Society of Pain and Palliative Care Pharmacists

Research Forum 2026 Abstracts

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Track 1

TR 1.1: Evaluation of a Clinician Decision Support Alert and Prescribing Protocol on Naloxone Prescribing in High-Risk Patients

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Background: The opioid crisis remains a critical public health emergency in the United States. Building on naloxone access efforts ongoing since 2016, the Johns Hopkins Health System (JHHS) developed a pharmacist prescribing protocol and supporting Clinical Decision Support (CDS) alert, encouraging pharmacists to order outpatient naloxone for patients with high-risk characteristics. This retrospective cohort study aimed to characterize health system prescribing of naloxone at discharge and evaluate the impact of the pharmacist CDS alert.
Methods: Inpatient and emergency department (ED) encounters for adult and pediatric patients from February to October 2025 were included if they had a pharmacist or prescriber CDS alert fire for prescribing of naloxone at discharge and a diagnosis of substance use disorder or opioid overdose. The primary endpoint was monthly percentage of naloxone prescribing to high-risk patients at discharge before and after pharmacist CDS alert implementation. Secondary endpoints included CDS alert frequency, reason for alert firing, patient hospitalization status and demographics at time of first alert, number of alert deferrals before ordering, and patterns of appropriate naloxone distribution. Descriptive statistics and chi-square testing will be used for analysis.
Results: In progress
Conclusion: In progress

TR 1.2: Patient-Centered Pain Medication Optimization: Reducing High Dose Opioids in Veterans with Chronic Nonmalignant Pain

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Background: Opioid prescriptions for chronic nonmalignant pain (CNMP) have been decreasing since their peak in 2012. Current guidelines recommend against the initiation of chronic opioids for CNMP, advising their use only when benefits outweigh risks, with a focus on improving functional goals. The use of opioids for CNMP can increase the risk of negative outcomes, such as overdose and opioid use disorder (OUD), with longer duration of use and/or higher doses posing greater risks. Reducing high-dose opioids can result in stabilized or decreased pain scores, stabilized or increased functioning, improvement in opioid-related adverse effects, and improved quality of life. Optimizing pain management through patient-centered approaches is crucial for reducing the risks associated with high-dose opioid use in Veterans with CNMP. This project aims to implement effective interdisciplinary strategies to enhance patient outcomes and overall quality of life in Veterans prescribed greater than or equal to 90 morphine equivalent daily dose (MEDD) for CNMP. The primary outcome of this quality improvement project is the percentage reduction in MEDD while being followed by specialty Pain Clinic. Secondary outcomes to include changes in patient-reported pain and functional assessments, to include the Pain, Enjoyment of life, and General activity (PEG), Patient's Global Impression of Change (PGIC), and Pain Self-Efficacy Questionnaire (PSEQ-2) scores. Additionally, the project will analyze pain interventions (medication and non-medication), reported overdoses, and increased utilization of healthcare resources, including calls to the Veteran Crisis Line and emergency department (ED) visits.
Methods: Patients prescribed 90 or more MEDD daily for CNMP for at least 90 days by a VA prescriber will be identified and contacted for a comprehensive pain management review, with exclusions for certain medical conditions. Those who accept will be scheduled with a pain physician along with Pain CPP for specialty management and follow-up.
Results: Of the 166 identified on the dashboard, 79 met inclusion criteria for outreach. Among this group, 37 patients accepted offer for pain clinic evaluation and are currently completing ongoing follow-up. Final results are pending.
Conclusion: In progress

TR 1.3: A Decade of Pain Stewardship: Retrospective Outcomes of a Pain PharmD Inpatient Consult Service

