2022 Southeastern Residency Conference

[A] Administration (ADM) [B] Ambulatory Care (AMB) [C] Cardiology (CAR) [Y] Community Pharmacy (CP)

[R] Critical Care/Emergency Medicine (CCM) [G] Geriatrics (GER) [I] Infectious Disease (ID)

[L] Internal Medicine (IM) [M] Medication Safety (MES) [N] Neurology (NEU) [O] Oncology (ONC)

[P] Pain Management (PM) [D] Pediatric (PED) [S] Psychiatric Pharmacy (PSY) [T] Transitional Care (TC)

[1] Transplant (TRP)

APRIL 21 • THURSDAY

PINNED
8:00am – 8:10am

SESSION I - Welcome Message — Main Room
Presenters: Karen Barlow
Welcome message from our committee Chair & Announcements

PINNED
8:10am – 9:00am

SESSION I - Keynote Speaker — Main Room
Presenters: Cory Jenks
Keynote Speaker, Cory Jenks will present!

9:10am – 9:30am A

The conversion of free-text sigs into discrete-text sigs — Room L
Presenters: Emelia Beam
TITLE: The conversion of free-text sigs into discrete-text sigs
AUTHORS: Emelia Beam, Peggy Brashear, Stephen Kung, Patti Fabel
OBJECTIVE: The primary objective of this project is to convert at least 50% of incoming Surescripts free-text sigs into discrete-text sigs on the translational table. Secondary objectives include pre-and post-analysis of free-text sigs, and to increase the accessibility of data regarding prescribing habits at the organization
SELF ASSESSMENT QUESTION: Which free-text sig was utilized frequently
BACKGROUND: Patient directions or sigs communicate pertinent instructions to pharmacists and patients about the medication administration. The variation in free-text sigs can create difficulty in data extraction as pulling and parsing the data would require a manual review
METHODOLOGY: An Excel Spreadsheet sig mapping table was created with the organization’s existing sig data. The worksheet table to be reviewed had information about previously mapped free-text sigs and those that needed to be mapped. Information such as dose, dose unit, route, frequency, and PRN reasons was manually entered into the blank discrete fields on the Excel Spreadsheet. The completed discrete fields were reviewed by an informatics pharmacist which was then uploaded by a representative from Epic.
RESULTS: A total of 5020 lines of free-text sigs were identified in the translational table. Of the 5020 total lines of free-texts sigs identified, 3721 (74%) were mapped with their appropriate discrete details. Data about the secondary objectives will be presented later.
CONCLUSIONS: While the majority of the data has been mapped, there is still an ongoing continuous process to maintain and monitor incoming sigs from Surescripts.

9:10am – 9:30am B **Efficacy and safety of dulaglutide versus semaglutide in a Veterans Affairs healthcare system**
Room I

Presenters: Elizabeth Trainham

Title: Efficacy and safety of dulaglutide versus semaglutide in a Veterans Affairs healthcare system
Author's names: Elizabeth Trainham, Laura Cherry, Kristen Lamb, Bianca Creith, Ashley Thomas
Presentation Objective: Describe differences in safety outcomes between dulaglutide and semaglutide at Tennessee Valley Healthcare System (TVHS) after a Veteran's Affairs Pharmacy Benefits Management (VA PBM) national formulary change.
Self-assessment question:
Which study noted that treatment with semaglutide may increase the incidence of diabetic retinopathy complications?
Purpose/Background: In November 2020 there was a national glucagon-like peptide-1 receptor agonist (GLP-1RA) formulary change within the VA from dulaglutide to subcutaneous semaglutide. This resulted in a change in therapy for clinically appropriate patients, those without intolerance to semaglutide or diabetic retinopathy. However, literature has identified key safety differences in these therapies. The purpose of this analysis was to assess safety changes resulting from this formulary change.
Methods: This retrospective, single-center, cohort study was conducted at TVHS. It evaluates the efficacy of the national VA formulary conversion to semaglutide from dulaglutide in adult veterans with type 2 diabetes. Patients included for analysis were those with an active dulaglutide or semaglutide prescription between June 30th, 2019, and June 30th, 2021. Patients were excluded if GLP-1RA prescriptions were filled outside the VA. Data collected includes A1c and weight prior to initiation of dulaglutide or semaglutide, A1c and weight at the time of data retrieval, and concomitant diabetes medications. The electronic medical record was reviewed to evaluate change in retinopathy status and incidence of gastrointestinal (GI) adverse effects (AE). Outcomes were compared between the semaglutide and dulaglutide cohorts.
Results: There were 200 patients in each cohort. Baseline characteristics were similar between groups. There was no difference between semaglutide and dulaglutide in terms of worsening retinopathy (11 vs. 13, p=0.461) or GI AEs leading to GLP1-RA discontinuation (20 vs. 14, p=0.282).
Conclusions: There was no statistically significant difference in safety outcomes in patients treated with dulaglutide versus semaglutide.

9:10am – 9:30am B **Impact of direct pharmacist intervention vs. usual care on the management of hypertension in a resident family medicine clinic**
Room J

Presenters: Sarah Byers

TITLE: Impact of direct pharmacist intervention vs. usual care on the management of hypertension in a resident family medicine clinic
AUTHORS: Sarah Byers, Abigail Wiggins, Shauntá Chamberlin, Rebecca Higdon, Julie Jeter
OBJECTIVE: Explain the pitfalls of a prospective strategy for pharmacist intervention in HTN
SELF ASSESSMENT QUESTION: What is one reason prospective chart review is not sustainable for pharmacist HTN recommendations?
BACKGROUND: Assess a process for prospective pharmacist recommendation in the management of hypertension (HTN)
METHODOLOGY: Retrospective chart review was performed on patients with HTN seen in clinic from September through November 2021. Patients were excluded if they were < 18 years, pregnant, being seen for a "sick" or hospital follow-up visit, a telehealth visit, or if HTN was not addressed at their appointment. The primary outcome was the rate of adherence to pharmacotherapy guidelines as set forth by the Eighth Joint National Committee (JNC8).
RESULTS: In this IRB-approved retrospective review, 134 of 731 pharmacist-reviewed encounters were eligible for inclusion. Thirty-five patients displayed uncontrolled blood pressure per JNC8 goals at the time of pharmacist review. A total of 22 pharmacist recommendations were made on 16 individual patients. Prior to the eligible encounter, 73/134 (54.4%) patients were adherent to JNC8 pharmacotherapy guidelines. Medication adjustments occurred at 30 appointments. In patients that received pharmacist recommendation (n=5), the percentage of those on appropriate therapy increased from 60% to 80%, in those that did not receive a recommendation (n=25), the percentage decreased from 56% to 48%. Eighteen patients (60%) with medication adjustments had follow-up planned within one month as is recommended by JNC8.
CONCLUSIONS: Patients with HTN are relatively well-controlled in this clinic, and the ratio of recommendations to total patient reviews does not support the continuation of a prospective process. The timeframe for follow-up suggests there may be benefit from pharmacist involvement post-appointment. While pharmacists are consulted for HTN management in this clinic already, the volume is much less than with other disease states.

9:10am – 9:30am R **Evaluating the Safety and Efficacy of Standardized Dose Ranges for Vasopressors in Extremes of Body Weight: a Retrospective Study** Room E

Presenters: Samantha Rauer

TITLE: Evaluating the Safety and Efficacy of Standardized Dose Ranges for Vasopressors in Extremes of Body Weight

AUTHORS: Samantha Rauer; Abby Ellington; Kimberly Hurth; Catherine Pierce

OBJECTIVE: To evaluate and identify the optimal dose range for epinephrine, norepinephrine, and phenylephrine

SELF ASSESSMENT QUESTION: What potential factors may contribute to patients exceeding the default vasopressor range?

BACKGROUND: Septic shock is a life-threatening condition where vasopressors are used to help patients with inadequate response to fluid resuscitation. The optimal dosing strategy for vasopressors remains ill-defined, but current practice suggests non-weight-based dosing may be best based on safety and cost. Cone Health uses norepinephrine 0-40 mcg/min, epinephrine 0.5-20 mcg/min, and phenylephrine 0-400 mcg/min as default ranges. These default ranges are adjusted by the physician and overridden in patient-specific situations.

METHODOLOGY: This is a retrospective, multicenter analysis of patients who received continuous infusions of either norepinephrine, epinephrine, or phenylephrine from January 1, 2021 to June 30, 2021. Data collection included demographic information, vasopressor doses, adverse events from vasopressor use, and mortality. The primary outcome was average time to achieve goal MAP. Secondary outcomes were average vasopressor dose to achieve goal MAP, subgroup analysis of factors impacting vasopressor response, average time to discontinuation of vasopressors and time spent outside the default range, in-hospital mortality, and development of treatment related complications and associated doses.

RESULTS: There was no difference in average time to goal MAP between the two groups (exceeded: 4.26 vs inside limit: 1.89, P = 0.063). However, there was a difference in doses required for NE and PE to achieve goal MAP. The subgroup analysis had a significant difference with more patients on >2 vasopressors, weight >100 kg and <150 kg, and had cardiogenic shock in the exceeded group. There was no difference in time to discontinuation of vasopressors (exceeded 75.6 hours vs inside limit 61.7 hours, P = 0.281). Adverse events reported were swelling, redness, infiltration and blistering. In-hospital mortality was significantly higher in the exceeded group compared to the inside limit group (85.7% vs 47.4%, P <0.001).

CONCLUSIONS: The results from this study confirm that the current vasopressor default ranges, at Cone Health, are appropriate for most patients.

9:10am – 9:30am R **Medical management of unattached patients with end-stage renal disease** Room D

Presenters: Erin Rountree

TITLE: Medical management of unattached patients with end-stage renal disease

AUTHORS: Erin Rountree, Adam Sawyer

OBJECTIVE: Describe protocols for disease state management in unattached patients with end-stage renal disease (ESRD) who routinely receive dialysis after evaluation in the emergency department and are not followed by an outpatient nephrologist.

SELF ASSESSMENT QUESTION: Which three disease states are routinely managed for patients with end-stage renal disease?

BACKGROUND: Patients currently receive routine dialysis through the emergency department because they are not managed by an outpatient nephrologist or dialysis clinic. Dialysis orders are obtained from the on-call nephrologist; while some chronic disease states are addressed, care of these patients is inconsistent. This project creates nurse-driven policies to consistently manage complications of ESRD in unattached dialysis patients, including anemia, iron deficiency, and hyperparathyroidism.

METHODOLOGY: Current prescribing practices for unattached patients were evaluated to identify gaps in care of these patients. Protocols for epoetin alfa, iron sucrose, and paricalcitol were developed and approved by institutional committees and dialysis staff. New nurse-driven protocols include dosing algorithms, as well as monitoring and dose adjustments to guide prescribers and verifying pharmacists.

RESULTS: In progress

CONCLUSIONS: In progress

9:10am – 9:30am R **Propofol-Associated Hypertriglyceridemia in Adults Receiving Venovenous ECMO for Acute Respiratory Distress Syndrome: Incidence and Risk Factors** Room C

Presenters: Sara Stallworth

TITLE: Propofol-Associated Hypertriglyceridemia in Adults Receiving Venovenous ECMO for ARDS: Incidence and Risk Factors

AUTHORS: S. Stallworth, K. Ohman, J. Schultheis, C. Rackley, A. Parish, H. Kim, A. Erkanli

OBJECTIVE: To describe the incidence and risk factors for propofol-associated hypertriglyceridemia (HTG) in venovenous extracorporeal membrane oxygenation (VV ECMO) patients with acute respiratory distress syndrome (ARDS).

SELF ASSESSMENT QUESTION: Prolonged use of propofol in critically ill patients has been associated with:

a. hypertriglyceridemia

b. pancreatitis

c. propofol-related infusion syndrome (PRIS)

d. all of the above

BACKGROUND: ARDS remains a significant cause of morbidity and mortality. Management of sedation for patients with severe ARDS receiving ECMO is challenging due to sedative pharmacokinetic alterations and prolonged duration of mechanical ventilation. Propofol, a first-line sedative, has been associated with the development of HTG. The incidence and risk factors for propofol-associated HTG in patients with ARDS receiving ECMO have not been exclusively evaluated.

METHODOLOGY: This single-center, retrospective, cohort study included all adults admitted to the Medical ICU at Duke University Hospital from July 1, 2013 - September 1, 2021, that received ECMO, at least 24 continuous hours of a propofol, and had one documented triglyceride level. The primary outcome assessed the incidence of propofol-associated HTG. Secondary outcomes include time to development of propofol-associated HTG, risk factors for HTG development, pancreatitis incidence, and time to HTG resolution after sedative adjustment.

RESULTS: A total of 167 patients were included in the study. HTG occurred in 58 (34.7%) of patients. In the HTG group, median time to development of HTG from ECMO cannulation was 4.8 days (IQR 1.7-9). Patients with propofol-associated HTG had a longer median duration of ECMO compared to those without HTG [19 days (IQR 10.2-34.8) vs. 13 days (IQR 6-8), $p < 0.0001$]. Baseline SOFA score was associated with an increased risk of developing propofol-associated HTG [HR 1.19 (95% CI 1.09, 1.30), $p < 0.001$].

CONCLUSIONS: Propofol-associated HTG occurred in approximately one-third of patients receiving ECMO for ARDS. Higher baseline illness severity and ECMO duration were associated with an increased risk of developing propofol-associated HTG. Future investigation is warranted to validate these results.

9:10am – 9:30am | **Evaluation of FilmArray® Blood Culture Identification (BCID) and TheraDoc® Utilization at a VA Health Care System (HCS)** Room F

Presenters: Galina Wang

TITLE: Evaluation of FilmArray® Blood Culture Identification (BCID) and TheraDoc® Utilization at a VA Health Care System (HCS)

AUTHORS: Galina Wang, Bailey Guest, Madison Treadway, and David Rudd

OBJECTIVE: To evaluate the impact of rapid diagnostic blood culture identification panel with FilmArray® BCID and TheraDoc® clinical surveillance on the timeliness of appropriate antimicrobial therapy initiation.

SELF ASSESSMENT QUESTION: How does utilizing BCID and TheraDoc® affect time to appropriate antimicrobial therapy?

BACKGROUND: For patients with documented hypotension, the survival rate decreases by 7.6% every hour antibiotic administration is delayed. Therefore, the Surviving Sepsis Guidelines recommend prompt administration of antimicrobials within 1 hour of clinical presentation for adults with possible septic shock and within 3 hours for those without shock. At the Salisbury VA HCS, FilmArray® BCID 2 panel is used along with TheraDoc® to assist with antimicrobial regimens as part of antimicrobial stewardship at the facility. The purpose of this study was to evaluate the time to appropriate antibiotic therapy based on positive BCID results at the Salisbury VA HCS.

METHODOLOGY: This was a retrospective, quality-improvement chart review. Subjects eligible to be included were Veterans at the Salisbury VA HCS with positive BCID results from 5/1/18-12/31/20 on TheraDoc®. The primary endpoint was to identify the average time for initiation of appropriate antimicrobial therapy for Veterans not on antibiotics or on inappropriate antibiotics from the time of BCID positivity. Secondary objectives included comparing time to appropriate therapy during business hours when on-site Infectious Diseases (ID) and Antimicrobial Stewardship Program (ASP) coverage is available or outside of normal operating hours and identifying average time to de-escalation for those on appropriate therapy.

RESULTS: In progress

CONCLUSIONS: In progress

9:10am – 9:30am | **Projected Cost-Effectiveness of Vancomycin Alternatives for Methicillin-Resistant Staphylococcus aureus Bloodstream Infections** Room G

Presenters: Emma Haught

TITLE: Projected Cost-Effectiveness of Vancomycin Alternatives for Methicillin-Resistant *Staphylococcus aureus* Bloodstream Infections

AUTHORS: Emma Haught; P. Brandon Bookstaver; Joseph Kohn; Julie Ann Justo

OBJECTIVE: Compare projected costs of an institutional algorithm that includes vancomycin alternatives to a historical strategy of initial vancomycin therapy for treatment of methicillin-resistant Staphylococcus aureus (MRSA) bloodstream infections (BSIs)

SELF ASSESSMENT QUESTION: What clinical monitoring does vancomycin routinely require that daptomycin Which of the following is true regarding the projected outcomes associated with the proposed institutional MRSA BSI algorithm?

1. Increased median duration of ceftaroline
2. Decreased costs associated with pharmacist clinical decision-making
3. Increased laboratory costs
4. Decreased medication-related costs

Purpose/Background: The cost of vancomycin alternative empiric gram-positive antibacterial agents (e.g., daptomycin, linezolid) have significantly decreased and a reevaluation of cost-effectiveness is needed. The primary objective of this study was to compare actual infectious disease-related costs with initial vancomycin therapy versus projected costs of an empiric algorithm incorporating vancomycin alternative agents among a patient cohort with MRSA BSIs.
Methods: Observational cohort study of adult hospitalized patients with MRSA BSI at the Prisma Health-Midlands campuses between January 1, 2015, and July 31, 2017. Enrolled patients received initial vancomycin therapy within 48 hours from index blood culture and maintained therapy for ≥7 days. Patients were excluded if they had polymicrobial BSI, repeat BSI episode, missing information, or death within 48 hours of index positive culture. A local algorithm incorporating vancomycin alternative agents was developed and applied to the historical patient cohort to project who could receive vancomycin alternatives. The primary endpoint was total infectious disease-related costs based on current pricing in 2022 US dollars, including antimicrobial drug acquisition and preparation costs, laboratory-related costs, and pharmacist, nursing, and phlebotomist personnel time for therapy-related activities. Secondary endpoints included incidence of acute kidney injury (AKI) while on vancomycin therapy and previously reported outcome of clinical failure.
Results: A total of 115 patients were included from the the historical cohort. Using the algorithm, 27 patients were projected to receive vancomycin, 7 linezolid, 58 daptomycin, and 23 daptomycin and ceftaroline combination empirically. The median projected total infectious disease-related costs using the algorithm were numerically higher than actual costs, but not statistically different (median $4,654.73 vs. $4,238.57, p=0.081). A major source of the numerically higher projected total costs as compared to actual costs was medication acquisition and preparation ($821.15 vs. $177.61). However, all other components of total infectious disease-related costs (e.g., laboratory, personnel time) were projected to be lower than actual costs. In the historical cohort, AKI and clinical failure occurred in 34 (29.6%) and 37 (32.1%) patients, respectively.
Conclusions: An algorithm that diversifies the empiric anti-MRSA agents used for MRSA BSI resulted in comparable total infectious disease-related costs. Future directions are to implement the algorithm and evaluate clinical outcomes to estimate cost-effectiveness.

9:10am – 9:30am L **Comparison of Medication Regimens for the Prevention and Minimization of Symptoms of Alcohol Withdrawal Syndrome** Room K

Presenters: Benjamin Harding

TITLE: Comparison of Medication Regimens for the Prevention and Minimization of Symptoms of Alcohol Withdrawal Syndrome

AUTHORS: Benjamin Harding, Kenda Germain, Kelsey Knorr, Jessica Starr, Nathan Pinner

OBJECTIVE: Evaluate the effectiveness of medication regimens for treatment of Alcohol Withdrawal Syndrome

SELF ASSESSMENT QUESTION: Which of the following agents are recommended by the American Society of Addiction Medicine for use in AWS?

BACKGROUND: Alcohol Withdrawal Syndrome (AWS) occurs when someone stops using alcohol after a period of heavy drinking with symptoms ranging from mild (nausea and vomiting) to severe (seizure). The purpose of this project was to evaluate which combination of scheduled and as needed agents was most effective at minimizing the effects of AWS.

METHODOLOGY: A retrospective cohort study was conducted in patients who received a combination of a scheduled (taper or fixed dose) regimen of long-acting agent (phenobarbital or benzodiazepine) and as needed agents via Clinical Institute Withdrawal Assessment for Alcohol (CIWA) protocol for use in AWS from January 1st, 2018 to January 1st 2022. Eligible patients were included if they were at least 18 years of age and had active orders for a scheduled agent plus as needed CIWA protocol for use in AWS, have at least 1 documented CIWA score, and received at least 24 hours of a scheduled and as needed CIWA regimen.

RESULTS: Forty-two patients met inclusion criteria with 17 in chlordiazepoxide plus lorazepam CIWA, 15 in phenobarbital plus lorazepam CIWA, and 10 in phenobarbital plus phenobarbital CIWA. The mean CIWA score over 72 hours was not significantly different between groups with mean scores of 5.25 for chlordiazepoxide plus lorazepam CIWA, 4.60 for phenobarbital plus lorazepam CIWA, and 2.46 for phenobarbital plus phenobarbital CIWA ($p = 0.359$). No significant difference was found for the mean CIWA doses over 72 hours with 2.71, 2.53, and 0.2 doses, respectively ($p = 0.150$).

CONCLUSIONS: Phenobarbital groups had lower mean CIWA score at 72 hours and fewer CIWA doses administered 72 hours, but no statistically significant difference was found.

9:10am – 9:30am P **Evaluation of Appropriate Monitoring of Opioids after Implementation of a Controlled Substance Prescribing Note** Room B

Presenters: Beth Brooks

TITLE: Evaluation of Appropriate Monitoring of Opioids after Implementation of a Controlled Substance Prescribing Note

AUTHORS: Beth Brooks, Mary Elizabeth O'Barr, Cassidy Moses

OBJECTIVE: Identify the impact of a controlled substance prescribing note on appropriate monitoring of opioid prescriptions.

SELF ASSESSMENT QUESTION: What are the parameters for appropriate monitoring of patients with opioid prescriptions.

BACKGROUND: The purpose of this project was to evaluate how the mandatory use of a controlled substance note template affected the monitoring of patients with opioid prescriptions. The implementation of this controlled substance note was intended to streamline querying the prescription drug monitoring program (PDMP), obtaining a urine drug screen (UDS) and reviewing the patient's risk while on opioid therapy.

METHODOLOGY: A report of all opioid prescriptions written 6 months before note implementation (July 24, 2019 –January 23, 2020) and 6 months after note implementation (January 24, 2020- July 24, 2020) was generated. From the prescriptions generated during those time periods, the presence of a timely PDMP check, a UDS every 6 months and the documentation of the controlled substance note were all assessed.

RESULTS:The total opioid prescriptions for the pre-intervention period was 4,991 and the total prescriptions for the post-intervention was 4.112. During the pre-intervention period 10% of prescriptions had a controlled substance note present, while in the post-intervention period 64% of prescriptions had the controlled substance note. Prescriptions with appropriate PDMP checks increased in the post-intervention period by 3%. UDS labs however decreased during the post-intervention time period from 86% to 81% of prescriptions having the labs checked appropriately.

CONCLUSIONS: Prescribers are more frequently utilizing the controlled substance prescribing note to order opioid prescriptions more frequently, however there is still a good portion of prescribers not using the required template. During the post-implementation period there was an increase in the percent of prescriptions with an appropriate PDMP check, while the number of UDS decreased slightly.

9:10am – 9:30am D **Ketorolac dose-response in management of pediatric post-operative spinal fusion pain** Room H

Presenters: Abigail Benfield

TITLE: Ketorolac dose-response in management of pediatric post-operative spinal fusion pain
AUTHORS: Abigail Benfield, Lauren Wyatt, John Frino, Sheila Mason, Chris Gillette
OBJECTIVE: Define the dose-response relationship of ketorolac 15 mg vs. 30 mg in pediatric spinal fusion patients.
SELF ASSESSMENT QUESTION: What is one potential advantage of using lower maximum doses of ketorolac in pediatric patients?
BACKGROUND: Multimodal analgesia, including ketorolac, is utilized in posterior spinal fusion (PSF) post-operative patients to treat pain while decreasing overall opioid exposure and side effects. Potential adverse effects of non-steroidal anti-inflammatory drugs (NSAIDs) are often dose-related and include gastrointestinal bleeding and acute kidney injury. Adult studies indicate no significant difference in pain reduction between 10 mg, 15 mg, and 30 mg ketorolac doses. A study evaluating analgesia following PSF in adolescents showed that low-dose ketorolac (maximum 15 mg) did not increase the incidence of NSAID side effects. This study will evaluate pain control and side-effect profile for maximum doses of ketorolac 15 mg compared to 30 mg in pediatric patients following PSF.
METHODOLOGY: This single center, retrospective observational study will be conducted at Brenner Children's Hospital from March 1, 2017 through February 28, 2022. Patients will be included if they are

9:10am – 9:30am T **Impact of bedside discharge medication delivery on re-presentation rates in patients with pre-identified barriers to medication access and adherence** Room A

Presenters: Dawnna Metcalfe

TITLE: Impact of bedside discharge medication delivery on re-presentation rates in patients with pre-identified barriers to medication access and adherence
AUTHORS: Dawnna Metcalfe, Aubrie Rafferty, Elizabeth Ramsaur, Christie Dresback
OBJECTIVE: Determine whether utilization of a discharge medication bedside delivery service in patients with pre-identified barriers to medication access and adherence impacts 30-day re-presentation rates.
SELF ASSESSMENT QUESTION: What is a common cause of adverse events leading to re-hospitalizations?
BACKGROUND: Medication non-adherence following discharge is a common cause of adverse drug events leading to re-hospitalizations. There is limited data on the impact pharmacist-led readmission prevention programs on patients with pre-defined barriers.
METHODOLOGY: This study analyzed all patients who discharged from Mission Hospital from November 1st, 2020 to October 31st 2021. Patients were included in the study based on the presence of at least one medication access or adherence barrier as determined by completion of the pharmacy transitions of care form in the electronic medical record. Patients were excluded from this study if they had a discharge disposition other than home (i.e. skilled nursing facility, etc.).
RESULTS: A total of 1,093 patients were included in the study. The average age of patients who received bedside medication delivery (intervention group) and who did not (control group) was 53.5 years and 56.2 years respectively. Average LACE score (predictor of hospital readmission or death within 30 days of hospital discharge) for the intervention group was 6.0291 and for the control group was 5.9001 (0-4=low risk, 5-9=moderate risk, >10=high risk). Overall, 30-day re-presentation rate in the intervention group was 30.81% and 30.08% in the control group.
CONCLUSIONS: It has been previously identified that a 2% reduction in re-presentation rates is considered clinically significant for the study hospital. Within this study, utilization of bedside discharge medication delivery did not significantly reduce 30-day re-presentation rates in patients with pre-identified barriers to medication access and adherence. Potential limitations of this study include: presence of barrier data is reliant on manual entry into medical records, not all patients are assessed for barriers upon admission, and not all patients are assessed for utilization of bedside delivery services upon discharge.

9:30am – 9:50am A **Effect of Pass/Fail Grading vs. Letter Grading Scales on Pharmacy Student Motivation** Room L

Presenters: Juliette Miller

TITLE: Effect of Pass/Fail Grading vs. Letter Grading Scales on Pharmacy Student Motivation
AUTHORS: J Miller, B Phillips, D Lavender, R Palmer, B Johnson, R Stone, M Fulford
OBJECTIVE: Explain how pass/fail and letter grading scales affect pharmacy student motivation.
SELF ASSESSMENT QUESTION: Which goal orientation are students who complete recitation with pass/fail grading vs. students who complete recitation with letter grading more likely to report?
BACKGROUND: In the fall of 2021, the grading scale for a recitation series of a course in the University of Georgia College of Pharmacy curriculum was changed from a letter grading scale to pass/fail. The purpose of this study was to determine how different grading scales affect student motivation and if pass/fail grading is associated with more students identifying as having a mastery-approach goal orientation.
METHODOLOGY: Second-year and third-year pharmacy students answered questions with end-of-semester evaluations regarding goal orientations to recitations (e.g. mastery-approach, mastery-avoidance, performance-approach, etc). Questions included 15 Likert scale, one multiple choice, and two short answer questions. Respondents were matched with GPA, Pharmacotherapy course scores, and demographics. Descriptive and inferential statistics were applied to questionnaire results and demographic information as appropriate.
RESULTS: The questionnaire was completed by 268 students (132 P2 and 136 P3 students). Most respondents were white and in-state with mean total GPA 3.49 and Pharmacotherapy final grade 83.96. Of the P2 students, 84.8% (n=112) reported having a mastery-approach goal orientation to recitations vs. 67.6% (n=92) of the P3 students. More P2 students preferred pass/fail over letter grading vs. P3 students (75.8% vs. 55.9%). There was no correlation between Pharmacotherapy final grade and goal orientation.
CONCLUSIONS: More students enrolled in recitations with pass/fail grading reported having a mastery-approach goal orientation, which suggests pass/fail grading scales may be associated with mastery-approach goal orientations rather than others such as work-avoidance. Future studies may strengthen results by comparing subjects in the same class, as this study compared two different college of pharmacy classes.

9:30am – 9:50am B **Evaluation of a Pharmacist-Driven Opioid Stewardship Program at a Family Medicine Clinic**

Presenters: Aly York Room I

TITLE: Evaluation of a Pharmacist-Driven Opioid Stewardship Program at a Family Medicine Clinic
AUTHORS: Aly York; Morgan Rhodes
OBJECTIVE: Describe the benefits of an opioid stewardship program on patient opioid use and prescribing practices by physicians in the Prisma Health Family Medicine Center.
SELF ASSESSMENT QUESTION: How can pharmacists support implementation of opioid stewardship protocols and opioid prescribing practices in primary care practices?
BACKGROUND: Evaluate the effect of the pharmacist-led opioid stewardship program and controlled substance policy implementation at a family medicine residency teaching clinic on prescriber adherence to CDC best practices for opioid prescribing.
METHODOLOGY: This study was a retrospective chart review of patients prescribed opioid prescriptions at the Prisma Health Family Medicine Center from January 2020 to January 2022. Patients prescribed chronic opioids (any continuous use of opioid medication > 3 months) from from this practice, excluding patients who are on buprenorphine containing products for opioid use disorder, were reviewed. Prescribing practices of each physician were also completed. Prescribing practices were compared to physicians in other Prisma Health Family Medicine Group – Midlands physicians as well.
RESULTS: In Progress.
CONCLUSIONS: In Progress.

9:30am – 9:50am B **Evaluation of Population Health Pharmacist Recommendations in Patients with Type 2 Diabetes Enrolled in an Employer-Sponsored Health Plan** Room J

Presenters: Micaela Hayes

TITLE: Evaluation of Population Health Pharmacist Recommendations in Patients with Type 2 Diabetes Enrolled in an Employer-Sponsored Health Plan

AUTHORS: Micaela Hayes, Angie Lynch, Andrew Hwang, Virginia Yoder

OBJECTIVE: Describe the impact of pharmacist recommendations in a new, population health program.

SELF ASSESSMENT QUESTION: What is the implementation rate of recommendations provided by population health pharmacists to help manage patients with uncontrolled, type 2 diabetes (T2DM) enrolled in an employer-sponsored health plan (EHP)?

BACKGROUND: The new, EHP-focused, population health initiative was established at Wake Forest Baptist Health in October 2020. The initiative's goals are to reduce health care costs and optimize patient care by providing patient-specific recommendations to help manage chronic disease states in the ambulatory care setting. This project's purpose is to quantify and categorize pharmacist recommendations implemented and not implemented.

METHODOLOGY: Eligible patients: >18 years and older, diagnosed with T2DM, baseline HbA1c >8%, and enrolled in the EHP. Patients were identified retrospectively through an EHR report. The primary endpoint assessed the proportion of pharmacist recommendations implemented. Interventions implemented and not implemented were categorized and reviewed for timely optimization of patient care and quality improvement.

RESULTS: Overall, 56% of pharmacist recommendations were implemented. The most common reason for recommendation decline was that the recommendation was not addressed by the provider. The most common pharmacist recommendation was a drug therapy addition. Recommendations were implemented within a median time of 44 days.

CONCLUSION: Over half of pharmacist recommendations were implemented, however, this rate was limited by the lack of provider consideration. Increasing provider education and advertisement of pharmacist services will hopefully increase future implementation rates. The project identified a need for optimization of timely patient care by prioritizing patient charts prior to their next applicable provider visit.

9:30am – 9:50am R **Impact of Hypoalbuminemia on Patient Response to Loop Diuretics with Adjunctive Albumin for Treatment in Acute Respiratory Distress Syndrome** Room D

Presenters: Natalie Sibold

TITLE: Impact of Hypoalbuminemia on Patient Response to Loop Diuretics with Adjunctive Albumin for Treatment in Acute Respiratory Distress Syndrome

AUTHORS: Sibold N, Baker A, Hodges M, Jensen M, Smith S, Hawkins WA

OBJECTIVE: The aim of this study is to assess the association of hypoalbumenia with diuretic response to this combination therapy.

SELF ASSESSMENT QUESTION: [True/False] When administering albumin and a loop diuretic in ARDS patients, presence of hypoalbumenia correlates to an increased incidence of urine output ≥600mL within 6 hours of administration.

BACKGROUND: Conservative fluid management is a core principle to management of acute respiratory distress syndrome (ARDS) and using loop diuretics alone can offer challenges to achieving a target diuretic effect. The adjunctive use of albumin in this setting has shown conflicting results.

METHODOLOGY: This was a retrospective study conducted at a 450-bed community hospital. Patients had to be >17 years of age, diagnosed with ARDS and received albumin and a loop diuretic within three hours of each other. Exclusion criteria included liver failure, ESRD/renal replacement therapy, COVID positive testing, pregnancy, and trauma. Patients were divided into two groups for comparison based on serum albumin levels, low albumin group (defined as ≤ 3.5 g/dL) and normal albumin group (albumin >3.5 g/dL). The primary outcome was the percent of patients with a positive diuretic response, defined as ≥600mL of urine within 6 hours of drug administration. Secondary outcomes included 24 hour change in total body weight (kg), urine output within 6 hours of therapy, oxygenation at 24 hours, mean arterial pressure at 24 hours of therapy, hypernatremia and hypokalemia within 24 hours.

RESULTS: In progress.

CONCLUSIONS: In progress.

9:30am – 9:50am R **Implementation of AUC-based vancomycin dosing and effects on outcomes in critically ill patients with pneumonia** Room E

Presenters: Courtney Crosby

TITLE: Implementation of AUC-based vancomycin dosing and effects on outcomes in critically ill patients with pneumonia

AUTHORS: Courtney Crosby, John Carr, Dustin Orvin, Joseph Crosby, Ryan Bok

OBJECTIVE: List potential differences in outcomes associated with trough versus AUC-based vancomycin dosing in critically ill pneumonia patients.

SELF ASSESSMENT QUESTION: What is one outcome that might be improved in critically ill pneumonia patients that receive vancomycin dosed by AUC rather than trough?

BACKGROUND: The purpose of this study was to determine the difference in vancomycin-associated nephrotoxicity (VANT) between AUC-based dosing and trough-based dosing of vancomycin in critically ill patients with pneumonia.

METHODOLOGY: Patients were included if they were critically ill pneumonia patients who met criteria for use of the available Bayesian adult vancomycin model, DoseMeRx. Patients were excluded if they were admitted for any laboratory confirmed viral pneumonia, receiving renal replacement therapy prior to vancomycin initiation, discharged within 24 hours, expired within 48 hours of admission, or had documented vancomycin hypersensitivity.

RESULTS: There was no significant difference in VANT between the pre-implementation group (mean = 20.3%) and the post-implementation group (mean = 23.2%, p=0.65). Average APACHE II scores of 18.4 for the pre-implementation group and 20.6 for the post-implementation group were significantly different (p=0.03), which corresponded with significantly different mortality rates of 25.4% and 50.9%, respectively (p=0.0005). No significant differences were found between the two groups for secondary outcomes except average duration of therapy was significantly shorter in the post-implementation group (3.97 days) than the pre-implementation group (4.85 days, p=0.0498).

CONCLUSIONS: Transition to AUC-based dosing was not associated with a significant difference in VANT in critically ill patients with pneumonia. Significantly higher mortality in the AUC-based group is better explained by APACHE II score differences rather than vancomycin dosing methods. Significantly reduced duration of therapy in the AUC-based dosing group may be due to more proactive stewardship activities rather than dosing method, but more research is needed.

9:30am – 9:50am R **Transition from ED paper insulin DKA protocol to Glucommander™ upon hospital admission**
Presenters: Spencer Graczyk Room C

TITLE: Transition from ED paper insulin DKA protocol to Glucommander™ upon hospital admission
AUTHORS: Spencer Graczyk, Lindsey Lindsey, John Patka, Marina Rabinovich
OBJECTIVE: Apply the study results to future patients regarding insulin infusion protocols for the treatment of DKA.
SELF ASSESSMENT QUESTION: Two insulin infusion protocols for the treatment of DKA may result in which negative patient outcomes?
BACKGROUND: Glucommander™ is a computerized glycemic management system that calculates patient-specific insulin infusion rates. Patients in the emergency department (ED) in diabetic ketoacidosis (DKA) are initiated on a paper insulin infusion protocol and are transitioned to Glucommander™ upon admission. The purpose of this study is to address the safety and patient outcomes when transitioning from the ED DKA paper protocol to Glucommander™.
METHODOLOGY: This retrospective evaluation from October 2018 to March 2021 included adults with DKA admitted from the ED to intensive or intermediate care units on a paper insulin infusion protocol and transitioned to Glucommander™. The primary outcome is the percent of consistent transitions defined as a no more than one unit/hour change in insulin rate between protocols. Secondary endpoints include the time to DKA resolution, anion gap increase, and frequency of hyper and hypoglycemia.
RESULTS: A total of 100 patients were included. Of the transitions from paper protocol to Glucommander™, 15% were deemed consistent. When comparing the number of patients with consistent transitions to those who had greater than one unit/hour change, 29% more patients had a higher incidence of hyperglycemic events (73% versus 44%; p=0.033). After the transition to Glucommander™ in those patients with consistent transitions, there was a 20% higher incidence of an increased anion gap one hour after transition (27% versus 7%; p=0.02).
CONCLUSIONS: Discrepancies with infusion rates are common with two insulin infusion protocols, as indicated by the high rate of inconsistent transitions and an increased incidence of hyperglycemia. Implementation of Glucommander™ in the ED to manage DKA would prevent discrepancies and provide adequate patient-specific insulin requirements from the start of DKA treatment.

9:30am – 9:50am I **EVALUATING THE SAFETY OF TROUGH VERSUS AREA UNDER THE CURVE (AUC)-BASED DOSING METHOD OF VANCOMYCIN WITH CONCOMITANT PIPERACILLIN-TAZOBACTAM** Room F
Presenters: Cassandra Karas

TITLE: EVALUATING THE SAFETY OF TROUGH VERSUS AREA UNDER THE CURVE (AUC)-BASED DOSING METHOD OF VANCOMYCIN WITH CONCOMITANT PIPERACILLIN-TAZOBACTAM
AUTHORS: Cassandra Karas, Kyle Manning, Darrell Childress, Elizabeth Covington, Melanie Manis
OBJECTIVE: Identify the most common adverse effect of the combination of vancomycin plus piperacillin-tazobactam as well as commonly used dosing methods of vancomycin.
SELF ASSESSMENT QUESTION: Which method of vancomycin dosing is independently associated with less acute kidney injury?
BACKGROUND: The purpose of this study is to retrospectively observe and compare the safety of the AUC-based dosing method and the more traditional trough-based dosing method of vancomycin with concomitant piperacillin-tazobactam (VPT).
METHODOLOGY: This is a multi-center, retrospective, IRB-approved observational study. Patients being included are adults at least 19 years of age and receiving intravenous vancomycin infusion for 48 hours or more in combination with piperacillin-tazobactam. Exclusion criteria include: pregnancy, prisoners, severe renal impairment at time of vancomycin initiation, malignancy, central nervous system infections, and cystic fibrosis. The primary outcome was incidence of AKI as defined by the IDSA criteria as an increase in the serum creatinine (SCr) level of ≥0.5 mg/dL, or a 50% increase from baseline in consecutive daily readings.
RESULTS: A total of 300 patients were included in the study; 150 patients were in the trough group and the AUC group each. A total of 23 patients (15%) in the trough group and 17 patients (11%) in the AUC group met the primary outcome (OR 0.7058, 95% CI: 0.3603-1.3826, P = 0.3098).
CONCLUSIONS: The incidence of AKI was numerically lower than the trough group, however, this was not significant. The results of our study suggest that there is no difference between AKI when using trough- or AUC-based dosing. Because of the small sample size and retrospective nature of the study, more data is needed on the subject.

9:30am – 9:50am | **Evaluation of Efficacy of Remdesivir on the Mortality of Hospitalized Minority Patients with COVID-19** Room G

Presenters: Kunjan Shah

TITLE: Evaluation of Efficacy of Remdesivir on the Mortality of Hospitalized Minority Patients with COVID-19

AUTHORS: Kunjan Shah, Anastasiya Phillips, Pamela Moye-Dickerson

OBJECTIVE: Determine the efficacy of remdesivir on the overall survival in hospitalized patients with COVID-19 who are Black/African American or White/Caucasian.

SELF ASSESSMENT QUESTION: Per the IDSA guidelines, what is the recommended use of remdesivir in treating COVID-19?

BACKGROUND: The Coronavirus Disease 2019 (COVID-19) pandemic has had a detrimental impact worldwide, especially on minorities or patients with multiple comorbidities. The lack of proven treatments has exacerbated the outcomes with this disease. Most data available in the literature regarding COVID-19 surrounds patients of White/Caucasian backgrounds. The patients at Wellstar Atlanta Medical Center are predominantly Black/African American. Our unique population provides the opportunity to determine the efficacy of remdesivir on the overall survival in hospitalized patients with COVID-19 who are Black/African American or White/Caucasian.

METHODOLOGY: This study is an Institutional Review Board approved, dual center, retrospective chart review completed from 11/1/2020 to 09/30/2021. Patients were randomized into two groups based on race. Data was compared to evaluate the efficacy of remdesivir in patients with severe COVID-19. Patients were enrolled in the study if they were ≥ 18 years, had a laboratory confirmed COVID-19 infection, required oxygen supplementation, and received remdesivir within 10 days of symptom onset. The primary outcome was mortality. Secondary outcomes included time to recovery, patients still on supplemental oxygen therapy on the last day of remdesivir therapy, readmission to a hospital within 30 days post-discharge, length of stay in the ICU, and progression to invasive ventilation. Safety outcomes included liver function tests and estimated glomerular filtration rate at baseline and throughout remdesivir therapy.

RESULTS: A total of 215 patient profiles were reviewed and 207 patients were included. The average age was 65.8 and 60.8 years for white and black patient groups, respectively. Patients included had multiple comorbidities, such as obesity, smoking history, diabetes, chronic kidney disease, hypertension, and chronic lung diseases. History of smoking occurred at a greater proportion in white patients, whereas obesity was significantly more prevalent amongst black patients (p-value of 0.013). Prior to initiation of remdesivir, majority of the patients were on non-invasive ventilation. The primary outcome, mortality, occurred in 37% vs. 23% in white and black patient groups, respectively, (p-value of 0.032). No secondary endpoint had a significant difference between either group. Complete safety data was available for 52% of patients with no significant differences between either group at baseline or throughout remdesivir therapy.

CONCLUSIONS: The mortality rate was higher in this trial when compared to other trials, such as the ACTT-1 trial. However, the study population had a higher burden of comorbidities when compared to patients in ACTT-1 trial. This study also highlighted the safe and potentially efficacious use of remdesivir in an underserved and predominantly minority population. Further targeted research is needed to further understand the impact of remdesivir on mortality in minority patients.

The Coronavirus Disease 2019 (COVID-19) pandemic has had a detrimental impact worldwide, especially on minorities or patients with multiple comorbidities. The lack of proven treatments has exacerbated the outcomes with this disease. Most data available in the literature regarding COVID-19 surrounds patients of White/Caucasian backgrounds. The patients at Wellstar Atlanta Medical Center are predominantly Black/African American. Our unique population provides the opportunity to determine the efficacy of remdesivir on the overall survival in hospitalized patients with COVID-19 who are Black/African American or White/Caucasian.

9:30am – 9:50am L **A Retrospective Analysis of Once-daily vs Twice-daily Dosing of Insulin Glargine in Non-critically Ill Patients** Room K

Presenters: Deasiah Hogue

TITLE: A Retrospective Analysis of Once-daily vs Twice-daily Dosing of Insulin Glargine in Non-critically Ill Patients

AUTHORS: Deasiah Hogue, Jennifer Clements, Adrienne Wright, Angie Wilson

OBJECTIVE: The participant should be able to describe the efficacy and safety of once-daily versus twice-daily insulin glargine regimen in non-critically ill patients.

SELF ASSESSMENT QUESTION: Is there a difference in efficacy and safety when insulin glargine is given once-daily versus twice-daily?

BACKGROUND: Insulin is the treatment of choice for diabetes care in the hospital. There is some debate regarding the efficacy and safety of once-daily versus twice-daily insulin glargine in the hospital. The purpose of this pilot study was to compare the efficacy and safety of insulin glargine administered as a once-daily versus twice-daily regimen in non-critically ill people.

METHODOLOGY:This study was a retrospective chart review ranging from June 1, 2020 to May 31, 2021. Inclusion criteria included people who were at least 18 years old and had received either once-daily or twice-daily insulin glargine for at least 72 hours during the specified time frame. Exclusion criteria included people who were COVID-19 positive, pregnant, prisoners, admitted for DKA or HHS, managed on an ICU floor at any time, or received steroids or an insulin drip during their hospital stay. The primary endpoint was a comparison of the number of days that all blood glucose measurements were within the range of 70-180 mg/dL over a 24-hour period (0000-2359). Secondary endpoints included the number of hyperglycemic (>180 mg/dL) and hypoglycemic (<70 mg/dL) events that occurred in each study group.

