongation. The following day after administration of methadone, a rapid response was called where she was found to have an abnormal rhythm. Her QTc interval increased to 580 ms and she ultimately went into Torsades de Pointes. She was administered magnesium 2 g and lidocaine 100 mg intravenous (IV) push, which resulted in resolution of the episode. She was then transferred to the ICU where she continued to have more episodes of TdP evident on a 12-lead electrocardiogram (EKG). She was treated with repeat magnesium boluses and a lidocaine infusion but remained refractory. Cardiology was consulted and recommended initiating isoproterenol due to refractory TdP. QTc interval trended down to 502 ms and then 482 ms the following days. There were no other episodes of TdP after 7 days and patient was discharged. **Review of Literature:** A PubMed search revealed limited reports for the treatment of TdP due to methadone. With no randomized controlled trials investigating isoproterenol use in TdP associated with methadone, the greatest source of evidence is from case reports. **Conclusion:** A temporal and causal relationship was observed between methadone and the development of TdP. This case report demonstrates the possible success of isoproterenol in mitigating refractory Torsades de Pointes.

Paliperidone-Induced Sialorrhea: A Case Report With Review of Current Literature

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Type: Therapeutic Case Report. **Background:** Antipsychotic-induced sialorrhea is a problematic side effect with potentially negative consequences on quality of life and medication adherence. While clozapine is the antipsychotic that is most associated with sialorrhea, there have been published reports of other second-generation antipsychotics (SGAs) causing sialorrhea, including aripiprazole, olanzapine, quetiapine, and risperidone. Although drooling is mentioned within the package insert for paliperidone, to date there have been minimal published reports in which paliperidone is implicated as the offending agent. **Patient History:** Here we present a case of sialorrhea in a 56-year-old male with schizoaffective disorder who had a supratherapeutic paliperidone level after both oral and intramuscular paliperidone use. Paliperidone was ultimately cross tapered to aripiprazole, and the patient was given atropine drops and benztropine with resolution of the sialorrhea. **Review of the Literature:** We provide a review of the literature regarding the other available reports of paliperidone-induced sialorrhea, possible mechanisms behind pathophysiology, as well as reports from the World Health Organization and Food and Drug Administration adverse event reporting systems. **Conclusion:** Clinicians should be aware of the potential for paliperidone and other non-clozapine second generation antipsychotics to induce sialorrhea, especially given the increased frequency of their use for a variety of psychiatric disorders.

Somnambulism Associated With Lithium Monotherapy

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Type: Therapeutic Case Report. **Background:** Somnambulism is a non-rapid eye movement (NREM) parasomnia that can lead to injury or death. NREM parasomnias are commonly associated with non-benzodiazepine benzodiazepine receptor agonists which have a boxed warning for complex sleep behaviors. Other medications associated with somnambulism include propranolol, topiramate, anticholinergics, antipsychotics, and antidepressants. Lithium has rarely been reported to be associated with somnambulism. We report a case of lithium-induced somnambulism that resolved following medication discontinuation. **Patient History:** A 30-year-old woman was seen for ongoing depressive symptoms. History was suggestive of a diagnosis of bipolar II. Therefore, her only medication, duloxetine was tapered in favor of lithium 300 mg at bedtime which was increased to 600 mg five days later. Following the increase, the patient reported waking up after falling down a flight of stairs which resulted in a large scalp hematoma. On a different night she awoke while doing laundry. The patient did not endorse common risk factors such as childhood sleepwalking or substance/alcohol use. A prior overnight oximetry was normal. She had no history of restless legs syndrome or other neurologic conditions. Given the clear temporal relationship to these events, lithium was discontinued and lamotrigine was started without recurrence. **Review of Literature:** Lithium may cause or worsen somnambulism by increasing slow-wave sleep or through serotonergic mechanisms. One of the first descriptions dates to 1979 in which 10 of 114 hospitalized patients administered both lithium and antipsychotics were described to have "somnambulistic-like episodes." Two decades later a survey of lithium clinic patients found 27 of 389 respondents self-reported new/worsening somnambulism with six patients on lithium monotherapy. A 2021

pharmacovigilance database study found a disproportionately increased risk for somnambulism among lithium and antipsychotics. Among 508 total reports involving lithium and antipsychotics, 15 cases involved lithium with a proportional reporting ratio of 2.03 (1.22, 3.37). While several other case reports exist, only one involved lithium monotherapy. **Conclusion:** Lithium, either alone or in combination with other medications can be risk factor for somnambulism. Screening for risk factors and patient education about risk for somnambulism should be considered when starting lithium.

Successful Clozapine Rechallenge After Suspected Clozapine-Induced Myocarditis: A Case Report

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Type: Therapeutic Case Report. **Background:** For one-fourth to one-third of those with treatment-resistant schizophrenia, clozapine is the most effective antipsychotic medication. However, clozapine may cause adverse effects including agranulocytosis, seizures, myocarditis, etc. Despite the onset of myocarditis, some patients may be restarted on clozapine after consideration of risks and benefits. Here we present a successful case of clozapine rechallenge after a suspected episode of clozapine-induced myocarditis. **Patient History:** A 22-year-old male with past medical history significant for schizoaffective disorder, bipolar type first diagnosed in 2011 presented with suicidal ideation without plan and responding to internal stimuli in the context of medication noncompliance and negative urine drug screen. Social history was positive for methamphetamine and marijuana use disorders. Patient was restarted on home risperidone 4 mg twice daily and valproic acid 1000 mg twice daily along with the addition of chlorpromazine 50 mg each morning, 50 mg each afternoon, and 150 mg at bedtime. Patient continued to demonstrate undertreated manic and psychotic symptoms including hyperactive/guarded behavior, irritable/labile affect, disorganized thinking, and internal preoccupation. Consequently, patient was started on clozapine (September 18, 2018), titrated to 150 mg at bedtime, with improvement in behavior and thought process. However, clozapine was discontinued (September 28, 2018) as C-reactive protein increased to 5.6 mg/dL (reference: 0.0-1.0 mg/dL) with mild upper respiratory infection symptoms consistent with clinical suspicion for early myocarditis. However, given absence of significant improvement under valproic acid, risperidone, chlorpromazine, and additional lithium 900 mg twice daily, decision was made to retrial clozapine with slower up-titration and closer monitoring of labs, vitals, and signs/symptoms of myocarditis. Clozapine was up-titrated to 225 mg at bedtime with concurrent titration off risperidone, chlorpromazine, and valproic acid yielding significant clinical improvement. No further signs of myocarditis were seen at clozapine 225 mg at bedtime. **Review of Literature:** Pubmed search demonstrated 34 published case reports of attempted clozapine rechallenge after clozapine-induced myocarditis with 22 cases demonstrating successful retrials. However, this may be underreported as clinicians may be less inclined to report unsuccessful retrials. **Conclusion:** Our case report reveals a successful clozapine rechallenge after clozapine-induced myocarditis. It is important that clinicians thoroughly analyze the risks and benefits and follow a rigorous monitoring protocol if he or she decides to pursue a rechallenge.