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Background: The Pain PharmD Inpatient Consult Service at the West Palm Beach VHACS has been in operation for 10 years, providing specialized clinical pharmacy expertise for complex inpatient pain management. To date, a comprehensive evaluation of its performance, utilization, and impact has not been conducted. This project will combine a 10-year retrospective analysis with a detailed one-year review to assess service outcomes, guide provider education, and optimize documentation processes.
Methods: The PGY2 Pain Management and Palliative care Pharmacy Resident completed a Ten-year retrospective review analyzed service trends, consult volumes, primary services requesting the consults, and average time from consult request to initial patient assessment by PharmD per consult. The one-year in-depth retrospective review was conducted between Jan. 1, 2024–Dec. 31, 2024 including patient demographics, clinical indications, specific pharmacologic and non-pharmacologic interventions, follow-up timeliness, clinical outcomes (including pain score changes and opioid use reduction), mean time spent on consults, use of clinical tools, a provider satisfaction questionnaire, and frequency of CPP recommendations for referral to opioid use disorder treatment.
Results: Between 2015 and 2024, 1,117 consults were placed, with 960 completed, 5 canceled, and 161 discontinued, demonstrating sustained integration of the service within inpatient care. In 2024, 118 consults were for pain diagnoses of 25% (29/118) low back, 12.7% (15/118) cancer-related, 4.2% (5/118) abdominal, and 4.2% (5/118) fracture-related pain. Mental health comorbidities identified were major depressive disorder 46% (54/118), post-traumatic stress disorder 35% (41/118), substance use disorder 41% (48/118), and anxiety 37% (44/118). Social determinants of health noted were housing instability 26% (31/118) and partner relationship problems 5% (6/118). Per consult, the CPP made an average of 3.5 new pain medication recommendations that were accepted by the provider, along with recommendations to discontinue an average of 1.3 medications. On admission 98% (115/117) of patients reported moderate to severe pain, at time of discharge moderate to severe pain score decreased to 34% (37/108). Opioid stewardship outcomes demonstrated reductions in median morphine equivalent daily dose (MEDD) from 58.9 mg at time of consult to 41.8 mg at discharge, including 44% (52/118) naloxone kit distribution at discharge and identification of 29% (35/118) high-risk patients using the opioid risk tool. Hospice symptom management comprised 9.3% (11/118) consults. Sustained annual volumes (148 in 2024) underscores enduring institutional demand for pharmacist-led pain consult services. The inpatient PharmD Pain Consult Service received uniformly positive feedback from inpatient providers who responded to survey (n=10), with all respondents agreeing or strongly agreeing that the service is user friendly, timely, evidence based, and worth recommending to other providers. Suggestions for improvement include automatic pain PharmD consults for hospice admissions and more direct patient communication.
Conclusion: The WPBVAHCS inpatient Pain PharmD consult service sustained itself as an integral component of interdisciplinary inpatient care. The service supports opioid stewardship by reducing unnecessary opioid exposure, promoting multimodal analgesia, and enhancing opioid safety practices. These findings highlight the value of embedding pain-trained clinical pharmacists within inpatient teams

to optimize complex pain management regimens and improve opioid-related outcomes in a medically and psychosocially complex veteran population.

TR 1.4: Implementing Technology to Improve the Identification of Biopsychosocial Needs for Palliation of Pain in Veterans Prescribed High-Dose Opioids During Pharmacist-Led Pain Consultations

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Background: A complex interplay exists between chronic pain and biopsychosocial factors, including depression, anxiety, sleep disturbances, and maladaptive pain beliefs which can worsen pain patient outcomes and increase healthcare costs. Patients prescribed daily chronic opioids face additional risks to both develop mental health-related comorbidities, as well as opioid-related adverse effects including overdose. The current pharmacist-led pain consultation captures the PEG tool (Pain, Enjoyment, General Activity) only in addition to subjective pain, sleep, mood, and quality of life data. The Veterans Affairs (VA) employs Behavioral Health Laboratory (BHL) Touch software to send assessments at questionnaires to veterans' personal devices and allows for integration of results into the medical record. The objective of this project is to leverage BHL touch technology to increase the measurement of eight VA Pain Management, Opioid Safety, and Prescription Drug Monitoring Program (PMOP) recommended domains including subjective health status, pain intensity and interference, self-efficacy, unhelpful pain thoughts, sleep, depression, anxiety, and general well-being during new PharmD pain consults for high-dose opioid patients to at least 70% utilization.
Methods: A Yellow Belt quality-improvement root cause analysis using the 5 Whys identified lack of use of BHL touch in pain care at WPBVHCS. Veterans prescribed more than 90 morphine-equivalent daily doses (MEDD) for chronic non-cancer pain at a single site were identified via the national Opioid Therapy Report (OTRR) database. PharmD PGY2 PMPC resident invited Veterans via telephone for pharmacist-led pain consultation including use of BHL touch. Veterans that accepted appointments to engage with specialty pain care, were sent standardized electronic surveys via BHL Touch to collect biopsychosocial data prior to initial consultation. Biopsychosocial data were gathered electronically and uploaded into the medical record for visibility to all VA providers. PharmD PGY2 PMPC resident created a recommended workflow protocol to integrate BHL touch collection of biopsychosocial domains into daily pain care through meetings with key stakeholders.
Results: At baseline, 40% (8/20) of consultations included 1 objective biopsychosocial measurement, the PEG score. Overall, 38 patients met inclusion criteria and agreed to participate to complete BHL touch assessments prior to Pain PharmD consultation. At 84.2% (32/38), most veterans completed the screenings prior to their initial PharmD consultation, with 84.3% (27/32) completing the requested screenings on their personal device, which exceeded the goal of 70% completion. Positive depression screen was found in 37.5% (12/32), positive screen for anxiety was found in 25% (8/32), moderately elevated pain catastrophizing was identified in 25% (8/32), and 40.6% (13/32) rated their sleep quality as poor or terrible. A workflow protocol was developed to operationalize and explore the inclusion of BHL touch software into clinical visits and enhance pain care.
Conclusion: This Yellow Belt project supports VA's strategic goals of delivering efficient, patient-centered care by integrating comprehensive biopsychosocial pain assessment into routine PharmD pain practice. It leverages technology to standardize data collection, improve care coordination, and advance population health initiatives for Veterans with chronic pain.