RESULTS: Group 1 included participants who received insulin glargine as once-daily regimen (n=101), whereas Group 2 were participants who received the basal insulin as twice-daily regimen (n=103). Baseline characteristics were similar in both groups except for higher BMI at admission (p=0.01) and higher pre-admission A1c (p=0.02) in Group 2. No differences were found between the two groups for the primary outcome (p=0.5) or the secondary outcomes of number of hypoglycemic (p=0.6) and hyperglycemic events (p=0.7).

CONCLUSIONS: There was no significant difference in the efficacy or safety of insulin glargine given as a once-daily versus twice-daily regimen in the non-critically ill patient population. This project was a retrospective pilot study with a small sample size so further research may be required to confirm these results.

9:30am – 9:50am P **Rate of 30-Day Hospital Readmissions and ED Visits in Rib Fracture Patients Discharged on Inadequate Morphine Milligram Equivalents (MMEs)** Room B

Presenters: Hannah Denham

TITLE: Rate of 30-Day Hospital Readmissions and ED Visits in Rib Fracture Patients Discharged on Inadequate Morphine Milligram Equivalents (MMEs)

AUTHORS: Hannah Denham, Megan Hintz, Jason Buehler, Sarah Eudaley

OBJECTIVE: Determine the rate of readmission and ED visits in rib fracture patients discharged on inadequate pain control.

SELF ASSESSMENT QUESTION: What are complications associated with rib fracture?

BACKGROUND: Rib fractures are common in trauma and account for 10% of injured patients. They are associated with significant morbidity and mortality, with one of the main problems being hypoventilation from pain. The pain associated with rib movement can lead to retention of pulmonary secretions and pneumonia. Among current literature, opioids remain a vital component in controlling pain. The goal of controlling pain at discharge is imperative. Despite the favorable outcomes associated with appropriately managed pain in rib fracture patients, there is currently no protocolized posthospital analgesia regimen, representing an opportunity to reduce readmissions for this set of patients.

METHODOLOGY: A single center, retrospective, institutional review board-approved cross-sectional study. Patients admitted with a rib fracture were included in the study. Data was collected from electronic health records from January 2018 to December 2019. Included patients were ≥18 years old admitted to UTMCK on the rib fracture pathway and received opioid therapy during their admission. Patients were excluded if they were not prescribed opioids during hospitalization and at discharge, deceased prior to discharge, or left against medical advice. The primary outcome of the study is to determine if the ratio of MME utilization over 72 hours prior to discharge to prescribed MMEs at discharge impacts rate of 30-day hospital readmissions and ED visits. The secondary outcomes are risk factors associated with readmission as well as readmission rates related to pain, opioid related adverse drug events (ORADE), pneumonia, or other.

RESULTS: 748 patients were included in the study. There was no statistically significant difference found between readmission rates based on MMEs used during final 72 hours of admission and discharge prescription. Pain control was one of the most common reasons for readmission, when compared to ORADEs, and pneumonia, however was not found to be statistically significant.

CONCLUSIONS: Based on our findings, there is not a coorelation between readmission rates following rib fracture and discharge MMEs. However, a larger population size is likely needed to determine correlation. CNI score may be predictive of readmission rates, however further analysis is needed to determine the relationship between CNI and MME requirements.

9:30am – 9:50am D **Evaluation of Neonatal Total Parenteral Nutrition Practices in a Community Hospital System** Room H

Presenters: Carlie Comeaux

TITLE: Evaluation of Neonatal Total Parenteral Nutrition Practices in a Community Health System

AUTHORS: Carlie Comeaux, Amanda Williams, Elizabeth Ezell, Charles DuRant

OBJECTIVES: Recognize typical components of neonatal TPN, describe the use of neonatal TPN in the studied health system, and identify areas of quality improvement in order to standardize neonatal TPN initiation and management in the studied health system.

SELF ASSESSMENT QUESTION: Heparin may be added to neonatal TPN for which of the following reasons?

BACKGROUND: The management of total parenteral nutrition (TPN) regimens is a complex aspect of the pharmacist's role in hospital pharmacy practice. Well-established guidelines exist for TPN use in adults, pediatrics, and more critical neonatal populations; however, data and guidance are limited for the neonatal population typically treated within this health system. Though parenteral nutrition is never considered preferred for a neonate over enteral feeds, TPN may be a patient's best available option. Due to the delicate nature of the body's electrolyte and macronutrient status, even minute imbalances may cause harm to patients receiving TPN. Accurately maintaining nutrition, fluid, and electrolyte status is necessary to avoid adverse patient outcomes and limit potential direct and indirect institutional costs. Calorie, fluid, and micronutrient requirements often differ between disease states and with variation in age, including differences in gestational age. In many patients in this population, what is referred to as "starter TPN" is used, which usually contains a relatively consistent concentration of dextrose and amino acids. Other additives are used less often in products known as "custom TPN."

METHODOLOGY: This is a multi-center retrospective chart review that will include 75 hospitalized neonatal patients receiving TPN during admission 12/2018-7/2020. Sites included 2 community hospitals, each with level 2 special care nursery (MIMC: 45 nursery beds; TH: 25 nursery beds). Data collected regarding patient demographics, TPN initial composition, duration of TPN, and modifications to TPN will be analyzed and used to enhance policies and electronic medical record order sets for system-wide use.

RESULTS: In Progress

CONCLUSIONS: In Progress

9:30am – 9:50am T **Evaluating the Need for Inpatient Pharmacy Technician Transitions of Care Services by Demonstrating the Impact of Medication History Specialist on Medication Errors** Room A

Presenters: Jarvett Cox

TITLE: Evaluating the Need for Inpatient Pharmacy Technician Transitions of Care Services by Demonstrating the Impact of Medication History Specialist on Medication Errors

AUTHORS: Jarvett Cox, Quwanna Clemons, Lakisha Hamilton

OBJECTIVE: Describe the value of pharmacy technicians in the medication reconciliation (MR) process.

SELF ASSESSMENT QUESTION: Can pharmacy technicians impact transitions of care?

BACKGROUND: Patient safety data involving inpatient pharmacy technicians in the MR process, is limited. The purpose of this study is to evaluate the number of medication discrepancies identified by pharmacy technicians and transition of care (TOC) pharmacists during the MR process to demonstrate the need for inpatient pharmacy technicians in transitions of care.

METHODOLOGY: A retrospective chart review was conducted on 300 patients admitted to Wellstar Cobb Hospital for exacerbations of heart failure, chronic obstructive pulmonary disease, or diabetic-related admissions from January 1, 2019 to December 31, 2019. Patients were categorized based upon whether a best possible medication history (BPMH) was conducted. A quantitative analysis was utilized to determine the number of discrepancies in patients with a BPMH, the number and type of medication discrepancies identified, and the number of discrepancies resulting in unintended inpatient medication orders.

RESULTS: After conduction of a BPMH, 627 discrepancies were identified. Of those, pharmacy technicians identified 50.4% in the emergency department and TOC pharmacists identified 46.9% after admission. While 82% of all medication histories were performed post admission, approximately one error per patient was identified during the BPMH. Of the 300 study patients, 29% did not receive a BPMH by a pharmacy technician or TOC pharmacists and 19% received a BPMH from a TOC pharmacist only. On average, TOC pharmacists took 37 hours to conduct a BPMH, with each encounter taking approximately 47 minutes. The most common discrepancies were no longer taking medication (45.4%) and medication omission (18.5%). Roughly 9% of the discrepancies identified resulted in an unintended admission order and 11% of the discrepancies identified were not addressed by provider.

CONCLUSIONS: Pharmacy technicians can play a pivotal role in the reduction of medication errors during transitions of care.

9:50am – 10:10am B **Evaluation of a Clinical Pharmacy Specialist's Role in Monitoring and Management of Levothyroxine Within a Healthcare System** Room I

Presenters: Jaycee Mandernach

TITLE: Evaluation of a Clinical Pharmacy Specialist's Role in Monitoring and Management of Levothyroxine Within a Veterans Affairs Health Care System

AUTHORS: Jaycee Mandernach, Morgan Fisher, Brianna Rhodes

OBJECTIVE: Describe the role of a clinical pharmacy specialist in the monitoring and management of levothyroxine.

SELF ASSESSMENT QUESTION: Identify interventions that a clinical pharmacy specialist can utilize in the monitoring and management of levothyroxine (select all that apply).
A. Order updated thyroid stimulating hormone labs
B. Always refer the patient to their PCP for levothyroxine management
C. Manage drug interactions with levothyroxine therapy
D. Diagnose patients with primary hypothyroidism as soon as possible to start treatment
E. Initiate levothyroxine dose adjustments

BACKGROUND/PURPOSE: Demonstrate the role of a clinical pharmacy specialist (CPS) in levothyroxine monitoring and management.

METHODOLOGY: This prospective cohort project involved CPS's identifying patients that were likely to benefit from levothyroxine management by utilizing a high-risk drug monitoring dashboard. Patients were included if they had primary hypothyroidism, a prescription for levothyroxine that was active or was expired and had been released within 1.5 times the days' supply that was given. Additionally, patients had a notable lab (TSH value <0.05 uIU/L or >5uIU/L) and were assigned a primary care team at the Central Alabama Veterans Affairs. Patients were excluded if they had thyroid cancer, were pregnant, were treated with other non-levothyroxine medications for their hypothyroidism, had a levothyroxine dose adjustment three or less weeks ago, or the prescription for levothyroxine was from outside of the Central Alabama Veterans Affairs. Patients were called and managed by the CPS which involved an initial visit and any necessary follow up or TSH lab updates. The primary outcome was to identify the percent of patients enrolled who achieved a euthyroid status after CPS intervention within a four-month window. Secondary outcomes included the average number of visits with the CPS, percent of patients taking a medication that interacts with levothyroxine, and the average number of levothyroxine dose adjustments stratified by achievement of euthyroid state within a four-month period.

RESULTS: There were 61 patients screened for eligibility for which only 16 were included in the study. Thirty four patients met at least one exclusion criteria and 11 patients were unable to be reached via phone. Of the patients in the study, 68.75% were male and the average age was 60 years old. Within a four-month period, 10 out of 16 (62.5%) patients achieved a euthyroid state after CPS intervention. The average number of visits with a CPS was 1.9. There was an average of 0.2 levothyroxine dose adjustments made and 70% of the patients who achieved a euthyroid state were taking a medication that interacts with levothyroxine. In the patients who did not achieve a euthyroid state the average number of visits with a CPS was 1.67. There was an average of 0.5 levothyroxine dose adjustments made and 50% of the patients were taking a medication that interacts with levothyroxine.

CONCLUSIONS: CPS intervention can be useful to help patients achieve a euthyroid state within a four-month period.

9:50am – 10:10am B **The Impact of Pharmacist-led Prescriber Intervention on Utilization of SGLT2 Inhibitors in Diabetes with Established ASCVD, CKD, and/or HF** Room J

Presenters: Jennifer Nguyen

TITLE: The Impact of Pharmacist-led Prescriber Intervention on Utilization of SGLT2 Inhibitors in Diabetes with Established ASCVD, CKD, and/or HF

AUTHORS: Jennifer Nguyen, Michelle Aslami, Urvi Choksi, Jasmine Rogers, Kayla Randle

OBJECTIVE: Evaluate the impact of pharmacist-led interventions on sodium-glucose cotransporter-2 inhibitor utilization at an integrated healthcare system.

SELF ASSESSMENT QUESTION: List different strategies to impact prescribing of SGLT2 inhibitors.

BACKGROUND: Current literature supports the cardiorenal benefits of sodium-glucose co-transporter 2 (SGLT2) inhibitors in Type 2 diabetes (T2DM). The clinical pharmacy service spearheaded interventions such as creating educational tools outlining appropriate prescribing and generating reports identifying gaps in prescribing in patients with atherosclerotic cardiovascular disease (ASCVD), chronic kidney disease (CKD), and/or heart failure (HF). The purpose of this study is to assess the change in the monthly prescribing of SGLT2 inhibitors after pharmacist-led interventions.

METHODOLOGY: This is a single-center, multi-site, observational study, which included T2DM patients with ASCVD, CKD, and/or HF from March 1, 2021 to December 31, 2021. Exclusions include ≤18 years old, Type 1 diabetes, active prescription for incretin mimetics, and SGLT2 inhibitor allergy. Descriptive statistics and electronic medical record data were utilized to assess the monthly change in active SGLT2 inhibitor prescriptions for the targeted patient populations, identify the percentage of patients with an active prescription but no fill, and assess trends for departments that commonly prescribe SGLT2 inhibitors.

RESULTS: A total of 280 SGLT2 inhibitors were prescribed in the specified populations during the study period, with an average of 28 prescribed monthly. There were 59 (21%) patients who had an active prescription and no initial fill. The adult primary care department had the highest number of prescriptions (63%), followed by endocrinology (24%), cardiology (9%), and nephrology (4%).

CONCLUSIONS: SGLT2 inhibitor prescribing increased in the target populations after pharmacist-led interventions. Barriers to initial fill were noted to be affordability and primary nonadherence.

9:50am – 10:10am C **Evaluation of Guideline-based Stroke Prophylaxis in Patients with Atrial Fibrillation at a Community, Teaching Hospital** Room H

Presenters: Cailyn Sandoval

TITLE: Evaluation of Guideline-based Stroke Prophylaxis in Patients with Atrial Fibrillation at a Community, Teaching Hospital

AUTHORS: Cailyn Sandoval, Doug Carroll

OBJECTIVE: Apply evidence-based recommendations for stroke prophylaxis at discharge in patients with atrial fibrillation (AF)

SELF ASSESSMENT QUESTION: True/False: Aspirin is appropriate for stroke prophylaxis in patients with AF, and it has less of a bleed risk than an OAC like apixaban

BACKGROUND: Evaluate current practice trends in antithrombotic therapy for stroke prophylaxis in patients with AF upon admission and at discharge

METHODOLOGY: Eligible participants are patients hospitalized between 6/1/2021-7/31/2021 who have nonvalvular AF with a CHADsVASc of ≥1 in men or ≥2 in women. Antithrombotic regimens were collected upon admission and at discharge, and were assessed for appropriateness based on the stroke prophylaxis recommendations in the AHA/ACC/HRS Guidelines for Management of Patients with Atrial Fibrillation. 6 month readmissions were also documented and any related to ischemic stroke or bleeding events were recorded. The primary outcome was the percentage of patients on oral anticoagulant-based regimens upon admission and at discharge.

RESULTS: 75 patients were included in the study. For the primary outcome, 53.7% and 64% of patients were on oral anticoagulant-based regimens upon admission and at discharge respectively. For the secondary outcome of the percentage of appropriately-dosed anticoagulant regimens, 47.8% and 57.3% of patients were on the appropriate oral anticoagulant dose upon admission and at discharge respectively. For the secondary outcome of other therapy, 34.3% and 25.3% of patients were on antiplatelet monotherapy upon admission and at discharge respectively, and 12.7% and 10.7% of patients were on no antithrombotic therapy upon admission and at discharge respectively. For the outcome of 6-momth readmissions related to bleeding or stroke, 1 patient readmitted with an ischemic event and 1 patient readmitted with a bleed event.

CONCLUSIONS: We observed an underutilization of oral anticoagulant use in patients with AF. This presents an opportunity for education to physicians on the importance of evaluating stroke risk in all AF patients and prescribing guideline-based oral anticoagulants for specific patients.

9:50am – 10:10am Y **Impact of a Pharmacist-Led Vaccination Delivery Service on Vaccination Rates in an Elderly, Assisted-Living Population** Room G

Presenters: Caleb Melton

TITLE: Impact of a Pharmacist-Led Vaccination Delivery Service on Vaccination Rates in an Elderly, Assisted-Living Population

AUTHORS: Caleb Melton, Patricia Fabel, Tessa Hastings

OBJECTIVE: The objective of this study was to evaluate the impact of implementing a pharmacist driven vaccine delivery service on the vaccination percentages in an elderly, assisted-living population. This study particularly focused on the vaccination rates of the pneumococcal, herpes zoster (RZV), and tetanus diphtheria and pertussis (Tdap) vaccines.

SELF ASSESSMENT QUESTION: What is one way that we as pharmacists can help to overcome vaccine hesitancy related barrier(s)?

BACKGROUND: Despite vaccines being widely available, administration and vaccination programs are underutilized in the U.S. Elderly patients are at the highest risk for shingles and pneumonia and according to Consumer Affair's, there are over 810,000 people living in assisted living facilities across the United States. Although pharmacists are easily accessible at community pharmacies, access is still a major issue for homebound and elderly patients. Motivational Interviewing may help to identify factors leading to vaccine hesitancy and possibly help overcome these barriers. A trained pharmacist using a respectful and empathic approach may lead to increased interest in receiving necessary vaccines. Pharmacist-led vaccine delivery services could help to meet the needs of this population

METHODOLOGY: This project was conducted by a pharmacy resident located at an independent pharmacy in South Carolina. Active delivery patients of the pharmacy who were 65 years of age and older and reside in an assisted living facility were included. Vaccination clinics were conducted at the assisted living facilities in February 2022. Needed and forecasted vaccines were identified using the South Carolina Statewide Immunization Online Network (SIMON). A pharmacist trained in motivational interviewing contacted each patient to discuss their needed vaccines and interest in attending the upcoming clinic. Motivational interviewing techniques were used to help identify factors contributing to vaccine hesitancy and possibly overcome these barrier(s). Patient date and time preferences were identified in order to set up a potential appointment for the different sites, as well as reasons for refusal. Tentative appointment dates at each location were scheduled. Patients were called a second time in order to remind them of the needed vaccines and the date and time of the vaccination clinic. A third phone call was then used to confirm final co-pays and payments, as well as serve as the last confirmation of the scheduled appointment. Impact on vaccination rates were evaluated by a comparison of the initial vaccination percentage, to the vaccination percentage once the service is completed. A 6-item survey was used to assess patient satisfaction with the vaccination service. Descriptive statistics were used to evaluate the data.

RESULTS: Overall, 27 needed vaccinations were given to 18 patients. Majority of the vaccines delivered (17) were for RZV, with Tdap (7) and pneumococcal (3) still having an impact on vaccination rates. In regards to being fully vaccinated in terms of these three vaccines, before the service 15.8% of patients were immunized against all three. After the service, there was an increase of +9.6% (25.4%) of patients who fell within this category. Individually, each vaccines % difference before and after the service: herpes zoster (+14.9%), pneumococcal (+2.6%) and Tdap (+6.1%).

CONCLUSIONS: This studies results showed that the vaccine delivery service had an impact on vaccination rates in the assisted living population, with the greatest change on the percentage of patients who have received the shingles vaccine. The vaccine delivery service was well received by the patients, and had a ROI of $66.86/hour. This study serves as a potential model for community pharmacists to expand vaccine services as well as improve public health. It also demonstrated the impact of a pharmacist with motivational interviewing experience on vaccine hesitancy and overall vaccination rates within a specific high-risk population.

9:50am – 10:10am R **Evaluation of Pharmacist Impact on Door-to-Needle Time in the Setting of Acute Ischemic Stroke in the Emergency Department of a Rural Community Hospital** Room D

Presenters: Jessica Yarbrough

TITLE: Evaluation of Pharmacist Impact on Door-to-Needle Time in the Setting of Acute Ischemic Stroke in the Emergency Department of a Rural Community Hospital

AUTHORS: Jessica Yarbrough, Stephanie Smith, Ashley Costello, Haley Hubbard

OBJECTIVE: Assess pharmacist participation as a member of the neuro response team and its impact on door-to-needle time (DTN) and patient outcomes.

SELF ASSESSMENT QUESTION: What benefits were seen when a pharmacist was involved in neuro response patient care?

a.Reduced DTN time

b.Reduced odds of patient receiving alteplase within 60 minutes of arrival

c.Increased improvement in NIHSS score

d.Improved patient outcomes

BACKGROUND: Assess pharmacist participation as a member of the neuro response team and its impact on door-to-needle time (DTN) and patient outcomes.

METHODOLOGY: Retrospective, single-center, cohort study of patients receiving alteplase for indication of acute ischemic stroke from September 2019 to January 2022. Eligible participants were those who were 18 years of age or older and received alteplase as treatment for acute ischemic stroke. Primary outcomes were change in DTN time observed when a pharmacist serves as an active member of the stroke team. Secondary outcomes included time from alteplase order to administration, time to systolic blood pressure reduction, development of intracranial hemorrhage, change in the National Institute of Health Stroke Scale (NIHSS) score, length of hospital stay, and in hospital all-cause mortality. All data collected and recorded without patient identifiers and confidentially maintained.

RESULTS: The electronic medical records of 117 patients were reviewed, with 99 patients being included in the final analysis. Baseline characteristics were similar between the control and intervention groups. The average DTN was 58.7 minutes when a pharmacist responded to neuro alerts comparted to 86.5 minutes in the control group (p=0.31). Additionally, 69% of patients in the pharmacist group received alteplase within 60 minutes of arrival, comparted to only 24% of patients in the control group.

CONCLUSIONS: Pharmacist participation as a member of the neuro response team resulted in a reduced average DTN time of alteplase administration as well as increased probability of the patient receiving alteplase within the recommended time frame of 60 minute of arrival.

9:50am – 10:10am R **Evaluation of the Impact of a Medication History Technician** Room E

Presenters: Dillon Hamilton

TITLE: Evaluation of the Impact of a Medication History Technician

AUTHORS: Dillon Hamilton, Matthew McAllister, Corinne Murphy, Meredith Burns

OBJECTIVE: Identify the benefits of having a medication history technician to focus on providing accurate and efficient medication reconciliation to patients when admitted to the hospital.

SELF ASSESSMENT QUESTION: What is one benefit of having a medication history technician obtaining medication histories?

BACKGROUND: Medication reconciliation is defined as the process of comparing a patient's medication orders to all the medications that the patient has been taking to reduce and avoid medication errors including omissions, duplications, dosing errors, or drug interactions. Dependent upon the available resources, there is a multitude of ways to approach implementing a medication reconciliation process within a hospital including standardized forms to be used for each patient, electronic versions of reconciliation tools, collaborative models, or even nurse-led programs. The purpose of this research is to assess the impact a medication history technician has on the accuracy of home medication lists obtained at a community teaching hospital.

METHODOLOGY: An IRB approved, prospective review of 100 patients admitted to the general medical ward was conducted in which home medication lists were updated by either the bedside nurse or the medication history technician. Inclusion criteria consisted of: age greater than 18 years and at least 3 home medications prior to hospital admission. Accuracy of the home medication lists collected was independently verified by the lead investigator and was assessed for errors of omission, commission, incorrect dose, incorrect frequency, and incorrect route. The primary objective was evaluating the percentage of home medication histories obtained with 90% accuracy or better. Secondary objectives included: average number of medication errors per medication list and frequency of medication error by drug class.

RESULTS: A total of 100 patients (50 per group) were included in the study. In the medication history technician group, 86% of the patient's initial medication history taken was within 90% accurate and 32% of the patient's initial medication history was within 90% accurate in the bedside nursing group. Patients in the medication history technician group had a 97% accuracy of initial medication list whereas the patients in the bedside nursing group had a 77% accuracy of initial medication list. The average number of errors that occurred in the medication history technician list was 0.22 per patient compared to 1.48 per patient in the bedside nursing list. The most common type of errors that occurred in both groups were errors of omission and errors of commission.

CONCLUSIONS: When appropriately trained, medication history technicians make a significantly positive impact upon the accuracy of patient medication history lists.

9:50am – 10:10am R **Prophylactic Enoxaparin Dosing in Trauma Patients Based on Anti-Xa Levels** Room C

Presenters: Erin Nifong

TITLE: Prophylactic Enoxaparin Dosing in Trauma Patients Based on Anti-Xa Levels

AUTHORS: Erin Nifong, Emily Whitehead, Kenji Leonard, Seth Quinn, Seth Welborn

OBJECTIVE: Evaluate the safety and efficacy of the current enoxaparin dosing protocol in trauma patients

SELF ASSESSMENT QUESTION: What is the appropriate enoxaparin starting dose for trauma patients to decrease time to goal anti-Xa levels?

BACKGROUND: Trauma patients are at an increased risk for venous thromboembolism (VTE). Data suggests that initial doses of enoxaparin 30 mg or 40 mg twice daily are inadequate to achieve goal peak prophylactic anti-Xa levels and that weight-based dosing may be needed. The purpose of this study is to evaluate the time to goal peak anti-Xa levels in trauma patients based on the current dosing protocol utilized at Vidant Medical Center.

METHODOLOGY: This retrospective analysis included adult trauma patients admitted to the surgical intensive care unit, receiving at least 3 doses of enoxaparin 30 mg or 40 mg twice daily with anti-Xa level monitoring between January 1, 2020 and July 31, 2021. Patients administered enoxaparin for other indications besides prophylaxis were excluded. The primary endpoint is the number of dose adjustments required to achieve goal anti-Xa levels. Secondary endpoints include time to goal anti-Xa level, bleeding and VTE rates, ICU and hospital length of stay, and mortality. Seventy-eight patients were screened, with 54 being included for analysis.

RESULTS: Mean time to goal peak prophylactic anti-Xa level was 5.4 days. Of 54 patients, 85.2% required at least one enoxaparin dose adjustment. Incidence of those receiving an inappropriate initial enoxaparin dose based on BMI was 20.4%. Bleeding occurred in 7 of 54 patients (p= 0.341). No thromboembolic events occurred during hospitalization, although routine screening didn't occur. Average ICU and hospital length of stay were 11 and 20 days, respectively. Two patients (3.7%) died during hospitalization.

CONCLUSIONS: The current enoxaparin dosing protocol for trauma patients is associated with a delay to goal anti-Xa levels, suggesting that higher initial doses of enoxaparin are needed.

9:50am – 10:10am I **Comparison of no cost online calculators versus trapezoidal method for calculation of vancomycin area-under-the-curve (AUC)** Room F

Presenters: Elizabeth Keil

TITLE: Comparison of No-Cost Online Calculators versus Trapezoidal Method for Calculation of Vancomycin Area-Under-the-Curve (AUC)

AUTHORS: Elizabeth Keil, Justin Spivey, Rebekah Wrenn, Connor Deri

OBJECTIVE: Evaluate alternative options for calculating vancomycin AUC

SELF ASSESSMENT QUESTION: Which single-concentration AUC calculator correlates most closely with the guideline-recommended trapezoidal method?

BACKGROUND: Compare the accuracy of vancomycin AUCs calculated by open-access online calculators using only troughs and AUCs calculated by the trapezoidal method (TM) using peak and trough concentrations as recommended by the 2020 vancomycin dosing IDSA guidelines.

METHODOLOGY: This retrospective, multi-center study included adults ≥ 18 years of age admitted to Duke University Hospital or Duke Raleigh Hospital from November 2020 through December 2021 who received vancomycin and had an appropriate steady-state peak and trough vancomycin concentration. Patients with unstable renal function, renal replacement therapy, meningitis, or received extracorporeal membrane oxygenation were excluded. AUC calculated by TM was compared to the AUC calculated by three trough-only online calculators: ClinCalc, VancoVanco, and VancoPK.

RESULTS: Seventy patients were included for analysis. The median BMI and creatinine clearance calculated by the Cockroft-Gault equation was 28.1 kg/m2 and 89 mL/min, respectively. A statistically significant median percent difference between TM and ClinCalc (-9%, $p<0.001$) and VancoVanco (20%, $p<0.001$) was observed. Different dose adjustments were required when comparing ClinCalc and VancoVanco to TM in approximately 30% of patients. The trapezoidal method and VancoPK (-0.1%, $p=0.83$) did not differ statistically. Comparing these two methods, only 8 patients (12%) would have required a different dose adjustment compared to TM and all but one was within +/- 15 mcg/mL of the goal AUC range of 400-600 mcg/mL.

CONCLUSIONS: Compared to the trapezoidal method, the AUC calculator with the highest level of correlation was VancoPK whereas other included AUC calculators were statistically different. Due to cost and complexity of obtaining multiple levels, our findings support using the modified volume of distribution equation used by VancoPK as an alternative to the TM.

9:50am – 10:10am L **Evaluation of the use of as-needed anti-hypertensive medications in general ward patients with acutely elevated blood pressure** Room K

Presenters: Holly Clark

TITLE: Evaluation of the use of as-needed anti-hypertensive medications in general ward patients with acutely elevated blood pressure

AUTHORS: Holly Clark, Jerry Robinson, Muhammad Zafar

OBJECTIVE: To discuss the implementation process of order set changes and compare patient outcomes after updating the order set including as-needed anti-hypertensive agents.

SELF ASSESSMENT QUESTION: What steps can a pharmacist take in ensuring appropriate treatment goals and drug administration of as-needed antihypertensive medications in patients with acutely elevated blood pressure?

BACKGROUND: The purpose of this study is to evaluate the appropriateness of as-needed anti-hypertensive agents in general ward patients with acutely elevated pressure and implementing blood pressure parameter changes within order sets based on current literature recommendations. These changes will be made with the goals of decreasing the instance of adverse drug events, reducing duplicate as-needed orders, and improving patient safety.

METHODOLOGY: A retrospective chart review was completed including general ward adult patients who received an as-needed (PRN) order of oral clonidine, intravenous (IV) hydralazine, or IV labetalol for the treatment of acute hypertension. Data was collected from electronic medical records and analyzed using descriptive statistics. The following data was collected: patient demographics, blood pressure and heart rate readings before and after the first dose of an IV anti-hypertensive, drug administered, number of doses administered, use of pre-built order set, dialysis status, instance of hypotension, and instance of duplicate PRN orders. Hospital-specific data and current literature were reviewed to identify areas of improvement. The order set utilizing these PRN anti-hypertensives will be updated based on these findings.

RESULTS: In progress

CONCLUSIONS: In progress

9:50am – 10:10am M **Evaluation of Medication Errors in Outpatient Veterans Receiving Medications and/or Nutrition Through the Enteral Route -A Quality Improvement Project** Room L

Presenters: Dayamie Othello, PharmD

TITLE: Evaluation of Medication Errors in Outpatient Veterans Receiving Medications and/or Nutrition Through the Enteral Route -A Quality Improvement Project

AUTHORS: Dayamie Othello, Cheryl Hankins

OBJECTIVE: Evaluate the appropriateness of medication administration through the enteral route in outpatient Veterans.

SELF ASSESSMENT QUESTION: In what capacity can pharmacists contribute to reducing errors in outpatient Veterans receiving medications through the enteral route?

BACKGROUND: Enteral nutrition aides in providing essential nutrients to the body in individuals with impaired oral intake. Oral medications can be given through the enteral route; however, many medications errors can arise due to incompatible route of administration, improper administration techniques, and improper preparation of medications. Errors made in administration can lead to occluded feeding tubes, reduced or enhanced drug effects, and drug toxicities. This project aims to ensure medications are properly administered through the enteral route in outpatient Veterans.

METHODOLOGY: Pharmacy resident along with clinical pharmacy practitioner (CPP) performed a baseline chart review of each Veteran receiving enteral nutrition and assessed for appropriateness of medication formulation, route of administration, absorption of drug in reference to placement of feeding tube (i.e., gastrostomy or jejunostomy) and if medications can be crushed or open and given through the enteral route. A request to providers with appropriate adjustments was initiated for medications not compatible with enteral route of administration. Future improvements to include alerts for optional clinical consultation by a pharmacist for full medication review in Veterans newly initiated on enteral nutrition.

RESULTS: A total of 56 patients were identified as receiving nutrition through the enteral route, of which 22 patients were identified as receiving at least 1 medication potentially unsuitable for administration through the enteral route. 44 recommendations were made to providers and only 4 (10%) out of the 44 recommendations were initiated by providers.

CONCLUSIONS: A underwhelming response rate to adjustments recommended by pharmacist where likely due to the already overwhelming prescriber workload. This quality improvement project helped to identify the increased need of pharmacy involvement in assessing the appropriateness of medication administration through the enteral route, ultimately meeting the needs of our Veterans. Pharmacist can play an essential role in medication assessment to ensure the safety of medication administration in outpatient Veteran receiving enteral nutrition.

9:50am – 10:10am O **Impact of an Antithrombin III Replacement Protocol on Incidence of VTE in ALL Patients Receiving Pegaspargase** Room B

Presenters: Haleh Bakhtiari

TITLE: Impact of an Antithrombin III Replacement Protocol on Incidence of VTE in ALL Patients Receiving Pegaspargase

AUTHORS: Haleh Bakhtiari, Belinda Li, Danielle Schlafer, William Blum, Jeffrey Switchenko

OBJECTIVE: Describe the impact of an antithrombin III (AT3) replacement protocol on the incidence of venous thromboembolism (VTE) in acute lymphocytic leukemia (ALL) patients treated with pegaspargase based regimens.

SELF ASSESSMENT QUESTION: By what mechanism does pegaspargase increase the risk of VTE?

BACKGROUND: In 2019, following increased use of asparaginase-containing ALL regimens at an academic medical center, a protocol for management and prevention of asparaginase-associated toxicities was created. The purpose of this retrospective review is to compare the incidence of venous thromboembolism in ALL patients treated with pegaspargase before and after implementation of an AT3 monitoring and replacement protocol. Results from this study may contribute to existing literature with the goal to reduce the risk of thrombosis for ALL patients initiated on pegaspargase therapy.

METHODOLOGY: This was a single center, retrospective, comparative review of ALL patients treated with pegaspargase between January 1, 2016, and July 19, 2021. This two-cohort study included an intervention group with implementation of AT3 replacement protocol and a control group maintained on pegaspargase without initiation of AT3 replacement. The primary objective was to examine the overall incidence of VTE during ALL induction chemotherapy with pegaspargase before and after the implementation of AT3 replacement and monitoring. The secondary objectives included incidence of major bleeding, incidence of VTE and CNS thrombosis after induction, dose/amount of AT3 administered, number of AT3 doses administered, and incidence of cryoprecipitate replacement.

RESULTS: In-progress

CONCLUSIONS: In-progress

9:50am – 10:10am T **Evaluation of discharge antibiotic prescribing to improve antimicrobial stewardship upon hospital discharge** Room A

Presenters: Amber Johnson

TITLE: Evaluation of discharge antibiotic prescribing to improve antimicrobial stewardship upon hospital discharge

AUTHORS: Amber Johnson, Taylor Wells, Tiffany Kahl, Serina Tart

OBJECTIVE: To identify opportunities for antimicrobial stewardship on discharge prescriptions since many existing programs are focused on antibiotic prescribing for patients within the hospital

SELF ASSESSMENT QUESTION: Which of the following are reasons to focus on antimicrobial stewardship at hospital discharge? Select all that apply.

BACKGROUND: Antibiotics prescribed at hospital discharge may be inappropriately prescribed. Focusing on antimicrobial stewardship at hospital discharge can reduce adverse events, C. difficile infections, and antibiotic resistance by decreasing the number of inappropriate antibiotics prescribed.

METHODOLOGY: This quality improvement project is a retrospective, descriptive chart review conducted at a community hospital in Fayetteville, NC. The primary objective is to determine how often discharge antibiotics are prescribed for an appropriate duration based on guideline recommendations when combining inpatient antibiotics administered and outpatient antibiotics prescribed. The secondary objectives include evaluating appropriateness of discharge antibiotics prescribed, identifying opportunities for antimicrobial stewardship at hospital discharge, and assessing hospital readmission rates related to an infectious disease. Adult patients with discharge antibiotics filled at our outpatient pharmacy between July 1, 2021 and December 31, 2021 were identified using an Epic® report. A random sample of 50 patients were selected each month. Chart review was performed to include patients with antibiotic prescriptions to treat urinary tract infection, pneumonia, skin and soft tissue infection, COPD/bronchitis, and complicated intra-abdominal infection.

RESULTS: There were 408 discharge antibiotics for 300 patients. Overall, 84.3% of patients received antibiotics for a duration that exceeded guideline recommendations. Community-acquired pneumonia was the most common infection type (28.7%), and cefdinir was most commonly prescribed (23%). Readmission for an infection within 30 days occurred in 12.7% of patients.

CONCLUSIONS: Significant opportunity exists to improve appropriate antibiotic prescribing at discharge. Future studies could assess the benefit of provider education or pharmacists review of antibiotics prescribed prior to discharge.

10:10am – 10:30am B **Evaluation of Osteoporosis Screening, Prevention, and Treatment in Patients Receiving Chronic Oral Corticosteroid Treatment** Room J

Presenters: Bailey Hammond

TITLE: Evaluation of Osteoporosis Screening, Prevention, and Treatment in Patients Receiving Chronic Oral Corticosteroid Treatment

AUTHORS: Bailey Hammond, PharmD; Lori Bennett, PharmD, BCPS

OBJECTIVE: The purpose of this project is to assess prescriber compliance to GIOP guidelines in patients receiving chronic oral corticosteroid therapy and increase compliance through pharmacist intervention.

SELF ASSESSMENT QUESTION: What should all patients prescribed prednisone 5 mg/day for 6 months receive?

BACKGROUND: Glucocorticoids are used to manage many inflammatory conditions, but complications including osteoporosis contribute to significant morbidity and mortality. The National Osteoporosis Foundation (NOF) and American College of Rheumatology (ACR) established guidelines for screening, prevention, and treatment of patients at risk of developing Glucocorticoid-induced Osteoporosis (GIOP). These methods of health maintenance are essential to avoid development and worsening of osteoporosis, but compliance is low.

METHODOLOGY:This study was a retrospective chart review including outpatients 40-70 years old with an active oral corticosteroid prescription for ≥5 mg/day prednisone equivalents filled for ≥6 months between September 1, 2020 and September 1, 2021. A pharmacy intervention note was generated in patients' medical record if indicated for ≥1 guideline-directed measure to notify the corticosteroid prescribing provider. Intervention impact was tracked through retrospective review of new orders for dual-energy x-ray absorptiometry (DXA) scans, calcium, vitamin D, and osteoporosis treatments.

RESULTS: Of 53 patients prescribed chronic corticosteroids, 20.8% had a DXA scan ordered, 24.5% had calcium prescribed, 39.6% had vitamin D prescribed, and 13.2% had an antiresorptive or anabolic agent prescribed within 12 months of corticosteroid initiation. Thirty-nine of the 53 (73.6%) patients were identified as not receiving at least one of the guideline-directed therapies indicated. Following pharmacist intervention, 11 (28.2%) of the 39 patients were considered guideline compliant.

CONCLUSIONS: Less than 40% of patients prescribed chronic corticosteroids received guideline directed screening, prevention, or treatment for GIOP within 12 months of initiation. Pharmacists can assist in recommending indicated therapies to improve clinical outcomes.

10:10am – 10:30am B **Evaluation of the Effectiveness of Continuous Glucose Monitors (CGM) in Lowering Hemoglobin A1C and Reducing Hyper/Hypoglycemic Events in a Veteran Population** Room I

Presenters: Sara Burks

TITLE: Evaluation of the Effectiveness of Continuous Glucose Monitors (CGM) in Lowering Hemoglobin A1C and Reducing Hyper/Hypoglycemic Events in a Veteran Population

AUTHORS: Sara Burks, Courtney Crawford

OBJECTIVE: At the conclusion of my presentation, the participant will be able to assess the association of CGMs with reduction in A1C and hypo/hyperglycemic events in a veteran population.

SELF ASSESSMENT QUESTION: In what way does the initiation of CGM affect A1C in a veteran population?

BACKGROUND: To evaluate the effectiveness of CGMs in lowering A1C and reducing hyper/hypoglycemic events in the veteran population at a Veterans Affairs Health Care System.

METHODOLOGY: Patient charts were reviewed who were prescribed a CGM from January 2018 to December 2020. Patients were included in study if they had been using CGM for at least 6 months. The patient chart was reviewed for demographic information, baseline A1C at time of CGM initiation, A1C after 6 months of use, change in total daily dose (TDD) of insulin from initiation of CGM to 6 months of use, and hypo/hyperglycemic events resulting in acute care visits.

RESULTS: A total of 70 charts were reviewed upon completion of the project – 50 patients were included in the study while 20 were excluded. The average change in A1C over 6 months of use of the CGM among type 1 diabetics was -0.54% and -0.35% among type 2 diabetics - both having a mean decrease in A1C over the 6 months. The average change in TDD of insulin among type 1 diabetics was +0.88 units while type 2 diabetics experienced a decrease of 2.5 units per day. Hypo/hyperglycemic events greatly decreased with the addition of the CGM – with patients experiencing 8 total events prior to adding the CGM and 2 total events after CGM (total reduction of 6 events).

CONCLUSIONS: Veterans who were initiated on CGM on average experienced an overall reduction in A1C and a decrease in hypo/hyperglycemic events.

10:10am – 10:30am C **The Association of Renal Dysfunction and Adverse Outcomes in Patients Receiving Milrinone Post Cardiac Surgery** Room H

Presenters: Amy Valkovec

TITLE: The Association of Renal Dysfunction and Arrhythmias in Patients Receiving Milrinone Post Cardiac Surgery

AUTHORS: Amy Valkovec, Shawn Kram, James Henderson, Jerrold Levy

OBJECTIVE: Present research findings of clinical outcomes which may be impacted by the altered pharmacokinetics of milrinone in patients with renal impairment.

SELF ASSESSMENT QUESTION: How does renal impairment affect the pharmacokinetics of milrinone?

BACKGROUND: To determine the association of renal dysfunction and new cardiac arrhythmias in patients receiving a milrinone infusion following cardiac surgery.

METHODOLOGY: A single-center, retrospective cohort study of patients at least 18 years old who received a milrinone infusion after a coronary artery bypass graft, valvuloplasty, annuloplasty or a combination of these cardiac surgeries from July 1, 2014 to July 1, 2021 was performed. Patients who received a weight-based continuous intravenous milrinone infusion for at least 12 hours during the index encounter were included. Patients with a cardiac arrhythmia, antiarrhythmic or dobutamine administration, or preoperative milrinone infusion were excluded. Renal dysfunction was defined as having a creatinine clearance of < 60 mL/min.

RESULTS: 197 patients met inclusion. There was no difference in the presence of new cardiac arrhythmias between patients with renal impairment and those without renal impairment (42.9% vs 40.3%, p=0.758). The time to new cardiac arrhythmia from milrinone initiation was not different in patients with renal impairment compared to those without (29.1 vs 33.3 hours, p=0.538). Atrial fibrillation was the most common type of arrhythmia that occurred (81.5% of patients with renal impairment and 72.2% of patients without renal impairment; p=0.414). Patients with renal impairment had a longer hospital stay compared to those without (17.5 days vs 13.9 days, p=0.0162). Cardiac arrhythmia type, length of ICU stay, and both ICU and hospital mortality were not different between the cohorts.

CONCLUSIONS: In a population of adults who received a continuous IV infusion of milrinone post cardiac surgery there was no association between renal impairment and new cardiac arrhythmias.

10:10am – 10:30am Y **Impact of a Pharmacist-Driven Appeals Process in an Inflammatory Bowel Disease Clinic** Room G

Presenters: Sydney Wooten

TITLE: Impact of a Pharmacist-Driven Appeals Process in an Inflammatory Bowel Disease Clinic

AUTHORS: Sydney Wooten, B. Kyle Hansen, Alyssa Stewart, Jennifer Young, Kathy Bricker

OBJECTIVE: Describe the impact of a pharmacist-driven appeals process in an inflammatory bowel disease (IBD) clinic.

SELF ASSESSMENT QUESTION: What was the most common reason for PA denials for IBD therapies?

BACKGROUND: The purpose of this study is to evaluate the impact of a pharmacist in handling the appeals process in an IBD clinic for biologics and small molecule therapies. Off-label dose optimizations usually require a prior authorization (PA), which may lead to PA denials and the appeals process. Prolonged appeals processes can lead to delays in therapy. Clinical pharmacists embedded within specialty clinics serve an important role in managing appeals.

METHODOLOGY: This study is a retrospective, single center review in an IBD clinic, which includes appeals for IBD biologic and small molecule therapies in adult patients between April 2018 through September 2019 and January 2020 through June 2021. The primary outcome was the time from PA denial to appeal submission. Secondary outcomes were the rate of submitted appeals, healthcare utilizations or steroid initiation 3 months after PA denial, rate of approved appeals, appeal approval rate based on denial reason, and time from PA denial to appeal determination.

RESULTS: A total of 68 PA denials were included in this study. The time to appeal submission decreased post-intervention (12.8 days vs 3.1 days; p-value <0.05). The rate of appeal approval increased with pharmacist ownership of the appeals process (52.9% vs. 86%, p-value <0.05). No statistical significance was observed in healthcare utilization outcomes (17.6% vs. 16.3%; p-value > 0.05).

CONCLUSION: A positive impact was shown for time to appeal submission and rate of approved appeals when a pharmacist took ownership of the appeals process. Pharmacists can use their clinical and medication access knowledge to improve turnaround time for appeals.

10:10am – 10:30am R **Comparison of andexanet alfa versus 4-factor prothrombin complex concentrate for the reversal of factor Xa inhibitor associated intracranial hemorrhage** Room E

Presenters: Diana Jassmann

TITLE: Comparison of andexanet alfa versus 4-factor prothrombin complex concentrate for the reversal of factor Xa inhibitor associated intracranial hemorrhage

AUTHORS: Diana Jassmann, John Norris, Matthew Bamber

OBJECTIVE: To evaluate the cost effectiveness of andexanet alfa versus 4F-PCC for the reversal of factor Xa inhibitor associated intracranial hemorrhage

SELF ASSESSMENT QUESTION: Andexanet alfa is FDA approved for the reversal of life-threatening bleeds associated with which factor Xa inhibitors?

BACKGROUND: Intracranial hemorrhage is a life-threatening emergency that requires immediate treatment. Current guidelines recommend the use of andexanet alfa first line for the reversal of apixaban or rivaroxaban associated bleeds. 4-factor prothrombin complex concentrate (4F-PCC) is recommended second line if andexanet alfa is not available or contraindicated. However, the cost of andexanet alfa is significantly higher than 4F-PCC and there are limited data showing benefit of one over the other.

METHODOLOGY: An IRB approved, retrospective chart review was conducted to evaluate the use of 4F-PCC versus andexanet alfa for intracranial hemorrhage associated with apixaban or rivaroxaban therapy between January 1st, 2017 and December 1st, 2021. Patients were included if they were diagnosed with an intracranial hemorrhage, treated with 4F-PCC or andexanet alfa, taking apixaban or rivaroxaban upon hospital presentation, and are ≥ 18 years old. Patient's demographics, primary indication for anticoagulation, medical history, length of hospital stay, disposition, and baseline labs were reviewed. Patients will be excluded if they received andexanet alfa or 4F-PCC for any other indication and if they used any of the following in the last 7 days: warfarin, dabigatran, edoxaban, Factor VIIa, unfractionated heparin, or enoxaparin. Our primary outcome was a Glascow Outcome Scale score of >3 at discharge and our secondary outcomes will be mortality at discharge, mortality at 90 days, and thromboembolic event within 30 days. To ensure appropriate PHI protection and data security, data collected will be de-identified and available only to the investigators.

RESULTS: In progress

CONCLUSIONS: In progress

10:10am – 10:30am R **Evaluation of Alcohol Withdrawal Treatment in the Medical ICU** Room C

Presenters: Lorin Bell

TITLE: Evaluation of Alcohol Withdrawal Treatment in the Medical ICU

AUTHORS: Lorin Bell, Shauna Winters, Mary Walton

OBJECTIVE: Identify the risks of large cumulative doses of benzodiazepines for the treatment of alcohol withdrawal

SELF ASSESSMENT QUESTION: True/False: Larger cumulative doses of benzodiazepines are associated with a longer ICU length of stay

BACKGROUND: Determine if larger doses of benzodiazepines for the treatment of alcohol withdrawal are associated with a longer length of ICU stay

METHODOLOGY: The research is a retrospective, single-group study of patients admitted between January 2017 and January 202018 who met the following criteria: age 18 years or older, admitted with an ICD 10 code for alcohol withdrawal, and admitted to medical critical care (MCC) or cardiovascular ICU (CVICU) with Critical Care Medicine (CCM) as the primary team. Those excluded were patients admitted with a seizure disorder or those with comfort care orders placed. The primary outcome is ICU length of stay. Secondary outcomes are hospital length of stay, incidence of mechanical ventilation, length of ventilator days, amount of benzodiazepine use, and incidence of delirium.

RESULTS: 92 patients were included in the final analysis. A Spearman's rho Correlation determined there to be a moderate positive association between total ICU dose of lorazepam and ICU length of stay ($r=0.495$; $p<0.001$). Patients who were mechanically ventilated received higher median doses of diazepam in the ICU compared to non-mechanically ventilated patients ($p=0.013$). Patients who received dexmedetomidine received higher median doses of lorazepam in the ICU compared to patients who did not receive dexmedetomidine ($p=0.011$). Patients who received haloperidol and quetiapine, respectively, received higher median doses of lorazepam in the ICU compared to patients who did not receive the antipsychotic ($p=0.002$; $p=0.001$).

CONCLUSIONS: The results of this single-group study show a statistically significant positive moderate association between total ICU dose of lorazepam and ICU length of stay. The data is being separated into cohorts based on high and low cummulative dose designations and will be analyzed to determine clinical significance. Results of this cohort study are in progress.

10:10am – 10:30am R **Impact of De-resuscitation in Critically Ill Trauma Patients on ICU Length of Stay** Room D

Presenters: Alyse Rehberger

TITLE: Impact of De-resuscitation in Critically Ill Trauma Patients on ICU Length of Stay

AUTHORS: Alyse Rehberger, Julie Bednarski, Michael Schurr, Lorinda Baker

OBJECTIVE: Describe the potential effect that achieving negative fluid balance via loop diuretics has on ICU length of stay.

SELF ASSESSMENT QUESTION: What are potential negative effects of over-resuscitation in trauma patients?

BACKGROUND: De-resuscitation is defined as aggressive and active fluid removal by means of diuretics and renal replacement therapy with net ultrafiltration. A previous study showed that fluid balance on day 3 was an independent risk factor for 30-day mortality, whereas negative fluid balance achieved in the context of de-resuscitative measures was associated with lower mortality. The purpose of this study is to determine if patients who received at least one dose of any loop diuretic for de-resuscitation measures had a shorter ICU length of stay (LOS) compared to those not given loop diuretics.

METHODOLOGY: This is retrospective chart review for patients at Mission Hospital from January 2015 to July 2021. Included patients will be ≥ 18 years of age, received mechanical ventilation in the ICU, directly admitted to an ICU from an emergency department or operating room, had an ICU LOS ≥ 3 days, received at least 50 mL/kg of fluid within first 24 hours, and received at least one dose of a loop diuretic. Patients were excluded if they received loop diuretics prior to admission or received any renal replacement therapy. Subgroups will evaluate ICU LOS, fluid balance on day 3 of ICU stay, fluid balance upon ICU discharge, days of mechanical ventilation, incidence of renal failure, and in-hospital mortality compared between the two groups.

RESULTS: In progress.

CONCLUSIONS: In progress.

10:10am – 10:30am I **Impact of Accelerate PhenoTest® BC Kit on optimal antibiotic therapy in patients with Enterococcal and Staphylococcal bacteremia** Room F

Presenters: Elizabeth Oglesby

TITLE: Impact of Accelerate PhenoTest® BC Kit on optimal antibiotic therapy in patients with Enterococcal and Staphylococcal bacteremia

AUTHORS: Elizabeth Oglesby, Daniel Chastain, Geren Thomas

OBJECTIVE: Identify the effect of the Accelerate PhenoTest® BC Kit on time to optimal antibiotic therapy in Enterococcal and Staphylococcal bacteremia.

SELF ASSESSMENT QUESTION: What is the impact of the Accelerate PhenoTest® BC Kit on antibiotic prescribing practices?

BACKGROUND: The Accelerate PhenoTest® BC Kit allows for rapid antimicrobial identification and susceptibility. This research sought to analyze antimicrobial therapy before and after implementation of this rapid diagnostic test at a rural hospital in southwest Georgia.

METHODOLOGY: This retrospective study included adult patients with Enterococcal and Staphylococcal bacteremia. Patients were excluded if blood culture results were determined to be polymicrobial or organism identification resulted after patient discharge. This study compared patients with positive blood cultures before and after implementation of the Accelerate PhenoTest® BC Kit for organism identification and susceptibility. The primary endpoint was calculated from the time of blood culture collection to the time of optimal antibiotic administration. Time to optimal antibiotic was determined based on antimicrobial susceptibility testing, patient specific conditions and comorbidities, and institutional policy. Safety analysis included all-cause thirty-day mortality, the incidence of acute kidney injury and toxogenic clostridioides difficile infection.

RESULTS: A total of fifty-six positive blood culture results were included for analysis. Twenty-eight of which were identified by the Accelerate PhenoTest® BC Kit, and twenty-eight were identified by traditional culture methods. Overall 35% of blood cultures were methicillin-sensitive Staphylococcus aureus, 30% were methicillin-resistant Staphylococcus aureus, and 7% were Enterococcus faecalis. The overall time to optimal antibiotic therapy was approximately forty hours after pathogen identification via Accelerate PhenoTest® BC Kit, compared to sixty hours in the traditional culture cohort.

CONCLUSIONS: Time to optimal antibiotic therapy was shorter with the use of the Accelerate PhenoTest® BC Kit to identify Enterococcal and Staphylococcal bacteremia, when compared to traditional culture methods.

10:10am – 10:30am L **Evaluation of Anticoagulation Post-Discharge for Venous Thrombo-Embolism (VTE) Readmission Prevention in Acutely Ill Medical Patients** Room K

Presenters: Patrick Barry

TITLE: Evaluation of Anticoagulation Post-Discharge for Venous Thrombo-Embolism (VTE) Readmission Prevention in Acutely Ill Medical Patients

AUTHORS: Patrick Barry and Allison Presnell

OBJECTIVE: The aim of this study is to determine the appropriate utilization of rivaroxaban in the prevention of VTE upon discharge after an acute medical illness.

SELF ASSESSMENT QUESTION: What drug and dose carries an indication for VTE prophylaxis in acutely ill medical patients?

BACKGROUND: VTE is an emergent health problem. VTE occurrence can be linked to Virchow's triad of endothelial damage, venous stasis, and/or hypercoagulability.

METHODOLOGY: All patients with the admitting diagnosis of VTE [deep vein thrombosis (DVT) or pulmonary embolism (PE)] from January 1st, 2020 to August 26th, 2021 were screened to determine if they had been admitted to St. Josephs/Candler Healthcare System (SJCHS) or another hospital in the area for an acute medical illness within the last 90 days. If they then met prespecified inclusion criteria and exclusion criteria, similar to other well-designed prospective trials like the MARINER, MAGELLEN, and MICHELLE trials, they were included in the study. Since VTE occurred in all of the patients included in the study, the primary outcome would be if the patients received appropriate extended duration VTE prophylaxis at discharge of previous acute medical illness. Secondary outcomes would be if the patients experienced mortality due to any cause after being admitted

RESULTS: Of the 298 patients admitted with VTE 18 of them were eligible to received rivaroxaban 10 mg daily for 35 days prior to experiencing a VTE. Of those 18 patients with VTE 1 patient died after being admitted with a VTE

CONCLUSIONS: Patients being treated for an acute medical illness would benefit from the use of an extended duration VTE prophylaxis upon discharge. Guidance to initiate rivaroxaban 10 mg daily for 35 days upon discharge for patients with an acute medical illness and an inpatient IMPROVE VTE score of 2-3 and elevated D-dimer (>0.04 mcg/mL) or IMPROVE VTE score of 4 or greater should be implemented to reduce readmission for VTE, decrease morbidity and mortality, and improve outcomes in the patients we serve at SJCHS

10:10am – 10:30am N **Predictors of acute kidney injury during early blood pressure management in spontaneous intracranial hemorrhage patients with extremely elevated blood pressure** Room L

Presenters: Chelsea Wamsley

TITLE: Predictors of acute kidney injury during early blood pressure management in spontaneous intracranial hemorrhage patients with extremely elevated blood pressure

AUTHORS: Chelsea Wamsley, Millad Sobhanian, Katleen Chester

OBJECTIVE: Identify potential risk factors for AKI development in sICH patients undergoing rapid blood pressure lowering.

SELF ASSESSMENT QUESTION: What are potential risk factors for the development of AKI during acute SBP lowering?

BACKGROUND: Determine risk factors for acute kidney injury (AKI) in spontaneous intracranial hemorrhage (sICH) patients with systolic blood pressure (SBP) >220 mmHg during acute blood pressure lowering

METHODOLOGY: A single-center, retrospective cohort study was conducted for patients admitted to Grady Health System (GHS) between 2015 and 2021 with sICH. Eligible patients were those who presented directly to GHS with SBP > 220 mmHg and documented nicardipine administration within 4.5 hours of admission. The primary objective was to compare the average percent mean arterial pressure (MAP) reduction within 6 hours of admission in patients who developed AKI versus those that did not. Secondary objectives include percent MAP reduction in 24 hours, time to SBP and MAP nadir, percent of time with MAP

10:10am – 10:30am 1 **Management of Hepatitis B Positive Donors in Liver Transplant** Room A

Presenters: Madeleine Tilley

TITLE: Management of Hepatitis B Positive Donors in Liver Transplant

AUTHORS: Madeleine Tilley, Taylor Sparkman and Kris Gutierrez

OBJECTIVE: Evaluate liver transplant related outcomes in patients who received a hepatitis B positive liver compared to those who did not

SELF ASSESSMENT QUESTION: Which of the following are potential hepatitis B prevention options used as our institution for liver transplant patients?

A. lamivudine
B. entecavir
C. tenofovir
D. all of the above

BACKGROUND: In an effort to expand the pool of solid organ transplant donors, patients with end stage liver disease may receive an organ from a donor with a history of hepatitis B virus (HBV) infection. With hepatitis B immune globulin (HBIG) and antiviral therapy, improved rates of patient and graft survival have been shown. The goal of this analysis is to assess current strategies for preventing breakthrough HBV infections in patients who receive a HBV core antibody positive (HBcAb+) liver and to compare graft and patient outcomes to those who received an HBcAb negative (HBcAb-) liver.

METHODOLOGY: This study was a retrospective chart review of liver transplant recipients from January 1st, 2014 through August 30th, 2020. The primary outcome was breakthrough HBV infection within the first 12 months post-transplant. Secondary outcomes included graft and patient survival for the first 12 months post-transplant. Recipients of an HBcAb+ liver were matched in a 1:2 fashion to a control group of HBcAB- liver transplant recipients. Propensity score matching was based on age, gender, race, body mass index (BMI), history of diabetes, MELD-Na score, serum creatinine, and albumin at the time of transplant.

RESULTS: Thirty three patients met criteria for the experimental group and were matched to 66 control patients. There were no documented cases of breakthrough HBV infections in HBcAb+ patients. Twenty-two HBcAb+ patients received antiviral prevention (lamivudine 30%, entecavir 9%, and tenofovir 27%), four of which also received HBIG. One patient received HBIG alone. There was no difference in patient survival between the experimental and control groups (94% vs. 94%, respectively). Graft survival was comparable (91% and 96%, respectively). Four HBcAb+ patients (12%) had one episode of rejection within the first year; only one control patient had rejection (3%).

CONCLUSIONS: Our insitution’s current approach to HBV post-exposure prophylaxis was effective during this time frame as no HBcAb+ patients had documented breakthrough HBV infections within the first 12 months post-transplant. Similar patient and graft survival rates were seen among the control and experimental groups. Given the variability in prescribing practices of antiviral and HBIG therapy, a more protocolized approach could be beneficial.

10:30am – 10:50am B **ASSESSMENT OF THE IMPLEMENTATION OF A PHARMACIST-LED INTERPROFESSIONAL TRANSITIONS OF CARE SERVICE** Room I

Presenters: Andrea Latson-Chambers

TITLE: Assessment of The Implementation of a Pharmacist-Led Interprofessional Transitions of Care Service

AUTHORS: Andrea Latson-Chambers, Courtney E. Gamston, Salisa Westrick, Emily Blaine, and Kimberly Braxton Lloyd

OBJECTIVE: List implementation science outcomes that can be used to assess adoption, acceptability, and fidelity of a transitions of care service.

SELF ASSESSMENT QUESTION: How can the field of implementation science be utilized to evaluate the success of a service?

BACKGROUND: Despite significant research demonstrating that transitions of care (TOC) services improve patient health outcomes, decrease hospital readmission, and decrease healthcare costs, readmission remains a significant burden on the healthcare system. One gap in the current literature is assessment of outcomes related to successful TOC program implementation. This study will utilize the principles of implementation science to evaluate the success of a pharmacist-led TOC service and identify opportunities for service improvement with the long-term goal of developing a sustainable model of TOC services that can be translated to other institutions.

METHODOLOGY: The effectiveness of service implementation was evaluated by assessing service adoption, acceptability, and fidelity. Retrospective chart reviews, service planning protocols, and a pre-implementation provider survey were reviewed to assess the following outcomes: percentage of patients who agreed to participate in the service, number and origin of patient referrals, baseline provider and administrator perception of the hospital's TOC activities and effectiveness, provider demand for a dedicated TOC service, adherence to the original service protocol, percentage of protocol delivery, and identification of opportunities for service improvement.

RESULTS: 81.25% (26) of patients agreed to participate in the program thus far from January 2022- to April 2022. In assessing provider demand for TOC services, 5 total providers participated in the survey. All providers believed that the facility would benefit from a TOC team (4 strongly agree & 1 agree). The most common errors that providers believed occurred during care transitions were medication-related problems (40%) and communication between department and outpatient (40%).

CONCLUSIONS: Analyses are still ongoing to assess the impact of implementing a TOC service. The pharmacist-led TOC service identified numerous opportunities for improvement and possible correlations. Further data collection is needed.

10:30am – 10:50am B **Formulary Conversion to Fluticasone/Salmeterol at a Veterans Affairs Medical Center** Room J

Presenters: Kaylee Herring

TITLE: Formulary Conversion to Fluticasone/Salmeterol at a Veterans Affairs Medical Center
AUTHORS: Kaylee M. Herring, Erin Amadon, Cassandra Warsaw
OBJECTIVE: Outline a protocol to convert patients to the VANF preferred ICS/LABA inhaler and determine associated cost-savings.
SELF ASSESSMENT QUESTION: What benefits were associated with this VANF conversion?
BACKGROUND: In August 2021, fluticasone/salmeterol (WIXELA INHUB), the first approved generic version of Advair Diskus, became the preferred inhaled corticosteroid/long-acting beta2-agonist (ICS/LABA) on the Veterans Affairs National Formulary (VANF). The purpose of this cost savings initiative was to adapt the national guidance at the local level by outlining a protocol to convert patients to the new VANF preferred ICS/LABA inhaler, and to assess the cost-savings associated with this VANF change.
METHODOLOGY: This project was designed as a multi-center, cost-savings analysis, and was exempt from Institutional Review Board approval. All Veterans with an active order for budesonide/formoterol within the past 12 months were evaluated for transition to fluticasone/salmeterol. The primary objective was to calculate the potential cost-savings associated with conversion from budesonide/formoterol to fluticasone/salmeterol. The secondary objective was to identify the total number of patients converted from budesonide/formoterol, stratified by diagnosis and dosage.
RESULTS: There were 2,571 active orders for budesonide/formoterol identified. Of those, 1,782 were converted to fluticasone/salmeterol and 342 were not. For the primary endpoint, the predicted annual cost was approximately $6.4 million and the predicted annual cost after conversion was approximately $1.3 million, resulting in an annual cost savings of approximately $5.2 million. For the secondary endpoint of budesonide/formoterol active orders stratified by diagnosis and dose, majority of the active orders were for the diagnoses of Chronic Obstructive Pulmonary Disease and asthma.
CONCLUSIONS: This project concluded that the Fayetteville NC VA Coastal Health Care System successfully implemented a protocol for conversion of budesonide/formoterol to fluticasone/salmeterol in accordance with the VANF change. The VANF conversion resulted in significant cost savings for the enterprise.

10:30am – 10:50am C **Enoxaparin Protocol Update: Anti-Xa Dosing Nomogram and Obesity Considerations** Room H

Presenters: Jackson Spradlin

TITLE: Enoxaparin Protocol Update: Anti-Xa Dosing Nomogram and Obesity Considerations
AUTHORS: Jackson Spradlin, R. Monroe Crawley
OBJECTIVE: To discuss the update of an enoxaparin protocol and to compare patient outcomes following implementation of anti-Xa level nomograms and obesity guidance.
SELF ASSESSMENT QUESTION: What steps can a pharmacist take to ensure appropriate use and monitoring of enoxaparin in hospitalized patients?
BACKGROUND: The purpose of this study is to assess the current practices surrounding enoxaparin use and to develop updated policy guidance regarding dose adjustments based on obesity and anti-Xa level monitoring.
METHODOLOGY: A retrospective chart review was conducted to identify opportunities for optimization of existing hospital policies surrounding pharmacotherapy with enoxaparin. A primary literature review was performed to identify optimal dosing strategies for enoxaparin in morbidly obese patients and dose adjustments based on anti-Xa level monitoring. Following institutional approval, pharmacist-driven dosing strategies for morbidly obese patients and anti-Xa level nomograms were developed and implemented. After implementation, patients receiving enoxaparin therapy warranting anti-Xa level monitoring were prospectively reviewed. Outcomes assessed include enoxaparin dosing, laboratory data, and major safety outcomes such as thrombosis and hemorrhagic events.
RESULTS: In Progress
CONCLUSIONS: In Progress

10:30am – 10:50am R **Early Initiation of Methocarbamol and Gabapentin for Multimodal Pain Control in Rib Fractures**

Presenters: Madison Kazerooni Room C

TITLE: Early Initiation of Methocarbamol and Gabapentin for Multimodal Pain Control in Rib Fractures

AUTHORS: Madison Kazerooni, Arjun Bakshi, Eric Shaw, James Dunne, Audrey Johnson

OBJECTIVE: At the conclusion of my presentation, the participant will be able to evaluate the benefit of early initiation of multimodal pain control with gabapentin and methocarbamol to prevent respiratory complications in patients with rib fractures.

SELF ASSESSMENT QUESTION: Does early administration of gabapentin and methocarbamol for multimodal pain control within 24 hours of injury in trauma patients with rib fractures prevent respiratory complications?

BACKGROUND: Rib fractures caused by blunt thoracic trauma are associated with severe pain and respiratory complications including worsening lung function, intubation, and pneumonia. Multimodal pain management with gabapentin and methocarbamol containing regimens are used in combination with opioids to provide effective pain control in trauma patients. There is limited data assessing timing of initiation of multimodal pain control and associated clinical outcomes in patients with rib fractures.

METHODOLOGY: This single-center, retrospective, observational, institutional review board approved study reviewed patients admitted with rib fractures. Adult patients with one or more rib fractures and received 24 hours of methocarbamol and gabapentin were eligible for inclusion. Patients were excluded if pregnant, incarcerated, intubated prior to arrival, or intubated within six hours of admission. Primary outcome was escalation of oxygen requirements during admission. Secondary outcomes included incidence of pneumonia, incidence of intubation, incidence of significant pain scores, hospital length of stay, and concomitant analgesics used for multimodal pain control.

RESULTS: A total of 310 patients were screened and 130 patients met inclusion criteria. Of this sample, 86 patients were included in the early initiation group and 44 patients were included in the delayed initiation group. A higher number of patients in the delayed initiation group required escalation of oxygen requirements (p=0.001) and subsequent intubation (p=0.029).

CONCLUSIONS: Early initiation of methocarbamol and gabapentin was associated with less escalation of oxygen requirements and decreased incidence of intubation in patients with rib fractures.

10:30am – 10:50am R **Evaluation of stress dose corticosteroid taper versus abrupt cessation on vasopressor dose for the treatment of septic shock** Room D

Presenters: Maddie Cooper

TITLE: Evaluation of stress dose corticosteroid taper versus abrupt cessation on vasopressor dose for the treatment of septic shock

AUTHORS: Maddie Sheffield Cooper, Jolie Gallagher, Peter Moran

OBJECTIVE: Identify various discontinuation strategies for stress dose corticosteroid regimens.

SELF ASSESSMENT QUESTION: What are the various discontinuation strategies for stress dose corticosteroid regimens?

BACKGROUND: Sepsis is a life-threatening condition caused by the body’s dysregulated response to infection. Septic shock is a subset defined by persistent hypotension requiring vasopressor use. In patients that do not respond to adequate fluid resuscitation and vasopressors, stress dose corticosteroids can be utilized to shorten time to septic shock resolution and weaning of vasopressors. The optimal discontinuation strategy of stress dose corticosteroids to prevent rebound inflammation and shock is unknown. The purpose of this study is to evaluate the effect of a taper strategy versus abrupt cessation of stress dose corticosteroids on vasopressor dose in patients with septic shock.

METHODOLOGY: This is a single center, retrospective, cohort study of critically ill adult patients receiving vasopressors and stress dose hydrocortisone admitted to medical or surgical intensive care units. The primary outcome is rebound shock within 24 hours of hydrocortisone cessation, defined as the addition of vasopressor or increase in dose by 0.05 mcg/kg/min norepinephrine equivalents or greater. Secondary outcomes are in-hospital mortality, intensive care unit length of stay, magnitude of vasopressor dose increase, duration of mechanical ventilation, hydrocortisone use, and septic shock, and a subgroup analysis on continuous renal replacement therapy patients. In addition to descriptive statistics, Chi square tests or Fisher’s exact test and Wilcoxon rank tests will be employed for categorical and continuous variables respectively.

RESULTS: The patient population was mostly male (61%) with a median age of 64 and a median SOFA score of 9. Rebound shock was experienced by 7 patients (9.7%) in the taper group and 8 patients (12.3%) in the abrupt cessation group (p-value: 0.628).

CONCLUSIONS: The discontinuation strategy of stress dose corticosteroids did not affect the incidence of rebound shock.

10:30am – 10:50am G **Patient Priorities Care within a Home-Based Primary Care Population** Room L

Presenters: Opeyemi Ogedengbe

TITLE: Patient Priorities Care within a Home-Based Primary Care Population

AUTHORS: Opeyemi Ogedengbe, Kelly Jamieson, Sedona Koenders, Aanand Naik, Tasha Woodall

OBJECTIVE: To determine the extent to which Patient Priorities Care within a Home-Based Primary Care population supports patient's goals, values, and preferences

SELF ASSESSMENT QUESTION: 1. As part of Patient Priorities Care (PPC), patients undergo a priorities identification conversation during which their goals, values, and preferences are identified. What are the 4 categories of values that are used to classify patients' goals?

A) Family, Managing Health, Happiness, Freedom
B) Community, Happiness, Independence, Quality of Life
C) Connecting, Managing Health, Enjoying Life, Functioning
D) Religion, Managing Health, Personal Growth, Independence

BACKGROUND: Home-Based Primary Care (HBPC) is an innovative healthcare delivery model that expands care to populations with limited access, including older adults. An HBPC program established in 2020 within a large family medicine practice employs Patient Priorities Care (PPC), an interdisciplinary, team-based approach to identify patients' health priorities and align care with what matters most to them. The purpose of this study is to describe the successful implementation of PPC within an HBPC population

METHODOLOGY: Using the process depicted in the image below, PPC was implemented within a homebound, rural and suburban population consisting of 100 Medicare and dual-eligible patients. Participants included men and women ranging in age from 42-98 years (average age 76), 77% of which were white, 12% of which were black, and 11% of which ethnicity was unknown. Data regarding gender identity and sexual orientation were not collected.

RESULTS: In progress

CONCLUSIONS: Patient priority conversations were successfully implemented within an HBPC population as illustrated by the care process shown in the results. Examining care alignment through the evaluation of current therapies and services may allow interdisciplinary teams to ensure they are providing appropriate care based on the patient's goals.

10:30am – 10:50am I **Efficacy of Universal Nasal Decontamination with Povidone-iodine Compared to Targeted Mupirocin in the Prevention of Cardiac Surgery Surgical Site Infections** Room F

Presenters: Kristin C. Davis

TITLE: Efficacy of Universal Nasal Decontamination with Povidone-iodine Compared to Targeted Mupirocin in the Prevention of Cardiac Surgery Surgical Site Infections

AUTHORS: Kristin Davis, Carmen Faulkner-Fennell, Beth Smith, Bill Kelly, Alex Ewing, Lyndsay Gormley

OBJECTIVE: Determine if preoperative nasal decontamination with povidone-iodine is as effective as mupirocin at preventing surgical site infections in cardiac surgery patients

SELF ASSESSMENT QUESTION: TRUE or FALSE: Based on this study, povidone-iodine is as effective as mupirocin at preventing surgical site infections in cardiac surgery patients.

BACKGROUND: Surgical site infections are considered the most common and costly healthcare-associated infection. Coronary artery bypass graft surgeries have the second highest cumulative incidence of surgical site infections after colon surgery. Nasal decontamination allows prevention of transfer of organisms, such as Staphylococcus aureus, from the nasal cavity to the skin site intended for surgical incision. Mupirocin has traditionally been considered the gold standard intranasal treatment; however, povidone-iodine has emerged as a potential alternative. Currently, literature conducting head-to-head comparisons of mupirocin and povidone-iodine are limited to the spine and arthroplasty surgery populations. The objective of this study is to determine if universal nasal decontamination with povidone-iodine is as effective as targeted mupirocin in the prevention of surgical site infections in patients undergoing cardiac surgery.

METHODOLOGY: A single-center, retrospective, pre/post intervention analysis was conducted on adult patients admitted to Prisma Health–Upstate between January 2017 and December 2021. Patients were required to receive cardiac surgery for coronary artery bypass graft procedure and preoperative nasal decontamination with mupirocin (pre-group) or povidone-iodine (post-group). The primary outcome was incidence of surgical site infection. Secondary outcomes included S. aureus surgical site infection, non-surgical site S. aureus infection, in-hospital and 30-day mortality, hospital and intensive care unit length of stay, adverse reactions, and cost.

RESULTS: In progress

CONCLUSIONS: In progress

10:30am – 10:50am O **Assessing various maintenance regimens of hypomethylating agents with or without venetoclax following hematopoietic stem cell transplant** Room B

Presenters: Mya Baker

TITLE: Assessing various maintenance regimens of hypomethylating agents with or without venetoclax following hematopoietic stem cell transplant

AUTHORS: Mya Baker, Rachel Matthews, Darby Siler, Laura Beth Parsons, Minoo Battiwalla

OBJECTIVE: Identify current place in therapy of using HMA + venetoclax for maintenance post hematopoietic stem cell transplant (HSCT) as recommended by NCCN guidelines.

SELF ASSESSMENT QUESTION: Per NCCN recommendations, is an HMA + venetoclax recommended as a maintenance regimen post HSCT?

BACKGROUND: Disease relapse accounts for approximately 40% of treatment failures in patients who have received an allogeneic hematopoietic stem cell transplant (HSCT) for myeloid malignancies [1]. Salvage regimens in patients who have relapsed after transplant only produce remission in approximately 20% of patients, prompting research into maintenance therapy [2]. Monotherapy with hypomethylating agents (HMAs) or venetoclax has shown improvement in relapse free survival [3,4,5]. Combination HMA and venetoclax has demonstrated superior complete and incomplete response rates compared with HMA alone in the induction setting [6]. However, the role of combination maintenance therapy post HSCT has yet to be fully established. This single institution study compares single agent HMA with combination maintenance post HSCT in patients with myeloid malignancies.

METHODOLOGY: This is a retrospective chart review of patients with myeloid malignancies who received HMA or combination maintenance therapy post-HSCT from January 2019 to December 2020. Patients will be selected using a convenience sample. Data will be analyzed using descriptive statistics.

RESULTS: In progress

CONCLUSIONS: In progress

10:30am – 10:50am S **Review of Buprenorphine Extended-Release Injection Use in a Veteran Population** Room E

Presenters: Kyrsten Chaplin

TITLE: Review of Buprenorphine Extended-Release Injection Use in a Veteran Population: Secondary Outcomes

AUTHORS: Kyrsten M. Chaplin, Megan B. Jackson, Dwight D. Eplin, Timothy J. Atkinson

OBJECTIVE: Compare opioid abstinence while using buprenorphine extended-release injection to sublingual buprenorphine in patients with opioid dependence

SELF ASSESSMENT QUESTION: Which of the following factors would be most likely to negatively effect opioid abstinence with the use of buprenorphine extended-release injection in a patient with opioid dependence?

BACKGROUND: No previous head-to-head studies have been conducted comparing extended-release injectable buprenorphine to other MAT drugs for OUD. Although multiple previous randomized controlled trials have demonstrated injectable buprenorphine's safety and superiority to placebo, this study intended to justify its place in therapy over less costly and invasive options such as oral buprenorphine, methadone, and naltrexone. Additionally, we looked to identify barriers to success for patients prescribed extended-release injectable buprenorphine for OUD and investigate trends in relapse for those patients.

METHODOLOGY: Patients with a diagnosis of opioid dependence will be identified for inclusion if they received at least one dose of buprenorphine extended-release injection from 11/30/2017 through 7/31/2021 at Tennessee Valley Healthcare System (THVS) and previously received sublingual buprenorphine maintenance therapy, defined as at least 28 days of therapy. Chart review for illicit substance use will be completed for the time frame over which each patient was receiving any form of MAT. Illicit substance use will be measured by inappropriate drug screens, self-reported use, and the filling of non-VA controlled substance prescriptions. Data will be identified using manual chart review, the Controlled Substance Monitoring Database program (CSMD), and data extraction from the Veterans Integrated Service Network 9 (VISN 9). Data collected will include patient demographics and past medication history. A manual chart review will be conducted to assess self-reported illicit substance use, drug screen results, reasons for discontinuation, reason for initiation, reported cravings, opioid use related hospitalization history, monthly therapy/group attendance, and prescribing clinic.

RESULTS: Previous sublingual therapy failure was not a significant predictor of injection success (p=0.2777). Previous total daily sublingual maintenance dose was not a significant predictor of injection success (p=1.000). Total number of consecutive injections received was not a significant predictor of injection success (p=0.2401). Number of months with reported opioid cravings was not a significant predictor of injection success (p=0.2643). Number of months with non-opioid illicit drug use was a significant predictor of injection success(p=0.0027).

CONCLUSIONS: One meaningful conclusion we were able to draw from our investigation was that non opioid illicit substance use during the time of buprenorphine injection therapy, was predictive of unsuccessful opioid abstinence. The non opioids we looked into included cocaine, barbiturates, benzodiazepines, amphetamines, and cannabinoids. Further research into the correlation between specific illicit substances and buprenorphine injection success may provide future guidance. This is something we believe would be useful for providers to consider when recommending injection therapy.

10:30am – 10:50am 1 **Impact of Diabetes Status on Kidney Transplant Outcomes** Room A

Presenters: Abigayle Stevens

TITLE: Impact of Diabetes Status on Kidney Transplant Outcomes

AUTHORS: Abigayle Stevens, Kwame Asare, Tonya Derrick

OBJECTIVE: Identify the effect donor and recipient diabetes status has on kidney transplant outcomes.

SELF ASSESSMENT QUESTION: Does the donor or recipient diabetes status affect short or long-term kidney transplant outcomes?

BACKGROUND: Historically, people with diabetes were considered ineligible to donate organs. This practice has changed over the past two decades; however, a clear consensus on allograft outcomes is lacking. Studies have shown transplantation of kidneys from diabetic donors into diabetic recipients is associated with less favorable outcomes and suggests the diabetes status of a recipient has the greatest impact on mortality and graft survival. The purpose of this study was to determine the effect donor and recipient diabetes status has on kidney transplant outcomes.

METHODOLOGY: Retrospective chart review of patients who received a kidney transplant at Ascension Saint Thomas Hospital West between January 2015 and December 2018. This is a single center study, and includes up to 200 patients total. Donors and kidney transplant recipients at least 18 years of age were included. Patients were excluded if they received a dual organ transplantation or if they received a prior solid organ transplantation other than a kidney transplant. Primary outcomes include graft failure and delayed graft function. Secondary outcomes include emergency department visits, all-cause hospitalizations, infections, and all-cause mortality.

RESULTS: One hundred and seventy-one patients were included in the study. There were 8 patients in the diabetic donor/diabetic recipient group, 6 patients in diabetic donor/non-diabetic recipient group, 57 patients in the non-diabetic donor/diabetic recipient group, and 100 patients in the non-diabetic donor/non-diabetic recipient group. The recipient's diabetes status did not significantly impact the rate of mortality, graft failure, or delayed graft function. The rates of emergency department visits, hospitalizations, and infections were similar regardless of the donor and recipient diabetes status.

CONCLUSIONS: In this study, we observed that donor and recipient diabetes status does not negatively affect kidney transplant outcomes at Ascension Saint Thomas Hospital West.

11:00am – 11:20am A **Integration of pharmacy interns in the ambulatory care setting of a large health-system** Room L

Presenters: Abigail Bouknight

TITLE: Integration of pharmacy interns in the ambulatory care setting of a large health-system

AUTHORS: Abigail Bouknight, Nicole Bookstaver

OBJECTIVE: Assess the integration of pharmacy interns in the ambulatory care setting

SELF ASSESSMENT QUESTION: What are the benefits of integrating pharmacy interns in the ambulatory care setting?

BACKGROUND: In addition to didactic and experiential hours, professional pharmacy school programs require PharmD candidates to complete a designated amount of internship hours prior to successfully completing their program. Historically, these intern hours are provided through positions in community pharmacies and acute care hospitals. To date, there are no robust ambulatory care internship programs that satisfy these requirements in a local institution. Pharmacy student involvement within the ambulatory care setting is not a new concept. Free-clinics and health education campaigns are among the many initiatives pharmacy students across the United States champion. The purpose of this study is to integrate pharmacy students into the ambulatory setting for their own professional development, as well as act as an extender to the ambulatory clinical pharmacy staff, which may ultimately improve productivity.

METHODOLOGY: Both pre-pharmacy and professional pharmacy students from local college of pharmacies were notified of this unique, unpaid internship opportunity in the ambulatory care setting. Interns selected were on-boarded through the student affairs office prior to being assigned to a longitudinal project with ambulatory care pharmacists. Longitudinal projects were non-time sensitive and submitted by clinical ambulatory care pharmacists and included medication use evaluations, medication access programs, and medication adherence reports. Interns will work on projects approximately 5-10 hours per week, with bi-weekly check-ins. Given the prospective nature of this study, the anticipated bi-weekly metrics tracked will include confirmation of completed tasks by interns, assessment of presumed productivity increase by ambulatory clinical pharmacists, and discuss professional development of the intern.

RESULTS: In progress

CONCLUSIONS: In progress

11:00am – 11:20am B **Analysis of gaps in care in primary care prescribing of personal continuous glucose monitors in patients with type 2 diabetes** Room J

Presenters: Kelly Brown

TITLE: Analysis of gaps in care in primary care prescribing of personal continuous glucose monitors in patients with type 2 diabetes

AUTHORS: Kelly Brown, Caleb Rich, & Grace Simpson

OBJECTIVE: Identify patients for whom the use of a CGM is recommended by the ADA and AACE guidelines.

SELF ASSESSMENT QUESTION: True or false, ADA and AACE guidelines recommend CGM use for a patient taking 4 insulin injections per day?

BACKGROUND/PURPOSE: To identify care gaps for patients eligible for a personal continuous glucose monitor (CGM), but not prescribed one.

METHODOLOGY: An IRB-waived retrospective chart review was performed evaluating patients seen at one of two primary care offices over one year. Adult patients with type 2 diabetes using multiple daily insulin injections were included. The primary outcome was the proportion of patients prescribed a CGM. Patients were then stratified into two groups, the multidisciplinary group or provider-managed group, based on having an encounter with a pharmacist during the study period. Secondary outcomes included the proportion of patients prescribed a CGM and change in HbA1c.

RESULTS: One hundred patients were included; 33% were using a CGM. Patients were evenly divided into two groups, the multidisciplinary group or provider-managed group. Baseline mean insulin injections per day was 3.23. Patients in the multidisciplinary group had more encounters during the study period (8.84 ± 4.7 vs. 4.30 ± 2.53, $p<0.001$). Thirteen patients (26%) in the multidisciplinary group and 7 patients (14%) in the provider-managed group were prescribed a CGM during the study period ($p=0.134$; OR 2.16; 95% CI 0.78, 5.98). Mean HbA1c change was -0.1% in the multidisciplinary group and +0.1% in the provider-managed group ($p=0.742$).

CONCLUSIONS: The majority of eligible patients were not prescribed a CGM. Patients in the multidisciplinary group had twice as many encounters during the study period and tended to have higher odds of CGM initiation. Results suggest opportunities exist for pharmacists to play a role in increasing access to CGMs. Study limitations include small population size and short study period.

11:00am – 11:20am B **Impact of clinical pharmacist-led patient education on medication adherence and diabetes knowledge within an underserved population.** Room I

Presenters: Disha Patel

TITLE: Impact of clinical pharmacist-led patient education on medication adherence and diabetes knowledge within an underserved population.

AUTHORS: Disha Patel, Salman Hasham, Maria Miller Thurston

OBJECTIVE: To evaluate the impact of a pharmacist-led education on medication adherence and diabetes knowledge among type 2 diabetes mellitus patients.

SELF ASSESSMENT QUESTION: What self-care activities can pharmacists help influence in patient's diabetes management?

BACKGROUND: Diabetes is a complex disease requiring self-management and self-care with a focus on patient education and medication adherence to improve glycemic control. Lack of diabetes knowledge and poor adherence to treatment is common, potentially causing severe health complications and leading to increased morbidity and mortality.

METHODOLOGY: Patients >18 years of age with T2DM and HbA1c > 9% at the WAMC-SC were eligible to be included this 12-week study. Participants completed two 30-to-40-minute pharmacist-led diabetes management education including discussion of the disease, symptoms, clinical goals, and self-care activities at baseline and 6-weeks. Change in medication adherence and diabetes knowledge was assessed at baseline, 6 and 12 weeks using the Adherence to Refills and Medication Scale (ARMS) and Diabetes Knowledge Test (DKT2) questionnaire, respectively. In addition, the proportion of days covered, calculated using participants diabetes regimen refill history, was used as an objective measure of medication adherence. Change in PDC was assessed from baseline to week 12. Secondary endpoints included change in weight, HbA1c, and hospital readmissions in 30 days. Descriptive statistics including mean and standard deviation was used to report the above primary and secondary outcomes. Informed consent was obtained from all participants for this Wellstar IRB-approved study.

RESULTS: 80 patients were screened; 21 patients were excluded from the study and nine patients have been enrolled. Three patients have completed 6-week follow up at this point. Change in ARMS score was recorded as -2 (± 3), showing an increase in medication adherence at 6-week follow up. PDC also increased by 0.23 (± 0.3) at 6-week follow-up. An increase in DKT2 score was seen by 1 (± 3.6). Change in weight and HbA1c was recorded as -4 (± 6) and -4.1 respectively. No 30-day hospital readmissions were seen.

CONCLUSIONS: Pharmacist-led diabetes education can help engage and support patients in improving diabetes knowledge and medication adherence. However, a larger sample size is required to detect any statistical or clinical significance.

11:00am – 11:20am R **Comparison of Recombinant Factor VIIa and Prothrombin Complex Concentrate for Uncontrolled Bleeding related to Cardiac Surgery** Room C

Presenters: Rima Bhakta

TITLE: Comparison of Recombinant Factor VIIa and Prothrombin Complex Concentrate for Uncontrolled Bleeding related to Cardiac Surgery

AUTHORS: Rima Bhakta, Lauren Caldwell, Megan VanBerkel Patel

OBJECTIVE: Compare efficacy and safety differences between low-dose rFVIIa, high-dose rFVIIa, and PCC in patients with bleeding related to cardiac surgery

SELF ASSESSMENT QUESTION: What is one major safety concern with factor products?

BACKGROUND: Off-label use of factor concentrates such as recombinant factor VIIa (rFVIIa) and prothrombin complex concentrate (PCC) provide alternatives to blood products used for uncontrolled bleeding related to cardiac surgery. These agents have been shown to decrease postoperative bleeding, transfusion of blood products, and need for re-operations. However, both rFVIIa and PCC have been associated with thromboembolic events. Lower doses of rFVIIa may have similar efficacy with reduced thromboembolic risk compared to higher doses of rFVIIa. There are limited comparisons between rFVIIa and PCC in controlling bleeding after cardiac surgery to evaluate the optimal dose of rFVIIa and the comparative efficacy and safety between rFVIIa and PCC.

METHODOLOGY: This IRB-approved, retrospective review at an academic medical center included adult patients who received either rFVIIa or PCC and underwent cardiac surgery between September 2017 to July 2021. Key exclusion criteria were extracorporeal membrane oxygenation and congenital bleeding disorders. The primary outcome is to compare transfusion requirements of packed red blood cells (pRBC) within 6 hours of receiving either low dose rFVIIa (less than 30 mcg/kg), high dose rFVIIa (30 mcg/kg or greater), or PCC. Secondary outcomes included transfusion requirements (pRBCs, platelets, and fresh frozen plasma) within 18 hours, need for additional factor products, hourly chest tube output for the first 6 hours, hospital and ICU lengths of stay, thrombotic events during hospitalization, acute kidney injury within 3 days of surgery, and need for re-operation due to bleeding. Nominal data will be analyzed using a Chi-square or Fisher’s exact test. Continuous data will be analyzed via Student’s t-test or Mann-Whitney U test.

RESULTS: In Progress

CONCLUSIONS: In Progress

11:00am – 11:20am R **Continuation of Amiodarone in Critically Ill Patients with Atrial Fibrillation** Room E

Presenters: Sam Pournezhad

TITLE: Continuation of Amiodarone in Critically Ill Patients with Atrial Fibrillation

AUTHORS: Sam Pournezhad, Elaina Etter, Sarah F Boyko, Marina Rabinovich

OBJECTIVE: Evaluate the frequency of inappropriate amiodarone continuation after ICU transfer and on discharge

SELF ASSESSMENT QUESTION: What is one area in which clinical pharmacists can have impact on patient care?

BACKGROUND: Atrial fibrillation (AF) is the most common arrhythmia in critically ill patients in the intensive care (ICU), and leads to longer lengths of stay and an increased mortality. Beta-blockers (BB) are the first-line but are avoided in ICU due to negative inotropic effect in hemodynamically unstable patients. Amiodarone is commonly used to manage AF in ICU due to rate control properties with minimal decrease in inotropy. Many patients inappropriately continued on amiodarone therapy after transitioning out of ICU, placing patients at increased risk of adverse effects. The purpose of this study was to evaluate the frequency of inappropriate amiodarone continuation after ICU transfer and on discharge.

METHODOLOGY: A retrospective cohort study evaluating patients with AF who were treated with amiodarone infusion between July 1, 2019, and July 1, 2021. Patients were included if they received amiodarone infusion and excluded with history of ventricular arrhythmias, ICD or pacemaker, and pregnant or lactating mothers. The primary outcome was to assess the proportion of patients discharged on amiodarone. Secondary outcomes included percentage of patients converted to oral once hemodynamically stable, median ICU and hospital length of stay, and percentage of patients converted to BB.