TR 1.5: Opioid-Related Emergency Department Visits (ORDEV): Design and Implementation of a Patient-centric Outcomes Measure for a Health-system Opioid Stewardship Program

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Background: A multidisciplinary opioid stewardship program was established in 2020 with the goal of providing safe and effective treatment for pain and tracking associated outcomes. Multiple process measures have demonstrated improvements in opioid stewardship, though they only serve as surrogates for a patient-centric outcome measure. To address this gap, a metric was designed to trend the number of patients prescribed an opioid who presented to the emergency department (ED) with an opioid-related adverse drug event (ADE). The objectives are to characterize different methodologies to measure opioid-related emergency department visits (OREDV), and to develop and implement a dashboard to track OREDV for the health-system, to better quantify the aggregate effects of multiple opioid stewardship initiatives.
Methods: This was a retrospective review of patients who were prescribed an opioid by a prescriber at our health-system and subsequently (within 90 days) had an OREDV at an ED within our health-system between January 1 and December 31, 2025. OREDV was defined four different ways, each leveraging different combinations of International Classification of Disease, Tenth Revision (ICD-10) codes. Two used national standards: Chronic Conditions Warehouse (CCW) focused broadly on those with a diagnosis of opioid use disorder (OUD), toxicity, or ADE, and National Center for Health Statistics (NCHS) focused on those with toxicity or ADE. Two leveraged Systemized Nomenclature of Medicine (SNOMED) using criteria: “poisoning” or “adverse reaction caused by drug” with causative agent of “substance with opioid receptor agonist mechanism of action” referred to as the SNOWMED broad (SB) cohort, and “poisoning” with causative agent of “substance with opioid receptor agonist mechanism of action” referred to as the SNOWMED narrow (SN) cohort.
Results: The primary outcomes were to quantify the overlap in the diagnosis codes between the databases (heatmap for visualization) and describe the correlation of OREDV between each of the respective research databases selected pairwise (Spearman’s rank correlation and regression model).The CCW definition used 189 ICD-10 codes, followed by NCHS (n=147), SB (n=25) and SN (n=18). The SN and SB definitions demonstrated 72% overlap while CCW and NCHS definitions demonstrated 56% overlap; all other pairs demonstrated 4% or less overlap. During the project period 3102 patients were prescribed an opioid and experienced an OREDV. After adjusting for calendar months, CCW identified the highest incidence of OREDV compared to all other definitions, followed by SB (incidence rate ratio (IRR) 0.51, 95%CI 0.45-0.58), NCHS (IRR 0.03, 95%CI 0.02-0.05), and SN (IRR 0.03, 95%CI 0.02-0.04). With the denominator being the same for all groups, NCHS and SN had the strongest correlation for numerators (rho=0.936 (95%CI 0.785-1.000) and rates (0.943, 95%CI 0.695-1.000), while all other comparisons were dissimilar (rho<0.5).

Conclusion: The CCW definition yielded the highest rate, and SN yielded the lowest rate; both were largely dissimilar from other definitions. NCHS and SB are similar in many respects, though reporting both would be redundant. Our health-systems dashboard uses CCW (most inclusive for OUD), NCHS (focused on ADE and toxicity, and because it is nationally indexed whereas SB is not), and SN (narrowly focused on toxicity), each offering a unique perspective.

TR 1.6: A National Comparison of Inpatient Opioid Reversal Tracking Methodologies

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Background: Opioid-related adverse events (ORADEs) account for a substantial proportion of inpatient adverse drugs events. Tracking of opioid antagonist administrations is often used as surrogate marker in opioid stewardship. In 2024, The Centers for Medicare and Medicaid Services (CMS) introduced a new quality measure, Hospital Harm – Opioid-Related Adverse Events, known as CMS 819. Reporting of CMS 819 is expected to be required in 2027. Beyond CMS 819, multiple approaches exist for capturing ORADEs, but how each compares remains unclear. The objective of this study is to compare CMS 819, VCDB, and other internal opioid reversal tracking methods across various institutions.
Methods: A multi-center, retrospective cohort study was conducted with three comparator arms: CMS 819 opioid reversal tracking, VCDB index rescue drug use report, and optional institution-specific tracking (IST) processes. A survey was utilized for hospital recruitment. Data were collected for each month from January 2024 through December 2024. Participating hospitals provided IST and CMS 819 data. Vizient provided VCDB data. The primary outcome measured correlation between the VCDB and CMS 819 opioid reversal metrics. Secondary outcomes included (1) correlation between IST and other metrics, (2) magnitude of overprediction/underprediction of opioid rescue events in alternative tracking methods compared to the CMS 819 metric, (3) magnitude of association between hospital characteristics and opioid reversal rates, and (4) IST metric definitions.
Results: Twenty-nine responses were received, and 16 hospitals were included in the analysis. Annual opioid reversal rates from CMS 819 and VCDB demonstrated moderate correlation (Spearman's Rho = 0.686; 95% CI, 0.288 to 0.882). Strong correlations were observed between the individual components of these metrics, with high agreement for numerators (Spearman's Rho = 0.976; 95% CI, 0.930 to 0.992) and denominators (Spearman's Rho = 0.988; 95% CI, 0.966 to 0.996). The correlation between IST metrics and CMS 819 (Spearman's Rho = 0.780; 95% CI, 0.426 to 0.927) was slightly higher than the correlation between IST metrics and VCDB (Spearman's Rho = 0.589; 95% CI, 0.086 to 0.853). Although CMS 819 and VCDB opioid reversal methods were correlated, the VCDB overestimated CMS 819 (IRR, 0.42; 95% CI, 0.29 to 0.60; P< .001). IST metrics were predictive of CMS 819 reversal rates (IRR, 1.26; 95% CI, 0.82 to 1.94; P = 0.532). No single variable demonstrated consistent associations (P< .05) across all three metrics. IST metrics varied across participating sites. All sites relied on reports or dashboards from the EHR to identify patients receiving naloxone. Seven sites conducted manual review to determine whether events represented true opioid reversals.
Conclusion: This multicenter evaluation provides early insight into how commonly used opioid reversal metrics perform in practice and how they may be applied to support medication safety efforts. All metrics correlated moderately well, with the VCDB producing consistently higher rates. While VCDB data is beneficial for benchmarking, CMS 819 and IST metrics more closely represent true opioid reversal events. Health systems should consider streamlining tracking approaches to align with institutional needs and resources, whether for CMS 819 regulatory reporting or internal quality improvement initiatives.