RESULTS: A total of 117 patients evaluated including 79 with chronic AF and 38 with new-onset AF. Amiodarone was continued on discharge in 2 (2.5%) patients in chronic AF group and no patients in new-onset AF group. No patients were converted oral amiodarone on ICU discharge. Lastly, 28 (35.4%) patients with chronic AF were converted back to BB therapy prior to hospital discharge, while 6 (15.8%) patients were started on BB in new-onset AF group.

CONCLUSIONS: Although amiodarone appropriately switched from IV to oral and discontinued in the majority of the patient before ICU or hospital discharge, however, BB therapy was not started or resumed prior to discharge in the majority of patients.

11:00am – 11:20am R **Evaluation of Outcomes in Critically-ill Patients with COVID-19 Disease Receiving Short Versus Long Courses of Methylprednisolone** Room D

Presenters: Eden Brewington

TITLE: Evaluation of Outcomes in Critically-ill Patients with COVID-19 Disease Receiving Short Versus Long Courses of Methylprednisolone

AUTHORS: Eden Brewington; Mark Caridi-Scheible; Jolie Gallagher; Peter Moran

OBJECTIVE: Describe the impact of corticosteroids on patients presenting with COVID-19 disease

SELF ASSESSMENT QUESTION: What is a concern with using high dose steroids in critically ill patients?

BACKGROUND: Corticosteroids are one of the only treatment modalities that have shown a decrease in all-cause mortality in patients infected with severe acute respiratory syndrome coronavirus-2 (SARS CoV-2) leading to coronavirus disease of 2019 (COVID-19) disease. Determination of an optimal dosing regimen incorporating an effective agent, dose, and duration is pivotal in order to balance the benefits and risks associated with corticosteroid use. Based on the limited data in this newly observed patient population, this study will evaluate outcomes associated with short versus long course methylprednisolone therapy in patients with confirmed COVID-19 disease.

METHODOLOGY: : Patients will be stratified into two intervention groups comparing short course versus long course methylprednisolone therapy. Inclusion criteria include age ≥18 years old, admission to the intensive care unit, positive COVID-19 PCR test, and utilization of methylprednisolone during admission. The primary outcome this study will evaluate is time to oxygenation improvement defined as a transition from invasive mechanical ventilation to non-invasive mechanical ventilation or non-invasive mechanical ventilation to nasal cannula versus room air. Safety outcomes will include incidence of serious secondary infections, hyperglycemia leading to a new insulin requirement, and new corticosteroid prescription at discharge. A pre-specified subgroup analysis will be completed to evaluate dose discrimination of methylprednisolone for the short course treatment cohort as well as evaluation of patients presenting with immunosuppression at baseline.

RESULTS: In progress

CONCLUSIONS: In progress

11:00am – 11:20am | **Analysis of an Outpatient COVID-19 Monoclonal Antibody Treatment Facility at a Community Teaching Hospital** Room G

Presenters: Sterling Serfoss

TITLE: Analysis of an Outpatient COVID-19 Monoclonal Antibody Treatment Facility at a Community Teaching Hospital

AUTHORS: Sterling Serfoss, Ryan Crossman, Amanda Hamrick

OBJECTIVE: Describe the hospitalization rates of different monoclonal antibody treatments used at a COVID-19 monoclonal antibody treatment facility over an annual period

SELF ASSESSMENT QUESTION: Which monoclonal antibody demonstrated the lowest rate of hospitalization?

BACKGROUND: In November, 2020, the first monoclonal antibody received FDA emergency use authorization for treatment of mild-to-moderate COVID-19. The Association of American Medical Colleges reported underutilization of monoclonal antibody treatment in January of 2021 despite zero cost to institutions and a statistically significant decrease in hospitalization shown in controlled and real-world studies. To fully utilize these products, an outpatient COVID-19 monoclonal antibody treatment facility was created at a community teaching hospital. Due to changing FDA authorization, product availability, and newly approved routes of administration, the treatment facility made several practice changes over the course of its development. The study was designed to evaluate administration and product changes at a single COVID-19 monoclonal antibody treatment facility over the course of a year. The purpose of this study was to compare the hospitalization rates of different monoclonal antibody treatments used at a COVID-19 monoclonal antibody treatment center.

METHODOLOGY: IRB approved retrospective chart review was conducted for patients ≥ 12 years of age receiving monoclonal antibody treatment at a community teaching hospital outpatient treatment facility. Hospitalization rates were compared between patients that received monoclonal antibody treatments used at the COVID-19 monoclonal antibody treatment facility. Descriptive statistics were used to determine whether there is an association between monoclonal antibody therapy received and the rate of hospitalization. The secondary endpoints included length of time from symptom onset until treatment and rate of treatment acceptance among sociocultural groups.

RESULTS: In Progress

CONCLUSIONS: In Progress

11:00am – 11:20am | **Utilization of methicillin-resistant Staphylococcus aureus nasal swab screening for vancomycin de-escalation in the empiric treatment of pneumonia** Room F

Presenters: Mackenna Boone

TITLE: Utilization of methicillin-resistant Staphylococcus aureus nasal swab screening for vancomycin de-escalation in the empiric treatment of pneumonia

AUTHORS: Mackenna Boone, Mark Vestal, Julie Thompson, John Boreyko

OBJECTIVE: Describe the impact of MRSA PCR nasal swab screenings on the percent of patients de-escalated away from vancomycin in the empiric antimicrobial treatment of pneumonia

SELF ASSESSMENT QUESTION: What is the impact of MRSA PCR nasal swab screenings in the antimicrobial treatment of pneumonia?

BACKGROUND: High rates of morbidity and mortality are associated with pneumonia due to MRSA and generally supports the need for the initiation of empirically guided treatment with vancomycin. However, there are many associated risks with vancomycin exposure and requires therapeutic drug monitoring. MRSA has been shown to colonize in the nasal passages, and recent literature suggests that MRSA PCR nasal swabs may be used to safely de-escalate empiric therapy away from vancomycin as an antimicrobial stewardship strategy.

METHODOLOGY: In this retrospective, single-center chart review at a community teaching hospital, eligible patients included those >18 years with a provider documented diagnosis of suspected pneumonia and were initially empirically treated with vancomycin between August 1, 2020 to August 1, 2021. Exclusion criteria included a documented history of MRSA infection 48 hours of treatment with an anti-MRSA agent prior to admission at our facility. The primary outcome was the percentage of patients de-escalated away from empiric vancomycin for pneumonia following the results of MRSA PCR nasal swab versus standard of care without this testing and analyzed using Fisher’s exact test. Secondary endpoints include the duration of vancomycin treatment, duration of hospital stay, incidence of AKI, incidence of anti-MRSA antibiotic re-initiation for pneumonia treatment, and incurred laboratory costs related to serum vancomycin monitoring and MRSA PCR assays.

RESULTS: In progress

CONCLUSIONS: In progress

11:00am – 11:20am L **Evaluating The Use of Anticoagulation Reversal Agents in Adult Patients at Northside Hospital**

Presenters: Andrew McCarter Room K

TITLE: Evaluating The Use of Anticoagulation Reversal Agents in Adult Patients at Northside Hospital

AUTHORS: Andrew McCarter, Omeka Sanders, Megan Freeman

OBJECTIVE: Discuss the inappropriate use of anticoagulation reversal agents in hospitalized adult patients

SELF ASSESSMENT QUESTION: When are anticoagulation reversal agents indicated prior to a surgical procedure?

BACKGROUND: Anticoagulation reversal agents require strict criteria for administration due to the pro-thrombotic potential in patients who are already at a high-clot risk. The current guidelines recommend that anticoagulation reversal agents only be administered for bleeding that occurs at a critical site or determined to be life threatening. The purpose of this study is to evaluate the use of anticoagulation reversal agents at Northside Hospital to determine how it reflects the current best practices.

METHODOLOGY: This study is a retrospective chart review and analysis of adult patients at Northside Hospital who were initiated on an anticoagulation reversal agent between January 1st, 2020, and June 30th, 2021. Patients were included if the hospital anticoagulation reversal protocol was initiated, and an anticoagulant medication was identified on the patient's medication administration record or the medication reconciliation form. The electronic medical record system was utilized to determine the anticoagulant that required reversal, reversal agent administered, and indication for reversal. Each instance of anticoagulation reversal that occurred was compared to current guideline recommendations to determine if the reversal was properly indicated.

RESULTS: 100 patients were included in the retrospective portion of this study. 5 instances of improper administration of anticoagulation reversal agent were identified. Of these 5 instances, 3 occurred prior to a surgical procedure; separately two patients received improper reversal for an elevated international normalized ratio.

CONCLUSIONS: The most common reason for improper administration of an anticoagulation reversal agent at Northside Hospital was to reverse an anticoagulant prior to a surgical procedure. This information will be utilized to educate staff and create a new guideline to assist with reversal of anticoagulants prior to an urgent surgical procedure

11:00am – 11:20am P **Evaluation of Ketamine Infusions for Chronic Pain at Tennessee Valley Healthcare System** Room B

Presenters: Courtney Clarke, PharmD, MBA

TITLE: Evaluation of Ketamine Infusions for Chronic Pain at Tennessee Valley Healthcare System

AUTHORS: Courtney Clarke, Justin Petway, Meredith Crumb, Timothy J. Atkinson

OBJECTIVE: To assess the use and impact of ketamine infusions for patients with chronic pain. Specifically, this presenter will be assessing adverse effects, analyzing discontinuation or drop-out rates and comparing trends in opioid use.

SELF ASSESSMENT QUESTION: What is a limitation/barrier to ketamine infusion for chronic pain and is there a way to mitigate this?

BACKGROUND: Due to the high prevalence of chronic pain conditions in the Veteran population and the recent emphasis on finding alternatives to commonly misused pain medications, the VA is an ideal location to assess the use and impact of ketamine infusions for those suffering with chronic pain conditions. The primary objective of this project was to evaluate the efficacy of ketamine infusions for chronic pain. The secondary objectives of this project were to assess adverse events, discontinuation or drop-out rates and trends in opioid use.

METHODOLOGY: This study was a single center (Tennessee Valley Healthcare System), retrospective, observational cohort study. Data of interest was pulled by identifying any Veterans who received a ketamine infusion through the facility's Ketamine Infusion Pain Clinic from January 1st, 2016 through September 30th, 2020. Data was obtained by utilizing the VISN-9 data warehouse.

RESULTS: 167 Veterans were included in this study. Adverse events occured at a higher rate in those who did not recieve benzodiazapine premedication compared with those who did (50% vs. 33%, p = 0.0348). There was no statistically significant difference in the rate of drop-out between these two groups. In patients prescribed long-term opioids prior to treatment, there was a mean reduction of MEDD (morphine equivalent daily dose) of 50.1%.

CONCLUSIONS: The authors of this study found there to be a benefit of benzodiazepine pre-treatment in order to mitigate adverse events and found ketamine infusion to be a potential strategy to reduce opioid dosage in Veteran's with chronic pain.

11:00am – 11:20am D **Comparison of empiric antimicrobials in pediatric febrile neutropenia patients in the ED – before, during, and after guideline implementation and dedicated pharmacist** Room H

Presenters: E. Yancey Murray

TITLE: Comparison of empiric antimicrobials in pediatric febrile neutropenia patients in the ED – before, during, and after guideline implementation and dedicated pharmacist

AUTHORS: E. Yancey Murray, Alicia C. Sanchez, Christopher T. Campbell, Kelley R. Norris

OBJECTIVE: Determine if the implementation of a dedicated pediatric emergency medicine pharmacist plus institutional guideline followed by a PowerPlan increase the percentage of pediatric febrile neutropenia patient's receiving appropriate empiric antimicrobials?

SELF ASSESSMENT QUESTION: While not statistically significant, what is the most likely clinically significant improvement resulting from a dedicated emergency medicine pharmacist, guideline, and PowerPlan?

BACKGROUND: The purpose is to evaluate the impact a dedicated pediatric emergency medicine (EM) pharmacist plus an institutional guideline followed by a PowerPlan will has on empiric antimicrobial selection in pediatric patients presenting to the emergency department (ED) with concern of febrile neutropenia.

METHODOLOGY: A single center retrospective study was conducted in pediatric patients presenting to the ED with fever and risk of neutropenia. Demographics, initial vital signs, absolute neutrophil count, white blood cell count, and empiric antimicrobials were collected from the medical record. Outcome data includes a before, during, and after comparison which respectively correlates to the control group (February 2018-December 2018), implementation of a dedicated EM pharmacist and institutional guideline (August 2019-March 2021), and then, the addition of a PowerPlan (April 2021-January 2022). The primary outcome is appropriate antimicrobial selection based on institutional guidelines. Secondary outcomes include time to administration of first dose of antimicrobials, days to defervescence, pediatric ICU length of stay (LOS), and hospital LOS.

RESULTS: Among those with an empiric antibiotic (n=38) there was no statistically significant difference in the appropriate use of the antibiotic (p=0.1534), before 71%, during 92%, after 100%. There was a statistically significant difference in days to defervescence and hospital length of stay. There was no statistically significant difference in the time to antibiotic administration or PICU LOS.

CONCLUSIONS: While there was no statistical difference in appropriate antimicrobial selection, there was a clinically significant improvement with 100% compliance after the intervention.

11:00am – 11:20am T **Effect of Pharmacy Counseling on Readmissions in Patients on Anticoagulation** Room A

Presenters: Suzanne Avant

TITLE: Effect of Pharmacy Counseling on Readmissions in Patients on Anticoagulation

AUTHORS: Suzanne Avant, Jessica Fedelini, Robin Lonscak

OBJECTIVE: Determine impact of pharmacist anticoagulation counseling on all-cause hospital readmission rates.

SELF ASSESSMENT QUESTION: Can pharmacist-led anticoagulation counseling decrease hospital readmissions?

BACKGROUND: Patients discharging on anticoagulants may have increased risk for readmission. Improving discharge transition-of-care has been recognized to reduce readmission rates, but not all strategies have shown efficacy. This project determined the impact of pharmacist anticoagulation counseling on readmissions in these patients.

METHODOLOGY: Adult patients who were being discharged on anticoagulation from five non-COVID-19 floors from September 1, 2021 to November 30, 2021 were randomized by age to receive standard discharge counseling from a nurse or anticoagulation counseling from a pharmacist utilizing Institute for Safe Medication Practices handouts. Patients discharging to rehabilitation, skilled nursing facilities, or nursing homes were excluded. The pharmacist followed up with a phone call to counseling group patients within five days of discharge. The primary outcome was 30-day all-cause readmission rate. Secondary outcomes were the percentage of anticoagulants prescribed per FDA approved dosing, the percentage of counseling patients reporting compliance during follow-up, the percentage of readmissions in both groups related to bleeding or clotting, and 90-day all-cause readmission rates.

RESULTS: 207 patients were discharged on anticoagulation from five non-COVID-19 floors during the study period. 58 patients received standard-of-care counseling and 38 received pharmacist anticoagulation counseling. 30-day all-cause readmission rates for the control group and the counseling group were 24.1% and 23.7%, respectively. 88% of anticoagulants were prescribed per FDA approved dosing. 94% of patients who were able to be contacted after discharge reported compliance. The percentage of readmissions related to bleeding or clotting for the control group and counseling group at 30 days were 14.1% and 22.2%, respectively. 90-day readmission rates are in progress.

CONCLUSIONS: Anticoagulation counseling by pharmacists to patients/caregivers did not decrease all-cause hospital readmissions at 30 days.

11:20am – 11:40am A **Implementing an Advanced Preparation Pilot Program for an Ambulatory Oncology Infusion Clinic** Room L

Presenters: Chance Partlow

TITLE: Implementing an Advanced Preparation Pilot Program for an Ambulatory Oncology Infusion Clinic
AUTHORS: Chance Partlow, Cameron Czech, Caio Max Sao Rocha Lima, Michael McCormack, W. Kyle Cornell
OBJECTIVE: Evaluate the impact of an advanced chemotherapy preparation program in an ambulatory infusion clinic.
SELF ASSESSMENT QUESTION: What is one proposed benefit of implementing an advanced chemotherapy preparation program?
BACKGROUND: It is estimated that by 2040, there will be 29.5 million new cases of cancer diagnosed each year (as compared to 18.1 million per year in 2018). To meet the subsequent increase in demand, infusion centers must focus on efficient utilization of institutional resources. However, the extensive safety protocols associated with intravenous (IV) chemotherapy present challenges for pharmacy leaders when aiming to improve pharmacy workflow efficiency.

Optimizing the medication use process (MUP) for IV chemotherapy requires multidisciplinary collaboration to ensure patient safety is not compromised. At Atrium Health Wake Forest Baptist (AHWFB), the greatest opportunity for the pharmacy department to impact the MUP is during the time from receipt of chemotherapy orders until drug delivery. The concept of advanced preparation was developed to eliminate lab and compounding delays by allowing patients to have their labs drawn 24 – 48 hours prior to their infusion appointment.
METHODOLOGY: This study was designed as a single center, quasi-experimental, pre vs. post-implementation pilot study. Patients of participating providers treated with a regimen that includes FOLFOX, FOLFIRI, FOLFIRINOX, or FOLFOXIRI were included. The pre-implementation phase spanned from October 1, 2021 - December 31, 2021, and the post-implementation phase will last from February 1, 2022 - April 30, 2022. January 2022 served as a washout period. The primary outcome is the turnaround time per encounter, defined as the average time from check-in to the start of the initial chemotherapy infusion. Secondary outcomes include chair time, pharmacy turnaround time, medication waste, and nursing satisfaction.
RESULTS: In Progress
CONCLUSIONS: In Progress

11:20am – 11:40am B **Impact of The Value SPRINT Quality Initiative - Pharmacist-led medication management in patients with uncontrolled hypertension within Atrium Health** Room I

Presenters: Anna Brown

TITLE: Impact of The Value SPRINT Quality Initiative - Pharmacist-led medication management in patients with uncontrolled hypertension within Atrium Health

AUTHORS: Anna Brown, Rachel Long, Casey Burleson, Amanda Woods, Paige Carson

OBJECTIVE: At the conclusion of my presentation, the participant will be able to describe interventions to help patients meet hypertension goals and identify the impact of pharmacist-led intervention on system-wide hypertension quality metrics.

BACKGROUND: Uncontrolled hypertension (HTN) contributes to an increased risk of cardiovascular events as well as increased health-related costs. Uncontrolled HTN is a quality metric that Atrium Health is measured on by health insurers. The primary HTN quality metric, percentage of patients with blood pressure (BP) < 140/90 mmHg, is tied to system-wide and provider level reimbursement. The purpose of this project is to identify the impact of pharmacist-led intervention on HTN quality metrics.

METHODOLOGY: This prospective, QI study was implemented at two Atrium Health practices – an urban, internal medicine practice and a rural, family medicine practice. A quality metrics tool was used to identify patients with uncontrolled HTN and screened for eligibility. The primary outcome was the percentage of patients meeting the quality metric, BP <140/90, following pharmacist-led intervention. Additional outcomes included reduction in systolic and diastolic BP, ability to achieve quality metric targets, pharmacist time allotted to quality metric work, and medication related problems (MRPs).

RESULTS: 135 patients were identified for eligibility - 75 patients were excluded and 60 patients were included in the intervention group. 60 random patients were selected for the control group. 90% of the intervention group achieved BP goal <140/90, compared to 58% in the control group. The intervention group had an average SBP reduction of -16% vs. -9% in the control group. An average of 1.5 medication related problems were identified per patient. 25 of 60 patients in the intervention group required medication therapy changes. Following pharmacist intervention, the providers with patients included in the intervention group saw an increase from 71% of patients meeting BP goals to 83% meeting the goal.

CONCLUSION: Pharmacist-led interventions for uncontrolled HTN can have a significant impact on quality metric goals and help to improve patient care.

11:20am – 11:40am B **Implementing a Clinical Pharmacy Specialist Run Dermatology Medication Monitoring Clinic Via a Population Management Tool at a VA Medical Center** Room J

Presenters: Taylor Wood

TITLE: Implementing a Clinical Pharmacy Specialist Run Dermatology Medication Monitoring Clinic via a Population Management Tool at a VA Medical Center

AUTHORS: Taylor Wood and Marisa Strychalski

OBJECTIVE: Describe the implementation and impact of a pharmacist-driven electronic monitoring tool on clinician compliance with the complex monitoring associated with the use of systemic dermatologic agents in the outpatient dermatology clinics.

SELF ASSESSMENT QUESTION: What is one potential benefit of a pharmacist driven high-risk medication monitoring program?

BACKGROUND: In 2013, approximately 85 million Americans were treated by a physician for a skin condition. Many dermatologic disease states require frequent follow-up by dermatology providers and are treated with high-risk medication therapies that require extensive safety and efficacy monitoring. To ensure our Veterans are receiving the highest level of care with evidence-based medication monitoring, a high-risk medication dashboard was created as a tool designed to help pharmacists and dermatologists improve patient compliance with medication monitoring requirements. Thus, the purpose of the project is to improve consistent and appropriate monitoring of systemic high-risk dermatology medication therapies and expand pharmacy services within dermatology through implementation and utilization of a population management tool.

METHODOLOGY: Prospective quality improvement project conducted at VA dermatology clinics utilizing a population level electronic monitoring system (high-risk medication monitoring dashboard). Inclusion criteria were adults 18 years of age or older with a dermatologic condition prescribed one of the following medications: acitretin, adalimumab, apremilast, azathioprine, brodalumab, cyclosporine, dapsone, etanercept, guselkumab, infliximab, isotretinoin, ixekizumab, methotrexate, mycophenolate mofetil, risankizumab, secukinumab, tildrakizumab, tofacitinib, and ustekinumab. Data was analyzed using descriptive statistics. Patients were excluded who were pregnant.

RESULTS: Over a one month period following the dashboard implementation, the clinical pharmacist made 627 interventions including interventions for preventing or managing adverse drug events or allergies, ordering labs, adjusting medication regimens, and ensuring proper follow-up with providers.

CONCLUSIONS: Pharmacists can assist in high-risk medication monitoring within the dermatology clinic to improve clinical outcomes, provide medication counseling, and educate dermatology providers on medication monitoring requirements.

EMAIL: Taylor.Wood1@va.gov

11:20am – 11:40am R **A Review of Outcomes in Patients with End-Stage Renal Disease Prescribed Oral Anticoagulants Presenting to a Community Hospital Emergency Department for Bleeding** Room E

Presenters: Anna-Kathryn Priest

TITLE: A Review of Outcomes in Patients with End-Stage Renal Disease Prescribed Oral Anticoagulants Presenting to a Community Hospital Emergency Department for Bleeding

AUTHORS: Anna-Kathryn Priest, William Johnson, Nancy Bailey

OBJECTIVE: Evaluate the outcomes of chronic anticoagulation use in patients with end-stage renal disease admitted for a gastrointestinal or intracranial hemorrhage

SELF ASSESSMENT QUESTION: True or False. Patients with ESRD are at a lower risk of bleeding compared to patients without kidney impairment.

BACKGROUND: Anticoagulants are commonly prescribed for the treatment of various diseases. Patients with end-stage renal disease (ESRD) are at a higher risk of bleeding as an adverse event due to both reduced clearance and multimodal effects of disease state interaction. Data regarding use in this population has been growing in recent years, however outcomes regarding bleeding events amongst different agents is lacking. The purpose of this study was to evaluate the burden on the hospital of bleeding in ESRD patients receiving oral anticoagulants at home.

METHODOLOGY: Patients being admitted to Jackson hospital from January 2018 to December 2020 were evaluated. Inclusion criteria were ≥ 19 years old with end-stage renal disease requiring dialysis and receiving chronic oral anticoagulation. The primary outcome measure was overall length of stay (LOS). Secondary outcomes included in-hospital mortality, reversal methods, blood transfusion necessity, and dose of antithrombotic medication. Additional analysis was conducted on patients receiving dual-antiplatelet therapy and outcomes were compared to patients on oral anticoagulation.

RESULTS: Of the 235 patient profiles reviewed, 29 patients met inclusion criteria. The average LOS in patients taking oral anticoagulants was 7.3 days compared to 4.1 days in patients on DAPT. The average LOS among this group was 4.1 days (SD 1.8). The mean difference in LOS between the two groups was 3.2 days ($p = 0.22$). Based on labeling for the respective indications, 38% of all patients were incorrectly dosed. Of those patients, 70% received doses lower than FDA-indicated.

CONCLUSIONS: The presentation of patients meeting study parameteres and receiving standard doses of anticoagulation was less frequent than anticipated. Numerically more patients presented with a bleed on reduced doses of anticoagulants. In addition, the difference in length of stay between oral anticoagulants and DAPT trended significant. This study is limited by small sample size, reliance on adequate medical record documentation of home medications, and disparity of ICD-10 codes and diagnoses.

11:20am – 11:40am R **Impact of propranolol therapy timing on outcomes in critically ill patients with traumatic brain injury** Room C

Presenters: Rachel LeClair

TITLE: Impact of propranolol therapy timing on outcomes in critically ill patients with traumatic brain injury

AUTHORS: Rachel LeClair, Lindsey Cooper, Layne Reihart

OBJECTIVE: Describe the rationale for propranolol use in traumatic brain injury

SELF ASSESSMENT QUESTION: What is the rationale for propranolol use in traumatic brain injury?

BACKGROUND: Traumatic brain injury (TBI) is associated with a hyperadrenergic state that can exacerbate pre-existing ischemia and metabolic crisis. Propranolol, a highly lipophilic beta-blocker that readily crosses the blood brain barrier, has been proposed in this population as it may blunt sympathetic activation associated with TBI. Studies have shown a mortality benefit with propranolol, but lack sufficient data on timing of initiation, dosing, or duration. This study aims to determine if there is a difference in outcomes between early versus late initiation of propranolol therapy in TBI patients.

METHODOLOGY: This is a single-center, retrospective, cohort study comparing the effectiveness of early versus late propranolol therapy initiation on outcomes in critically ill patients with TBI. Patients were identified via the trauma registry and subsequent data collection occurred via chart review. Eligible patients were those at least 18 years of age admitted to the surgical/trauma intensive care unit with traumatic brain injury who received at least 48 hours of propranolol. Patients with mild TBI were excluded. The primary endpoint is in-hospital mortality. Secondary endpoints include ICU length of stay, hospital length of stay, and duration of continuous infusion sedation and pain medications.

RESULTS: Two hundred and fourten patients were included, with 95 in the early group and 154 in the late group. There were no significant differences in the baseline demographics between the groups. Regarding other baseline data, the early group had more isolated head injury (39% vs 25%, p= 0.024) and more patients on a beta-blocker at home (7% vs 2%, p= 0.034). Incidence of in-hospital mortality was higher in the early group (17% vs 8%, p=0.028). In the logistic regression model, early initiation and age >55 were found to be predictors of mortality (aOR 2.50; 95% CI 1.06-5.68 and aOR 5.14; 95% CI 2.00-13.22, respectively).

CONCLUSIONS: Early initiation of propranolol was associated with increased mortality in critically ill traumatic brain injury patients admitted to our trauma intensive care unit.

11:20am – 11:40am R **Intravenous metoprolol versus diltiazem for rate control of atrial fibrillation in the emergency department in a predominantly minority population** Room D

Presenters: Savannah E Eichhorn

TITLE: Intravenous metoprolol versus diltiazem for rate control of atrial fibrillation in the emergency department in a predominantly minority population

AUTHORS: Savannah Eichhorn, Nicholas Filk, Jaleesa Myers, T. Vivian Liao

OBJECTIVE: Describe different rate control strategies that may be used for atrial fibrillation in the emergency department.

SELF ASSESSMENT QUESTION: What medications can a pharmacist recommend for rate control of atrial fibrillation in the emergency department?

BACKGROUND: The purpose of this study is to determine the efficacy and safety of intravenous diltiazem versus metoprolol for rate control of atrial fibrillation in the emergency department in a predominantly minority population.

METHODOLOGY: This study was a retrospective chart review of patients from three metropolitan emergency departments within the same hospital system with a greater than fifty percent minority patient population from 01/01/2018 to 08/31/2021. Inclusion criteria were adults (≥ 18 years) with a documented diagnosis of atrial fibrillation who presented with a heart rate (HR) of ≥ 120 bpm and received at least one dose of intravenous diltiazem or metoprolol. Pertinent exclusion criteria included initial systolic blood pressure (SBP) < 90 mmHg, initial HR ≥ 220 bpm, received a non-study rate control agent or attempted cardioversion prior to study drug administration, and insufficient documentation of HR. The primary outcome was rate control (HR < 100 bpm) at one hour following the first administration of the study drug.

RESULTS: At one hour following intravenous administration, there was no statistically significant difference seen in in rate control (HR < 100 bpm) between metoprolol and diltiazem (24.5% vs. 31.7%, p=0.364).

CONCLUSIONS: Results are consistent with previous data that either intravenous metoprolol or diltiazem is appropriate for rate control of atrial fibrillation in the acute care setting.

11:20am – 11:40am | **Comparing Safety Outcomes of Vancomycin Monitoring Strategies: Trough versus Area Under the Curve (AUC) in Obese Patients with Methicillin Resistant Staphylococcus aureus (MRSA) Infections** Room G

Presenters: Megan Kelly

TITLE: Comparing Safety Outcomes of Vancomycin Monitoring Strategies: Trough versus Area Under the Curve (AUC) Monitoring in Obese Patients with Methicillin Resistant Staphylococcus aureus (MRSA) Infections
AUTHORS: Megan Kelly, Brandon Hawkins, Robert Moye, Skyler Brown, & Samantha Yeager
OBJECTIVE: Evaluate vancomycin monitoring strategies in class II and III obese patients
SELF ASSESSMENT QUESTION: Which vancomycin monitoring strategy is most optimal in class II and III obese patients?
BACKGROUND: The 2020 IDSA guidelines recommend using AUC/MIC monitoring as opposed to trough-based monitoring with vancomycin as AUC/MIC has shown improved safety without compromising efficacy. There is a significant gap in the literature in class II and III obese patients regarding optimal vancomycin dosing and monitoring. The primary purpose of this study was to determine safety outcomes for vancomycin monitoring strategies in class II or class III obese patients with documented or suspected MRSA infections.
METHODOLOGY: The institutional review board has approved this single-center, retrospective quasi-experimental study. Adults aged 18 years or older who were treated with vancomycin for documented or suspected MRSA infection with a BMI of >35 were included. Patients who had a CNS infection, cellulitis/wound/abscess, or required vancomycin intermittent dosing were excluded.
RESULTS: A total of 3,279 patients were screened for inclusion; 303 patients were included. Baseline characteristics were similar between both cohorts. A rise in Scr of 0.3mg/dL in 48 hours was seen in 25 (17%) patients in the trough cohort and 32 (21%) patients in the AUC cohort (p=0.344). A multivariable regression analysis was performed and found ICU admission requiring vasopressors, concomitant use of loop diuretics, and a supratherapuetic trough were all independent risk factors for nephrotoxicity.
CONCLUSIONS: Patients treated with vancomycin for MRSA infections monitored using AUC/MIC are more likely to achieve a therapeutic level than patients monitored using a traditional trough-based strategy. Patients using trough-based monitoring are more likely to receive higher cumulative doses of vancomycin at 24, 48, and 72 hours.

11:20am – 11:40am | **Evaluation of antibiotic use for treatment of colitis and diarrhea in hospitalized patients** Room F

Presenters: Haodi Ruan

TITLE: Evaluation of antibiotic use for treatment of colitis and diarrhea in hospitalized patients
AUTHORS: Haodi Ruan, Tiffany Goolsby, Lauren Epstein, Andrew Webster
OBJECTIVE: Describe the treatment of hospitalized patients with non-specific colitis and/or diarrhea at the Atlanta VA Health Care System (AVAHCS)
SELF ASSESSMENT QUESTION: For most patients presenting with infectious diarrhea or colitis, is the use of antibiotics recommended?
BACKGROUND: An observation at the AVAHCS noted that patients presenting with diarrhea or non-specific colitis on admission were often started on empiric antibiotics. The purpose of this exploratory study is to describe the treatment of patients hospitalized with non-specific colitis and/or diarrhea at the AVAHCS.
METHODOLOGY: A retrospective chart review was conducted on patients ages 18-99 with a diagnosis of diarrhea or colitis using selected ICD-10 codes from January 1, 2018-December 31, 2019 at the AVAHCS. Patients were excluded if they were discharged from the ED, developed diarrhea >72h after hospitalization, prescribed antimicrobial therapy for a diagnosis unrelated to colitis and/or diarrhea. Pertinent demographic, clinical, and microbiological data were collected from the patient's medical record. For patients started on antibiotics, information was collected on antibiotic selection and duration as well as the department that initiated the antibiotic.
RESULTS: 100 patients met the inclusion criteria. 45 (45%) were initiated on antibiotics. Of the 45 patients on antibiotics, 22 (49%) had final diagnoses that did not have an indication for antibiotics. The most common antibiotics used were oral vancomycin (27%), ciprofloxacin and metronidazole (27%), and ceftriaxone and metronidazole (11%). The majority of antibiotics were initiated from the Emergency Department.
CONCLUSIONS: Antibiotic use is common for patients at the AVAHCS with an initial diagnosis of non-specific colitis and diarrhea when they present to the ED. Appropriate treatment of non-specific colitis represent a target for antimicrobial stewardship interventions.

11:20am – 11:40am L **Comparing Time to Therapeutic Range of Anti-factor Xa Assay to Activated Partial Thromboplastin Time in Continuous Unfractionated Heparin Monitoring in a Rural Health System** Room K

Presenters: Jamie Kilburn

TITLE: Comparing Time to Therapeutic Range of Anti-factor Xa Assay to Activated Partial Thromboplastin Time in Continuous Unfractionated Heparin Monitoring in a Rural Health System

AUTHORS: Jamie Kilburn, Kristen Keen, C. Neil Wheeless, Ruthanne Baird, Steven Johnson

OBJECTIVE: At the conclusion of my presentation, the participant will be able to identify whether implementation of anti-Xa monitoring decreases time to reach therapeutic anticoagulation compared to aPTT monitoring in hospitalized patients receiving continuous unfractionated heparin (UFH).

SELF ASSESSMENT QUESTION: True or False: Anti-factor Xa monitoring of UFH reduced time to therapeutic anticoagulation and decreased frequency of bleeding events.

BACKGROUND: Unfractionated heparin (UFH) or low-molecular weight heparin (LMWH) are utilized as mainstays of anticoagulation therapy for prevention or treatment of thrombotic events or acute coronary syndromes (ACS). Monitoring of UFH varies among institutions. In previous studies, therapeutic Anti-factor Xa (anti-Xa) levels correlated to supratherapeutic activated partial thromboplastin time (aPTT), leading to an increased bleeding risk. Further, data suggests that anti-Xa monitoring may lead to a shortened time to therapeutic anticoagulation as compared to activated partial thromboplastin time (aPTT) monitoring. In 2021, Harnett Health began the transition from aPTT monitoring to anti-Xa for UFH. Therefore, the purpose of this study is to compare the time to therapeutic anticoagulation with UFH infusions when monitoring either aPTT or anti-Xa.

METHODOLOGY: Adult inpatients at least 18 years of age at either Betsy Johnson Hospital or Central Harnett Hospital were included if they received UFH infusion for at least 24 hours for either a thrombotic event or ACS indication. Included patients were monitored utilizing a nurse driven aPTT protocol during a 4-week period in March of 2021, or monitored utilizing a pharmacist-driven anti-Xa protocol during a 4-week period in March of 2022. Patients were excluded if they had a documented COVID-19 infection, had insufficient records, or were monitored utilizing aPTT levels during the intervention period. The primary endpoint was defined as the time between UFH initiation and the first therapeutic level, 60-90 seconds versus 0.3-0.7 units/mL for aPTT and anti-Xa, respectively. The secondary endpoints included the comparison of percentage levels within range in either group, the number of UFH dose adjustments made once therapeutic anticoagulation levels were met, and to describe the number of major or minor bleeding events.

RESULTS: A total of 18 patients were included in the study, 12 patients in the aPTT group and 6 patients in the anti-Xa group. Included patients had a mean age of 67.8 years, mean body weight of 82.4 kg, and 72.2% had an indication for acute coronary syndrome. The primary endpoint, time to therapeutic anticoagulation, had a mean time of 26.3 hours in the aPTT group compared to 13.9 hours in the anti-Xa group. The median time for the primary endpoint was 23.1 hours (95% CI, 14.1 to 40.5) and 7.9 hours (95% CI, 6.2 to 37.4) in the aPTT and anti-Xa groups, respectively. There were no statistically significant differences found in any of the secondary objectives.

CONCLUSIONS: Patients receiving UFH for thrombosis or ACS indications had a shortened time to therapeutic anticoagulation, although not statistically significant, when monitored utilizing pharmacy driven anti-Xa monitoring compared to nurse driven aPTT monitoring. Despite its small sample size, this study did not contradict previous study data suggesting that anti-Xa monitoring reduced time to anticoagulation.

11:20am – 11:40am P **Effects of Opioid Tapering and Discontinuation on Overdose and Suicide in the Veteran Population** Room B

Presenters: Lauren Bell

TITLE: Effects of Opioid Tapering and Discontinuation on Overdose and Suicide in the Veteran Population
AUTHORS: Lauren Bell, Claire Brandt, and Timothy Atkinson
OBJECTIVE: Describe preliminary findings about the association of overdose or death by suicide and opioid tapering efforts
SELF ASSESSMENT QUESTION: How does opioid tapering affect risk of opioid overdose or death?
BACKGROUND: In fiscal year (FY) 2013, the VA launched the Opioid Safety Initiative (OSI); its effectiveness was assessed by comparing patterns of opioid deprescribing between FY 2013 and 2017. The present study builds on that assessment, with its purpose to identify veterans on chronic opioid therapy that had either a reduction or discontinuation of opioid therapy during FY 2017 through 2020 and to determine if there is an association between overdose or death by suicide and tapering efforts.
METHODOLOGY: A national VA retrospective database extraction was completed by VAMedSAFE and chart review at 18 sites will be conducted. Patients that were on opioid therapy for chronic, noncancer-related pain who were subsequently tapered or discontinued were included for analysis. In addition to the primary objective above, secondary objectives include the identification of risk factors associated with death by suicides or suicide attempts; this includes concurrent mental health comorbidities and logistics of the opioid taper. Opioid taper logistics include reason for taper, patients' response to opioid taper initiation, speed, starting MEDD, percent of MEDD reduction, use of nonopioid medications, use of nonpharmacotherapy for pain, and presence of withdrawal symptoms. Other secondary objectives included identification of patients transitioned to buprenorphine products and whether pharmacists were involved in the taper process.
RESULTS: Pending national review
CONCLUSIONS: Pending national review

11:20am – 11:40am D **Incidence of Necrotizing Enterocolitis (NEC) Prior to and Following Implementation of a Probiotic Protocol in a Level III NICU** Room H

Presenters: Meghan Riney

TITLE: Incidence of Necrotizing Enterocolitis (NEC) Prior to and Following Implementation of a Probiotic Protocol in a Level III NICU
AUTHORS: Meghan Riney, Katie Brown, Megan Phillips, Mary Hannah Walters
OBJECTIVE: Describe risk factors that may influence the incidence of NEC in preterm neonates.
SELF ASSESSMENT QUESTION: Which of the following is not a risk factor for NEC?
BACKGROUND: NEC is a devastating inflammatory disease of the intestines primarily affecting premature infants. Since current treatment options like abdominal decompression, antibiotics, and surgery are often inadequate, the focus has turned to preventative strategies, such as oral probiotics.
METHODOLOGY: Neonates born <32 weeks gestational age or very-low birth weight (<1500 grams) between June 2020 and September 2021 were included in the study population. A chart review was performed on two groups of patients: those who met inclusion criteria prior to implementation of a probiotics protocol and those who received probiotics after the protocol was implemented. Patients were excluded if they did not achieve at least 3 mL per enteral feed during the data collection period, had a congenital gastrointestinal anomaly or any other anomaly incompatible with life, or experienced an intestinal bleed deemed unrelated to NEC. The primary endpoint was incidence of NEC prior to and following implementation of the probiotic protocol. The secondary endpoint included the incidence of late onset sepsis (LOS) prior to and following protocol implementation. Proportions of neonates who developed NEC or LOS in the before and after probiotic groups were compared using descriptive statistics.
RESULTS: A total of 237 patients were included. Nine (7.1%) patients met the primary endpoint in the pre-protocol group while 2 (1.8%) patients met this endpoint in the post-protocol group. Nine (7.1%) and 4 (3.6%) patients met the secondary endpoint in the pre- and post-protocol groups, respectively.
CONCLUSIONS: Rates of NEC and LOS decreased between pre- and post-probiotic protocol implementation groups. However, these findings cannot conclusively determine that probiotics caused the observed reduction in NEC incidence.

11:20am – 11:40am T **Role of Pharmacists in the Weaning and Discontinuation of Agitation and Delirium Medications After ICU Transfer** Room A

Presenters: Kelsey Heintz

TITLE: Role of Pharmacists in the Weaning and Discontinuation of Agitation and Delirium Medications After ICU Transfer

AUTHORS: Kelsey Heintz, Emily Garrett, Breanna Carter

OBJECTIVE: Compare medication interventions made when patients transfer from ICU to a receiving team with or without clinical pharmacists

SELF ASSESSMENT QUESTION: Does having a clinical pharmacist on the receiving team decrease potentially inappropriate medications continued from the ICU?

BACKGROUND: Agitation and delirium are common complications that occur in intensive care unit (ICU) patients. Treatment with medications such as antipsychotics may be necessary; however, there is a lack of data on the recommended duration of treatment. Pharmacist involvement in medication management is important to minimize potentially inappropriate medication use and decrease adverse drug effects. This study seeks to evaluate the impact of a clinical pharmacist on agitation/delirium medication de-escalation in patients after transfer from the ICU.

METHODOLOGY: This is an Investigational Review Board approved, single-center, retrospective study comparing agitation/delirium medication de-escalation between patients transferred from the ICU to a receiving team with and without a rounding pharmacist. Patients were excluded from review if they were < 15 years old, started on their home agitation/delirium medication at their regular dose, received a one-time dose of an agitation/delirium medication, pregnant, or incarcerated. The primary outcome of the study is the number of interventions made by pharmacists on scheduled or as needed agitation/delirium medications post-ICU transfer. Interventions of interest include medication discontinuation and dose decreases. Secondary outcomes include the number of newly initiated antipsychotics and benzodiazepines continued at discharge, the utilization of antipsychotics in elderly patients with dementia, and common adverse drug effects associated with these medications including QTc prolongation and sedation. Nominal data will be analyzed using a Chi-square or Fischer’s exact test. Continuous data will be analyzed via Student’s t-test or Mann-Whitney U. Descriptive statistics will be used for the remainder of data.

RESULTS: In Progress.

CONCLUSIONS: In Progress.

11:40am – 12:00pm B **Evaluating Ambulatory Medication Management for Patients with Emergency Department Visits due to Hypertension or Chronic Obstructive Pulmonary Disease** Room I

Presenters: Tori Taylor

TITLE: Evaluating Ambulatory Medication Management for Patients with Emergency Department Visits due to Hypertension or Chronic Obstructive Pulmonary Disease

AUTHORS: Tori Taylor, Anna Love, Sarah Darby, Breanne Wofford, Julia Fabricio

OBJECTIVE: Describe the frequency of appropriate outpatient medication therapy adjustments prior to emergency department encounters according to current clinical practice guidelines.

SELF ASSESSMENT QUESTION: True/False: The majority of patients in this study did not receive guideline-directed medication changes at the outpatient provider appointment preceding their emergency department visit.

BACKGROUND: Several studies suggest that connecting patients to outpatient healthcare successfully reduces the rate of emergency department (ED) visits. Despite connection to outpatient services, patients still seek emergency care related to hypertension and chronic obstructive pulmonary disease (COPD). Thus, evaluation of factors contributing to continued use of ED services in these populations is needed.

METHODOLOGY: Eligible patients included those ≥18 years of age with a primary ED diagnosis of hypertension or COPD within 30 days following an outpatient provider visit. Provider chart notes were reviewed to determine which medication adjustments occurred at the provider appointment preceding the ED visit. Medication changes were assessed for appropriateness utilizing current clinical practice guidelines. Data analysis was performed using descriptive statistics. The primary outcome was the percentage of guideline-recommended changes in therapy in patients who were symptomatic at the provider visit preceding the ED visit.

RESULTS: Overall, 23 patients with hypertension and 13 patients with COPD were eligible for inclusion. Sixteen patients had elevated blood pressure and four patients presented with symptoms of COPD at the provider appointment. Of the 20 total symptomatic patients, two patients received guideline-directed medication optimization in the outpatient setting—one patient with elevated blood pressure and one patient with symptoms of COPD.

CONCLUSIONS: This study found that a low percentage of patients with symptomatic hypertension and COPD received guideline-directed medication optimization in the outpatient setting. These results suggest an opportunity for pharmacist involvement, either at the level of provider education or through collaborative practice. Further research is needed to evaluate the impact of a clinical pharmacist in these practice settings.

11:40am – 12:00pm B **Implementation and analysis of a professional Continuous Glucose Monitor educational program for medical residents at a Family Medicine Clinic** Room J

Presenters: Lawrence Bean

TITLE: Implementation and analysis of a professional Continuous Glucose Monitor educational program for medical residents at a Family Medicine Clinic

AUTHORS: Lawrence Bean, Morgan Rhodes

OBJECTIVE: Identify educational techniques to improve CGM comprehension for medical residents.

SELF ASSESSMENT QUESTION: What tools can be used to increase knowledge and level of confidence with continuous glucose monitors by medical trainees?

BACKGROUND: To implement a continuous glucose monitor (CGM) service in an academic family medicine residency clinic and evaluate the educational, clinical and financial impact.

METHODOLOGY: This was a single center, retrospective cohort study to implement a CGM service and to analyze an educational program regarding CGM use and understanding. The population in this study is the family medicine medical residents at the Prisma Health Family Medicine Center for the educational component of the study. Secondary analyses were done to look at both clinical and financial endpoints of the professional CGM clinic. For the educational portion, family medicine residents at the Prisma Health Family Medicine Center were given CGM training that included a pre-survey, an opportunity to place a personal CGM on themselves and in-person educational sessions. Residents will also complete a post-survey. The financial endpoints will include the revenue generated from the professional CGM program by the billing of CPT codes 95250 and 95251. Clinical secondary endpoints include change in A1c from baseline to post interventions. Baseline A1c is the measurement obtained prior to CGM placement, and post-intervention A1c is defined as at least 3 months after CGM removal. Data was analyzed retrospectively and included educational, clinical, and financial endpoints of the study.

RESULTS: In Progress

CONCLUSIONS: In Progress

11:40am – 12:00pm C **Impact of Multidisciplinary Interventions on 30-day Heart Failure Readmission Rates in a High-Risk Veteran Population** Room H

Presenters: Lindsey Ricchetti

TITLE: Impact of Multidisciplinary Interventions on 30-day Heart Failure Readmission Rates in a High-Risk Veteran Population

AUTHORS: Lindsey Ricchetti, PharmD, Mary Martin McGill, PharmD, Amanda Holloway, PharmD, Katherine McLaurin, PA

OBJECTIVE: Identify the impact of a multidisciplinary approach on preventing HF readmissions in a high-risk population.

SELF ASSESSMENT QUESTION: Would patients at high-risk for HF exacerbation readmission benefit from additional monitoring?

BACKGROUND: An estimated 3,000 patients at the Birmingham VA Health Care System (BVAHCS) are living with heart failure (HF). Despite implementing many strategies to reduce HF readmissions at BVAHCS, rates remain high. Most recent data from Quarter 3 of 2021 shows a 30-day readmission rate of 20.2% with a VA National Rate of 17.8%. In an effort to continue to improve readmission rates, high-risk HF patients will be proactively identified, provided HF education, and offered follow-up in Cardiology Clinic for evaluation and optimization of HF therapy. A comparative analysis will be performed to assess risk reduction and readmission rates following interventions.

METHODOLOGY: The VA National and VISN-7 Academic Detailing Team Heart Failure Dashboards will be used to identify BVAHCS patients with 3 or more admissions in the previous 12 months, those with a calculated hospitalization risk of greater than 10% in a 3-month period, and patients recently discharged from the hospital without scheduled follow-up within 14 days. Patients will be contacted by a clinical team member consisting of a clinical pharmacist practitioner (CPP), pharmacy resident and/or cardiology physician assistant (PA) to provide HF education, assess symptoms and medication compliance, as well as arrange follow-up with a cardiology provider (CPP, PA, nurse practitioner or cardiologist) as appropriate. After a 3-month period, included patients' calculated risk of hospitalization and facility HF readmission rate will be compared to scores prior to interventions. Optimization of HF guideline directed medical therapy (GDMT) before and after intervention as well as medication compliance improvement will also be assessed using tools from the HF dashboard.

RESULTS: In progress.

From the VA National and VISN-7 Academic Detailing Team Heart Failure Dashboards, 123 BVAHCS patients have been selected with 3 or more HF exacerbations in the previous 12 months, have a calculated hospitalization risk of greater than 10% in a 3-month period, or have been recently discharged from the hospital without scheduled follow-up within 14 days. These patients have been contacted by a clinical team member or will soon be contacted to schedule appointments, provide HF education, or optimize HF guideline directed medical therapy.

CONCLUSIONS: In progress.

11:40am – 12:00pm Y **Assessment of Community-Based Pharmacist-led Diabetes Self-Management Education (DSME) on Hemoglobin A1c (HbA1c) in Patients with Uncontrolled Type 2 Diabetes** Room G

Presenters: Josef Wills

TITLE: Assessment of Community-Based Pharmacist-led Diabetes Self-Management Education (DSME) on Hemoglobin A1c (HbA1c) in Patients with Uncontrolled Type 2 Diabetes

AUTHORS: Josef Wills, Maria Yi, Paige Brockington, Victoria Phan, Whitney Testorf

OBJECTIVE: The objective of this study is to identify the effects of community pharmacist-led virtual DSME via phone calls and emails on HbA1c, weight loss, and medication adherence.

SELF ASSESSMENT QUESTION: Can community pharmacist-led DSME provided by phone calls and emails improve HbA1c, weight loss, and medication adherence?

BACKGROUND: Diabetes is a chronic condition that affects 34.2 million people in the United States according to the Centers of Disease Control (CDC). While there were no studies found by the investigators comparing virtual DSME to in-person DSME, there was one study that investigated the benefit of virtual DSME in addition to in-person DSME. The study concluded that patient referral to online tools is considered one key component of initial and ongoing DSME and is recommended to enhance and extend the reach of in-person diabetes education.

METHODOLOGY: This prospective study includes patients who are Piedmont Health System employees in the Atlanta metropolitan area, 18 years of age or older, diagnosed with type 2 diabetes, and fill prescriptions at Walgreens. Enrolled patients receive monthly counseling through phone calls and emails from an AADE accredited site and are evaluated over 6 months. There are a total of 6 sessions covering topics such as medication, nutrition, exercise, and preventing complications of diabetes. The primary outcome is the change of HbA1c from baseline. Secondary outcomes will be weight loss and medication adherence measured by the proportion of days covered (PDC) score. All data points will be gathered at baseline, 3 months, and 6 months. A t-test will be used to analyze statistical data.

RESULTS: In progress.

CONCLUSIONS: In progress.

11:40am – 12:00pm R **Assessing the Safety and Efficacy of an Insulin Infusion Protocol and Calculator on Hyperglycemic Outcomes in the ICU During the COVID-19 Pandemic** Room C

Presenters: Taylor Ellison

TITLE: Assessing the Safety and Efficacy of an Insulin Infusion Protocol and Calculator on Hyperglycemic Outcomes in the ICU During the COVID-19 Pandemic

AUTHORS: Taylor Ellison, Tram Simmons

OBJECTIVE: Evaluate the implementation of an insulin infusion protocol and calculator to determine if time to target blood glucose range improves and number of hypoglycemia event decrease.

SELF ASSESSMENT QUESTION: Did implementation of an insulin infusion calculator and protocol reduce the number of hypoglycemic and events in the ICU?

BACKGROUND: Hyperglycemia is prevalent in critically ill patients and is associated with worse outcomes in the intensive care unit (ICU). Management of hyperglycemia became more complex during the COVID-19 pandemic. Data suggests these patients have poorly controlled glucose levels and an increased need for a specific insulin infusion protocol with calculator. Insulin infusion protocols reduce the human error involved in following an insulin titration algorithm. Studies examining the use of insulin calculators within the ICU, achieved consistent target blood glucose values with minimal episodes of hypoglycemia.

METHODOLOGY: A retrospective chart review was performed to identify Veterans treated with an insulin infusion in the ICU. The review examined data from 8 months prior to the implementation of the insulin calculator and protocol. A prospective chart review is in progress, examining Veterans treated with an insulin infusion in the ICU after the implementation. Descriptive statistics were used to summarize study population characteristics and outcomes.

RESULTS: There were a total of 51 patient encounters analyzed, with 24 patients in the historical cohort, 16.66% with current COVID infection at time of admission. The average age was 60.5 years with majority of patients male (95.8%) and average weight of 97.26 kg. There were 27 patients in the prospective, 18.5% with current COVID infection. The average age was 65.5 years and majority of patients were male (88.9%) and average weight of 88.6 kg. The average time to target blood glucose was 12.88 hours in the historical cohort and 4.08 hours in the prospective. In the historical group, 12 patients experienced 46 hypoglycemic events with 16 events categorized as mild hypoglycemic event (60 – 70 mg/dL), 20 events categorized as moderate hypoglycemia (40 – 59 mg/dL) and 10 events categorized as severe hypoglycemia (< 40mg/dL). In the prospective group, 9 patients experienced 24 hypoglycemic events, with 15 events categorized as mild, 6 categorized as moderate and 3 events identified as severe. The average length of ICU stay for the historical cohort was 106.5 hours and the average length of ICU stay for the prospective cohort was 86.6 hours.

CONCLUSIONS: Patients included in the prospective cohort were treated with an insulin infusion calculator and protocol at the Charlie Norwood VA Medical Center ICU. The prospective cohort had a shorter average time to target blood glucose range than compared to the historical cohort patients. The prospective cohort group had less hypoglycemic events and less events of rebound hypoglycemia compared to the historical cohort. The authors conclude the implementation of an insulin infusion protocol and calculator improved time to target blood glucose with a reduction in hypoglycemic events.

11:40am – 12:00pm R **Evaluation of phenobarbital in addition to a CIWA protocol for management of alcohol withdrawal syndrome (AWS)** Room E

Presenters: Laura Wade

TITLE: Evaluation of phenobarbital in addition to a CIWA protocol for management of alcohol withdrawal syndrome

AUTHORS: L Wade, J Coluccio, T Parker, C Moran, N Morgan, N Patel, N Badger-Plange

OBJECTIVE: To evaluate the efficacy and safety of scheduled phenobarbital in addition to CIWA-administered benzodiazepines for the acute management of AWS

SELF ASSESSMENT QUESTION: Does phenobarbital decrease benzodiazepine requirements in patients with alcohol withdrawal?

BACKGROUND: Benzodiazepines (BZDs) administered using the revised Clinical Institute Withdrawal Assessment of Alcohol (CIWA) scale are the standard of care for AWS. However, the superiority of benzodiazepines to other agents is unclear and patients often require frequent dose administration. Phenobarbital has been studied as an adjunct to BZDs and has been found to be efficacious with a tolerable safety profile. At Piedmont Atlanta Hospital, AWS is managed using a BZD-based CIWA order set. The purpose of this study is to explore the effect of addition of phenobarbital to the current protocol.

METHODOLOGY: Single-center, parallel cohort study comparing patients with AWS on phenobarbital in addition to the CIWA protocol (intervention arm) to patients on the CIWA protocol alone (historical arm). Data was collected through both prospective and retrospective chart review at Piedmont Atlanta Hospital between 1/2021 through 3/2022. The primary endpoint was to compare the average BZD requirements between the two arms. Secondary endpoints included duration on the CIWA protocol, average hospital length of stay (LOS), the need for ICU admission/ICU LOS, maximum CIWA score, use of adjunctive therapies for AWS, and the incidence of over sedation.

RESULTS: The average BZD requirement was 46 mg for the historical arm and 64 mg for the intervention arm (P-value = 0.218). Results for the secondary endpoints found a statistically significant difference only in the average duration on the CIWA protocol (5.4 days for the historical arm vs. 7.4 days for the intervention arm; P-value = 0.024). Patients in the intervention arm had a longer hospital LOS, were more frequently admitted to the ICU, used more adjunctive therapies, and had a higher average maximum CIWA score. ICU LOS was shorter in the intervention arm (3.4 days) compared to the historical arm (4.8 days); P-value = 0.524. Over sedation occurred in 1 patient in the phenobarbital arm and in 5 patients in the CIWA only arm (P-value = 0.137).

CONCLUSIONS: The average BZD dose requirement between arms was not found to be statistically significant. The only secondary endpoint found to be statistically significant was the duration on the CIWA protocol. Because of a decreased ICU LOS and no major safety concerns associated with phenobarbital, Piedmont Healthcare may consider its addition to the CIWA orderset as an adjunctive therapy.

11:40am – 12:00pm R **Pressed for Time: Safety and Efficacy of Adjunctive Midodrine Use in the Intensive Care Unit**

Presenters: Hayden Lee Room D

TITLE: Pressed for Time: Safety and Efficacy of Adjunctive Midodrine Use in the Intensive Care Unit

AUTHORS: Hayden Lee, Brittany Till, Jasleen Bolina, Rachel Settle

OBJECTIVE: State the impact of midodrine added as an adjunct to vasopressor therapy.

SELF ASSESSMENT QUESTION: Did the addition of midodrine to norepinephrine decrease norepinephrine duration or ICU LOS?

BACKGROUND: Midodrine has been the focus of multiple recent drug studies evaluating its efficacy as a means to decrease the duration of vasopressor use in critically ill patients. In the face of the COVID-19 pandemic, Baptist Medical Center South has seen an increased usage of midodrine in attempts to wean vasopressor therapy and expedite intensive care unit (ICU) transfer. The purpose of this study is to determine the efficacy and safety of midodrine as an adjunct to norepinephrine in an effort to wean vasopressor therapy in the ICU setting.

METHODOLOGY: This study was a single-center, retrospective chart review that evaluated patients who received either norepinephrine alone or norepinephrine with midodrine from January 2021 to June 2021. Adult patients with norepinephrine use for more than 24 hours were included. Patients who were pregnant, on dialysis, or received midodrine before norepinephrine were not included in the study.

RESULTS: Of the 259 electronic medical records reviewed, 48 met inclusion criteria. The average duration of norepinephrine was 92 hours in the norepinephrine group versus 202 hours in the norepinephrine plus midodrine group. The average ICU length of stay (LOS) was 12 days in the norepinephrine group versus 18 days in the norepinephrine plus midodrine group. No adverse effects were documented. More patients in the midodrine plus norepinephrine group (46%) survived to discharge as compared to the norepinephrine group (33%).

CONCLUSIONS: Our study did not find a reduction in norepinephrine duration of use or ICU LOS when adding midodrine to norepinephrine. Future areas of interest related to this study include establishing criteria for midodrine initiation, standardized midodrine dosing, and evaluation of appropriateness of midodrine continued at discharge.

11:40am – 12:00pm I **Assessment of empiric antimicrobial appropriateness for non-purulent skin and soft tissue infections within a community hospital system** Room F

Presenters: Christian Ruiz

TITLE: Assessment of empiric antimicrobial appropriateness for non-purulent skin and soft tissue infections within a community hospital system

AUTHORS: Christian Ruiz, Geneen Gibson, Joseph Crosby, Nathan Adams, Kim Friend

OBJECTIVE: Identify factors involved in classifying patients into their modified Dundee classifications.

SELF ASSESSMENT QUESTION: Which of the following is a factor involved in classifying patients into their modified Dundee classifications?

A)American Early Warning Score

B)Risk factors for failure of inpatient oral antibiotic treatment

C)End-stage comorbidities

BACKGROUND: Determine the frequency with which empiric antimicrobial therapies for non-purulent skin and soft tissue infections (SSTIs) align with modified Dundee classification severity and compare clinical outcomes and antibiotic utilization among patients treated per the classification and those who were not.

METHODOLOGY: A retrospective chart review of two community hospitals was conducted for inpatient adults with a diagnosis of cellulitis (including erysipelas) or necrotizing soft tissue infection. Patients were classified using the modified Dundee classification criteria, and their empiric antibiotic regimens from the emergency department (ED) and inpatient settings were then classified as adherent or non-adherent per their respective classifications.

RESULTS: A total of 120 patients were included, with a minimal amount of empiric antibiotic regimens adherent to their modified Dundee classifications (10%, n=12 [ED]; 15%, n=18 [inpatient]). Adherence was not similar across the modified Dundee classes (p=.013 [ED]; p

11:40am – 12:00pm L **Evaluation of Prior Authorization Approval and Patient Assistance Program Acceptance Between Pharmacy Trainees and Clinical Pharmacy Specialists** Room K

Presenters: Heidi Berman

TITLE: Evaluation of Prior Authorization Approval and Patient Assistance Program Acceptance Between Pharmacy Trainees and Clinical Pharmacy Specialists

AUTHORS: Heidi Berman, Nicole Metzger, Emma Chandlee, Collin Lee, Carrie Tilton

OBJECTIVE: Describe the difference in approval rates of PAs and PAPs between clinical pharmacy specialists and pharmacy trainees.

SELF ASSESSMENT QUESTION: What was the difference in approval rates for PAs and PAPs between pharmacy clinical specialists and pharmacy trainees?

BACKGROUND: Pharmacists can improve transitions of care at discharge through ensuring patients can afford and access their discharge prescriptions, but there is limited published data on the role pharmacy trainees (pharmacy students and pharmacy residents) can play in this process. The purpose of this study is to evaluate the rate of approval of prior authorizations (PAs) and patient assistance programs (PAPs) between pharmacy clinical specialists and pharmacy trainees.

METHODOLOGY: This is a single center retrospective chart review of adult patients admitted from July 1, 2019 to September 20, 2021. Patients were included if they had received a pharmacy driven intervention such as a medication that required pursuing a PA, enrollment in a PAP, a formulary substitution, or a coupon to ensure affordability. The primary outcome is the rate of approval of PAs and PAPs between pharmacy clinical specialists and pharmacy trainees. Secondary outcomes include turnaround time for PA and PAP requests, approval rates, type of intervention, classes of medications, cost savings, time spent on intervention, insurance type, time hospital length of stay, and 30-day readmissions. The nominal primary endpoint will be compared using a chi square test. Continuous variables will be presented as means, standard deviation, and range. Categorical variables will be summarized with frequencies and percentages.

RESULTS: The pharmacy clinical specialist group had a total of 353 interventions, and the pharmacy trainee involement group had a total of 137 interventions. The specialists group had a PA/PAP approval rate of 88.3% compared to an approval rate of 94.8% in the trainee group. The most common type of intervention for both groups was insurance verification. Readmission rates (p= 0.88) and hospital length of stay (p= 0.33) were not different bettwen groups.

CONCLUSIONS: Utilization of pharmacy trainees resulted in similar approval rates for PAs and PAPs with no differences in clinical outcomes when compared to the specialists group

11:40am – 12:00pm M **Efficacy and Safety of Fixed Dose Magnesium Replacement** Room L

Presenters: Andrew Harsh

TITLE: Efficacy and Safety of Fixed Dose Magnesium Replacement

AUTHORS: Andrew Harsh, Diana Mulherin, Kelli Rumbaugh, Bob Lobo

OBJECTIVE: Describe the effectiveness and safety of implementation of fixed dose magnesium replacement.

SELF ASSESSMENT QUESTION: Fixed dose magnesium replacement is effective and safe for treatment of hypomagnesemia (True or False)?

BACKGROUND: Magnesium replacement dosing across institutions widely varies due to the lack of a preferred protocol in current literature. Over-repletion of magnesium can result in adverse effects such as confusion, or in more severe cases can result in life threatening magnesium toxicity. A current protocol at Vanderbilt University Medical Center (VUMC) for magnesium replacement uses magnesium sulfate at a fixed dose in increments of 4 grams as a cost savings measure. The purpose of this research project is to contribute to limited literature by retrospectively comparing the efficacy and safety of 2g versus 4g of magnesium sulfate IV for treatment of hypomagnesemia at VUMC.

METHODOLOGY: This study was a retrospective chart review and analysis of patients treated at Vanderbilt University Medical Center. Patients were classified in periods before (January 2018 – August 2018) and after (January 2018 – August 2019) the implementation of fixed dose magnesium in increments of 4 grams. The primary endpoint of this study was the efficacy of magnesium replacement based on repeat magnesium levels drawn at 48 hours. Secondary outcomes included efficacy at various times after first magnesium repletion, incidence of adverse effects of magnesium, and the total dose of magnesium in grams.

RESULTS: In Progress

CONCLUSIONS: In Progress

11:40am – 12:00pm O **Evaluation of IVIG Prescribing Practices in Patients with Hematologic Malignancies** Room B

Presenters: Lauren Burton

TITLE: Evaluation of IVIG Prescribing Practices in Patients with Hematologic Malignancies

AUTHORS: Lauren Burton, Jessica Gorgeis, Lise Langston, Alex Ewing

OBJECTIVE: To determine the percentage of patients with hematologic malignancies who are appropriately treated with IVIG for infection prophylaxis based on current recommendations

SELF ASSESSMENT QUESTION: Why should IVIG be given in patients with low serum IgG levels?

BACKGROUND: Hypogammaglobulinemia (serum IgG count

11:40am – 12:00pm T **Impact of COVID-19 Follow-Up Care in the Post-Acute Care Setting** Room A

Presenters: Grace Wilson

TITLE: Impact of COVID-19 Follow-Up Care in the Post-Acute Care Setting

AUTHORS: Grace Wilson, Emily Brinkman, Ann Truong

OBJECTIVE: Describe the outcomes evaluated for patients seen at a transitional care clinic either in-person, virtually, or not seen following a COVID-19 related hospitalization.

SELF ASSESSMENT QUESTION: Will follow-up visits in the post-acute care setting make an impact on readmission rates or mortality for patients following a COVID-19 related illness?

BACKGROUND: Prior studies have found that approximately 28% of patients discharged from the hospital following a COVID-19 infection died in the months following or were readmitted to the hospital within a 60-day window. However, data regarding follow-up care for these patients is incredibly scarce. Monitoring patients in the post-acute care setting and managing comorbidities could play a role in reducing mortality and re-admission rates. The purpose of this study is to determine if post-acute care follow-up, whether in person or virtually, can decrease hospital readmission following a SARS-CoV-2 hospitalization.

METHODOLOGY: This is an observational, retrospective, epidemiological cohort study. A retrospective chart review was conducted to evaluate patients that were previously discharged from the hospital after a COVID-19 infection and referred to an on-site clinic which provides transitions of care services. Patient charts were reviewed to identify if the patient was seen virtually, in-person, or not seen and a primary outcome of 60-day readmission rates was compared among the groups. Secondary outcomes included 60-day mortality rates for all patients, vaccination status prior to hospitalization, and the treatment regimen prescribed at discharge following the COVID-19 hospitalization.

RESULTS: In progress

CONCLUSIONS: In progress

12:00pm – 12:20pm B **Efficacy and safety of dulaglutide versus semaglutide in a Veterans Affairs healthcare system**

Presenters: Laura Cherry Room I

Title: Efficacy and safety of dulaglutide versus semaglutide in a Veterans Affairs healthcare system

Authors: Laura Cherry, Elizabeth Trainham, Kristen Lamb, Bianca Creith, Ashley Thomas

Objective: Describe differences in efficacy outcomes between dulaglutide and semaglutide at Tennessee Valley Healthcare System (TVHS) after a Veteran's Affairs Pharmacy Benefits Management (VA PBM) national formulary change.

Self Assessment Question: The SUSTAIN 7 trial found that semaglutide was superior to dulaglutide in which endpoints?

Background: In November 2020 there was a national glucagon-like peptide-1 receptor agonist (GLP-1RA) formulary change within the VA from dulaglutide to semaglutide. This resulted in a change in therapy for clinically appropriate patients, those without intolerance to semaglutide or diabetic retinopathy. However, literature has identified key efficacy differences in these therapies. The purpose of this analysis was to assess efficacy changes resulting from this formulary change.

Methodology: This retrospective, single-center, cohort study was conducted at TVHS. It evaluates the efficacy of the national VA formulary conversion to semaglutide from dulaglutide in adult veterans with type 2 diabetes. Patients included for analysis were those with an active dulaglutide or semaglutide prescription between June 30th 2019 and June 30th 2021. Patients were excluded if GLP-1RA prescriptions were filled outside the VA. Data collected includes A1c and weight prior to initiation of a GLP-1RA, A1c and weight at time of data retrieval, and diabetes medications used. The electronic medical record was reviewed to evaluate change in retinopathy status and incidence of gastrointestinal (GI) adverse effects (AE). Outcomes were compared between the semaglutide and dulaglutide cohorts.

Results: There were 200 patients in each cohort. Baseline characteristics were similar between groups. There was no difference between semaglutide and dulaglutide in terms of change in A1c (-0.689% vs. -0.723%, p=0.838), or change in weight (-5.99 vs. -5.30, p=0.797).

Conclusions: There was no statistically significant difference in efficacy outcomes in patients treated with dulaglutide versus semaglutide.

12:00pm – 12:20pm B **Impact of Incorporating a Women's Health Clinical Pharmacy Specialist into a VA Medical Center-A Quality Improvement Project** Room J

Presenters: Adrienne Busch

TITLE: Impact of Incorporating a Women's Health Clinical Pharmacy Specialist into a VA Medical Center-A Quality Improvement Project

AUTHORS: Adrienne Busch, Tiffany Jagel, Hayley McCarron

OBJECTIVE: Define the impact of a women's health CPS in the VA on outcomes in patients with cardiovascular conditions and in female specific areas of care.

SELF ASSESSMENT QUESTION: What is one area of patient care a women's health CPS can have an impact?

BACKGROUND: Female Veterans account for approximately 9% of patients in the VA healthcare system. However, gender disparity is still evident in many areas of care. Clinical pharmacy specialists (CPS) have become more prevalent in the primary care setting and, with their specialized clinical knowledge, have been able to optimize patient care and improve outcomes.

METHODOLOGY: A women's health data portal, electronic quality measurement (EQM) portal and PharmD progress reports were used for primary data collection and analysis. Fourteen clinics in the Gulf Coast Veteran's Health Care System with female panels were identified, of those clinics; six were identified as having female-only patients. The CPS addressed patient-specific measures including percentage of diabetic patients meeting blood pressure goals, statin use in coronary heart disease (CHD) patients, and women's health encounters by CPS's and obstetrics/maternity medication consults. Data collection began in August 2021. Data is tracked across the identified clinics and compared to non-women's health clinics and national measures to identify areas for improvement.

RESULTS: Three all-female clinics were initially targeted by the women's health CPS. Preliminary results showed improvement in diabetic patients meeting blood pressure goals (

12:00pm – 12:20pm C **Efficacy and Safety of Reduced Concentration Heparinized Purge Solution for Impella Circulatory Support Devices** Room H

Presenters: Shama Roy

TITLE: Efficacy and Safety of Reduced Concentration Heparinized Purge Solution for Impella Circulatory Support Devices

AUTHORS: Shama Roy, Brendon Banes, Kathy Tang

OBJECTIVE: To describe the safety and efficacy of reducing the Impella heparin purge concentration from 50 to 25 units/mL.

SELF ASSESSMENT QUESTION: What purpose does the heparinized purge solution serve with the placement of Impella devices?

BACKGROUND: The Impella is a percutaneous ventricular assist device that may be used for temporary mechanical circulatory support in cardiogenic shock, high risk percutaneous coronary intervention, and acute decompensated heart failure. The Impella requires a dextrose-based purge solution that flows countercurrent to the blood to prevent blood from entering the Impella motor. To maintain a properly functioning device, the manufacturer recommends a heparinized dextrose purge solution. The manufacturer also recommends using supplemental anticoagulation during device support to maintain the goal activated clotting time (ACT). The manufacturer has made recent recommendations to change the heparin purge solution concentration from 50 units/mL to 25 units/mL; however, there is minimal guidance on supplemental anticoagulation. With limited manufacturer recommendations on the management of patients on Impella support, there is a need for real-world data to develop a standardized protocol for the use of heparin in the purge solution with systemic heparin to achieve the target ACT.

METHODOLOGY: We ran a report to identify the patients who had an Impella placed. We used this report to complete a retrospective observational study of adult patients at Wellstar Kennestone Hospital who required at least 12 hours of Impella support and received heparin purge concentration of 50 units/mL between October 1, 2020 to April 14, 2021 or heparin purge concentration of 25 units/mL between April 15, 2021 to October 1, 2021.

RESULTS: In Progress

CONCLUSIONS: In Progress

12:00pm – 12:20pm Y **EVALUATION OF A COMBINED PROCESS FOR INDUCTION AND MAINTENANCE USTEKINUMAB PRIOR AUTHORIZATIONS FOR INFLAMMATORY BOWEL DISEASE PATIENTS**

Presenters: Christopher Batista Room G

TITLE: EVALUATION OF A COMBINED PROCESS FOR INDUCTION AND MAINTENANCE USTEKINUMAB PRIOR AUTHORIZATIONS FOR INFLAMMATORY BOWEL DISEASE PATIENTS

AUTHORS: Christopher Batista, Alyssa Stewart, Jennifer Young, Kathy Bricker, B. Kyle Hansen

OBJECTIVE: Determine if a combined PA process impacts on-time continuation from induction to maintenance ustekinumab therapy in patients with IBD.

SELF ASSESSMENT QUESTION: What was an identified benefit of implementing a combined PA process for ustekinumab?

BACKGROUND: Ustekinumab requires separate prior authorizations (PA) for the induction infusion and maintenance injections. In November 2018, the specialty pharmacy transitioned to a combined PA process for ustekinumab induction and maintenance prescriptions prior to scheduling a patient for infusion. This study aims to identify the impact of the PA process change on the rate of on-time continuation from induction to maintenance ustekinumab.

METHODOLOGY: Retrospective, single-center review of patients receiving care at a health-system based gastroenterology practice. Patients were included if a benefits investigation was performed from November 1, 2017 to October 31, 2018 or December 1, 2018 to November 30, 2019. The primary outcome is the rate of on-time continuation to maintenance ustekinumab between the pre- and post-combined process (defined as within 8 weeks, and no later than 10 weeks, post-infusion).

RESULTS: 39 patients were included in the study. The rate of on-time continuation to maintenance ustekinumab was not statistically significant between the pre- and post-combined process (84% vs. 90%, $p>0.05$). The rate of patients who continued to maintenance at any period post-induction was not statistically significant between the pre- and post-combined process (84% vs. 100%, $p>0.05$). A reduction of 10.8 days was observed in the average time from initial benefits investigation to maintenance PA approval between the pre- and post-combined process (21.1 days vs. 10.3 days, $p<0.05$). An additional 27.3 days was observed in the average time from initial benefits investigation to maintenance SQ dispense date between the pre- and post-combined process (54.9 days vs. 82.2 days, $p<0.05$).

CONCLUSIONS: Implementation of a combined PA process for ustekinumab did not impact on-time transition from induction to maintenance.

12:00pm – 12:20pm R **ENHANCING PATIENT EDUCATION STRATEGIES TO OPTIMIZE NALOXONE PRESCRIBING FOR PATIENTS AT RISK OF OPIOID OVERDOSE** Room D

Presenters: Holly Mize

TITLE: ENHANCING PATIENT EDUCATION STRATEGIES TO OPTIMIZE NALOXONE PRESCRIBING FOR PATIENTS AT RISK OF OPIOID OVERDOSE

AUTHORS: Holly Mize, Elizabeth Clegg, Jun Wu

OBJECTIVE: The purpose of this study was to evaluate the impact of targeted naloxone education of the healthcare team in a rural community hospital emergency care center.

SELF ASSESSMENT QUESTION: What is one barrier to patients accepting and filling their naloxone prescription?

BACKGROUND: Opioid overdose is a nationwide public health concern. South Carolina recently passed a law requiring providers to offer a naloxone prescription to patients at risk of opioid overdose and provide education on overdose prevention and the use of naloxone.

METHODOLOGY: Eligible patients were ≥ 18 years and received a naloxone prescription when discharged from the emergency department. Pre- and post-intervention data was collected from the Electronic Medical Record. The intervention was providing education to the nursing staff through in-person training and written materials to facilitate effective patient education on the risks for opioid overdose and counseling on the utility of naloxone in the event of overdose. The primary endpoint was incidence of opioid reversal events in the emergency department. Secondary endpoints included proper prescribing based on state law, naloxone prescriptions offered based on individual factors, and staff perception of naloxone prescribing and opioid misuse.

RESULTS: In Progress

CONCLUSIONS: In Progress

12:00pm – 12:20pm R **EVALUATION OF STANDARDIZING ANTIEPILEPTIC DRUG DOSING IN THE EMERGENCY DEPARTMENT** Room C

Presenters: Hunter Laag

TITLE: Evaluation of Standardizing Antiepileptic Drug Dosing in the Emergency Department

AUTHORS: Hunter Laag, Vince Buttrick, Erik Turgeon

OBJECTIVE: Assess the impact of clinical decision support and standardized AED dosing on provider adherence to guideline recommendations in the management of acute seizure disorders in the ED.

SELF ASSESSMENT QUESTION: Per the 2016 American Epilepsy Society (AES), what is the maximum initial (loading) dose of levetiracetam for the treatment of status epilepticus?

BACKGROUND: Seizures account for 1-2% of annual emergency department (ED) visits and vary in etiology and severity. The decision to initiate therapy with an antiepileptic drug (AED) is based on a variety of factors. Further complicating the issue are differences in dosing recommendations across seizure types. The purpose of this study is to evaluate the impact of clinical decision support (CDS) on provider adherence to guideline-recommended AED dosing in the ED.

METHODOLOGY: Data was collected for a 90-day period pre-intervention (July 21, 2021- October 19, 2021) and post-intervention (October 20, 2021- January 18, 2022). The CDS was implemented through the creation of an order set within the electronic health record. This order set contains standardized, indication-specific dosing for AEDs. The primary objective was provider adherence to guideline-recommended dosing for AEDs. Secondary and exploratory objectives included the necessity for additional AEDs and the time-to-dose administration.

RESULTS: The pre-intervention group comprised 70 patients with 19% provider adherence to guideline-recommended AED dosing. The post-intervention group comprised 105 patients with 41% provider adherence to guideline-recommended AED dosing. After CDS implementation, provider adherence increased by 22% (p=0.003). The necessity for additional AEDs was 4.3% in the pre-intervention group compared to 4.8% in the post intervention group (p=1.00). Average time-to-dose administration was reduced by 15 minutes in the post-intervention group.

CONCLUSIONS: Implementation of clinical decision support and standardized AED dosing improved provider adherence to guideline-recommended AED dosing.

12:00pm – 12:20pm R **INCIDENCE OF HYPERTRIGLYCERIDEMIA IN PATIENTS ON PROPOFOL, CLEVIDIPINE, OR BOTH** Room E

Presenters: Christopher Johns

TITLE: INCIDENCE OF HYPERTRIGLYCERIDEMIA IN PATIENTS ON PROPOFOL, CLEVIDIPINE, OR BOTH

AUTHORS: Christopher Johns, Travis Fleming, Rebekah Black, Skyler Brown, Shaun Rowe

OBJECTIVE: Identify the incidence and risk factors for hypertriglyceridemia with drugs in a lipid emulsion.

SELF ASSESSMENT QUESTION: What is one medication that can cause hypertriglyceridemia due to its lipid emulsion?

BACKGROUND: Drugs that are formulated in lipid emulsions can cause hypertriglyceridemia (HyperTG) after prolonged exposure. However, the incidence rates and risk factors for developing HyperTG due to lipid emulsions are not well defined. Furthermore, there has not been an investigation of this issue in patients receiving both propofol and clevidipine concurrently. The purpose of this study is to evaluate the incidence of HyperTG and the risk factors associated for HyperTG in patients who were exposed to propofol, clevidipine, or both.

METHODOLOGY: This is an institutional review board approved retrospective cohort study with a nested case-control study. It will examine at patients receiving at least 24 hours of continuous infusion of propofol and/or clevidipine from January 2018 to January 2021. Patients with no triglyceride levels drawn, HyperTG at baseline, acute pancreatitis on admission, or receiving TPN with lipids will be excluded. The included patients will be split into 3 arms: propofol alone, clevidipine alone, and both propofol and clevidipine concurrently. The primary endpoint is the incidence of HyperTG, defined as a triglyceride level > 400 mg/dL, and to compare the median and peak triglyceride levels for patients in the 3 groups. Secondary endpoints include identification of risk factors for HyperTG and determining if there is a relationship between HyperTG and the dose and/or duration of drug exposure. The primary endpoint will be evaluated using a chi square test for dichotomous data and pairwise comparisons for continuous data. The secondary endpoints will utilize linear regression analysis to evaluate outcomes.

RESULTS: A total of 190 patients were included in the study with 109 patients in the propofol group, 50 patients in the clevidipine group, and 31 patients in the both group. There was no statistical difference in the incidence of HyperTG between propofol vs. clevidipine vs. both drugs concurrently [19 (17.4%) vs. 6 (12%) vs. 4 (12.9%) patients, p=0.6246]. The nested-case-control portion to identify risk factors is still in progress.

CONCLUSIONS: The incidence of HyperTG was similar in patients on propofol, clevidipine, and both drugs concurrently. In addition, the three groups had similar peak and median triglyceride levels. Secondary outcomes showed that clevidipine had the quickest time to peak triglyceride level but was also associated with shorter hospital and ICU lengths of stay. The nested-case-control portion to identify risk factors is still in progress.

12:00pm – 12:20pm | **Incidence and clinical predictors of complications in gram-negative bloodstream infections**

Presenters: Erin Warren Room F

TITLE: Incidence and clinical predictors of complications in gram-negative bloodstream infections

AUTHORS: Erin Warren, Utpal Mondal, Karma Safford, P. Brandon Bookstaver, Joseph Kohn, Julie Justo, Majdi Al-Hasan

OBJECTIVE: At the conclusion of this presentation, the participants will be able to define the incidence of complications within 90 days of gram-negative BSI onset.

SELF ASSESSMENT QUESTION: Which of the following is NOT considered a complication associated with gram-negative bloodstream infection?

a.Osteomyelitis

b.Endocarditis

c.Coronary aneurysm

d.Epidural abscess

BACKGROUND: Over 500,000 patients develop a bloodstream infection (BSI) in the United States each year. Of these, about 45% are caused by gram-negative isolates. Complications following gram-negative bacteremia are rare, however the precise incidence has not been defined in the literature to date. Furthermore, risk factors for complicated gram-negative bacteremia are unknown, much unlike clinical predictors for complicated Staphylococcus aureus BSI. The purpose of this study is to determine the frequency at which complications of gram-negative bacteremia occur, what those complications are, and clinical criteria that may predict those patients at highest risk for developing complications.

METHODOLOGY: Retrospective chart review will assess how many patients developed complications following BSI due to gram-negative bacilli at two of our regional hospitals from January 2010 to December 2015 using a pre-existing database. Eligible patients are those ≥ 18 year of age with a monomicrobial BSI caused by gram-negative organisms. Recurrent episodes of bacteremia will not be included.

RESULTS: The overall incidence of complications identified in our study was 79 events, with the most common being deep-seated abscesses, recurrent bacteremia and endocarditis. The overall incidence of complications at 90 days when censoring for death or loss to follow-up was 13.9%. The median time to complication was 5.2 days (IQR 1-28 days). Although there was a relatively low incidence of bacteremia caused by *Pseudomonas, Proteus or Serratia*, those organism were associated with a ≥ 20% incidence of complications. Our study identified five independent risk factors for the development of complications which were early clinical failure criteria (HR 1.19; p = 0.019), non-urinary source (HR 2.04; p = 0.005), *Pseudomonas, Proteus or Serratia* bacteremia (HR 1.73; p = 0.049), presence of prosthesis (HR 1.68; p = 0.031) and persistent bacteremia (HR 2.92; p = 0.031). The risk of developing complications also increased depending on the number of risk factors present from 15%, 34%, 43% with 2, 3 or ≥ 4 risk factors, respectively.

CONCLUSIONS: The overall incidence of complications associated with gram-negative BSI is at least 13.9%, often occurring late in the hospital course or discovered upon readmission. The riisk for the development of complications may be predicted by microbiological and host factors, including the early clinical failure criteria. Stratification of patients based on these risk factors may aid in identifying the patients necessitating further diagnostic work-up to improve the early detection of complications.

12:00pm – 12:20pm L **Comparison of a weight-based insulin infusion protocol with a non-weight-based protocol for the management of diabetic ketoacidosis among over-and-underweight patients** Room K

Presenters: James Holland

AUTHORS: James R. Holland III, Geren Thomas, Haley Ethredge

TITLE: Comparison of a weight-based insulin infusion protocol with a non-weight-based protocol for the management of diabetic ketoacidosis among over-and-underweight patients

PURPOSE: There is an association between obesity and diabetes, but to what degree a patient's weight plays in determining their insulin needs during hyperglycemic crisis is not completely clear. This study examined the effects of two different methods of insulin infusion on the management and resolution of diabetic ketoacidosis (DKA) among underweight and obese patients by comparing a traditional blood glucose (BG)-based protocol against a weight-based protocol that takes the patients' size, and likely insulin needs, into consideration.

METHODS: A retrospective, quasi-experimental study was designed after a change was made in the hospital's insulin infusion protocol from an approach that determined the rate of infusion based on where the patient's BG level fell in a range of values to one based on the patient's actual body weight. Patients were included if they were 18 years of age or more, met 2 of 4 laboratory parameters indicating DKA (pH < 7.3, BG ≥ 250 mg/dL, serum bicarbonate <15 mg/dL, positive urinalysis ketones), and had a body mass index (BMI) of either less than 20 kg/m2 or greater than 25 kg/m2. Patients were excluded if they met 4 of 4 laboratory parameters of hyperosmolar hyperglycemic syndrome (HHS) (pH ≥ 7.3, bicarbonate ≥ 15mg/dL, absence of ketones on urinalysis, serum osmolality ≥ 320) or received less than 4 hours of intravenous insulin. The primary outcome was time to DKA resolution defined as resolution of laboratory parameters (BG < 250mg/dL, serum bicarbonate >15mg/dL, and anion gap <12mg/dL) or discontinuation of insulin drip by the prescriber. Secondary outcomes examined included hospital and ICU lengths of stay and duration of IV insulin infusion. Safety outcomes included incidence of hypoglycemia.

RESULTS: A total of 52 patients were included in the analysis. Of those, 22 patients received IV insulin using the blood glucose-based protocol (BGB) and 30 patients received IV insulin using the weight-based protocol (WB). Fourteen of the total patients had a BMI of <20kg/m2 and 38 patients had a BMI of ≥25kg/m2. Mean BG on admission for all patients was >500mg/dL. Mean BMI was 17.5kg/m2 and 33kg/m2 for the underweight and overweight/obese patients, respectively. Time to DKA resolution was less with the BGB protocol (17.6 hours BGB vs. 20.2 hours WB). Hospital length of stay was similar between protocols (5.6 days BGB vs. 6.2 days WB) as well as ICU length of stay (3.3 days BGB vs. 3.4 days WB). When comparing protocols among overweight/obese patients specifically, time to DKA resolution was similar (18.3 hours BGB vs. 18.7 hours WB) while bicarbonate and blood glucose resolved more quickly with the WB protocol. Hypoglycemic events only occurred in the underweight patient population, one instance with each protocol.

CONCLUSION: Data collected for this comparison seems to indicate that there is no meaningful difference in the time to DKA resolution between BGB and WB protocols. Study size was a limitation of this study and results could be improved by utilizing a larger sample size over a longer period of time.

12:00pm – 12:20pm N **Glucocorticoid Usage in Hemorrhagic StrokeGlucocorticoid Usage in Hemorrhagic StrokeGlucocorticoid Usage in Hemmorhagic Stroke** Room L

Presenters: Taylor Mosteller

TITLE: Glucocorticoid Usage in Hemorrhagic Stroke

AUTHORS: Taylor Mosteller, Jessica Starr, Thomas Achey, John Michael Herndon

OBJECTIVE: Discuss outcomes associated with glucocorticoid therapy in hemorrhagic stroke management.

SELF ASSESSMENT QUESTION: What is one intervention that can be done to improve care in patients with an acute hemorrhagic stroke?

BACKGROUND: Despite data showing lack of benefit, glucocorticoids are sometimes used for management of intracranial pressure (ICP) for hemorrhagic stroke. This study aims to quantify benefit when glucocorticoids are used in this manner.

METHODOLOGY: From January 2018 to July 2021, patients were identified by ICD-10 code of hemorrhagic stroke. Patients were excluded if they were <18 years of age, pregnant, were without CT/MRI-confirmed acute intracerebral or subarachnoid hemorrhage, received fludrocortisone for hyponatremia, or had taken steroids chronically (> 1 month) before stroke. Patients that received ≥12 mg daily dexamethasone equivalent within 72 hours of stroke were designated to the steroid group, others to the non-steroid group. The primary outcome was inpatient death. Secondary outcomes included incidence of hyperglycemia, GI bleed, new-onset infection, disposition, 30-day survival, and change in the National Institutes of Health Stroke Scale (NIHSS) score. Alpha was set to 0.05.

RESULTS: In this IRB-approved study, 15 patients were included in the steroid group, 119 in the non-steroid group. No difference was found in mortality between the steroid and non-steroid groups (20%, 34%; p=0.357), median improvement in NIHSS score (0 [-4.3-0.8], 0 [0-1]; p=0.423), 30-day survival (57%, 54%; p=0.340) new onset infection (20%, 10%; p=0.279), disposition, or GI bleed. Incidence of hyperglycemia was significant (46%, 8%; p=0.001).

CONCLUSION: There was significantly more hyperglycemia within the steroid group, and nonsignificant differences for all other outcomes. This aligns with data in previous studies, and prompts reducing or eliminating usage of steroids for hemorrhagic stroke. However, there is less usage than previously thought.

12:00pm – 12:20pm O **Impact of African American Race on Peripheral Neuropathy in Newly Diagnosed Patients with Multiple Myeloma Receiving Bortezomib Induction Therapy** Room B

Presenters: Laura Sun

TITLE: Impact of African American Race on Peripheral Neuropathy in Newly Diagnosed Patients with Multiple Myeloma Receiving Bortezomib Induction Therapy

AUTHORS: Laura Sun, Kathryn Maples, Kevin Hall, Yuan Liu, R. Donald Harvey

OBJECTIVE: Identify the risk factors for BIPN

SELF ASSESSMENT QUESTION: What are the risk factors for BIPN?