Track 2

TR 2.1: Dose By Design: Comparing the Clinical Utility of Low-Dose and Standard Buprenorphine Induction in a Community Hospital

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Background: In 2024, 67.3% of overdose deaths involved illicit fentanyl in Pennsylvania. Low dose buprenorphine induction (LDBI) and standard dose buprenorphine induction can be used to initiate treatment in patients with opioid use disorder (OUD). Low dose induction may be preferred in patients experiencing fentanyl withdrawal, at higher risk or fearful of precipitated withdrawal, and/or experiencing concomitant pain. Patients do not need to exhibit signs of opioid withdrawal to initiate LDBI, and full agonist opioids can be used simultaneously to manage withdrawal symptoms and pain. Standard induction is useful for management of non-fentanyl opioid withdrawal but requires objective signs of withdrawal to be present prior to initiation. This study will assess the feasibility and benefits of each buprenorphine dosing regimen in patients using illicit fentanyl.
Methods: A retrospective record review will be conducted from August 1, 2024-December 1, 2025. A report will be run through a secure EHR to identify patients treated with buprenorphine for OUD. The subjects will be further reviewed to ensure they meet inclusion and exclusion criteria. The primary outcome measure will be successful completion of buprenorphine induction defined as receiving at least 8 mg/day of buprenorphine at completion and Clinical Opiate Withdrawal Score maintained at less than or equal to 12 from protocol start to completion or reported, subjective low levels of withdrawal. The safety outcomes are the administration of naloxone and occurrence of precipitated withdrawal.
Results: In progress
Conclusion: In progress

TR 2.2: Effectiveness of Subcutaneous Methylnaltrexone in Patients Receiving Sublingual Buprenorphine

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Background: Opioid-induced constipation (OIC) is a common adverse effect that should be routinely considered in patients receiving opioid therapy. Bowel regimen optimization is recommended to prevent and treat OIC; however, when first-line agents fail to restore bowel function, peripherally acting mu-opioid receptor antagonists (PAMORAs), such as methylnaltrexone, provide a targeted approach to symptom management. Buprenorphine is a partial μ-agonist opioid that is known to have high binding affinity and slow dissociation from the μ-opioid receptor; however, it is unknown if these pharmacokinetic properties may impact the efficacy of PAMORAs. The purpose of this study is to evaluate the effectiveness of subcutaneous methylnaltrexone for OIC associated with sublingual buprenorphine therapy.

Methods: This was a single-center, retrospective study including patients receiving both subcutaneous methylnaltrexone and a sublingual buprenorphine product at an academic medical center in Columbus, Ohio between December 1, 2020, and November 30, 2025. The primary outcome was rescue-free laxation within 24 hours of subcutaneous methylnaltrexone initiation. Rescue-free laxation was defined as laxation without the use of a rescue laxative such as a suppository, enema, or bowel cleanse solution. Secondary outcomes included rescue-free laxation following ≥2 doses of methylnaltrexone, time to first bowel movement, number of bowel movements within 24 hours and 48 hours of methylnaltrexone initiation, and occurrence of adverse events. Rescue-free laxation within 4 hours of initial methylnaltrexone dose was also collected to correlate with published literature on subcutaneous methylnaltrexone use for OIC in patients receiving full μ-agonist opioid therapy.

Results: Twenty-one patient encounters were included in the analysis. Patients achieved rescue-free laxation within 24 hours of subcutaneous methylnaltrexone initiation in 9 encounters (42.86%), with 5 encounters (23.81%) achieving rescue-free laxation within 4 hours of administration. Rescue-free laxation occurred in 6 out of 11 (54.55%) eligible encounters in which ≥2 doses of methylnaltrexone were administered. The median time to first bowel movement was 24.96 hours (n=19; IQR 3.37- 47.67). The median number of bowel movements within 24 hours and 48 hours of methylnaltrexone initiation were 0 (range 0-5) and 1 (range 0-7), respectively. No serious adverse events were observed during the study period. One patient had documented diarrhea following repeat methylnaltrexone dosing, defined as the occurrence of ≥3 loose bowel movements in 24 hours.

Conclusion: Subcutaneous methylnaltrexone is a reasonable approach to inducing laxation in patients receiving sublingual buprenorphine products. Larger prospective studies are needed to evaluate the comparable efficacy of subcutaneous methylnaltrexone in OIC related to buprenorphine compared to full μ-agonist opioid therapy.

TR 2.3: Evaluation of the use of Atypical Buccal Buprenorphine Dosing for Treating Veterans with Chronic Pain in a Veterans Affairs (VA) Healthcare System

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BACKGROUND: Buprenorphine is approved by the US Food and Drug Administration (FDA) for treating opioid use disorder, acute, and chronic pain. Currently, there is limited published clinical guidance for managing patients on buccal buprenorphine for chronic pain management. Based on the pharmacokinetic properties of buprenorphine and its approved usage for chronic pain management at higher doses and frequency in other formulations, three times daily dosing of buccal buprenorphine should be fairly well-tolerated and efficacious for analgesic benefit. Data collected from this study can be analyzed to assess the efficacy and tolerability of atypical (three times daily) dosing of buccal buprenorphine for chronic pain treatment.
Methods: This was a single-center research project deemed exempt from review by the Institutional Review Board. Using data from the Computerized Patient Record System (CPRS), a retrospective chart review was conducted on veterans with an outpatient prescription of buccal buprenorphine with three times daily (TID) dosing instructions from January 1, 2019 to November 30, 2026. A set of pre-specified characteristics included previous opioid usage (i.e., morphine equivalent daily dose, medication type) and treatment-related factors (i.e, baseline and treatment pain scores, objective pain reduction descriptions, adverse reaction reports). Collected data will be analyzed to evaluate the analgesic efficacy and safety profile of TID buccal buprenorphine dosing for patients with chronic pain.
Results: Research in progress
Conclusion: Research in progress

TR 2.4: Evaluation of Dronabinol Prescribing for Chronic Pain in a Veterans Healthcare Facility

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Background: Dronabinol is a schedule III orally active cannabinoid medication. While dronabinol is currently FDA approved for anorexia associated with acquired immunodeficiency syndrome and chemotherapy-induced nausea and vomiting after failed response to conventional treatments, recent studies support dronabinol use for muscle spasticity, migraines, neuropathy, and fibromyalgia. The Birmingham VA Health care System (BVAHCS) developed a local criteria for use (CFU) to guide providers when prescribing dronabinol for chronic pain conditions. The purpose of this project was to determine if dronabinol prescribing practices were appropriate and what effects were observed for chronic pain.
Methods: This project was conducted as a retrospective chart review for patients receiving dronabinol between September 1, 2020, and April 30, 2025. Primary outcome data assessing prescribing appropriateness was collected by reviewing patient care notes, orders, and formulary consults for provider specialty, medication dosing, indication, formulary consult entry, and compliance with the CFU. The secondary outcomes of effects on chronic pain were measured by collecting data on dronabinol treatment modifications before and after backorder, such as changes in pain scores, alternative therapies used, functional changes, and reasons for discontinuation. The primary and secondary outcomes were reported as percentage of patients meeting each measure and pain score changes assessed by a reduction of at least 30% from first reported pain score.
Results: Between the above timeframe, 72 dronabinol orders were identified with 24 meeting criteria for inclusion. The average patient age was 55 (range 33–74) with 79% being male participants. All orders had a corresponding non-formulary consult and with majority ordered by pain specialty physicians (20). Dronabinol dosing ranged from 2.5 mg daily to 30 mg daily in divided doses. Two of the twenty-four medication orders did not meet all CFU requirements due to active substance use disorder. Ninety-six percent of patients had a coexisting mental health condition, including 29% with history of substance use disorder. Forty-two percent of patients had a history of illicit cannabis use, with six having a positive urine screen before initiation and nine having no screen collected. Three patients reported mental health changes after starting dronabinol with two as a result of the backorder. Nine patients discontinued with no alternative and twelve patients transitioned to buprenorphine. Other alternative medications utilized during the supply shortage included tapentadol, oxycodone, hydrocodone, methadone, muscle relaxants, compounded naltrexone, tricyclic antidepressants, and pregabalin. Three of twenty-four veterans achieved at least a 30% pain reduction, and baseline pain scores were unavailable for seven who began therapy at a non-VA facility.
Conclusion: The findings suggest that dronabinol is being used appropriately for chronic pain management, with all prescriptions originating from the specialty pain clinic or representing continuity of care from non-VA providers. Although total percentage changes in pain scores from baseline indicate that dronabinol may offer limited benefit for pain reduction, 37.5% achieved an overall decrease in pain score. Future research with a larger sample size is warranted to reduce the potential influence of chance and to better assess effectiveness in managing chronic pain.