BACKGROUND: Bortezomib is the drug of choice in preferred regimens including a proteasome inhibitor for the treatment of multiple myeloma (MM). Nevertheless, the use of bortezomib comes with frequent and potentially debilitating peripheral neuropathy (PN). This study aims to investigate risk factors for bortezomib-induced PN (BIPN).

METHODOLOGY: Retrospective chart review including patients who received bortezomib for the treatment of MM at Winship Cancer Institute and followed through any visits to hospitals within the Emory Healthcare System during January 2007 and August 2017. Demographic information was obtained from the institutional review board-approved myeloma database. Clinical characteristics and outcomes were retrieved from the EeMR. The primary objective is to evaluate the impact of AA race on the incidence of BIPN. Secondary endpoints include time to onset and severity of BIPN.

RESULTS: In progress

CONCLUSIONS: In progress

12:00pm – 12:20pm 1 **Evaluation of a weight-based dosing strategy with transition from immediate-release (IR) tacrolimus to LCP-tacrolimus (Envarsus XR®) in thoracic transplant recipients** Room A

Presenters: Kayla Moody

TITLE: Evaluation of a weight-based dosing strategy with transition from immediate-release (IR) tacrolimus to LCP-tacrolimus (Envarsus XR®) in thoracic transplant recipients

AUTHORS: Kayla Moody, Holly Berry, Mara Watson, Lorenzo Zaffiri, Hakim Azfar Ali, Zidanyue Yang, Alaattin Erkanli, Hui-Jie Lee

OBJECTIVE: Describe a therapeutic weight-based dose of LCP-tacrolimus for thoracic transplant patients.

SELF ASSESSMENT QUESTION: Which end-stage diagnosis often requires higher weight-based doses of LCP-tacrolimus?

BACKGROUND: There is limited data available evaluating dosing in outpatient thoracic transplant recipients. This study aims to describe weight based doses of LCP-tacrolimus needed to achieve one therapeutic trough in adult thoracic transplant recipients converted from IR tacrolimus to LCP-tacrolimus.

METHODOLOGY: Eligible patients included thoracic (heart, lung) transplant recipients followed at Duke who were ≥ 18 years and converted from IR-tacrolimus to LCP-tacrolimus. Patients were identified electronic prescribing reports and data was collected through retrospective chart review for six months after conversion. Patients were stratified for differences in race, end-stage organ diagnosis, organ transplanted, and tacrolimus target trough levels.

RESULTS: Sixty-two patients were included. There were 28 lung transplant recipients, 28 heart transplant recipients, 5 heart/other transplant recipients, and 1 lung/other transplant recipient. The most common reason for converting from IR-tacrolimus to LCP-tacrolimus was drug shortage in 38 patients (61.3%). Fifty-two patients (83.9%) met the primary endpoint. The median weight-based dose at therapeutic level was 0.06 mg/kg/day (IQR 0.04-0.11). The full data range was wide at 0.02-0.63 mg/kg/day. Data stratification found an increase in weight-based dose for African-American patients and cystic fibrosis patients. The median time to therapeutic trough was 19.5 days (13.0-42.5). Twelve patients were treated for acute cellular rejection and 2 patients were treated for antibody-mediated rejection after conversion.

CONCLUSIONS: In our cohort, the median weight-based dose of LCP-tacrolimus at the first therapeutic trough was 0.06 mg/kg/day, but the data range showed wide interpatient variability. Weight-based dose differences were seen when stratified for race and end-stage diagnosis. Further studies are needed to identify a weight-based dose of LCP-tacrolimus with the goal of a shorter time to therapeutic level.

12:20pm – 12:40pm B **Evaluating glycemic control in patients living with HIV managed by an ambulatory care trained pharmacist** Room I

Presenters: Annette Yoo

TITLE: Evaluating glycemic control in patients living with HIV managed by an ambulatory care trained pharmacist

AUTHORS: Ah Lim Yoo; Shelbie Foster; Mehul Tejani; Bradley Smith

OBJECTIVE: Determine the impact of an ambulatory care trained pharmacist (PharmD) on glycemic control among patients living with HIV (PLWH)

SELF ASSESSMENT QUESTION: What are the benefits of a collaborative management between PharmD and primary care physicians in the management of diabetes among PLWH?

BACKGROUND: With advancements in antiretroviral therapy and longer lifespan of PLWH, chronic disease state management has become imperative. In 2019, a PharmD was deployed at the Infectious Diseases Center on Ponce (Grady Health System clinic), to provide primary care services for PLWH. Currently, there is limited data to evaluate the role of PharmDs in this setting.

METHODOLOGY: A retrospective chart review was conducted from January 1, 2018 to September 16, 2021. The PharmD group had patients co-managed by PharmD and the control group consisted of a matched sample who previously received usual care. The primary outcome was the overall change in HbA1c. Secondary outcomes were the percentage of patients who achieved HbA1c

12:20pm – 12:40pm B **Evaluation of congruence with current guidelines regarding metformin use for patients with Type 2 Diabetes Mellitus in a rural healthcare setting** Room K

Presenters: Rebecca Bostick

TITLE: Evaluation of congruence with current guidelines regarding metformin use for patients with Type 2 Diabetes Mellitus in a rural healthcare setting

AUTHORS: Rebecca S. Bostick, Sharmon P. Osae

OBJECTIVE: List potential reasons metformin may be excluded from a T2DM patient medication regimen

SELF ASSESSMENT QUESTION: Which of the following is not a reason that metformin may be missing from a patient regimen?

1. patient reported side effects
2. lactic acidosis
3. eGFR 18 years of age without an active prescription for metformin were included in the study. Patients were excluded if < 18 years of age, diagnosis of T1DM, expired, pregnant, or had an active prescription for metformin.

RESULTS: In progress

CONCLUSIONS: In progress

12:20pm – 12:40pm B **Evaluation of whether Return on Investment is a Sustainability Measure for Ambulatory Care Pharmacy Services** Room J

Presenters: Casey Wells

TITLE: Evaluation of whether Return on Investment is a Sustainability Measure for Ambulatory Care Pharmacy Services

AUTHORS: Casey Wells, Anne Carrington Warren, Irene Park Ulrich

OBJECTIVE: Review the relevance of return on investment (ROI) for ambulatory pharmacy service sustainability

SELF ASSESSMENT QUESTION: What are important characteristics for the creation of sustainable ambulatory pharmacy services?

BACKGROUND: The PGY2 residency in Ambulatory Care and Academia at the Mountain Area Health Education Center has a core focus on practice site development for ambulatory pharmacy services with the goal of creating sustainable and replicable clinical pharmacy services. Prior literature from established ambulatory care clinics from across the country found six key characteristics deemed important to sustain ambulatory pharmacist services. These include full team integration, access to electronic health records, physician champion, appropriate equipment, private clinic room and team-based care. The purpose of this study was to analyze past pharmacy residents' proposed ROI for ambulatory pharmacist services and determine whether the aforementioned characteristics were important for position sustainability.

METHODOLOGY: A retrospective review of past resident business plans and survey were performed. Practice site ROIs were calculated using resident business plan proposals for ambulatory pharmacy services. The survey obtained information about the key practice site characteristics.

RESULTS: Twelve PGY2 residents (100%) completed the survey. Of these twelve, ten completed business plans to pitch for implementation of pharmacist services. All ROIs were positive for each proposed ambulatory pharmacist position (average 1.2). Four practice sites sustained an ambulatory care pharmacist. All six factors from the prior study for establishing ambulatory services in primary care were present at four practice sites, three of which sustained an ambulatory pharmacist.

CONCLUSIONS: Data from the twelve practice sites where clinical pharmacist services were developed support prior survey results for key characteristics needed for sustainability. A positive ROI alone was not indicative of sustaining an ambulatory pharmacist position.

12:20pm – 12:40pm C **Impact of Pharmacist on Optimizing Guideline-Directed Medical Therapy in Patients with Heart Failure Reduced Ejection Fraction at a VA Medical Center** Room H

Presenters: Julia Kim

TITLE: Impact of Pharmacist on Optimizing Guideline-Directed Medical Therapy in Patients with Heart Failure Reduced Ejection Fraction at a VA Medical Center

AUTHORS: Julia Kim, Brittany Wheeler

OBJECTIVE: Describe the impact of pharmacist involvement on optimizing guideline-directed medical therapy (GDMT) in heart failure (HF) patients in an established HF clinic.

SELF ASSESSMENT QUESTION: What medications are first-line GDMT in HFrEF patients?

BACKGROUND: The 2021 update to the 2017 ACC Expert Consensus Decision Pathway recommends a beta-blocker and an inhibitor of the renin-angiotensin system as initial guideline-directed medical therapy for heart failure reduced ejection fraction (HFrEF). Other agents such as aldosterone antagonists, sodium-glucose cotransporter-2 inhibitors, hydralazine and isosorbide dinitrate, or ivabradine can be added after first-line GDMT. The purpose of this study is to assess the impact of incorporating a pharmacist in an established HF clinic on optimizing GDMT for patients with HFrEF.

METHODOLOGY: Chart reviews were conducted for patients identified using the HF population management dashboard. Veterans followed by cardiology at the institution with HFrEF and at least one HF-related hospital admission within the past year were included. Recommendations regarding optimizing GDMT, initiating or switching to appropriate GDMT, and/or discontinuing medications contraindicated in HF were provided to the HF practitioners via electronic medical record. Data to be gathered included the number of recommendations and provider acceptance rates at day 30, 60, and 90. Descriptive statistics were used to analyze the results.

RESULTS: A total of 165 patients were screened, and 50 chart reviews were completed. A total of 106 HF-related recommendations and 40 immunization-related recommendations were made to HF practitioners. The most common recommendation provided was initiating or switching to appropriate GDMT (47%) followed by optimizing GDMT (37%). After 30 days, a total of 7 recommendations were accepted and implemented by practitioners. Between days 31 and 60 and days 61 and 90, 5 additional recommendations were accepted and implemented during each 30 day period. After 90 days, 10% of the HF-related recommendations and 15% of the immunization-related recommendations were accepted and implemented.

CONCLUSIONS: This quality improvement project suggests that the incorporation of a pharmacist into the HF clinic could lead to more accepted recommendations to optimize GDMT with intentions of improving patient outcomes.

12:20pm – 12:40pm Y **Impact of Pharmacist-Led Cardiovascular Health Monitoring and Education on ASCVD Risk Score in the Community Pharmacy Setting** Room G

Presenters: Ashley Eason

TITLE: Impact of Pharmacist-Led Cardiovascular Health Monitoring and Education on ASCVD Risk Score in the Community Pharmacy Setting

AUTHORS: Ashley Eason, Jonathan Harward, Katie Trotta

OBJECTIVE: To describe the implementation and preliminary findings of a pharmacist-run cardiovascular risk reduction clinical service at an independent pharmacy.

SELF ASSESSMENT QUESTION: Can pharmacists impact patient cardiovascular health through education and monitoring?

BACKGROUND: Cardiovascular diseases (CVDs) are the leading cause of death worldwide; myocardial infarction and cerebrovascular accidents (CVA) account for roughly 85% of those deaths. Risk factors for these events include hypertension, hyperlipidemia, diabetes, obesity, and tobacco use. Lifestyle changes such as tobacco cessation, increased physical activity, healthy diet, and medication adherence are all modifiable factors that can contribute to improved cardiovascular outcomes. Since the risk factors for myocardial infarction and CVA are well established, an atherosclerotic cardiovascular disease (ASCVD) risk score is often used in the clinical setting to assess the likelihood of a patient experiencing a stroke or heart attack. The ASCVD risk score calculator uses modifiable and nonmodifiable factors to quantify the potential risk for a cardiovascular event within the next ten years and is presented as a percentage. Risk factors include age, sex, race, blood pressure, cholesterol, history of diabetes, smoking status, and current medications.

The Healthy Heart program offered at Josefs Pharmacy is designed to help empower patients with knowledge about their health in a setting where barriers and concerns can be addressed. The goal is to communicate information about the patient's disease states in a manner in which they will understand and provide attainable goals for the patient to improve health outcomes with a focus on cardiovascular health. The purpose of this study is to describe the implementation and preliminary findings of a pharmacist-run cardiovascular risk reduction clinical service.

METHODOLOGY: This is an observational, single-center, quality improvement pilot study. Eligible patients include individuals: 18 years and older receiving medications at Josefs Pharmacy in Raleigh, NC, enrolled in the cardiovascular health monitoring and education program, Healthy Heart, who agreed to complete routine (every 3 months) health assessments as part of the program, and are English speaking. Patients enrolled in the Healthy Heart program for which an ASCVD risk score cannot be calculated were excluded. Patients were identified using PioneerRx software or OutcomesMTM and enrolled by pharmacy personnel.
Patients will have an ASCVD risk score calculated at baseline and 12 months, medication and disease state history collected, and lifestyle assessments performed by the pharmacy team. Participants will complete a total of 8 sessions over the year-long course.

RESULTS: Prior to program implementation, 31 individuals were identified based on prior enrollment into a blood pressure monitoring program. Contact/contact attempts were made for these individuals, and 10 individuals agreed to program enrollment. Of those enrolled, 6 individuals have had baseline assessments completed. Enrollment and data collection is ongoing as part of a clinical service being offered at the independent pharmacy. Preliminary findings available at this time.
CONCLUSIONS: In Progress

12:20pm – 12:40pm R **Impact of Pharmacy-Led Medication Reconciliation in the Emergency Department to Reduce Medication History Discrepancies** Room C

Presenters: Macy Wigginton

TITLE: Impact of Pharmacy-Led Medication Reconciliation in the Emergency Department to Reduce Medication History Discrepancies

AUTHORS: Macy R. Wigginton, Courtney Haiflich

OBJECTIVE: Evaluate the implementation of a pharmacy-led medication reconciliation process

SELF ASSESSMENT QUESTION: Does implementation of pharmacist-led medication reconciliation program decrease the number of discrepancies on
admission home medication lists?

BACKGROUND: Medication discrepancies, which are defined as inconsistencies between patient and provider documented medication list, have the potential to contribute to adverse drug events surrounding transitions of care. At University Hospital, nurses are prompted to complete medication reconciliation during the initial patient assessment. Providers are required to acknowledge medication reconciliation lists at transitions of service and discharge. However, no standardized process exists for how to perform medication reconciliation.

METHODOLOGY: A pharmacy-led admission medication reconciliation pilot program was implemented in December 2021 and ran for ten days. Patients were included if they were admitted, had three or more documented home medications, or one
documented high-risk medication. Patients were interviewed by pharmacy staff after the nurse or provider completed the initial medication history. Discrepancies between the nursing and pharmacy staff were documented. Discrepancies were then classified based on a modified Med Tax tool. The primary endpoint was to identify the quantity of medication discrepancies and perform a cost avoidance and annual net savings analysis. Secondary endpoints included frequency of different types of medication discrepancies and the time spent collecting medication histories.

RESULTS: A total of 149 patients were screened. 77 patients met inclusion criteria and 63 patients had home medication histories completed by a pharmacy staff member. There was a total of 328 discrepancies. The most common types of home medication discrepancies were omission and commission. Additional analysis ongoing.

CONCLUSIONS: Preliminary analysis shows utilization of pharmacy-led medication reconciliation in the emergency department decreased the number of medication discrepancies on documented home medication lists and demonstrated the
potential for cost savings.

12:20pm – 12:40pm R **Optimizing the Emergency Treatment of Pediatric Patients with Diabetic Ketoacidosis** Room D

Presenters: Meredith Sutton

TITLE: Optimizing the Emergency Treatment of Pediatric Patients with Diabetic Ketoacidosis

AUTHORS: Meredith Sutton, Jennifer Mando-Vandrick, Wennie Huang, Emily Sterrett, Claire Thompson

OBJECTIVE: Discuss barriers to implementation of the two-bag system for pediatric diabetic ketoacidosis in the emergency department

SELF ASSESSMENT QUESTION: What is one barrier to the implementation of routine use of the two-bag system to treat pediatric diabetic ketoacidosis in the emergency department?

BACKGROUND: Diabetic Ketoacidosis is a common presentation of pediatric patients in the emergency department. Traditional management utilizes an insulin drip in conjunction with intravenous maintenance fluids until serum glucose levels drop to 250 mg/dL, at which point fluids containing dextrose are initiated. This treatment method is complicated by hypoglycemia and possible cerebral edema as well as interruptions in therapy. The two-bag system utilizes two bags of maintenance fluids, one containing electrolytes with dextrose and the other without dextrose. The percentage of each fluid that is infusing is shifted as the patient's glucose levels change in response to insulin therapy. Our institution currently utilizes the two-bag system in the pediatric intensive care unit but not in the emergency department. The inconsistency in practice leads to therapy interruptions and confusion among staff. This study sought to characterize knowledge and perceptions of pediatric diabetic ketoacidosis among nurses in our emergency department.

METHODOLOGY: All registered nurses working primarily in our emergency department were invited to complete the survey. Results were then used to guide the content of in-service educational interventions to address survey findings.

RESULTS: The pre-education survey process is currently in progress with approximately 54 completed surveys out of 127 possible candidates resulting in a 42.5% response rate. While this does demonstrate a high response rate, we will continue to gather pre-education responses prior to analysis of educational strategies to ensure a complete assessment of the current state of knowledge is understood.

CONCLUSION: Implementing new processes within a department can be challenging but special care needs to be taken with subpopulations, for example, the treatment of pediatric diabetic ketoacidosis. Prior to initiating our protocol changes it is important to understand what gaps are present in general knowledge and address those along with process change.

12:20pm – 12:40pm I **Epidemiology and Treatment of Invasive Bartonella spp. Infections** Room F

Presenters: Morgan Pizzuti

TITLE: Epidemiology and Treatment of Invasive Bartonella spp. Infections

AUTHORS: Morgan Pizzuti, Pamela Bailey, Caroline Derrick, P. Brandon Bookstaver

OBJECTIVE: At the conclusion of my presentation, participants will be able to describe the epidemiology and treatment outcomes of invasive bartonellosis.

SELF ASSESSMENT QUESTION: What is the most common treatment regimen for invasive bartonellosis?

BACKGROUND: Bartonella spp. are fastidious Gram-negative pathogens that can create biofilms, therefore are suitable pathogens for infecting heart valves and causing invasive bartonellosis. Bartonella spp. are difficult to isolate on culture due to specific environment requirements. Methods such as serology (IgM and IgG) and PCR testing have increased the ability to detect B. henselae and B. quintana in clinical settings. Current treatment recommendations are based on case reports and aging data published before newly available diagnostic techniques. These recommendations are also limited in safety and effectiveness outcomes. This multicenter, retrospective cohort study will describe the epidemiology and treatment outcomes of invasive bartonellosis among patients in the U.S.

METHODOLOGY: Collaborating sites were selected from the SERGE-45 (Southeastern Research Group Endeavor) network and each site managed local IRB approval with Prisma Health serving as the sponsor IRB. Data were collected through REDCap and collated from each participating site. Subjects were screened from adult patients with invasive bartonellosis diagnosis codes, positive Bartonella spp. serologies, PCR, 16/18S tests, cultures, and Karius® tests isolated from blood or tissue from January 1, 2014, through September 1, 2021. Eligible patients were required to have at least one positive test result and have evidence of invasive bartonellosis. Patients that did not receive antibiotic treatment were excluded from this study. An estimated sample size of 100 patients is expected. Chi-square or Fisher's exact tests will be used for categorical data, ANOVA or Kruskal-Wallis test for continuous data, with an alpha level of < 0.05 deemed statistically significant.

RESULTS: In progress

CONCLUSIONS: In progress

12:20pm – 12:40pm O **Evaluation of Risk Factors for Delayed Methotrexate Clearance** Room B

Presenters: Kallie Erickson

TITLE: Evaluation of Risk Factors for Delayed Methotrexate Clearance
AUTHORS: Kallie Erickson, Austin Lucas, LeAnne Kennedy, Glenn Lesser
OBJECTIVE: To evaluate predicted risk factors for delayed clearance of high-dose methotrexate
SELF ASSESSMENT QUESTION: What risk factors lead to delayed clearance of high dose methotrexate?
BACKGROUND: High-dose methotrexate therapy, defined as a dose greater than or equal to 500 mg/m2, is used to treat a variety of malignancies including primary CNS lymphoma and osteosarcoma. High-dose regimens of methotrexate are utilized to overcome resistance, increase the cellular entry of methotrexate into cancer cells, and achieve adequate CNS concentrations. Due to methotrexate having limited solubility at a normal physiological urine pH of 6, patients receive sodium bicarbonate fluids to increase both urine output and urine pH to a goal of greater than or equal to 100 mL per hour and a pH of 7. Some patients take longer than the desired 48 to 72 hours to clear high-dose methotrexate due to several predicted risk factors including drug interactions with methotrexate, acute kidney injury, and the overall volume status of the patient. Decreased clearance leads to increased length of stay and increased methotrexate toxicity, including myelosuppression, mucositis, and hepatotoxicity.
METHODOLOGY: The study evaluated 115 patients from October 2012 through November 2021. Patients were 18 years and older receiving 0.5-12 g/m2 methotrexate at a large academic cancer center. The average age of patients was 59 years old with 62% males and 38% females included. Patients were randomized to evaluate random cycles for each patient. Other data collected included BMI, patient comorbidities including heart failure and chronic kidney disease, patient's fluid status, duration of sodium bicarbonate fluids before methotrexate infusion initiation, and any drug interactions with methotrexate.
RESULTS: In progress
CONCLUSIONS: In progress

12:20pm – 12:40pm S **Implementation of a Multi-Disciplinary Overdose Review Team** Room E

Presenters: Sarah Kemerer

TITLE: Implementation of a Multi-Disciplinary Overdose Review Team
AUTHORS: Sarah Kemerer; Michelle Colvard; Monica Barrett
OBJECTIVE: Describe overdose events and team interventions/recommendations, as well as identify areas where the process could be improved. Additionally, describe the development and implementation of a multi-disciplinary ORT including team membership, the review process, and workload.
SELF ASSESSMENT QUESTION: What interventions are made by an overdose review team? What does the team membership, review process, and workload of a Multi-Disciplinary Overdose Review Team look like?
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.
METHODOLOGY: This was a single-center observational, retrospective, review of all patients reviewed by the ORT from August 19th, 2020 to August 19th, 2021.
RESULTS/CONCLUSIONS: ORT improved naloxone distribution and education with over half of patients who were recommend naloxone receiving the medication. Most of these patients had documented education. Over one-third of patients who were recommended an MAT received the medication within 3 months. Reduction in medication supply occurred for nearly one-third of the patients when recommended. To improve outcomes, the ORT may consider having a designated member of the ORT call the patient to offer ATS follow up and/or naloxone and place consult/order if patient agreeable. This may improve both ATS follow-up for those with SUD in addition to naloxone distribution. It may be beneficial to add a summary of recommendations at the bottom of note for ease of review by providers. ORT may also consider auto-reducing supply if medical charting system would allow, or adding a flag/alert to chart to remind prescribers. Lastly, overall education to facility about the ORT and its purpose may improve outcomes.

12:20pm – 12:40pm 1 **Post-Transplant Diabetes Mellitus (PTDM) in Kidney Transplant Recipients Using Belatacept-Based Immunosuppression** Room A

Presenters: Caleb Good

TITLE: Post-Transplant Diabetes Mellitus (PTDM) in Kidney Transplant Recipients Using Belatacept-Based Immunosuppression

AUTHORS: Caleb Good, Erika Meredith, Arpita Basu

OBJECTIVE: Identify differences between belatacept and tacrolimus-based immunosuppression

SELF ASSESSMENT QUESTION: Which immunosuppression agent is known for causing diabetes mellitus and was used as the control in our study?

BACKGROUND: Kidney transplant recipients are at increased risk for PTDM due to multiple risk factors, including immunosuppressive medications. Calcineurin inhibitors are the backbone of immunosuppression in most transplant centers despite their high association of PTDM. At Emory Transplant Center, belatacept is commonly used for kidney transplant recipients. The purpose is to compare incidence of PTDM between belatacept- and tacrolimus-based immunosuppression in kidney transplant recipients at Emory University Hospital.

METHODOLOGY: This was a single-center, institutional review board approved, retrospective chart review of adult patients who received a kidney transplant at Emory University Hospital between August 1, 2013 and December 31, 2016. The study allowed a follow-up period of three years. The two cohorts in this study were a belatacept and tacrolimus group. The primary outcome compared incidence of PTDM between patients who received belatacept or tacrolimus at month 6, 12, 18, 24, and 36. The secondary outcomes evaluated change in metabolic parameters from baseline and incidence of CMV viremia, BK virus, and recurrent urinary tract infections (UTIs). A subgroup analysis was conducted for patients who developed PTDM.

RESULTS: The incidence of PTDM comparing belatacept (n=254) and tacrolimus (n=36) respectively, was 6.7% and 16.7% at 6 months (p=0.038), 1.6% and 0% at 12 months (p=0.448), 0.4% and 0% at 18 months (p=0.706), 0.4% and 0% at 24 months (p=0.706), and 1.6% and 0% at 36 months (p=0.448). For selected secondary outcomes comparing belatacept and tacrolimus respectively, the incidence of CMV viremia was 8.7% and 13.9% (p=0.312), BK viremia was 29.9% and 41.7% (p=0.155), and recurrent UTIs was 16.5% and 16.7% (p=0.984).

CONCLUSIONS: The difference in patients developing PTDM at 36 months is not clinically significant between treatment groups.

1:50pm – 2:10pm A **DEVELOPMENT AND IMPLEMENTATION OF A PHARMACIST-DRIVEN IV-TO-PO PROTOCOL AT USA HEALTH UNIVERSITY HOSPITAL** Room L

Presenters: Leah Croft

TITLE: Financial Impact of a Pharmacist-Driven IV-to-PO Protocol

AUTHORS: Leah Croft; Emily Statkewicz; Rachel Larry

OBJECTIVE: Implement a pharmacist-driven protocol for IV to PO conversions to improve cost savings.

SELF ASSESSMENT QUESTION: How can this process aid in institutional cost savings?

BACKGROUND: Design and implement a pharmacist-led IV-to-PO protocol.

METHODOLOGY: Retrospective chart reviews were conducted on 100 randomly chosen inpatients; 50 who had received IV pantoprazole and 50 who had received IV azithromycin. The cost difference between doses given IV versus if they had been given orally (PO) was calculated. Then, adult inpatients were prospectively screened daily for 24 days for eligibility to convert to PO therapy. Prescribers were contacted if the patient met criteria to change and conversions were made upon prescriber approval. Cost savings and losses were then calculated.

RESULTS: Two hundred total patients were included in the study (100 prospective recommendations, 100 retrospective chart reviews). Retrospectively, 56 doses of IV azithromycin met criteria for PO administration, resulting in a loss of $86.80. This corelates to an approximate annual loss of $1000. For pantoprazole, 549 IV doses were administered that met criteria for oral administration, resulting in a loss of $1320. This correlates to an approximate annual loss of $55,000. For the prospective portion, 37 out of 100 patients were able to be transitioned to PO therapy and resulted in $699.91 in cost savings. A total of 198 additional IV doses could have been given orally but were not due to lack of prescriber response. This correlated to an approximate loss of $435.57 during the study period. The remaining patients reviewed were not transitioned to PO therapy due to not meeting PO administration criteria, therapy discontinuations, or discharge.

CONCLUSIONS: The results of this study confirmed the benefit of allowing pharmacist-driven dosage formulation conversions. There can be significant institutional cost savings if implemented.

1:50pm – 2:10pm B **Implementation of the Hypoglycemia Safety/Choose Wisely(National VA Initiative) in Patient Aligned Care Team** Room I

Presenters: Dillon Thompson

TITLE: Implementation of the Hypoglycemia Safety/Choosing Wisely(National VA Initiative) in Patient Aligned Care Team

AUTHORS: Dillon Thompson, Courtney Baldridge, Brent Salvig, Aleia Judd

OBJECTIVE: Describe potential interventions that could be made by a clinical pharmacy specialist utilizing the CW-HSI dashboard within the VA.

SELF ASSESSMENT QUESTION:•What was the most common intervention made as a result of clinical pharmacy specialists using the CW-HSI dashboard?

BACKGROUND: The Veterans Health Administration (VHA) Choosing Wisely Hypoglycemia Safety Initiative (CW-HSI) was created to promote moderate glycemic control in vulnerable populations. The goal of the initiative is to foster shared, informed decisions among clinicians, veterans and family/caregivers. The Veterans Affairs (VA) created a template/reminder tool to evaluate patients at high-risk for hypoglycemia. Thereby, prompting practitioners to discuss individualized glucose control targets. The purpose of this study is to determine the type of interventions and change in hypoglycemic events following the implementation of the CW-HSI tool.

METHODOLOGY: This multi–site, prospective observational, cohort review. Patients were included if they had an insulin or sulfonylurea VA prescription, a recent HbA1c within 18 months < 7%, and either age ≥ 75 or dementia/cognitive impairment or SCr ≥ 1.7 mg/dL from 11/01/2021 to 01/31/2022 within the Veterans Affairs Tennessee Valley Healthcare System were identified through the HSI database. Patients were excluded if they were not assigned a PACT location. The following data was also obtained through medical chart review: patients age, sex, race, A1c, current medications, serum creatinine, vital signs (blood pressure, weight, and height). A manual chart review will be conducted to review pharmacist interventions.

RESULTS: Among the 194 patients whom chart were reviewed, treatment interventions occurred in 35% (n=68) of all patients screened and 53% (n=51) in patients reporting hypoglycemia. Of the 68 patients who received a medical intervention: medication discontinuation 53%(n=36), medication dose reduction 28%(n=19), and switching to medication with lower hypoglycemic risk 19% (n=13).

CONCLUSIONS: Patients who endorsed hypoglycemia were sustainably more likely to have a medication intervention. The most common medicaiton intervention was medication discontinatuon. Implementation of the CW-HSI lead to de-intensification of diabetes regimen, which theoretically decreases their risk for hypoglycemia..

1:50pm – 2:10pm B **Safety and effectiveness of direct oral anticoagulants in patients with a creatinine clearance less than 30 ml/min** Room J

Presenters: Sara Dellinger

TITLE: Safety and effectiveness of direct oral anticoagulants in patients with a creatinine clearance less than 30 ml/min

AUTHORS: Sara Dellinger, Amber Tovey, Lauren Cline, Nicholas D'Apice, Erika Generoso

OBJECTIVE: Describe the safety and effectiveness of direct oral anticoagulants compared to warfarin among patients with a creatinine clearance less than 30 ml/min being treated for VTE.

SELF ASSESSMENT QUESTION: Which anticoagulant demonstrated the lowest risk of bleeding among patients treated for VTE with a creatinine clearance less than 30 mL/min?

BACKGROUND: Direct oral anticoagulants (DOACs) are first line for the treatment of venous thromboembolism (VTE). Warfarin remains the mainstay recommendation in patients with severe renal insufficiency (i.e., a creatinine clearance (CrCl) < 30 mL/min), given the reliance of DOACs on renal elimination. Data comparing warfarin and DOACs in this setting of renal insufficiency remains limited. The purpose of this study is to evaluate the safety and efficacy of DOACs compared to warfarin among patients with VTE and advanced chronic kidney disease (CKD).

METHODOLOGY: This retrospective longitudinal cohort study will examine patients from six integrated healthcare systems. Administrative databases will be used to identify patients, exposures, and outcomes. Patients with a CrCl < 30 mL/min and VTE who were dispensed a DOAC or warfarin between January 1, 2016 and December 31, 2020 will be included. Patients who received a DOAC will be propensity score matched 1:5 to patients who received warfarin. Patients will be followed from their initial anticoagulant dispensing date until an outcome is identified, health plan membership termination, anticoagulant discontinuation, or June 30, 2021, whichever comes first. The primary outcome is the composite of systemic thromboembolism including ischemic stroke, clinically relevant bleeding, and all-cause mortality. Secondary outcomes include the individual components of the composite outcome and major bleeding. Outcomes will be validated by manual chart review. Kaplan Meier curves and analysis will be conducted. Multivariable, conditional proportional hazards regression will assess differences between groups while adjusting for potential confounding factors.

RESULTS: No statistically significant difference in the composite outcome of hemorrhage overall, stroke, recurrent VTE, and all-cause mortality was found between the warfarin and DOAC treatment arms (HR 1.13, 95% CI 0.87-1.47). With regard to secondary objectives, while we approached statistical significance particularly with overall hemorrhage, a statistically significant difference was not achieved between treatment groups for hemorrhage overall (HR 0.89, 95% CI 0.58-1.45), gastrointestinal bleed (HR 1.24, 95% CI 0.40-3.85), or intracranial hemorrhage (HR 1.32, 95% CI 0.49-4.37).

CONCLUSIONS: No significant difference in the overall safety and efficacy of DOACs compared to warfarin in the treatment of VTE was found among patients with a CrCl < 30 mL/min. DOACs may be considered before warfarin in patients with severe renal insufficiency for ease of use and a reduction in patient monitoring.

1:50pm – 2:10pm R **Efficacy of high dose versus low dose levetiracetam for status epilepticus** Room C

Presenters: Erin Bendock

TITLE: Efficacy of high dose versus low dose levetiracetam for status epilepticus

AUTHORS: Erin Bendock, PharmD; Brittny Medenwald, Pharm.D.; Cassey Starnes, Pharm.D., BCPS; Shaun Rowe, Pharm.D., M.S., BCCCP, FNCS; Thomas Christianson, M.D.; Leslie Hamilton, Pharm.D., FCCP, FCCM, BCPS, BCCCP

OBJECTIVE: The purpose of this study is to investigate the impact of the loading dose of levetiracetam in patients with status epilepticus on the need for additional anti-epileptic drugs. Lower doses may be as effective in decreasing the need for additional anti-epileptic drugs.

SELF ASSESSMENT QUESTION: What is the most recent guideline recommended weight-based dose for levetiracetam loading?

BACKGROUND: Status epilepticus (SE) is a severe condition with significant morbidity and mortality. After emergent initial benzodiazepine therapy, there is limited guidance for the urgent control agent to be used in SE. Higher dosing of levetiracetam (60 mg/kg) was introduced in the 2019 ESETT trial and has not been studied against the previous standard (20 mg/kg).

METHODOLOGY: This retrospective cohort will evaluate patients admitted to the University of Tennessee Medical Center treated for status epilepticus with > 1 dose of intravenous levetiracetam from January 1, 2019 – January 14, 2022. Exclusion criteria include age < 16 years old or presenting with traumatic injury and/or admitted to trauma service.

RESULTS: As compared to those who received less than 40 mg/kg of levetiracetam, a lower proportion of those who received more than 40 mg/kg required the administration of a second antiepileptic medication within 48 hours (39[69.9%] vs. 15[38.5%]; p=0.0127). However, when taking into consideration potential confounders, there was no difference in the odds on requiring a second AED in the high dose group (OR 0.4, 95% CI 0.2 – 1.2, p=0.0954). More patients in the standard dose (<40 mg/kg) group were on AEDs at home or had a history of seizures.

CONCLUSIONS: Standard doses (<40 mg/kg) of levetiracetam may be as effective as high doses (≥40 mg/kg) for the treatment of SE based on the lack of difference in primary outcome seen across the groups.

1:50pm – 2:10pm R **Evaluation of the Appropriateness of Antipseudomonal Agents Prescribed in the Emergency Department** Room D

Presenters: John Lam

TITLE: Evaluation of the Appropriateness of Antipseudomonal Agents Prescribed in the Emergency Department

AUTHORS: John Lam, Michael Thiefault, Jessica Michal

OBJECTIVE: Evaluate inappropriate overprescribing of anti-pseudomonal agents in the emergency department.

SELF ASSESSMENT QUESTION: In what ways can pharmacists impact antibiotic regimens in the ED?

BACKGROUND: Overprescribing antipseudomonal antibiotics in the emergency department (ED) increases risk for antimicrobial resistance, mortality, healthcare costs, length of stay, and readmissions. This study sought to evaluate appropriateness of antipseudomonal antibiotic use in the ED.

METHODOLOGY: Eligible patients were at least 18 years old initiated on at least one antipseudomonal antibiotic within the ED. Patients were separated into two groups according to presence or absence of guideline-directed Pseudomonas aeruginosa infection risk factors. The primary outcome is percentage of patients who continued to receive antipseudomonal antibiotics on admission. Secondary outcomes include order set used, 30-day readmissions, hospital length of stay, duration of therapy, rates of double antipseudomonal antimicrobial use, appropriateness of aminoglycoside orders, and evaluation of antibiotics received by patients with documented beta-lactam allergies.

RESULTS: Of 287 patients screened, 102/200 (51%) were low risk for P. aeruginosa infection while 98/200 (49%) were high risk. Sixty-five of the 102 (63.7%) patients in the low risk group were continued on an antipseudomonal agent on admission compared to 69 of 98 (70.4%) of patients in the high risk group (p = 0.37). There were no significant differences in secondary outcomes except that patients in the low risk group received a median of one less day of antipseudomonal antibiotics compared to the high risk group (3 vs 4 days, p = 0.02).

CONCLUSIONS: Determining patients' risk of an infection associated with P. aeruginosa offers opportunities to optimize antimicrobial regimens in the emergency department.

1:50pm – 2:10pm R **USE OF ORAL OPIOIDS TO FACILITATE WEANING OF PARENTERAL OPIOIDS IN CRITICALLY ILL ADULT PATIENTS** Room E

Presenters: Hanna Azimi

TITLE: Use of Oral Opioids to Facilitate Weaning of Parenteral Opioids in Critically Ill Adult Patients

AUTHORS: Hanna Azimi, Kelli Keats, Kristina Ortiz, Essilvo Sulejmani, Nathan Wayne

OBJECTIVE: Describe potential advantages of using methadone as a weaning strategy from IV opioids.

SELF ASSESSMENT QUESTION: Which enteral weaning strategy (oxycodone or methadone) resulted in faster time to discontinuation of IV opioids?

BACKGROUND: The purpose of this study is to determine if a weaning strategy using enteral methadone or oxycodone results in faster time to discontinuation of IV opioids in critically ill, mechanically ventilated adult patients.

METHODOLOGY: This was a single-center, retrospective chart review of adult patients in an ICU who received a continuous infusion of IV fentanyl or hydromorphone for > 72 hours and an enteral weaning strategy using either methadone or oxycodone from January 1, 2020 through December 31, 2021.

RESULTS: Ninety-three patients were included in the IRB-approved study. Thirty-six (38.7%) of patients were weaned using methadone, while 57 (61.3%) were weaned using oxycodone. Patients who were weaned using methadone were on IV opioids significantly longer prior to the start of weaning (p=0.04) and had a significantly faster time to discontinuation of IV opioids (p=0.04). After adjusting for COVID status, scheduled midazolam, oral opioid titration, and total morphine equivalents prior to the start of weaning, the association between opioid weaning choice and time to discontinuation of IV opioid was statistically significant. At any given time, patients on methadone are expected to wean from IV opioids 1.89 times as often as those transitioning with oxycodone (final model HR=1.89, 95% CI 1.16-3.07, p=0.0104). There were no significant differences in duration of mechanical ventilation (p=0.32), hospital length of stay (p=0.25), ICU length of stay (p=0.46), or safety outcomes including use of naloxone (p=1.0), ileus (p=0.28), or QTc >500 (p=0.08).

CONCLUSIONS: Compared to oxycodone, patients weaned from IV opioids using enteral methadone resulted in faster time to discontinuation of IV opioids without differences in length of stay measures or safety outcomes.

1:50pm – 2:10pm | **Impact of vancomycin loading doses in patients with methicillin-resistant Staphylococcus aureus infections** Room F

Presenters: Alec Raley

TITLE: Impact of vancomycin loading doses in patients with methicillin-resistant Staphylococcus aureus infections

AUTHORS: Alec Raley, Seth Edwards, Matt Brown, Morgan Frawley

OBJECTIVE: Describe the association between vancomycin loading doses and clinical outcomes in patients with methicillin-resistant Staphylococcus aureus (MRSA) infections.

SELF ASSESSMENT QUESTION: Receipt of a vancomycin loading dose was associated with a significant reduction in mortality? (True/False)

BACKGROUND: Vancomycin loading doses are commonly used in practice. Data has shown that the use of vancomycin loading doses quickly attains target vancomycin trough concentrations; however, limited clinical patient outcomes data is available to support the use of vancomycin loading doses. In April 2020, our institution updated its vancomycin pharmacy-to-dose protocol to align with national consensus guideline recommendations, stating that vancomycin loading doses can be considered for critically ill patients with serious methicillin-resistant Staphylococcus aureus (MRSA) infections. Prior to the protocol update, all patients treated with vancomycin at UAB hospital received a weight-based loading dose. Since implementation of the update, vancomycin loading doses have been reserved for patients who are hemodynamically unstable defined as a systolic blood pressure (SBP) < 90 mmHg, mean arterial pressure (MAP) < 60 mmHg, or requiring vasopressor support. This protocol update provides an opportunity to assess clinical efficacy and safety outcomes related to the use of vancomycin loading doses.

METHODOLOGY: A retrospective, quasi-experimental study was performed to assess the impact of a vancomycin loading dose on clinical outcomes and rates of nephrotoxicity in adult patients with laboratory confirmed MRSA infections who received vancomycin for a minimum of 5 days. Patients requiring renal replacement therapy, receiving vancomycin therapy prior to admission, or with polymicrobial infection were excluded. The primary outcome was inpatient all-cause mortality. Secondary outcomes included persistent signs and symptoms of infection ≥ 5 days after vancomycin initiation, switch to an alternative antimicrobial agent, and nephrotoxicity.

RESULTS: A total of 122 patients with laboratory confirmed MRSA infection were included. 63 patients received vancomycin therapy prior to the protocol update. 59 patients received vancomycin therapy after the protocol update. There was no significant difference in the rate of inpatient mortality between the regimen with and without routine use of a loading dose (4.76% versus 6.78%; p=0.64). Secondary outcomes were also similar between groups, including persistent signs and symptoms of infection, switch to an alternative antimicrobial agent, and nephrotoxicity.

CONCLUSIONS: These findings suggest that routine use of vancomycin loading doses was not associated with reduced mortality in patients with MRSA infection.

1:50pm – 2:10pm I **Rapid Diagnostic Testing and Vancomycin Utilization for Contaminated Blood Cultures** Room G

Presenters: Connor Lockridge

TITLE: Rapid Diagnostic Testing and Vancomycin Utilization for Contaminated Blood Cultures

AUTHORS: Connor Lockridge, Kristen Paciullo, Ronald Trible

OBJECTIVE: Identify the potential impact of rapid diagnostic testing on vancomycin utilization for contaminated blood cultures.

SELF ASSESSMENT QUESTION: How does rapid diagnostic testing impact empiric vancomycin utilization?

BACKGROUND: Bacteremia is a prevalent hospital acquired infection that affects nearly one in ten hospitalized patients. Rates of contaminated blood cultures have ranged from 0.6% to 6% in the literature. Vancomycin is often chosen as empiric coverage for gram positive organisms while awaiting bacterial identification. The purpose of this study was to evaluate the impact of GenMark ePlex Blood Culture Identification Panel (BCID) implementation on the duration of vancomycin therapy for blood cultures contaminated with coagulase negative staphylococci (CoNS).

METHODOLOGY: A retrospective chart review was conducted on patients meeting inclusion criteria during a six month period prior to BCID implementation and post BCID implementation from 03/01/2019 to 08/31/2019 and 03/01/2021 to 08/31/2021. The primary outcome analyzed was the duration of vancomycin therapy (in hours) in patients with a single contaminated blood culture. Secondary outcomes included hospital length of stay, readmission for treatment of contaminated blood cultures, and nephrotoxicity.

RESULTS: The IRB-approved study included 190 patients, 75 in the pre-BCID group and 115 in the post-BCID group. Based on preliminary analysis of the data, the average duration of vancomycin therapy was 53.7 hours in the pre-BCID group and 20.5 hours in the post-BCID group. Additionally, time to culture identification was 57.0 hours in the pre-BCID group and 39.7 hours in the post-BCID group.

CONCLUSIONS: Following implementation of the GenMark ePlex Blood Culture Identification Panel (BCID), there was a reduction in both time to culture identification and duration of vancomycin therapy for blood cultures contaminated with CoNS. Rapid diagnostic testing is helpful in clinical decision-making and can lead to earlier discontinuation of empiric antibiotics such as vancomycin.

1:50pm – 2:10pm L **Evaluation of alvimopan versus naloxegol for prevention of post-operative ileus in patients undergoing bowel resection surgery** Room K

Presenters: Elizabeth DeMoss

TITLE: Evaluation of alvimopan versus naloxegol for prevention of post-operative ileus in patients undergoing bowel resection surgery

AUTHORS: Elizabeth DeMoss, Jonathan Spry, Richard Cramer

OBJECTIVE: Compare the efficacy, safety, and economic outcomes of alvimopan and naloxegol in patients undergoing bowel resection surgery.

SELF ASSESSMENT QUESTION: Which peripherally-acting opioid receptor antagonist used for prevention of post-operative ileus requires a REMs program for safety monitoring?