TR 2.5: Impact of CYP2D6 Metabolism and CYP2D6 Inhibitor Use on Post-Procedure Pain Outcomes in Patients Prescribed Codeine or Tramadol

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Background: Codeine and tramadol are opioid prodrugs whose analgesic efficacy depends on hepatic bioactivation by cytochrome P450 2D6 (CYP2D6). CYP2D6 is highly polymorphic resulting in a spectrum of metabolizer phenotypes, including poor (PM), intermediate (IM), normal (NM), and ultrarapid metabolizers (UM). In addition to genetic variation, CYP2D6 activity may be reduced by coadministration of CYP2D6 inhibitors, a process known as phenoconversion, leading to effects similar to genetically reduced metabolizers. Data evaluating the combined influence of CYP2D6 genotype and CYP2D6 inhibitor exposure on postprocedural outcomes remains limited. This study evaluated the impact of CYP2D6 metabolizer phenotype and use of CYP2D6 inhibitors on post-procedure pain outcomes in patients prescribed tramadol or codeine for cardiac or orthopedic procedures.
Methods: This retrospective chart review included patients within a large, urban, academic health system from March 1, 2016 to March 1, 2025. Patients were identified through a large institutional biobank linking genetic data and electronic health records. They were eligible if they had available CYP2D6 genotype data and received codeine or tramadol within 30 days before or after a cardiac or orthopedic procedure. Patients were then excluded if they had opioid use disorder, liver failure, liver or kidney transplant recipient, dialysis or renal replacement therapy, chronic kidney disease stage 4 or greater, 3 or more opioid prescriptions within the six months prior to the procedure, received tramadol or codeine only during hospitalization, had codeine or tramadol listed only as a historical medication, received the codeine as cough syrup, or concurrent long-acting opioids. Descriptive statistics were used to characterize patient demographics, medication use, and clinical outcomes.
Results: From 1,085 eligible encounters, all PM and IM patients and a random sample of 200 NM patients were screened, resulting in 264 encounters undergoing detailed chart review. After exclusions, 108 encounters were included in the final cohort. The majority of patients (75.9%) underwent orthopedic procedures, while 24.1% had cardiac procedures. Based on CYP2D6 genotypes, 67.6% (n=73) of patients were normal metabolizers, 21.3% (n=23) were intermediate metabolizers, and 11.1% (n=12) were poor metabolizers. Based on genotype and concurrent CYP2D6 inhibitor use, 58.3% (n=63) of patients were normal metabolizers, 28.7% (n=31) were intermediate metabolizers, and 14% (n=13) were

poor metabolizers. Tramadol and codeine were prescribed to 69.4% (n=75) and 32.4% (n=35) of patients, respectively. Thirteen percent of patients (n=14) were prescribed a CYP2D6 inhibitor, most commonly duloxetine (n=11). Pain-related emergency department visits within 30 days of the procedure occurred in 7.4% (n=8) of patients. Out of those patients, 25% (n=2) were poor metabolizers. Notably, none of the patients who experienced pain-related emergency department visits were prescribed CYP2D6 inhibitors. Opportunities for optimization of non-opioid pain management strategies were also identified.

Conclusion: Reduced CYP2D6 activity may contribute to suboptimal pain control in patients prescribed codeine or tramadol after orthopedic or cardiac procedures. These findings support pharmacogenomic-guided opioid selection and careful evaluation of drug–drug interactions to optimize pain management and reduce pain-related healthcare utilization.

TR 2.6: Abdominal surgery analgesia: liposomal vs epidural bupivacaine (+/- opioids) comparison

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Background: Effective postoperative pain management is critical in abdominal surgeries to enhance recovery, reduce opioid consumption, and decrease hospital length of stay. Traditionally, epidural analgesia with local anesthetics like bupivacaine have been a mainstay for postoperative analgesia in open abdominal procedures. Liposomal bupivacaine (Exparel®) offers an alternative route for analgesia, via intraoperative local infiltration, providing analgesia up to 72 hours. While some studies suggest comparable outcomes (length of stay and opioid reduction) between liposomal bupivacaine and epidural analgesia, findings remain mixed and context specific. The EXPLANE trial14 compared transversus abdominis plane (TAP) blocks with liposomal bupivacaine to epidural analgesia in patients recovering from abdominal surgery. The investigators found that cumulative opioid consumption over three days post operatively for TAP patients with liposomal bupivacaine was non-inferior to epidural blocks. A trial looking at liposomal bupivacaine compared to simple bupivacaine and placebo found no differences in the total opioid consumption in the first 72 hours after abdominal wall reconstruction surgery. There is a need for real-world comparative data on the efficacy and outcomes of intraoperative liposomal bupivacaine infiltration versus epidural bupivacaine (+/- opioids) in major abdominal surgeries at our institution to guide future pain management protocols to include opioid stewardship.
Methods: This single center, retrospective chart review will analyze patient data from University of Washington Medical Center Montlake Campus. Inclusion criteria include adults greater than or equal to 18 years of age who underwent abdominal surgery. The study will compare patients receiving epidural bupivacaine (+/- opioids) following abdominal surgery and patients who received liposomal bupivacaine intraoperatively. The primary endpoint will be daily average pain score via NRS scores over the first 72 hours postoperatively. Secondary end points will include total opioid use postoperatively within 72 hours, time to ambulation, time to transition to oral pain regimen, length of stay, side effects / adverse drug events, and total MMEs prescribed at discharge.
Results: In Progress
Conclusion: The results of this study will evaluate pain reduction, opioid consumption, and safety differences between intraoperative liposomal bupivacaine and epidural bupivacaine (+/- opioids) in abdominal surgery patients. These findings have the potential to enhance patient safety and improve management strategies for those undergoing abdominal surgery.

Track 3

TR 3.1: Transdermal Fentanyl Cost Savings in Hospice: A Retrospective Cost Analysis

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Background: Transdermal fentanyl (TDF) is a commonly used analgesic for opioid-tolerant patients in hospice care but comes with a cost significantly higher than alternative long-acting opioid therapies such as methadone or morphine extended-release (ER). This study aims to evaluate the potential cost-savings of using methadone or morphine ER in place of TDF when clinically appropriate.
Methods: Patients were deemed eligible if they received TDF during hospice admission and were discharged by death between January 1, 2024, and December 31, 2024. Total doses of TDF needed were calculated assuming patients received a new patch every 72 hours between the start and end date of the TDF prescription or patient death. Total doses needed for each patch strength was then used to calculate cost spent. The total daily dose of TDF was converted to equivalent methadone and morphine ER and days supply needed to calculate total cost associated with each formulation.
Results: For 230 patients, $28,389 was spent on TDF during the study period. Alternatively, equivalent doses of methadone and morphine ER would result in potential cost savings of $26,032 and $14,018, respectively.
Conclusion: These findings may impact the current prescribing practices and support a sustainable and effective approach to end-of-life care without compromising safe and effective pain management.

TR 3.2: Developing a Pharmacy Resident Palliative Care Curriculum for Pharmacy Residents in a PGY2 Geriatrics Residency

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Background: There is very limited literature on didactic teaching in palliative care pharmacy as part of general residency training, or for residents pursuing PGY2 specialties besides palliative care. The UPMC St Margaret Geriatrics PGY2 Pharmacy Residency has a required, longitudinal palliative care experience, which consists of a 4 hour-clinic on Thursday mornings every other week. This unique rotation allows residents to practice safe, effective, and patient-centered pharmacotherapy considering patients' concomitant conditions, medications, goals, and prognosis. It is a unique experience that fulfills numerous American Society of Health Systems Pharmacists Geriatric Pharmacy Residency objectives. The clinical experience has evolved from transitions of care focus to full integration into an outpatient palliative care practice since the inception of this longitudinal rotation in 2022. Additionally, in the first half of the year, foundational palliative care pharmacy topics are taught in a didactic format through a combination of self-directed learning, review, and debrief. Our aim was to collect feedback on current and proposed palliative care education to inform the development of a didactic teaching curriculum for future academic years.
Methods: A focus group was held with current and former PGY2 geriatric pharmacy residents (residency classes 2024-2026) to discuss the evolution of the palliative care longitudinal rotation. A group interview was completed about the didactic palliative care education and preparedness for direct patient care experiences to collect feedback and develop a future curriculum. This project was approved by the institution's quality improvement review committee. The focus group was facilitated by the project leader and was recorded in Microsoft Teams® by transcribing. A student pharmacist was present for the session as the scribe. A series of interview questions were posed by the project leader to facilitate discussion during the focus group session. Past and present residents discussed their current roles and utilization of palliative care skills, provided feedback on the didactic curriculum content and modality, described organizational involvement, and discussed the value of microcredentialing. The project leader and scribe are asynchronously developing code books from which themes will be synthesized.
Results: Five residents participated in the focus group (n=1 class of 2024, n=2 class of 2025, n=1 class of 2026). One participant holds appointment as a clinical assistant professor, two participants are ambulatory care pharmacists, and one is a current PGY2 resident. Focus group discussion coding is ongoing and curriculum development is forthcoming.
Conclusions: Data Analysis in progress.