BACKGROUND: Development of post-operative ileus in the setting of bowel resection surgery has been associated with significant increases in length of hospital stay and medical costs. Peripherally-acting opioid receptor antagonists, such as alvimopan and naloxegol, are used to prevent post-operative ileus. Both agents are on formulary at our institution; however the determination of a preferred agent has yet to be established. The purpose of this study is to evaluate alvimopan versus naloxegol for prevention of post-operative ileus based on a review of efficacy, safety, and economic findings in patients > 18 years old undergoing bowel resection surgery.

METHODOLOGY: An Investigational Review Board-approved retrospective chart review will be conducted to collect data on patients receiving either alvimopan or naloxegol in the setting of bowel resection surgery. Example of data to be collected include: length of stay, development of documented post-operative ileus, and time to first post-operative bowel movement. Data will be evaluated at a patient/dose specific level in order to determine the most appropriate agent for formulary recommendation. The findings and conclusions will be presented as a recommended action item to various committees for approval.

RESULTS: In progress.

CONCLUSIONS: In progress.

1:50pm – 2:10pm P **The Effect of Ketamine on Hospital Length of Stay in Adult Patients Admitted for a Vaso-Occlusive Crisis** Room B

Presenters: Heather Wilson

TITLE: The Effect of Ketamine on Hospital Length of Stay in Adult Patients Admitted for a Vaso-Occlusive Crisis
AUTHORS: Heather Wilson, Lindsay Reulbach, Alex Ewing, Michael Wagner
OBJECTIVE: Identify outcomes of patients receiving adjunct ketamine infusion for the treatment of an acute vaso-occlusive crisis.
SELF ASSESSMENT QUESTION: Which of the following is NOT a benefit of adjunct ketamine for the treatment of vaso-occlusive crisis as cited by the American Society of Hematology?
BACKGROUND: Vaso-occlusive crisis (VOC) is the most common hospital admission diagnosis for patients with sickle cell disease (SCD). VOC pain can be difficult to manage due to hyperalgesia. Adjunct ketamine has demonstrated decreased opioid consumption and patient-reported pain. Guidelines cite the lack of patient-centered outcomes in the current literature evaluating the use of ketamine for VOC pain. The objective of this study was to determine if the utilization of adjunct ketamine infusion decreased hospital length of stay compared to opioid monotherapy in adult patients admitted for a VOC.
METHODOLOGY: A single-center, retrospective, cohort study was conducted on adult SCD patients admitted between May 2018 and May 2021 for a VOC and required opioid therapy. The primary outcome was hospital length of stay. Secondary outcomes included average daily pain scores and overall opioid consumption.
RESULTS: In progress
CONCLUSIONS: In progress

1:50pm – 2:10pm D **Standardization of Parenteral Controlled Substance Preparations Utilized in Pediatric Care**

Presenters: Tyler Merritt Room H

TITLE: Standardization of Parenteral Controlled Substance Preparations Utilized in Pediatric Care

AUTHORS: Tyler Merritt, Gina Willard, Iliana Morataya, Nicole Panosh, Tyler Vest

OBJECTIVE: Identify parenteral controlled substance preparations ideal for standardization.

SELF ASSESSMENT QUESTION: What barriers exist to standardization of medications utilized in pediatric care?

BACKGROUND: Pediatric patients are among the most vulnerable patient groups clinicians treat in the acute care setting. Physiologic changes and rapid progression through development stages require vigilance on the part of the clinician. The percentage of medication errors that lead to harm or death in pediatric care is estimated to be upwards of 31% and many medication errors are a result of the narrow therapeutic index and irreversible onset of effects of intravenous (IV) medications. Furthermore, the Institute for Safe Medication Practices currently identifies IV opioids and midazolam as high-alert medications. Standardize 4 Safety, an FDA-funded initiative from the American Society of Health System Pharmacists, provides guidance on standardization of both IV continuous and intermittent infusions for adult and pediatric patients.

METHODOLOGY: In this IRB-approved, retrospective, single-center study, dispense and waste data were collected from the period beginning January 2019 through December 2020 and analyzed to determine if changes to ready-to-use, parenteral controlled substance preparations were warranted. Average ordered and administered dose, percentage of preparations wasted, and overall expiration data were combined to optimize preparations available to order within the institution. A cost-benefit analysis was performed to determine the financial impact changes to preparations would have on the institution.

RESULTS: A total of eight preparations were analyzed in the waste event analysis, three of which were compounds prepared specifically for pediatric use. One preparation was excluded a priori from analysis due to being produced for a specific patient population and because it had been the subject of previous optimization efforts. Methadone 10 mg/mL (1 mL vial), though not prepared specifically for pediatric use, was found to have high rates of waste per preparation (median 95%) and was predominantly used in the pediatric population, based on EHR administration data. Furthermore, it was determined that the mean dose administered to pediatric patients over the two-year timeframe was 1.32 mg, leading to the recommendation that a 1 mg/mL preparation to deliver a total 2.5 mg dose (3 mL syringe) would be optimal and would result in a cost-savings of 88% per preparation. Additionally, using EHR data, midazolam continuous infusions in both 1 mg/mL and 5 mg/mL were administered an average of approximately 780 times over the two year timeframe. Midazolam preparations displayed high variability in how they were produced, with a determination being made that a centrally-produced 1 mg/mL preparation to deliver 5 mL would potentially lead to improvements in efficiency and safety.

CONCLUSIONS: This study was able to identify opportunities for enhancements and optimization in the medication use process for parenteral controlled substance preparations utilizing a data driven approach at a large academic medical center. Future studies should focus on automation of these types of analyses and analyses on the effect any proposed and implemented changes have on overall efficiency. Finally, future studies should assess staff perception to the medication use process as it relates to these preparations through the use of validated surveys.

1:50pm – 2:10pm T **Clinical and Financial Impact of Transitions of Care Pharmacist Interventions on Heart Failure (HF) Patients Admitted to a Community Hospital** Room A

Presenters: Arrington Mason-Callaway

TITLE: Clinical and Financial Impact of Transitions of Care Pharmacist Interventions on Heart Failure (HF) Patients Admitted to a Community Hospital

AUTHORS: Arrington D. Mason-Callaway, Quwanna Clemons

OBJECTIVE: At the conclusion of my presentation, the participant will be able to describe the clinical and financial impact of TOC pharmacist interventions on preventing adverse drug events (ADEs) in hospitalized HF patients through the measures of cost avoidance and hospital days prevented.

SELF ASSESSMENT QUESTION: TOC interventions that prevent adverse drug events show a significant impact on cost avoidance but do not decrease length of stay. TRUE/FALSE (False).

BACKGROUND: Preventable ADEs cost over $4000 per event and increase length of stay (LOS) by more than three days. In heart failure (HF) patients, increased LOS is associated with increased all-cause readmission rate and 30-day mortality risk. Many preventable ADEs occur during transitions of care (TOC). As experts in pharmacotherapy, TOC pharmacists play an essential role in preventing adverse drug events. The purpose of this study is to quantify the clinical and financial impact of TOC pharmacist interventions on preventing ADEs in hospitalized HF patients.

METHODOLOGY: This was a single-center, retrospective, randomized chart review of adult patients admitted to Wellstar Cobb Hospital with an acute heart failure exacerbation from January 1, 2019 to December 31, 2019. Patients with the primary International Classification of Diseases (ICD-10) codes for acute exacerbation of heart failure or new HF diagnosis were identified using the electronic medical record EPIC Hyperspace®. The primary endpoints of this study include the estimated yearly cost avoidance from preventing ADEs, and the estimated hospital days prevented per year.

RESULTS: In the sample of 200 patients, TOC pharmacists performed 393 (130 hours) medication-related interventions, and 457 (310.2 hours) non-medication-related (“other”) TOC interventions. The total cost avoidance from preventing ADEs was $116,601.83 per year, and the total hospital days prevented per year was 51.58 days.

CONCLUSIONS: The findings of this study suggest that TOC pharmacists provide a substantial clinical and financial benefit from interventions that prevent ADEs in hospitalized HF patients.

2:10pm – 2:30pm A **Implementation of Engagement Activities to Combat Healthcare Burnout Among Pharmacy Professionals** Room L

Presenters: Brooke DeHaven

TITLE: Implementation of Engagement Activities to Combat Healthcare Burnout Among Pharmacy Professionals

AUTHORS: M. Brooke DeHaven, PharmD; Ashley Costello, PharmD, BCPS; Lisa Gibbs, PharmD; Lindsey Arthur, PharmD

OBJECTIVE: At the conclusion of my presentation, the participant will be able to define healthcare burnout, identify risk factors for the development of burnout, and assess prevention strategies to decrease the incidence of burnout.

SELF ASSESSMENT QUESTION: What is the most common burnout symptom displayed by men experiencing burnout? (answer: depersonalization)

BACKGROUND: Burnout is defined as a “high degree of emotional exhaustion, depersonalization, and a low sense of personal accomplishment.” Addressing risks for this syndrome could help improve resiliency at work, employee wellbeing, and patient care. This research aims to determine if implementing emotionally and physically engaging activities and strategies will help decrease burnout, or the risk thereof, of practicing pharmacy staff.

METHODOLOGY: A survey will be sent to all members of the pharmacy department of a single institution center (N = 82) that utilizes a combination of the Burnout Assessment Tool (BAT) with additional screening questions pertaining to sleep, overtime, and at-home work duties. Emotionally and physically engaging activities will be offered monthly to the pharmacy department. The primary outcome is reduction in total BAT score. Secondary outcomes include changes in BAT subsection scores from initial to final survey and employee turnover rate pre- and post-implementation. Subgroup analyses will be conducted to examine responses of individual employee groups.

RESULTS: The primary endpoint of total BAT score decrease occurred for a total 0.35 score decrease noted between surveys (p=0.912). Secondary endpoints of BAT subsection score changes were not statistically significant, though a decrease in all subsections, except emotional impairment and psychological complaints; employee turnover rate showed no difference between the survey periods. The secondary endpoint of employee participation did increase 200%, but this was not found to be statistically significant. Improvement in sleep quality, hours worked per week, and amount of overtime worked were noted. Subgroup analyses noted that pharmacy residents increase BAT score by a mean of 9.6 points while pharmacy technicians decreased BAT score by a mean of 9.6 points. Exhaustion was found to increase in pharmacy residents 4.25 points and decrease in both clinical pharmacists and pharmacy technicians ~1 point (p=0.093).

CONCLUSIONS: Addressing healthcare burnout is an ongoing process with an extended treatment duration needed. Though no statistically significant changes in scores were noted through the research, it is important to consider concurrent factors at play during survey time (i.e. COVID-19 peak census, longitudinal requirements, increased work demand) and that these strategies may have been beneficial in preventing substantial increases in burnout assessment scores. These strategies should continue to be implemented and practiced for the ongoing process of self-improvement and addressing this endemic within the healthcare profession.

2:10pm – 2:30pm B **Implementation of the Hypoglycemia Safety/Choose Wisely(National VA Initiative) in Patient Aligned Care Team** Room I

Presenters: Courtney Baldridge

TITLE: Implementation of the Hypoglycemia Safety/Choosing Wisely(National VA Initiative) in Patient Aligned Care Team

AUTHORS: Courtney Baldridge, Dillon Thompson, Aleia Judd, Brent Salvig

OBJECTIVE: List potential interventions that could be made by a pharmacist utilizing the CW-HSI toolkit within the VA.

SELF ASSESSMENT QUESTION: •What percentage of patients identified through the CW-HSI dashboard required intervention to reduce the risk of hypoglycemia?

BACKGROUND: The Veterans Health Administration (VHA) Choosing Wisely Hypoglycemia Safety Initiative (CW-HSI) was created to promote moderate glycemic control in vulnerable populations. The goal of the initiative is to foster shared, informed decisions among clinicians, veterans and family/caregivers. The Veterans Affairs (VA) created a template/reminder tool to evaluate patients at high-risk for hypoglycemia. Thereby, prompting practitioners to discuss individualized glucose control targets. The purpose of this study is to determine the rate of interventions after the implementation of the CWI-HSI tool.

METHODOLOGY: This multi–site, prospective observational, cohort review. Patients were included if they had an insulin or sulfonylurea VA prescription, a recent HbA1c within 18 months < 7%, and either age ≥ 75 or dementia/cognitive impairment or SCr ≥ 1.7 mg/dL from 11/01/2021 to 01/31/2022 within the Veterans Affairs Tennessee Valley Healthcare System were identified through the HSI database. Patients were excluded if they were not assigned a PACT location. The following data was also obtained through medical chart review: patients age, sex, race, A1c, current medications, serum creatinine, vital signs (blood pressure, weight, and height). A manual chart review will be conducted to review pharmacist recommendations.

RESULTS: In progress

CONCLUSIONS: In progress

2:10pm – 2:30pm B **Retrospective Evaluation of Differences Within Successful and Unsuccessful Patient Use of a Personal Continuous Glucose Monitor (CGM) To Achieve Glycemic Control Within an Employee-based Health Center.** Room J

Presenters: Sherlie Llorens

TITLE: Retrospective Evaluation of Differences Within Successful and Unsuccessful Patient Use of a Personal Continuous Glucose Monitor (CGM) To Achieve Glycemic Control Within an Employee-based Health Center.

AUTHORS: Sherlie J. Llorens, PharmD

OBJECTIVE: This retrospective study aims to evaluate patients that have achieved glycemic control while using CGM as well as patients that have not achieved control within 1 year of sensor utilization. Also, this study will identify barriers for patients that are uncontrolled.

SELF ASSESSMENT QUESTION: What are common barriers for patients that would prevent successful glycemic control when using a Continues Glucose Monitor (CGM)?

BACKGROUND: The Diabetes Standards of Care, written by the American Diabetes Association continues to move toward the utilization of technology to provide more information to improve decision making and better glycemic control. One area of focus being the use of Continuous Glucose Monitors (CGMs) to help achieve goals of Target Range and hemoglobin A1c.

METHODOLOGY: Using a pharmacy generated report to identify patients with a personal CGM prescription filled between January 2021- December 2021, patient profiles within our electronic medical record will be retrospectively evaluated. Patients will be evaluated and compared between achieved and non-achieved goals of A1c and Target Range to determine deterrent factor of success.

RESULTS: In progress

CONCLUSIONS: The identified factors that contribute to unsuccessful blood glucose target range or A1c target goals will be determining targeted factors for future patient to project future success.

2:10pm – 2:30pm R **CLINICAL AND ECONOMIC OUTCOMES RESULTING FROM AN INHALED EPOPROSTENOL FORMULARY CONVERSION** Room D

Presenters: Daniel Remke

TITLE: CLINICAL AND ECONOMIC OUTCOMES RESULTING FROM AN INHALED EPOPROSTENOL FORMULARY CONVERSION

AUTHORS: Daniel Remke, Jack Umphers, Jeannie Watson

OBJECTIVE: Describe differences between inhaled epoprostenol products used in critically ill patients.

SELF ASSESSMENT QUESTION: How does a formulary conversion between inhaled epoprostenol products impact Ascension Saint Thomas Hospital West.

BACKGROUND: Compare clinical outcomes and assess the financial impact of a conversion between inhaled epoprostenol products in critically ill patients receiving this treatment modality.

METHODOLOGY: Retrospective cohort study of patients treated with inhaled epoprostenol, specifically patients who received Flolan between August 1, 2020 and October 31, 2020, or Veletri between August 1, 2021 and October 31, 2021. The primary objective was to determine if there is a difference in duration of therapy between inhaled epoprostenol products used in critically ill patients. Secondary objectives included ICU length of stay, time to first titration, overall decrease in dose, and a comparison in costs associated with different epoprostenol products.

RESULTS: 100 patients were included in the study, 50 in each group. There was no statistically significant difference when comparing the primary outcome of duration of therapy between the two groups (72 vs 52 hours, p = 0.261). Secondary outcomes were also similar between the two groups except when comparing cost. The median cost of therapy per patient was significantly less in the Veletri group ($281 vs $432, p = 0.002). Additional analysis found that there were significantly fewer Veletri syringes dispensed per patient compared to Flolan (8 vs 14, p= 0.013)

CONCLUSIONS: In this study we observed that Veletri was associated with a significant decrease in cost as well as total number of syringes dispensed. These observations support the formulary conversion from Flolan to Veletri and lead us to believe that this switch will lead to a decrease in costs and reduced work for the IV room, while maintaining clinical efficacy.

2:10pm – 2:30pm R **Comparison of Corticosteroid Doses on Reducing Ventilator Days in COVID-19 ARDS** Room E

Presenters: Meera Patel

TITLE: Comparison of Corticosteroid Doses on Reducing Ventilator Days in COVID-19 ARDS

AUTHORS: Meera Patel, Jana Mills, Mydien Tran, Donna McAuley, Michael Waldman

OBJECTIVE: To evaluate the impact of different corticosteroid doses in reducing ventilator days in COVID-19 ARDS

SELF ASSESSMENT QUESTION: What is one benefit of using steroids in COVID-19 ARDS?

BACKGROUND: There is emerging evidence that high dose adjunct steroids may decrease ICU escalation of care and mortality, as well as duration of mechanical ventilation in COVID-19 acute respiratory distress syndrome (ARDS). This study evaluated the impact of different corticosteroid doses in COVID-19 patients at a community hospital on days of mechanical ventilation and 30-day mortality.

METHODOLOGY: This was a single center retrospective study conducted at a 32-bed ICU from June 2020 to September 2021. Adult patients who were COVID positive and developed ARDS with a PaO2: FiO2 ratio of ≤ 200, who received standard of care in addition to adjunct steroids, were evaluated for the study. Patients were further stratified into sub-groups depending on prednisone equivalent dose. The intervention group included very high or pulse dose steroids while the control group included patients who received less than 100mg of prednisone equivalents per day. The primary endpoint was the number of days on mechanical ventilation. Secondary endpoints included 30-day mortality and ICU length of stay.

RESULTS: The primary end point of number of days on mechanical ventilation and secondary endpoint of ICU length of stay was longer and statistically significant in very high/pulse dose corticosteroid group with p-values of 0.033 and 0.014 respectively. Other secondary endpoints including number of secondary infections and hyperglycemia events were not statistically significant.

CONCLUSION: The use of very high/pulse dose corticosteroids in COVID induced ARDS may be associated with greater number of days on mechanical ventilation and longer ICU length of stay. More data from large randomized controlled trials is needed to draw a definitive conclusion.

2:10pm – 2:30pm R **Impact of enteral analgosedation on parenteral analgosedation weaning in a community teaching hospital** Room C

Presenters: Quinn Hattaway

TITLE: Impact of enteral analgosedation on parenteral analgosedation weaning in a community teaching hospital

AUTHORS: Quinn Hattaway, Sarah Blackwell, Alyssa Osmonson

OBJECTIVE: Describe the effect of enteral analgosedation overlap as a method for weaning IV analgosedation in mechanically ventilated patients.

SELF ASSESSMENT QUESTION: Does utilizing enteral analgosedation affect the weaning of IV analgosedation in mechanically ventilated patients?

BACKGROUND: There is limited evidence on the use of enteral analgosedation as stepdown therapy for mechanically ventilated patients. The enteral route may allow for a more stable level of consciousness, less neurological fluctuation, and decreased cardiorespiratory side effects often seen with intravenous (IV) analgosedation. The goal of this study is to determine the impact of enteral overlap with IV analgosedation in mechanically ventilated patients.

METHODOLOGY: Included patients were admitted from July 2019 to August 2020, ≥19 years of age, had medication orders for concurrent IV and scheduled enteral analgesia and/or sedation, and were on mechanical ventilation for at least 24 hours prior to and after enteral analgosedation initiation. The primary outcome was IV medication exposure 24 hours before and after the introduction of enteral analgosedation. Key secondary outcomes include patients requiring re-initiation/upward titration of IV analgosedation after the introduction of enteral analgosedation and patients who required the use of rescue medications. Descriptive statistics were used to analyze results.

RESULTS: One hundred eighteen patients were included. The mean change in IV medication exposure for opioids, benzodiazepines, and propofol after enteral analgosedation initiation was not significantly different. Seventy-one patients (61.16%) required the re-initiation or upward titration of IV analgosedation and forty-seven patients (39.83%) required the use of rescue medications after enteral analgosedation initiation.

CONCLUSIONS: The addition of enteral to IV analgosedation did not result in a change in overall IV medication exposure. Limitations to this study include retrospective design and the lack of an enteral analgosedation initiation protocol, resulting in a wide range of enteral medications and dosages used. Future studies are needed with protocolized enteral analgosedation initiation to further elucidate the effect of enteral analgosedation on the weaning of IV analgosedation.

2:10pm – 2:30pm | **ANTIMICROBIAL STEWARDSHIP FOR URINARY TRACT INFECTIONS IN THE EMERGENCY DEPARTMENT** Room F

Presenters: Sara Black

TITLE: ANTIMICROBIAL STEWARDSHIP FOR URINARY TRACT INFECTIONS IN THE EMERGENCY DEPARTMENT

AUTHORS: Sara Black, Victoria Woolley, Omeka Sanders, Megan Freeman

OBJECTIVE: Identify areas for improvement in prescribing practices through education and interventions

SELF ASSESSMENT QUESTION: What is one area in which clinical pharmacists can impact patient care in the emergency department?

BACKGROUND: This retrospective study will concentrate on antimicrobial prescribing for urinary tract infections (UTIs) in the emergency department and will aim to evaluate Northside Hospital Atlanta's current practices and compliance with current guidelines for the treatment of urinary tract infections.

METHODOLOGY: We conducted a retrospective chart review for patients diagnosed with urinary tract infections in the emergency department of Northside Hospital Atlanta. The data collection period for this study is January 2020 to December 2021. Patients were excluded if they were under the age of 18, had a history of recurrent UTIs, admitted to an inpatient unit, prescribed antibiotics for indications other than UTI, and/or receiving antibiotics prior to ED visit. Patients were evaluated on symptoms, urinalysis and culture results and relation of these results to antibiotic therapy. Data collection and the interventional portion of the prospective portion of this study will be from April to July 2022.

RESULTS: 100 patients were included in the retrospective phase. Of these 100 patients, 91% had specific UTI symptoms and all 100 patients had a urinalysis taken. The majority of isolates from urine cultures were Escherichia coli, and Klebsiella pneumoniae, to a much smaller degree. 100% of patients were discharged from the emergency department on an oral antibiotic, 80% of them receiving a prescription for cephalexin. Optimal therapy was defined by current guideline and clinical literature recommendations for UTI treatment. 31% of all patients did not receive optimal therapy, with the most common reasoning being prolonged duration of therapy.

CONCLUSIONS: Overall, the retrospective phase of this study demonstrated an opportunity for education and the potential for future interventions as the prospective phase of this study is conducted.

2:10pm – 2:30pm | **The Risk of Acute Kidney Injury in Patients on Concomitant Vancomycin and Cefepime or Piperacillin/Tazobactam Therapy** Room G

Presenters: Hailey Wolk

TITLE: The Risk of Acute Kidney Injury in Patients on Concomitant Vancomycin and Cefepime or Piperacillin/Tazobactam Therapy

AUTHORS: Hailey Wolk, William Wilkie, and Jesse McKee

OBJECTIVE: At the conclusion of my presentation, the participant will be able to define an acute kidney injury (AKI) in accordance to the AKIN and RIFLE criteria.

SELF ASSESSMENT QUESTION: What are two values used to assess the presence of an AKI?

BACKGROUND: Vancomycin and antipseudomonal beta-lactams are often used in combination to provide broad empiric antibiotic activity. Current literature suggests that when used in combination, vancomycin and piperacillin/tazobactam (PTZ) may have an increased risk of causing acute kidney injury (AKI). This study aims to compare the difference in AKI incidence in patients receiving vancomycin and PTZ or cefepime.

METHODOLOGY: This study was approved by the Mission Research Hospital Review Committee. The electronic medical record will be used to identify patients between the date range of 5/1/2013 and 12/31/2020, who are over the age of 18, admitted to an adult inpatient unit, had vancomycin and either PTZ or cefepime initiated within 24 hours of each other, and received either antibiotic combination for at least 48 hours. The primary outcome measure will be the difference in incidence of AKIN-defined AKI in patients receiving vancomycin and PTZ versus vancomycin and cefepime. Secondary outcomes include mortality, length of hospital stay, length of antibiotic therapy, and RIFLE (risk, injury, failure, loss of kidney function, and end-stage kidney disease)-defined AKI. It was determined that 590 patients per treatment group would yield 80 percent power.

RESULTS: In Progress

CONCLUSIONS: In Progress

2:10pm – 2:30pm L **Evaluating the 30-day Incidence of Venous Thromboembolism (VTE) Among Patients Discharged From a Coronavirus Disease 2019 (COVID-19) Admission in the Absence of Thromboprophylaxis at Discharge** Room K

Presenters: Morgan Cunningham

TITLE: Evaluating the 30-day incidence of venous thromboembolism among patients discharged from a COVID-19 healthcare encounter in the absence of anticoagulation at discharge

AUTHORS: Morgan Cunningham; Brandon Beers; James Groce; Sheema Hallaji; Michelle Turner

OBJECTIVE: To evaluate the 30-day incidence of VTE among patients discharged from a COVID-19 healthcare encounter in the absence of anticoagulation at discharge.

SELF ASSESSMENT QUESTION: What potential factors may contribute to a higher incidence of VTE in COVID-19?

BACKGROUND: Complications of COVID-19 include venous thromboembolisms (VTE). VTE risk in acutely ill patients is highest during the first 30-days following hospitalization.

METHODOLOGY: A retrospective chart review was conducted to determine the 30-day incidence of VTE among patients discharged from a COVID-19 healthcare encounter in the absence of thromboprophylaxis at discharge. Patients had to be 18 years of age or older. The COVID-19 cohort patients had a COVID-19 related visit to an acute care hospital and positive COVID-19 PCR with a readmission for VTE within 30 days while the control cohort patients had a non-COVID-19 related visit to an acute care hospital and readmission for VTE within 30 days. The primary objective was to evaluate the 30-day incidence of VTE among patients discharged from a COVID-19 healthcare encounter in the absence of anticoagulation at discharge. Secondary objectives included to determine the incidence of PE versus DVT, analyze the use of anticoagulation administered during hospitalization, analyze possible contributing factors for VTE, and calculate time-to-VTE occurrence.

RESULTS: The incidence of PE was higher than DVT in both groups. Most VTEs occurred around day 12 after discharge. Days receiving anticoagulants during the initial healthcare encounter significantly differed between the COVID-19 and control groups.

CONCLUSIONS: There is a higher incidence of VTE within 30-days of initial visit among patients with COVID-19 in the absence of anticoagulation at discharge.

2:10pm – 2:30pm P **Effectiveness of Battlefield Acupuncture on Pain Outcomes at the Carl Vinson VA Medical Center** Room B

Presenters: Sara Peacock

TITLE: Effectiveness of Battlefield Acupuncture on Pain Outcomes at the Carl Vinson VA Medical Center
AUTHORS: Sara Grace Peacock, Marci Swanson, Deborah Hobbs
OBJECTIVE: Identify the effectiveness of battlefield acupuncture on pain outcomes.
SELF ASSESSMENT QUESTION: In what situations should a patient not receive battlefield acupuncture?

BACKGROUND: Over fifty percent of Veterans currently suffer from chronic pain in the United States. Battlefield acupuncture is a type of auricular acupuncture that is offered to Veterans as an alternative or adjunctive option to pain medications to reduce chronic pain. The theoretical mechanism involves semi-permanent, gold-plated needles being placed in the ear and interfering with pain in the central nervous system. This project's purpose is to further analyze battlefield acupuncture's effectiveness in managing chronic pain and decreasing the number of pain medications needed.

METHODOLOGY: This quality improvement project was approved by the P&T committee in September 2021. Assessment of effectiveness of battlefield acupuncture includes a retrospective chart review and a standardized questionnaire. Patients were included if they have completed at least one session of battlefield acupuncture from March 2021 to August 2021. Patients were excluded if they had an allergy to gold, refused therapy, had an aversion to needles, or were currently pregnant. This yielded a total of 292 patients.
Data collected through retrospective chart reviews included age, race, gender, chronic pain indication, pain regimen before and after starting battlefield acupuncture, number of battlefield acupuncture sessions, morphine equivalent daily dose (MEDD) before and after starting battlefield acupuncture, and distance traveled. In addition to the retrospective chart review, standardized questionnaires were given via telephone or through face to face visit to assess Veteran perceived effectiveness. Questionnaires also asked patients how their pain has affected specific areas of their lives including sleep quality, stress, and mood.

RESULTS: The average age of patients included in this project was 55.5 years old. 69.3% of patients were male, and the majority of patients were either African American (55.5%) or Caucasian (41.6%). 39% of patients traveled 50 miles or greater to receive BFA. A variety of pain indications were seen, with the most common being back, knee, shoulder, and neck pain, as well as headache/migraine. 19.7% of patients had one pain indication, 29.5% had two indications, and 50.7% of patients had three or more indications.
68% of patients found BFA to be beneficial in treating their chronic pain, with length of benefit most often being less than 2 weeks. More benefit was seen with an increased number of sessions. Most patients also found BFA to be beneficial regarding their sleep, stress, and mood. 81 patients saw a decrease in amount of pain medications since starting BFA. 26 patients saw a decrease in morphine equivalent daily dose (MEDD), with 18 of those seeing a decrease to 0. Veterans who discontinued BFA most often did so due to ineffectiveness, with adverse effects being the second most common reason. The most common adverse effects seen were ear tenderness and itching.

CONCLUSIONS: Battlefield acupuncture performed at the Carl Vinson VA Medical Center from March 1, 2021 to August 31, 2021 provided benefit to over half of Veterans regarding pain reduction. Shorter follow-up visits may lead to improved outcomes, as Veterans most often reported pain relief lasting less than two weeks after receiving battlefield acupuncture.
Overall, the addition of BFA to patients' pain regimens lead to a decrease in both the amount of opioids used and number of pain medications needed in general. Further research should be done on the potential differences in effect among race, sex, and age. Effectiveness in those patients who only had one session of BFA should also be further evaluated.

2:10pm – 2:30pm D **Clinical Outcomes Following the Implementation of Protocol Driven Management for Late Onset Sepsis (LOS) in a Neonatal Intensive Care Unit (NICU)** Room H

Presenters: Benjamin Tabor

TITLE: Clinical Outcomes Following the Implementation of Protocol Driven Management for Late Onset Sepsis (LOS) in a Neonatal Intensive Care Unit (NICU)

AUTHORS: Benjamin Tabor, Andrew Gainey, Robert Daniels

OBJECTIVE: At the conclusion of my presentation, the participant will be able to recommend appropriate empiric antibiotics for a NICU patient presenting with late onset sepsis.

SELF ASSESSMENT QUESTION: Which of the follow antibiotics is an appropriate empiric agent for a NICU patient with presumed late onset sepsis and no history of resistant pathogens? Select all that apply.

BACKGROUND: Sepsis is an important cause of morbidity and mortality among newborn infants. Although the incidence of sepsis in term and late preterm infants is low, the potential for serious adverse outcomes is of such great consequence that practitioners should have a low threshold for treatment of possible sepsis in neonates. The absence of a protocol for antimicrobial therapies can lead to variations of antibiotic regimens, in which coverage can be unnecessarily broad. The purpose of this study is to examine the clinical impact and outcomes associated with the implementation of a protocol for the treatment of LOS in the NICU.

METHODOLOGY: The screening pool was generated from reports of blood cultures obtained and antibiotics ordered in patients aged ≥ 72 hours who were admitted to the NICU. Patients admitted to Prisma Health Children's Hospital - Midlands NICU with clinical suspicion or diagnosis of LOS were included. Patients' baseline demographics, culture results, antibiotic therapy, adverse events, and severity of illness markers were collected.

RESULTS: In Progress

CONCLUSIONS: In Progress

2:10pm – 2:30pm T **Pharmacist-Led Post-Discharge Follow Up Phone Calls with Patients in the Primary Care Setting**

Presenters: Logan Talley Room A

TITLE: Pharmacist-Led Post-Discharge Follow Up Phone Calls with Patients in the Primary Care Setting

AUTHORS: Logan Talley, Carly Steuber, April Williams

OBJECTIVE: Identify the clinical and financial impact of pharmacist-led post-discharge follow up phone calls with patients in the primary care setting.

SELF ASSESSMENT QUESTION: What is one area in which pharmacists can impact patient care during post-discharge follow up?

BACKGROUND: The purpose of this study is to evaluate the impact of pharmacist-led post-discharge follow up phone calls with patients in the primary care setting.

METHODOLOGY: Eligible participants were established patients at a health-system owned primary care clinic that have recently been discharged from a large community hospital. The pharmacist identified patients for transitional care management (TCM) phone call follow up by reviewing a daily discharge report. Hospital courses were reviewed by the pharmacist prior to completing the phone call. A form in the electronic medical record was used to guide conversation and document all concerns, recommendations, and interventions. During the phone call, the pharmacist addressed patient concerns, provided medication education, and completed medication reconciliation. After the phone call, the pharmacist messaged the clinic staff to schedule follow up appointments. For urgent concerns, the pharmacist messaged the patient's primary care physician or called the clinic office directly.

RESULTS: In Progress

CONCLUSIONS: In Progress

2:30pm – 2:50pm B **Evaluation of ophthalmic monitoring and counseling of Veterans with a history of diabetic retinopathy new to semaglutide in a Veterans Affairs Health Care System (VAHCS)** Room I

Presenters: Kyle Weatherman

TITLE: Evaluation of ophthalmic monitoring and counseling of Veterans with a history of mild to moderate diabetic retinopathy new to semaglutide in a Veterans Affairs Health Care System (VAHCS)

AUTHORS: Kyle Weatherman, Rebecca Edwards, Camille Robinette

OBJECTIVE: At the conclusion of my presentation, the participant will be able to identify whether timely eye care monitoring was ensured and/or recommended in Veterans with diabetic retinopathy (DR) new to semaglutide.

SELF ASSESSMENT QUESTION: Name one way DR monitoring can be improved in Veterans new to semaglutide?

BACKGROUND: DR is one of the most common etiologies of vision loss worldwide. Recent studies and post-marketing reports suggest that semaglutide may have a greater association with DR than other GLP-1 RAs. Semaglutide is the preferred GLP-1 RA for the SVAHCS. DR is irreversible; therefore, it is essential that appropriate eye care monitoring is implemented to minimize progression in Veterans with established DR starting semaglutide.

METHODOLOGY: This was a retrospective quality improvement project. Included Veterans had a history of mild to moderate DR and converted to semaglutide from an another GLP-1 RA at SVAHCS between October 1, 2018 to June 30th, 2019. The primary objective was to identify and evaluate post-initiation ophthalmic follow-up plans. The secondary objective was to determine the occurrence and quality of Veteran eye care counseling upon starting therapy.

RESULTS: A total of 31 Veterans were included. The primary outcome revealed the duration between eye clinic follow-up pre to post-conversion was 14.4 months (standard deviation= 12.68, coefficient of variation= 0.88). For the secondary outcome, 87.1% of Veterans had documented eye care counseling but the majority of that documentation (81.5%) was of low quality. Limitations included the inability to assess undocumented counseling and, potential impact of the pandemic on post-initiation follow-up appointments.

CONCLUSIONS: There is room for improvement in the timeliness of eye care monitoring and quality of documented counseling for Veterans new to semaglutide. Developing future local guidance regarding timely eye care and patient education may minimize potential for DR complications.

2:30pm – 2:50pm B **Initiative to Deprescribe Benzodiazepines and Sedative Hypnotics in the Geriatric Veteran Population** Room J

Presenters: Jenna Griffin

TITLE: Initiative to Deprescribe Benzodiazepines and Sedative Hypnotics in the Geriatric Veteran Population

AUTHORS: Jenna Griffin, Keeya Turner, Cassandra Warsaw, Erin Amadon

OBJECTIVE: Describe the potential impact of direct-to-consumer educational materials on deprescribing rates in the elderly.

SELF ASSESSMENT QUESTION: What is one risk associated with long term benzodiazepine use in the elderly?

BACKGROUND: The Veterans Health Administration (VHA) has implemented a nation-wide Psychotropic Drug Safety Initiative (PDSI) in order to address the risk and potential harm associated with benzodiazepine and sedative hypnotic use in the elderly. This project aims to initiate discussions between geriatric Veterans and mental health providers through the use of mailed direct-to-consumer educational information, and encourage deprescribing of potentially inappropriate benzodiazepine and sedative hypnotic medications.

METHODOLOGY: This project was a quality-improvement, prospective, cohort analysis. Veterans aged 65 and older, managed by mental health, and prescribed chronic benzodiazepines or sedative hypnotics with mental health appointments between June and August 2021 were included. Direct-to-consumer educational materials were mailed at least two weeks in advance of their scheduled mental health appointments. The primary endpoint was the percentage of benzodiazepine and sedative hypnotic therapy discontinuation at first mental health appointment after direct-to-consumer materials were received and at 3 months. The secondary endpoint included the percentage of benzodiazepine and sedative hypnotic therapy dose reduction at first mental health appointment and at 3 months.

RESULTS: Therapy discontinuation occurred for 9 prescriptions (5 at the initial appointment and 4 at the 3-month follow-up) for an overall average of 10.7%. Therapy dose reduction occurred for 14 prescriptions (9 at the initial appointment and 5 at the 3-month follow-up) for an overall average of 16.7%. The deprescribing rates at initial appointment, 3-month follow-up, and overall were 16.7%, 14.1%, and 27.4% respectively.

CONCLUSIONS: Mailing of direct-to-consumer educational materials to augment healthcare literacy may be associated with clinically meaningful deprescribing trends of benzodiazepine and sedative hypnotics in elderly Veterans. Educational materials may encourage increased discussions between Veterans and providers, increasing opportunities for deprescribing.

2:30pm – 2:50pm C **Implementation of Pharmacist Interventions in Heart Failure into PACT Model** Room H

Presenters: Alexandria Borden

TITLE: Implementation of Pharmacist Interventions in Heart Failure into PACT Model

AUTHORS: Alexandria Borden, Tiffany Jagel

OBJECTIVE: The purpose of this quality improvement project is to incorporate treatment of low-complexity heart failure into the PACT CPS practice.

SELF ASSESSMENT QUESTION: Which classes of medications decrease mortality in heart failure?

BACKGROUND: Various care models exist for heart failure that emphasize multidisciplinary treatment. Primary Care plays a vital role in patient education, adjustment of drug therapy, and early detection of exacerbation. In The Patient Aligned Care Team (PACT) model, pharmacists have a broad scope of practice that allows them to independently prescribe, order labs and initiate referrals for chronic disease states.

METHODOLOGY: An initial assessment of PACT pharmacist comfort level treating heart failure was obtained. Detailed inclusion criteria was established affirming patients that were appropriate to receive treatment in the Primary Care setting and the facility care coordination agreement was updated to reflect the inclusion of treatment of heart failure.

A list of patients who were not receiving guideline-directed therapy was obtained from the national academic detailing dashboard and distributed to PACT CPS to contact patients needing interventions. Target measures for clinic efficacy include patients that had a diagnosis of HFrEF but were not prescribed an ACE inhibitor, Angiotensin Receptor Blocker (ARB), angiotensin receptor neprilysin inhibitor (ARNI), beta blockers or aldosterone antagonists at target doses.

A quarterly progress report of actionable patients was distributed to each PACT pharmacist. The report includes the percentage of patients that were contacted and the number of interventions per month.

RESULTS: The percentage of patients who were treated by the PACT CPS and reached target dose of guideline directed therapy increased.

CONCLUSIONS: CPS were able to successfully implement treatment of heart failure into their workflow and improve access to care for Veterans with CHF. The consistent increase in number of interventions per month implies that CPS became more comfortable incorporating treatment of Heart Failure in their practice.

2:30pm – 2:50pm R **Early versus Late Initiation of Ketamine for Analgosedation in the Intensive Care Unit** Room C

Presenters: Elaina Etter

TITLE: Early versus Late Initiation of Ketamine for Analgosedation in the Intensive Care Unit

AUTHORS: Elaina Etter, Shannon Lawson, Marina Rabinovich

OBJECTIVE: Describe the place in therapy of ketamine as an adjunctive sedative infusion in the mechanically ventilated critically ill population.

SELF ASSESSMENT QUESTION: What continuous infusion sedative agents were used prior to ketamine in patients included in the late initiation group?

BACKGROUND: Ketamine may provide analgesic, opioid-sparing, and benzodiazepine-sparing effects for management of pain and sedation. The purpose of this study is to characterize the place in therapy of ketamine infusion as an adjunctive sedative in the mechanically ventilated critically ill population.

METHODOLOGY: A single-center retrospective cohort study was conducted on patients who received ketamine continuous infusion from January 2020 to June 2021. Inclusion criteria were ICU admission, mechanical ventilation > 24 hours, and fentanyl infusion as a first-line sedative. Exclusion criteria included age < 18 years, intubation for airway protection, and diagnosis of status epilepticus or asthmaticus. The primary objective was to evaluate the percentage of patients with early ketamine initiation (ketamine as a first- or second-line adjunctive agent) versus late initiation (ketamine as a third- or fourth-line adjunctive agent). Key secondary objectives included ketamine dose, adjunctive sedative medications, duration of mechanical ventilation, and ICU/hospital length of stay.

RESULTS: Within this cohort, there were 18 patients in the early initiation group and 31 patients in the late initiation group. Prior to ketamine initiation, all patients received fentanyl and the majority received propofol (88.9% vs 93.5%, p=0.566). The late initiation group had significantly higher utilization of dexmedetomidine (55.6% vs 96.8%, p

2:30pm – 2:50pm R **Quantifying Pharmacist Interventions in COVID-19** Room D

Presenters: Jack Pluenneke

TITLE: Quantifying Pharmacist Interventions in COVID-19

AUTHORS: Jack Pluenneke, Mathew Semler, Jonathan Casey, Eddie Qian, Todd Rice, Joanna Stollings

OBJECTIVE: Describe pharmacists' interventions within critically ill patients with COVID-19.

SELF ASSESSMENT QUESTION: What was the most frequent intervention made by pharmacists within critically ill patients with COVID-19?

BACKGROUND: Pharmacists have been shown to play an important role in the management of critically ill patients. Quantification of pharmacist interventions within critically ill patients with coronavirus-2019 (COVID-19) is limited.

METHODOLOGY: A single-center, retrospective, cohort study was conducted at Vanderbilt University Medical Center in Nashville, Tennessee. All adult patients admitted to the COVID-19 ICU and MICU with a COVID-19 diagnosis at VUMC between March 1st, 2020, and June 30th, 2021, were included in the study. All interventions made by pharmacists were documented electronically, collected, and subsequently categorized and analyzed. The primary outcome of this study was the median number of medication interventions by pharmacists per patient. The secondary outcome was quantification of the different types of interventions preformed.

RESULTS: 768 patients were included in the analysis. The median age was 63 years old; most patients were male (63%) and white (71%). Median hospital length of stay (LOS) was 12 days (Interquartile range = 7, 21) and ICU LOS was 5 days (Interquartile range = 1, 11). Median admission SOFA score was 4 (Interquartile range = 2, 7). 60-day mortality occurred in 352 patients (46%). There was a total of 7027 total interventions for 655 patients. The median number of interventions by pharmacists was 6 interventions per patient. The most common interventions preformed was drug therapy discontinued (24%), ICU liberation (19%), dose adjustment (18%), therapeutic drug monitoring (15%), and drug therapy started (10%).

CONCLUSIONS: Pharmacists made multiple interventions related to medication use and medication management in critically ill patients with COVID-19. This study adds important information of the evolving role clinical pharmacists play in the care of critical illness, specifically during the COIVD-19 pandemic.

2:30pm – 2:50pm R **The Relationship Between Increased Phosphorus Utilization and Resolution of Refeeding Syndrome** Room E

Presenters: Rachel Leong

TITLE: The Relationship Between Increased Phosphorus Utilization and Resolution of Refeeding Syndrome

AUTHORS: Rachel Leong, Vivian Zhao, Nisha Dave, Daniel Griffith, Thomas Ziegler

OBJECTIVE: Determine number of days until resolution of refeeding syndrome (RFS) with increased phosphorus utilization after initiating patients on parenteral nutrition (PN).

SELF ASSESSMENT QUESTION: On average, how many days did it take for RFS to resolve in patients on PN based on resolution of hypophosphatemia?

BACKGROUND: Determine resolution of RFS by identifying number of days with increased phosphorus utilization after initiating patients on PN.

METHODOLOGY: Eligible participants are ≥ 18 years of age started on PN for the first time during hospital admission at Emory University Hospital (EUH) from September 1, 2020 to October 31, 2021. Retrospective chart reviews were preformed to collect demographic information, laboratory values, nutritional information, etc. The collected data will be analyzed to identify correlation between increased phosphorus utilization and resolution of RFS.

RESULTS: Based on preliminary data, a total of 58 patients were enrolled. At the time of PN initiation, 57% patients were male, average age was 60 (22 – 89) and average body mass index was 26.5 kg/m2 (17.2 – 53.5). The average hospital length of stay was 29.4 days (8.2-99.5). Most common past medical history included diabetes (25.8%), hyperlipidemia (19%), and gastroesophageal reflux disease (15.5%); most common past surgical history was gastrointestinal (20.7%). According to American Society of Parenteral and Enteral Nutrition (ASPEN) RFS Risk Criteria, 31 patients had moderate risk and 17 had significant risk. Using National Institute for Health and Care Excellence (NICE) RFS risk criteria, 35 patients had high risk. On average, patients took 2.7 days (median 3 days; range 1 – 8) to recover from RFS-related hypophosphatemia.