TR 3.3: Meperidine versus Morphine for Rigors Relief

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Background: Meperidine went on national shortage due to manufacturing delays and discontinued formulations on April 23, 2025, with no resolution date available at the time. As a result, many hospitals planned strategically to address the shortage by rationing their meperidine supply and seeking out therapeutic alternatives where appropriate. At Dana-Farber Cancer Institute (DFCI), meperidine is the preferred agent for rigors, which is its primary use as it is not used for pain in this institution. During the meperidine shortage, DFCI implemented an automatic interchange to morphine for the treatment of rigors. To date, there have only been two studies comparing morphine to meperidine for rigors associated with a hypersensitivity reaction. UC Davis found similar rates of ablation in both groups and removed meperidine from their formulary in favor of morphine. Similarly, Atrium Health Wake Forest Baptist found 96% resolution with morphine, which has been their preferred formulary option since 2003. The objective of this study is to assess the number of morphine or meperidine doses required for resolution of rigors to guide formulary decisions at DFCI.
Methods: Patients were identified using an Electronic Medical Record (EMR)-generated report of administrations of morphine or meperidine in an outpatient hematology-oncology infusion center in 2025. The primary endpoint is the number of doses required for resolution of rigors including the number of administrations, number of doses, and documentation of resolution. Secondary endpoints included naloxone administration and opioid-related adverse effects. Anticipated sample size of 150 patients was utilized for meperidine matching from six months prior to conversion to morphine. Baseline demographics data was analyzed using descriptive stats, and continuous data was evaluated using Mann-Whitney U test.
Results: Over the duration of the study, 104 patients and 117 administrations of meperidine and morphine were evaluated. The majority, 70.95%, of hypersensitivity reactions were Grade 2 severity on the CATCE Grading Scale in both groups. In the meperidine group, 97% and 87% of the morphine group had resolution of rigors with 2 or fewer doses of the respective agent. The median time to resolution in the meperidine group was 19.5 minutes, while the morphine group was 23 minutes, which was not statistically significant. Four patients were switched from morphine to meperidine after the first dose. The only patient requiring 4 doses of medication was in the morphine group. There were two instances of documented sedation and one hypoxia in the morphine group, but neither group had any instances of naloxone administration.
Conclusion: In this small, single-center, retrospective study conducted during a medication shortage, the median time to resolution and the average time to resolution of rigors with meperidine or morphine were similar. Most instances of rigors resolved within 25 minutes, and there were limited instances of opioid-related adverse events. These results were anticipated and are consistent with the current body of literature surrounding morphine use for rigors. Given the similar response between morphine and meperidine, morphine is a reasonable option for managing rigors in shortage settings or formulary decisions.

TR 3.4: Evaluation of Peak Inspiratory Flow Rate in Hospice Care Patients with Chronic Obstructive Pulmonary Disease

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Background: Chronic obstructive pulmonary disease (COPD) is typically managed through inhalation therapy, with dry powder inhalers (DPI) as a common medication-delivery system which can be more costly than traditional meter-dose inhalers (MDI) or nebulized medications. DPIs require a minimum peak inspiratory flow rate (PIFR) of 30 L/min to ensure proper drug delivery into the lungs.
Methods: This study aims to quantify peak inspiratory flow rate (PIFR) values for hospice care patients. Hospice patients admitted to AccentCare to the Maryland office with an admitting diagnosis of COPD will be deemed eligible if they are at least 18 years of age or older. If the nurse states the patient is a good candidate (cognitively intact and amenable to a visit), and the patient/caregiver agree to participate, one of the research team will visit the patient and assess their PIFR. Each participant will perform three PIFR measurements using the In-Check™ device; the highest value will be used for statistical analysis. This study intends to evaluate ten to thirty patients to assess the feasibility of DPI use in hospice patients.
Results: We hypothesize that patients admitted to hospice will have a PIFR value insufficient for DPI use and an alternative medication-delivery system may be more appropriate. In progress.
Conclusion: In progress

TR 3.5: Opioid Dosing for Opioid-Tolerant Patients with Cancer in the Emergency Department

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Background: Pain affects approximately 44 - 49% of people with cancer, increasing to 68% in patients with metastatic disease. Current national guidelines recommend the use of opioid analgesics for those with moderate to severe cancer related pain. Due to this pain, some patients with cancer need to take opioids daily; those requiring ≥ 60mg oral morphine equivalents (OME) per day are considered opioid tolerant. Patients with cancer pain who are opioid tolerant are at risk for inadequate acute pain management. A previous study at our institution revealed that only 61% of opioid-tolerant patients received an adequate initial opioid dose in the emergency department (ED). Following the establishment of a specialized oncology-focused ED unit, our study aims to reassess current opioid dosing practices for opioid-tolerant patients with cancer.
Methods: This was an IRB approved retrospective cohort study of patients who presented to the ED at a large academic medical center between January 1st, 2022 to December 31st, 2024. Patients were included if they had a documented home opioid regimen >100 OME per day, active cancer within 12 months prior to encounter, and received at least one dose of opioid analgesic within 24 hours of ED arrival. A higher OME threshold was used to define opioid tolerance to account for typical opioid dosing practices in the ED. Baseline characteristics collected included age, sex, race, weight, height, malignancy type and stage (including presence of metastasis), serum creatinine, liver function tests, and home opioid regimen OME per day. To verify the accuracy of home opioid regimens, patient's charts were reviewed for a medication reconciliation note completed during that encounter, verification of an electronic prescription within 90 days of the encounter, or an outpatient palliative or oncology note within 90 days of encounter. The primary outcome was to evaluate if opioid-tolerant patients with cancer received an appropriate initial opioid dose, defined as ≥ 10% of their total prescribed home OME per day. Secondary outcomes included analyses of OME of all opioid doses received in the first 24 hours of ED presentation, time to initial opioid administration, use of non-opioid analgesics, and effectiveness of pain control, defined as ≥30% reduction in pain score within 4 hours of the initial opioid dose. For safety, we assessed naloxone administrations within 24 hours of initial opioid dose. Using the primary and secondary outcomes, a further analysis compared patients treated in the general ED with those treated in the oncology-focused ED.
Results: In progress.
Conclusion: In progress.