CONCLUSIONS: Based on preliminary analysis, a median of 3 days until resolution of RFS was identified. At EUH, the nutrition support team generally initiates PN with full calories and aggressive supplementation of electrolytes instead of recommended calorie titration. This difference in practice may shorten days required for resolution of RFS.

2:30pm – 2:50pm | **Clinical Outcomes and Cost Effectiveness of Ethanol Lock Therapy on Central-Line Associated Bloodstream Infections in Patients Requiring Home Parenteral Nutrition** Room F

Presenters: Blake Barta

TITLE: Clinical Outcomes and Cost Effectiveness of Ethanol Lock Therapy on Central-Line Associated Bloodstream Infections in Patients Requiring Home Parenteral Nutrition

AUTHORS: Blake Barta, Sara Bliss, Harleen Singh, Abbey Whittington, Ann-Marie Riley-Caldwell, Jodi Spann, Brittani Carlington, Allison Lynch, Krista Haines

OBJECTIVE: Describe the risk factors for central-line associated bloodstream infections (CLABSIs) and the role of ethanol lock therapy (ELT) in management of CLABSIs.

SELF ASSESSMENT QUESTION: Which of the following is a risk factor associated with central-line associated bloodstream infections?

BACKGROUND: Patients requiring home parental nutrition (HPN) require long-term central venous access and depend on maintaining central venous access for survival. Central-line associated bloodstream infections (CLABSIs) are a significant complication in patients requiring HPN and contribute to increased morbidity in these patients. Ethanol lock therapy (ELT) was initially designed for the management of catheter occlusion but has shown efficacy in decreasing CLABSIs. Prospective data in pediatric patients suggests efficacy of ELT to prevent CLABSI with minimal complications, but there is limited evidence supporting ELT for CLABSI prevention in adult HPN patients. A recent retrospective study showed promising results of ELT in adult HPN patients. Our aim was to compare the incidence of CLABSI before and after ELT initiation in a cohort of long-term adult HPN patients.

METHODOLOGY: A retrospective chart review was performed using the Duke Home Infusion Pharmacy (DHI) dispense records for patients followed by the Duke HPN Team between July 2013 - December 2021. This single-center study included adults age 18 years or older with a documented history of CLABSI, and prescribed HPN and 70% ELT via a silicone central venous catheter or peripherally inserted central catheter. A registered nurse measured the fill volume of each catheter lumen to determine the exact dose of ELT required, commonly ≤ 1 mL. Patients served as their own matched controls.

RESULTS: Of the 17 patients who met the inclusion criteria during the study period, the incidence of CLABSI was 4.81 (95% CI 3.04 to 7.5) per 1000 catheter days before ELT initiation and lower in the period after ELT initiation at 2.5 (95% CI 1.39 to 4.66) per 1000 catheter days. The median number of catheter days after ELT initiation was 633 (IQR 414 to 883) days. The incidence of CLABSI during the post-ELT period was 60% lower than the incidence during the pre-ELT period (IRR 0.4, 95% CI 0.9 to 0.89, p=0.013). The sensitivity analysis showed a similar result.

CONCLUSIONS: In this retrospective study with matched controls from the same academic center, instillation of ELT in adults requiring HPN was associated with a statistically significant decrease in CLABSI incidence rate.

2:30pm – 2:50pm

Performance of MRSA PCR Nasal Screening for Ruling Out Infections in Hospitalized, Immunocompromised Patients Room G

Presenters: Hui Lin

TITLE: Performance of MRSA PCR Nasal Screening for Ruling Out Infections in Hospitalized, Immunocompromised Patients

AUTHORS: Hui Lin, Daniel Anderson, Amber Clemmons, Josh Eudy, Christy Forehand

OBJECTIVE: Evaluate the utility of MRSA NaPCR for ruling out MRSA infections in hospitalized, immunocompromised patients based on its negative predictive value.

SELF ASSESSMENT QUESTION: What is the utility of the MRSA NaPCR for ruling out MRSA infections in hospitalized, immunocompromised patients?

BACKGROUND: Recent literature demonstrates increasing support for using a methicillin-resistant Staphylococcus aureus (MRSA) nasal swab polymerase chain reaction (NaPCR) laboratory test as an effective antimicrobial stewardship tool by aiding early de-escalation of anti-MRSA antimicrobials. However, immunocompromised patients have been underrepresented in these studies despite increased risk of morbidity and mortality from multidrug-resistant organisms (MDRO). The purpose of this study is to determine the negative predictive value (NPV) of the MRSA NaPCR in hospitalized, immunocompromised patients and provide guidance for its use in ruling out MRSA infections in this patient population.

METHODOLOGY: This is a single-site, retrospective, observational chart review of immunocompromised adult patients who were hospitalized and had an MRSA NaPCR obtained between March 1, 2020 and June 30, 2022. For inclusion, a confirmed culture result within the two weeks after MRSA NaPCR was required. The primary outcome is the NPV of MRSA NaPCR in hospitalized, immunocompromised patients with suspected pneumonia. Secondary outcomes include NPV in other infections and positive predictive value (PPV) for each infection. Descriptive statistics will be used, and the primary outcome of NPV will be reported as a percentage.

RESULTS: 53 patients admitted from March 1st, 2020 to November 10th, 2020 were included in the study and yielded a total of 71 cultures, of which 23 were pneumonia cultures. The NPV of the MRSA NaPCR for pneumonia was 90.5%. The NPV for bloodstream infections was 100% and for urinary tract infections was 100%.

CONCLUSIONS: The reported NPV of MRSA NaPCR in pneumonia was lower in immunocompromised patients compared immunocompetent patients but maintains a high value. Limitations of the study include small sample size and limited culture results. However, use of MRSA NaPCR in immunocompromised patients should not differ from its current use in immunocompetent patients.

2:30pm – 2:50pm L **Comparison of rates of initial supratherapeutic aPTT and anti-Xa concentrations in patients receiving therapeutic heparin infusions** Room K

Presenters: Jennifer Wood

TITLE: Comparison of rates of initial supratherapeutic aPTT and anti-Xa concentrations in patients receiving therapeutic heparin infusions

AUTHORS: Jennifer Wood, PharmD; Carrie Baker, PharmD, MBA, BCPS; Brock Dorsett, PharmD, BCPS; Riley Bowers, PharmD, BCPS, BCCP; Savannah Knepper, PharmD, BCPS

OBJECTIVE: Determine if anti-Xa monitoring results in decreased instances of initial supratherapeutic levels of heparin compared to aPTT monitoring.

SELF ASSESSMENT QUESTION: A patient previously on apixaban 5 mg BID is started on a therapeutic heparin infusion for ACS. What is the correct goal anti-Xa concentration for this patient?

BACKGROUND: Anti-Xa and activated partial thromboplastin time (aPTT) monitoring are both regarded as safe and effective ways to monitor anticoagulation in patients when using heparin. Prior studies have demonstrated utilization of anti-Xa monitoring leads to decreased time to therapeutic range, fewer dosage adjustments, and a greater percentage of time spent within therapeutic range. Cape Fear Valley Medical Center (CFVMC) utilizes a pharmacist driven protocol for dosing heparin. In June of 2021, CFMVC transitioned from aPTT monitoring to anti-Xa monitoring. The purpose of this study is to determine if anti-Xa monitoring results in decreased instances of initial supratherapeutic levels of heparin compared to aPTT monitoring.

METHODOLOGY: This single center, retrospective, observational cohort study evaluated patients receiving therapeutic heparin infusions as part of the pharmacy to dose protocol at CFVMC. Adult patients >18 years or older who received therapeutic heparin infusions from August 1, 2020 through October 31, 2020 and August 1, 2021 through October 31, 2021 were eligible for inclusion. Exclusion criteria included SARS-CoV-2 infection, active or recent bleed, contraindication to heparin, liver failure of any type, recent epidural or lumbar puncture, anti-thrombin III deficiency, and/or missing baseline aPTT or anti-Xa level. The primary endpoint was percentage of patients with initial supratherapeutic aPTT versus anti-Xa level at six hours with key secondary endpoints including time to therapeutic range, percentage of patients achieving initial therapeutic concentration, difference in time to initial therapeutic concentration based on indication, and time to therapeutic anti-Xa concentration in patients previously receiving a direct oral anticoagulant.

RESULTS: A total of 511 patients were eligible for inclusion. Participants were an average age of 64.6 years and 52.8% were male. Anti-Xa monitoring resulted in fewer initial supratherapeutic concentrations compared to aPTT monitoring (32.0% versus 30.2%, P=0.6693). Anti-Xa monitoring also resulted in decreased average infusion rates and decreased time to therapeutic concentration achieved.

CONCLUSIONS: Anti-Xa monitoring did not result in a statistically significant decrease in initial supratherapeutic heparin concentrations compared to aPTT monitoring (30% versus 32%, P=0.6693). Results of additional endpoints are consistent with previous literature that showed anti-Xa monitoring resulted in decreased time to therapeutic concentration.

2:30pm – 2:50pm M **Utilization of Heparin Intravenous Continuous Infusions at a Multi-Site Inpatient Facility** Room L

Presenters: Logan Boone

TITLE: Utilization of Heparin Intravenous Continuous Infusions at a Multi-Site Inpatient Facility
AUTHORS: Logan Boone, Hannah Young, Carolyn Ellison
OBJECTIVE: Identify appropriate UFH continuous infusion dosing for common indications
SELF ASSESSMENT QUESTION: What is the appropriate unfractionated heparin initial maintenance infusion rate for a patient who presents with a new onset DVT?A. 18 units/kg/hour B. 80 units/kg/hour
C. 12 units/kg/hour
D. 60 units/kg/hour
BACKGROUND: Unfractionated heparin (UFH) is an anticoagulant utilized in the critically ill, medical, and surgical inpatient populations. Patients who receive an inappropriate intensity of UFH continuous infusion based on indication may be at risk of adverse events, including clotting (if under anticoagulated) or bleeding (if over anticoagulated). UFH is recognized by the Institute for Safe Medication Practices as a high alert medication, or a medication that has a heightened risk of causing significant harm when used in error. The purpose of this study is to evaluate the frequency that the correct UFH continuous infusion intensity is ordered for specific indications, and to identify opportunities to improve the current process if needed.
METHODOLOGY: A retrospective chart review was performed among 16 inpatient facilities within Prisma Health between May 2021 and August 2021. Included patients were ≥ 18 years old and received UFH for venous thromboembolism, mechanical heart valve, atrial fibrillation, or acute coronary syndrome. Patients were excluded if they received UFH for another indication, received subcutaneous UFH, or UFH was not documented as given.
RESULTS:
Primary Endpoint: Discordant infusion rate of 4.2%
Secondary Endpoints: Adjusted discordance rate of 2.4% (defined as documented reason for having discordant infusion intensity in progress notes on chart review)
Documented Pharmacist Involvement in 21/425 orders (5%); Ivents occurred twice, pharmacist being listed as the ordering user occurred 18 times, and pharmacy consult occurred once.
Comparison of indication discordance rate: discordant intensities occured 9/260 (3.5%) in low intensity heparin drip orders, and 10/165 (6.1%) in high intensity heparin drip orders p value of 0.237

CONCLUSIONS: With an adjusted concordance rate of 97.6%, our health system performed well with selection of appropriate UFH CI intensities by indication

2:30pm – 2:50pm O **Efficacy and Cost Analysis of Plerixafor Administration in Autologous Stem Cell Transplant**

Presenters: Haylee Guerin Room B

TITLE: Efficacy and Cost Analysis of Plerixafor Administration in Autologous Stem Cell Transplant
AUTHORS: HJ Guerin, KM Bruce, RA Matthews, LB Parsons, DJ Siler, SN Schneck, HA Frangoul
OBJECTIVE: Describe the effect of adding plerixafor to G-CSF for mobilization.
SELF ASSESSMENT QUESTION: Plerixafor is given after how many doses of G-CSF?
BACKGROUND: Autologous stem cell transplant is an established treatment for multiple myeloma and lymphoma. Prior to transplant, patients undergo stem cell mobilization followed by apheresis. Mobilization is achieved using granulocyte colony-stimulating factor (G-CSF) ± plerixafor, a CXCR4 antagonist. Many institutions limit plerixafor to patients with CD34+ cell counts ≤20 cells/mcL on day 4 of G-CSF administration due to cost. The purpose of this study is to determine if administering plerixafor when CD34+ cell count is 20 to 30 cells/mcl on day 4 of G-CSF administration increases collection success and efficiency while reducing overall cost.
METHODOLOGY: This is a retrospective cohort review including patients who underwent apheresis from 7/1/2017-6/30/2021. Adults with multiple myeloma or lymphoma were included if they received G-CSF for mobilization prior to planned autologous stem cell transplant and had a CD34+ cell count of 20-30 cells/mcL on day 4 of mobilization. Patients were divided into 2 cohorts; those who received plerixafor plus G-CSF and those who received G-CSF alone. The primary objective was apheresis success, as defined by collection of ≥5 million CD34+ cells/kg/day. The secondary objective was a cost analysis to evaluate the financial impact to the institution.
RESULTS: In progress
CONCLUSIONS: In progress

2:30pm – 2:50pm T **Implementation of literature-based protocol updates in patients continuing their home insulin pump in the inpatient setting** Room A

Presenters: Allison Monsell

TITLE: Implementation of literature-based protocol updates in patients continuing their home insulin pump in the inpatient setting

AUTHORS: Allison Monsell, April Williams

OBJECTIVE: To discuss the implementation process of protocol changes and compare patient outcomes after updating the protocol and order set.

SELF ASSESSMENT QUESTION: What steps can a pharmacist take to ensure appropriate use and documentation of a patient's insulin pump when transitioning to the inpatient setting?

BACKGROUND: The purpose of this study is to assess the current policy a large community hospital uses for insulin pumps in the inpatient setting, with subsequent development and implementation of literature-based updates to that policy to improve documentation, adherence, and patient safety.

METHODOLOGY: A retrospective chart review was conducted and literature was reviewed to identify gaps in care in the current policy used for patients using an insulin pump while admitted to the hospital. Primary literature was reviewed to determine best practices for insulin pump use while hospitalized. Updates to the policy, protocol, and order set were discussed and implemented after multi-disciplinary discussions and approval by multiple committees. Outcomes measured for policy comparison include home medication documentation, administration documentation assessment, duplicate insulin orders, and hypoglycemia events.

RESULTS: In Progress

CONCLUSIONS: In Progress

2:50pm – 3:10pm B **Evaluation of a Hand-Foot Skin Reaction Protocol** Room J

Presenters: Ryan Cromer

TITLE: Evaluation of a Hand-Foot Skin Reaction Protocol

AUTHORS: Ryan Cromer, Amber Keeton, Tushar Patel

OBJECTIVE: To examine if an educational hand-foot skin reaction protocol for providers and patients could prevent therapy modifications of chemotherapy regimens

SELF-ASSESSMENT QUESTION: Which of the following therapies could be used to prevent hand-foot skin reactions?

BACKGROUND: Tyrosine kinase inhibitors (TKIs) and other forms of oral chemotherapy are utilized at the forefront of many oncologic disease states due to their targeted mechanism of action and decreased incidence of adverse events compared to cytotoxic chemotherapy. On the other hand, TKIs and capecitabine bring their dermatologic adverse events, including hand-foot skin reactions (HFSRs) which are common cutaneous adverse events described as hyperkeratotic, callus-like lesions on an erythematous base. They can begin as bullae or blisters that can cause pain, tingling, burning, soreness of the palms and soles, and decreased tolerance to hot objects. In severe cases, they can limit a patient's ability to care for themselves. This study aims to determine if an educational HFSR protocol would help prevent HFSRs and subsequent therapy modifications in patients that have documented HFSRs on the mentioned therapies.

METHODOLOGY: A retrospective pre-post study was conducted in an outpatient cancer center to assess the incidence of HFSRs before and after the implementation of an educational protocol to help prevent dose modifications in patients on multitargeted TKIs (regorafenib, axitinib, cabozantinib, sunitinib, sorafenib, lenvatinib, afatinib, trametinib, dabrafenib, pazopanib) and capecitabine therapy. The protocol was an educational tool for providers and patients that offered information on how to prevent HFSRs, grade the HFSRs based on presentation and severity, then subsequently manage the adverse effects in order to prevent dose modifications. The pre-arm consisted of adult patients who received these therapies between July 20, 2020, and July 20, 2021, and served as a historical comparison for the post protocol group reviewed between November 14, 2021, and January 31, 2022. For the primary outcome, a Fisher's Exact test will be performed and descriptive statistics will be utilized for the secondary outcomes. Patients were excluded from the project if they lacked patient data or documentation in the EMR.

RESULTS: A total of 204 patients were reviewed, 136 in the pre-protocol arm and 68 in the post protocol arm. There was no difference in the number of therapy modifications due to HFSRs between the two arms (13.2% vs 5.9%, p=0.056). Although, the post-protocol group had a reduction in HFSRs by 77%. The patient population most associated with HFSRs were patients 50 years or older, usually of the female gender, and had at least hypertension and/or diabetes. The therapies with the highest incidence of HFSRs were afatinib, axitinib, cabozantinib, capecitabine, and regorafenib.

CONCLUSIONS: The study demonstrated that the use of a HFSR protocol helped lower the number of therapy modifications by 77%, however, this was not statistically significant. Additionally, the study showed that patients ≥50 years, who have hypertension or diabetes and are on afatinib therapy could use more education and intervention to prevent HFSRs.

2:50pm – 3:10pm B **Evaluation of diclofenac gel prescribed in combination with oral NSAIDs in a Veterans Affairs Health Care System (VAHCS)** Room I

Presenters: Holly Edison

TITLE: Evaluation of diclofenac gel prescribed in combination with oral NSAIDs in a Veterans Affairs Health Care System (VAHCS)

AUTHORS: Holly Edison, Alyssa Conner, Camille Robinette

OBJECTIVE: At the conclusion of my presentation, the participant will be able to determine the prevalence of duplicate NSAID therapy, which includes diclofenac gel in combination with one or more of four commonly prescribed oral NSAIDs (diclofenac, ibuprofen, meloxicam, or naproxen) in a VAHCS.

SELF ASSESSMENT QUESTION: Will the information you learned today change your practice? If so, how?

BACKGROUND: Diclofenac gel, previously restricted to VA National Formulary (VANF) criteria for use, is currently a formulary agent. Volume of diclofenac gel orders has grown since the change, and it appears the amount of Veterans receiving duplicate therapy with topical and oral NSAIDs has grown too. Notably, there was not a provider education component incorporated into this change. Both topical and oral NSAIDs carry the same black box warning for cardiovascular and gastrointestinal risk. Using combination oral NSAID and topical diclofenac gel raises the risk for bleeding and may contribute to increased risk of harm to the patient without additional benefit.

METHODOLOGY: Medical charts of Veterans prescribed diclofenac gel from January 7, 2021 – January 7, 2022 were reviewed to assess the percentage of duplication with frequently prescribed oral NSAIDs. Outcomes will be reviewed to determine if provider education is needed. If education provided, the frequency of duplication of therapy will be reassessed monthly to evaluate impact. A marker of improvement will be a decrease in prescription orders for duplicate therapy.

RESULTS: There were a total of 7382 patients with active diclofenac gel orders between January 7, 2021 through January 7, 2022. Of the total patients, 1278 (17.3%) were on duplicate therapy which included diclofenac gel plus one of four commonly prescribed oral NSAIDs. Of the 50 Veteran charts reviewed, 42 (84%) did not contain documentation within the note or sig of the NSAID orders to indicate that the diclofenac gel and oral NSAID should not be used in combination.

CONCLUSIONS: Less than one in five Veterans receiving diclofenac gel were on a duplicate NSAID. Of Veterans receiving duplicate therapy, more than half were on both agents for 8 months or less. Chart reviews demonstrate a need for improved documentation regarding NSAID usage. This documentation is key for pharmacist counseling which is a main source of communication between the prescription and the patient.

2:50pm – 3:10pm C **Effect of Contemporary Oral Potassium Binders on Diuretic Doses in Hospitalized Patients** Room H

Presenters: Catherine Donaldson

TITLE: Effect of Contemporary Oral Potassium Binders on Diuretic Doses in Hospitalized Patients

AUTHORS: Catherine Donaldson, Lindsay Reulbach, John Howard, Jason Guichard, Alex Ewing

OBJECTIVE: Describe the effect of high sodium medications like sodium zirconium cyclosilicate on diuretic dosing requirements in hospitalized patients.

SELF ASSESSMENT QUESTION: How much sodium is in a standard 10g dose of sodium zirconium cyclosilicate?

BACKGROUND: Hyperkalemia is associated with poor outcomes like life-threatening arrythmias. Patiromer and sodium zirconium cyclosilicate (SZC) have demonstrated efficacy in hyperkalemia through similar mechanisms, however the agents differ in that SZC contains 400mg of sodium in every 5g dose. Medications with high sodium content contribute to fluid retention in hospitalized patients, especially those with concomitant heart failure and chronic kidney disease. The purpose of this study was to determine if there is an increase in diuretic dosing required to overcome the high sodium content of SZC in comparison to patiromer.

METHODOLOGY: A single-center, retrospective, matched cohort study was conducted on all adult patients admitted to Greenville Memorial Hospital who received at least one dose of SZC or patiromer for acute management of hyperkalemia. Patients were excluded if they required dialysis prior to or during their hospital stay. The primary outcome was average daily furosemide-equivalent dose of loop diuretics during hospital stay.

RESULTS: In Progress

CONCLUSIONS: In Progress

2:50pm – 3:10pm Y **Assessing the Impact of a Diabetes Prevention Education Program on Progression to Type 2 Diabetes Mellitus** Room G

Presenters: Grace Coefield

TITLE: Assessing the Impact of a Diabetes Prevention Education Program on Progression to Type 2 Diabetes Mellitus

AUTHORS: Grace Coefield; Paige Brockington; Kevin Philippart; Sharon Sherrer

OBJECTIVE: Identify the impact of a pharmacist-led diabetes prevention program on patient outcomes in those individuals diagnosed with pre-diabetes or deemed at high-risk for developing type 2 diabetes mellitus.

SELF ASSESSMENT QUESTION: How can diabetes prevention programs offered by pharmacists to individuals who are at risk for type 2 diabetes impact patient outcomes?

BACKGROUND: The purpose of this study is to identify the impact of a pharmacist-led diabetes prevention program on patient outcomes in individuals diagnosed with pre-diabetes or deemed at high-risk for developing type 2 diabetes mellitus.

METHODOLOGY: Eligible participants are those 18 years of age or older with a BMI ≥ 25 and a prediabetes determination meeting at least 1 of 3 eligibility criteria. These criteria include a hemoglobin A1c (HbA1c) of 5.7-6.4%, a history of gestational diabetes mellitus, or a CDC risk score of ≥5 assessed using a CDC diabetes risk assessment tool. Participants' baseline HbA1c and weight were determined. Patients were then enrolled to participate in a Diabetes Prevention Program (DPP) offered weekly. Change in baseline HbA1c value was measured at 3 months and 6 months after entering the study. Change in baseline weight was measured weekly throughout duration of the 6-month study.

RESULTS: Six patients were included in the study. All six patients had a prediabetes determination based on a HbA1c of 5.7-6.4% with a mean BMI at study initiation of 34.4. At the 3-month follow up, the average decrease in HbA1c in participants was 0.2% and an average weight loss for all six participants was 1.15% from baseline weight.

CONCLUSIONS: Study is still currently in progress.

2:50pm – 3:10pm R **A retrospective comparison of the efficacy of parenteral droperidol versus haloperidol for refractory nausea and vomiting in a metropolitan emergency department** Room D

Presenters: Steven Slack

TITLE: A retrospective comparison of the efficacy of parenteral droperidol versus haloperidol for refractory nausea and vomiting in a metropolitan emergency department

AUTHORS: Slack, S.; Badger-Plange, N.; Shell, A.; Hallman, L.; Horton, K; Park, H.; Parry, C.

OBJECTIVE: Describe the efficacy of droperidol as compared to haloperidol for treatment of refractory nausea/vomiting patients

SELF ASSESSMENT QUESTION: Does droperidol compared to haloperidol result in fewer administrations of alternate antiemetics in refractory nausea/vomiting patients?

BACKGROUND: Refractory nausea and vomiting in the emergency department (ED) remains a challenging disease state, often requiring multimodal approaches to treatment. Despite its prevalence, there is a lack of consensus on the appropriate agent(s) for use in refractory nausea and vomiting. In the fall of 2019, IV droperidol was added to Piedmont Atlanta Hospital's formulary for use as an alternative agent in refractory nausea and vomiting during a nationwide shortage of IV haloperidol. With variable supply and nationwide shortages of medications, having access to an alternative agent with non-inferior efficacy and safety is critical. The purpose of this study is to compare the efficacy of parenteral droperidol versus haloperidol for the treatment of refractory nausea/vomiting in a metropolitan hospital emergency department.

METHODOLOGY: A retrospective chart review was conducted of adult patients treated for nausea/vomiting with parenteral droperidol or haloperidol at Piedmont Atlanta Hospital's emergency department between December 2020 to December 2021. The primary endpoint was the number of additional antiemetic doses required. Secondary endpoints were composite safety endpoints including QT prolongation, Torsades de pointes, presence of other arrhythmias, or other cardiac events.

RESULTS: No statistically significant difference in average number of alternative antiemetic doses given post-haloperidol or post-droperidol administration. No statistically signifigant difference in incidence of cannabinoid-induced hyperemesis syndrome (CHS) on presentation, incidence of QT prolongation, new arrhythmias, including Torsades de Pointes

CONCLUSIONS: Droperidol appears to be an equally safe and effective alternative to haloperidol at doses used for refractory nausea/vomiting

2:50pm – 3:10pm R **Efficacy of bromocriptine for central fever in critically ill patients with neurovascular injuries**

Presenters: Amanda Seals, Amanda Neal Room C

TITLE: Efficacy of bromocriptine for central fever in critically ill patients with neurovascular injuries

AUTHORS: Amanda Neal, Emily Bowers, Eric Shaw

OBJECTIVE: The objective of this study is to determine the effectiveness of bromocriptine in patients with central fever secondary to neurovascular injury.

SELF ASSESSMENT QUESTION: Does bromocriptine reduce body temperature in patients with central fever secondary to neurovascular injuries?

BACKGROUND: Central fever can occur in patients after neurovascular injury and is defined as an elevated temperature with no identifiable cause. Fever has a detrimental impact on the recovery of the brain and is associated with poor outcomes. Bromocriptine is a dopamine-2 agonist used for central fever but the mechanism of temperature reduction has not been established. There is currently limited evidence for efficacy, a preferred regimen, or optimal dose adjustments of bromocriptine in patients with central fever.

METHODOLOGY: This was a single-center, retrospective, institutional review board approved study conducted from July 30, 2015 – December 30, 2021. Patients were included if they received at least 3 doses of any strength of bromocriptine. Exclusion criteria included patients less than 18 years old, pregnant patients, and incarcerated persons. Patients with a new presenting bacterial or viral infection within 48 hours of initial bromocriptine administration were also excluded. The primary outcome was reduction of body temperature to less than 38.3 degrees Celsius within 48 hours of bromocriptine initiation. Secondary outcomes included hospital length of stay, ICU length of stay, hospital mortality, and time to initial fever cessation (defined as a temperature less than 38.3 degrees Celsius) after bromocriptine therapy initiation.

RESULTS: There was a total of 97 patients screened and 34 patients met inclusion criteria. Thirty-three of 34 (97%) patients had a reduction of body temperature to less than 38.3 degrees Celsius within 48 hours of bromocriptine initiation. The average length of hospital stay for patient was 24 days. The average ICU length of stay was 17 days. Hospital mortality occurred in 16 of 34 (47%) of patients. The average time to initial fever cessation after bromocriptine was initiated was 7.8 hours.

CONCLUSIONS: Administration of bromocriptine may be associated with reducing body temperature in patients with central fever secondary to neurovascular injury.

2:50pm – 3:10pm R **Standardization of Enteral Medication Utilization to Facilitate Intravenous Analgesia and Sedation Weaning** Room E

Presenters: Sierra Mullen

TITLE: Standardization of Enteral Medication Utilization to Facilitate Intravenous Analgesia and Sedation Weaning

AUTHORS: Sierra Mullen, Mickala Thompson

OBJECTIVE: Describe how standardization of weaning intravenous analgesics and sedatives can impact patient care

SELF ASSESSMENT QUESTION: What patient outcomes and medication safety parameters can be improved by standardizing the intravenous medication weaning process?

BACKGROUND: Implementation of enteral analgesic and sedative medications can be useful for weaning continuous infusion medications, decreasing mechanical ventilation time, and decreasing ICU length of stay (LOS). A standardized protocol for this process has not been established. The purpose of this project is to evaluate the current enteral analgesic and sedative utilization practices for patients on continuous infusions and create a standardized clinical decision tool to guide initiation and adjustment of these medications.

METHODOLOGY: Data from patients who had enteral medications implemented to wean intravenous analgesics and sedatives in the medical ICU (MICU) during August and September 2021 was collected and evaluated to assess current practice and outcomes. After assessment of initial data, a clinical decision tool was created to guide initiation of enteral analgesic and sedative agents in the MICU to standardize weaning intravenous medications and improve medication safety. This clinical decision tool will be implemented in the MICU and patients will be evaluated post-implementation to assess whether a standardized approach decreases time to discontinuation of continuous intravenous medications, duration of mechanical ventilation, and ICU LOS.

RESULTS: In progress

CONCLUSIONS: In progress

2:50pm – 3:10pm G **Uptake of Pharmacist Recommendations After Pharmacist-led Medication Management and Polypharmacy Review for Older Adults** Room L

Presenters: Daniel Julien

TITLE: Uptake of Pharmacist Recommendations After Pharmacist-led Medication Management and Polypharmacy Review for Older Adults

AUTHORS: Daniel Julien, LaWanda Kemp, Kimberly Manns, Ann E. Vandenberg, Anna K. Mirk

OBJECTIVE: Characterize medication-related recommendations from clinical pharmacists to the primary care provider (PCP) to simplify medication regimens for older adults

SELF ASSESSMENT QUESTION: What are two evaluations pharmacists can make to improve the pharmacotherapy of older adults?

BACKGROUND: IMPROVE (Integrated Management and Polypharmacy Review of Vulnerable Elders) is an ongoing initiative to incorporate pharmacist-led medication reviews into practice to simplify older patients' medication regimens and improve prescribing quality.

METHODOLOGY: We conducted a retrospective chart review of all older adults receiving an IMPROVE pharmacist-led medication review at one Veterans Affairs medical center between 6/1/2012 and 7/31/2021. The objectives were to characterize pharmacist medication-related recommendations for the primary care provider (PCP) and to determine ensuing uptake of pharmacist recommendations by the PCP at the next primary care or geriatric visit.

RESULTS: The study included 126 veterans, ages 64-98 years. Patients were 98% male, 66% White, with a mean baseline of 16 medications. In addition to actions taken by the pharmacist at the point of care, pharmacists made 192 recommendations to the PCP, of which 161 (84%) were medication-related recommendations. Seventy-four (46%) of those recommendations were acted upon by the PCP at the subsequent visit. Pharmacist medication-related recommendations included: assess the need for continued therapy (32%), stop a medication (31%), adjust the dose or frequency (11%), stop and prescribe an alternative (9%), start a medication (8%), assess for clinical indication (7%), change formulation or restart a medication (1% each). PCP uptake of medication-related recommendations were: stop a medication (52%), assess need for continued therapy (52%), stop and prescribe an alternative (50%), change a formulation (48%), start a medication (42%), adjust the dose or frequency (28%), and assess for a clinical indication (27%).

CONCLUSIONS: PCP uptake of 46% of recommendations suggest adequate PCP engagement. Providers were most inclined to accept pharmacist recommendations to stop medications or evaluate medications that may be unnecessary. Pharmacist review using the IMPROVE program was an effective means to reduce polypharmacy and optimize medication safety in older adults.

2:50pm – 3:10pm I **Comparison of Ceftriaxone/Azithromycin vs Ceftriaxone/Doxycycline for Empiric Community-Acquired Pneumonia (CAP)** Room F

Presenters: Zachary Martin

TITLE: Comparison of Ceftriaxone/Azithromycin vs Ceftriaxone/Doxycycline for Empiric Community-Acquired Pneumonia (CAP)

AUTHORS: Zachary Martin, Brad Crane, Patrick Blankenship, Susan Roberts

OBJECTIVE: At the conclusion of my presentation, the participant will be able to better understand doxycycline's place in therapy for CAP.

SELF ASSESSMENT QUESTION: When primary regimens are not preferred, ceftriaxone with doxycycline could be considered an alternative regimen for non-severe community-acquired pneumonia (CAP). True or False?

BACKGROUND: In 2019, The American Thoracic Society (ATS) and the Infectious Diseases Society of America (IDSA) updated the guidelines for the diagnosis and treatment of adults with community-acquired pneumonia (CAP). This guideline has a strong recommendation, with a high quality of evidence, to use a beta-lactam (e.g., ceftriaxone) and macrolide combination for empiric therapy. However, the combination of a beta-lactam and doxycycline carries a "conditional recommendation" due to "low quality of evidence". The objective of this research is to provide additional data comparing these two combination regimens in hospitalized patients with community-acquired pneumonia.

METHODOLOGY: This is an IRB-approved, retrospective, cohort analysis evaluating patients with a principal discharge diagnosis of pneumonia present on admission. Eligible patients from January 1st, 2021, to June 30th, 2021, include those who received either ceftriaxone/azithromycin or ceftriaxone/doxycycline within 24 hours of admission for at least 48 hours. The primary objective is to compare these two groups for survival-to-discharge. Secondary objectives include comparing rates of antibiotic escalation, 30-day readmissions, and adverse drug events. Patients were excluded if they received two or more doses of both azithromycin and doxycycline during admission, received antibiotics within the last 90 days and classified as "severe", have a confirmed viral infection during the current admission, active tuberculosis or cystic fibrosis, immunosuppressed or immunocompromised, or expected death/comfort care within 48 hours of admission.

RESULTS: In Progress

CONCLUSIONS: In Progress

2:50pm – 3:10pm L **Initiation of long-acting injectable antipsychotics during psychiatric hospitalization** Room K

Presenters: Hiba Yacout

TITLE: Initiation of long-acting injectable antipsychotics during psychiatric hospitalization

AUTHORS: Hiba Yacout, Hannah Leschorn, Stella Ye, Lauren Gensler, Kruti Shah

OBJECTIVE: At the conclusion of my presentation, the participant will be able to describe psychiatric hospitalization rate after LAIA initiation.

SELF ASSESSMENT QUESTION: How did the type of antipsychotic affect psychiatric hospitalizations?

BACKGROUND: Schizophrenia is one of the top 15 leading disabilities worldwide. Treatment includes first and second generation antipsychotics, available in multiple formulations. The American Psychiatric Association suggests the utilization of long-acting injectable antipsychotics (LAIA) based on patient preference or history of uncertain adherence. LAIA have shown to delay time to hospitalization and reduced readmission rates. Grady Health System (GHS) operates a 24-bed inpatient psychiatric unit with follow up by outpatient psychiatry. The purpose of this study is to identify the rate of psychiatric hospitalizations after LAIA initiation.

METHODOLOGY: A single-center, retrospective chart review was conducted on patients admitted to GHS psychiatric unit for a psychiatric indication. Patients were included if they received a new start LAIA inpatient between January 2017 to December 2018. The primary outcome is to compare the rate of psychiatric hospitalizations within 2 to 12 months of starting a LAIA between patients who have previously been on 0 to 1 antipsychotic versus 2 or more antipsychotics. Secondary outcomes include comparing characteristic differences between groups based on number of previous antipsychotic therapy and first versus second-generation antipsychotics utilization.

RESULTS: There were 100 patients included in the study. The majority of the patients were male (65%), African American (83%), had schizophrenia, and had been on 2 or more agents (53%) prior to LAIA use. Psychiatric hospitalizations between number of prior antipsychotics were both about 9%, p=0.595. Psychiatric hospitalizations among LAIA generation, was 7% among 1st generation and 10% among 2nd generation LAIA, p=0.735.

CONCLUSIONS: The rate of hospitalizations after LAIA initiation was similar based on prior antipsychotic use and generation. Future directions include identifying methods for continuing LAIA after discharge.

2:50pm – 3:10pm O **Ifosfamide induced encephalopathy with concomitant fosaprepitant use.** Room B

Presenters: Erin Eickman

TITLE: Ifosfamide induced encephalopathy with concomitant fosaprepitant use.

AUTHORS: Erin Eickman, Dustin Orvin, Sarah Trone, Joseph Crosby

OBJECTIVE: Identify risk factors for developing ifosfamide-induced encephalopathy (IIE).

SELF ASSESSMENT QUESTION: What are the established risk factors for development of IIE according to current literature?

BACKGROUND: To determine if use of fosaprepitant with ifosfamide increases risk of developing ifosfamide-induced encephalopathy (IIE).

METHODOLOGY: This investigation was a retrospective, observational cohort, chart review taking place in a two-hospital health system. Patients were included if they were at least 18 years of age, admitted between January 1, 2015 and December 31, 2021, and received ifosfamide as part of their chemotherapy regimen. The primary outcome was occurrence of ifosfamide-induced encephalopathy in patients who received fosaprepitant vs patients who did not receive fosaprepitant. Secondary outcomes included overall rate of encephalopathy with ifosfamide treatment, and occurrence of other risk factors including low serum albumin, elevated serum creatinine, and concomitant use of other CYP3A4/5 inhibitors and inducers.

RESULTS: All 103 patients who received ifosfamide during the study period were included for analysis. There were 41 patients who received fosaprepitant as part of their CINV regimen and 63 patients who did not receive fosaprepitant. Encephalopathy occurred in 10/103 patients (9.7%) who received ifosfamide, 4 patients in the fosaprepitant group (10%) vs 6 patients who did not receive fosaprepitant (9.5%). Between the fosaprepitant group and the group that did not receive fosaprepitant, there was no notable differences in average serum creatinine (0.74 mg/dL vs 0.79 mg/dL, respectively) and average serum albumin (3.4 g/dL vs 3.4 g/dL, respectively). More patients in the group that did not receive fosaprepitant had a dose >2 g/m2 (79.4%) compared to the fosaprepitant group (47.5%). Of the patients who developed encephalopathy, none were concomitantly receiving other CYP3A4/5 inhibitors or inducers.

CONCLUSIONS: There does not appear to be a significant difference in the risk of encephalopathy between patients who do or do not receive fosaprepitant for CINV prophylaxis with ifosfamide treatment.

2:50pm – 3:10pm 1 **Opportunistic Infection Rates after Rabbit Anti-Thymocyte Globulin Treatment in Kidney Transplant Recipients** Room A

Presenters: Alysia Blais

TITLE: Opportunistic Infection Rates after Rabbit Anti-Thymocyte Globulin Treatment in Kidney Transplant Recipients

AUTHORS: Alysia Blais, Sara Gattis, Heather Snyder, Arpita Basu

OBJECTIVE: Evaluate the rates of opportunistic infection in patients who received rATG for acute cellular rejection while maintained on belatacept-based immunosuppression.

SELF ASSESSMENT QUESTION: What was the most common opportunistic infection amongst both groups within one year of rATG treatment?

BACKGROUND: Rabbit anti-thymocyte globulin (rATG) is utilized for acute cellular rejection (ACR) treatment in kidney transplant recipients but is associated with an increased risk of opportunistic infections (OI). There is limited data regarding infectious risk in patients maintained on belatacept-based immunosuppression after ACR treatment with rATG.

METHODOLOGY: This was a single-center, retrospective chart review of adult solitary kidney transplant recipients who received rATG for ACR while maintained on belatacept- or tacrolimus-based immunosuppression between January 1, 2016 and December 31, 2020. Patients were excluded if they received rATG induction or had an OI at the time of rejection. OIs were defined as: cytomegalovirus, Epstein-Barr virus, BK virus, Pneumocystis jiroveci pneumonia, and cryptococcosis. The primary outcome was the composite rate of OI within one year of rATG treatment. Secondary outcomes included time from rATG to infection, incidence of each OI, and hospital readmission due to OI.

RESULTS: Of the 303 patients screened, 175 patients met inclusion criteria with 87 in the belatacept group and 88 in the tacrolimus group. Baseline characteristics were similar between groups. Patients maintained on belatacept had an OI incidence rate of 64.4% compared to 53.4% in the tacrolimus group with the most common infection being BK viremia (41.4% and 37.5% respectively). There were no significant differences in the secondary outcomes between groups.

CONCLUSIONS: Belatacept-based immunosuppression does not appear to increase the risk of OI after rATG treatment when compared to tacrolimus-based immunosuppression. Larger studies are needed to validate these results.

3:10pm – 3:30pm B **Identifying Outcomes of Oral Anticoagulation Therapy in Patients after Bariatric Surgery** Room J

Presenters: Liw Panichakornkul

TITLE: Identifying Outcomes of Oral Anticoagulation Therapy in Patients after Bariatric Surgery
AUTHORS: Kulchanok Panichakornkul, Sara Sainsbury, Christie Dresback, Elizabeth Ramsaur, Krista Luck
OBJECTIVE: Evaluate appropriateness of anticoagulation therapy in bariatric surgery patients
SELF ASSESSMENT QUESTION: Which oral anticoagulation agent is currently recommended for patients with a history bariatric surgery?
BACKGROUND: Anticoagulation is necessary for prevention of embolic events in atrial fibrillation (AF) and treatment and prevention of venous thromboembolism (VTE). Clinical trials show that direct oral anticoagulants (DOACs) are as effective as warfarin with lower bleed risk and require less monitoring. Anticoagulation management in bariatric surgery patients is challenging because anatomical changes within the gastrointestinal tract impact drug pharmacokinetics. Based on current guidance from the International Society on Thrombosis and Haemostasis (ISTH) and the Anticoagulation Forum, warfarin is recommended over DOACs for patients with a history of bariatric surgery requiring anticoagulation. If a DOAC is utilized, it is suggested to obtain drug-specific trough to check for drug absorption and bioavailability. The primary objective of this study is to identify bariatric surgery patients with history of AF or VTE and evaluate appropriateness of anticoagulation therapy.
METHODOLOGY: A retrospective chart review will be conducted on patients of Mission Health System outpatient clinics across Western North Carolina. Included patients have had prior Roux-en-Y bypass surgery, gastric sleeve, or gastric banding and also have either AF or VTE, identified by ICD-10 diagnosis codes. Patients will be excluded if they are < 18 years old or have a history of gastrointestinal surgeries for other indications. The primary investigator will manually review and evaluate each patient to determine the appropriateness of oral anticoagulant. Data collection will also identify adverse events using diagnosis codes for bleeding or thrombotic events leading to hospital admission, emergency department visit, or a clinic visit.
RESULTS: In Progress
CONCLUSIONS: In Progress

3:10pm – 3:30pm B **The effect of clinical pharmacist interventions in patients with diabetes managed on insulin in an outpatient endocrine clinic** Room I

Presenters: Melissa Dempsey

TITLE: The effect of clinical pharmacist interventions in patients with diabetes managed on insulin in an outpatient endocrine clinic
AUTHORS: Melissa Dempsey, Heather McLeod, Autumn Mittleider, Erika McClain
OBJECTIVE: Identify pharmacist interventions in a specialty clinic setting.
SELF ASSESSMENT QUESTION: Which pharmacist interventions could be categorized as “educational” or “clinical”?
BACKGROUND: Diabetes has a significant impact on patients due to the costs associated with diabetes medications, follow up medical care, and an increased risk of high cost complications. Patients with diabetes are also at a higher risk of developing other comorbidities, adding to a decreased quality of life. The purpose of this study is to evaluate the impact of clinical pharmacist interventions on glycemic control in an endocrinology clinic specializing in complex diabetes patients.
METHODOLOGY: A retrospective, single-center, crossover cohort study was conducted pre and post clinical pharmacist intervention. All patients seen by the clinical pharmacist between May and August 2021 were evaluated for inclusion. The primary objective was to analyze A1c before and after pharmacist interventions, and the secondary objectives evaluated glycemic control and amount of patient care.
RESULTS: A total of 112 patients were seen by the clinical pharmacist and 75 met inclusion criteria for analysis. Preliminary results show a baseline A1c of 9.3%, POC BG of 205 mg/dL, and an average of 2.4 appointments in the 6 months prior to intervention. Of the 75 patients analyzed, an initial A1c reduction of -1.42 (95% CI -2.0 to -0.83) was identified. In addition, 43 patients had home BG readings available for analysis, where the average time BG 250 was 19.4% at baseline. Qualitative analysis identified 21 unique pharmacist interventions provided in the clinic, 60% of which were educational in nature, and 40% clinical interventions.
CONCLUSIONS: Preliminary data suggest that appointments with a pharmacist in a specialty clinic, to support diabetes management, significantly reduces A1c and provides additional diabetes education for patients.

3:10pm – 3:30pm C **Efficacy of oral and intravenous magnesium replacement in hospitalized heart failure patients undergoing intravenous diuresis with loop diuretics** Room H

Presenters: Cassidy Kemp

TITLE: Efficacy of oral and intravenous magnesium replacement in hospitalized heart failure patients undergoing intravenous diuresis with loop diuretics

AUTHORS: Cassidy Kemp, Sarah Blandy, Gabrielle DuBruille, Austin Williams

OBJECTIVE: Identify an appropriate route and dosage for magnesium replacement in heart failure patients concurrently receiving intravenous (IV) loop diuretics

SELF ASSESSMENT QUESTION: EK is an 86 YO male admitted for a heart failure exacerbation being diuresed with furosemide 80 mg IV BID. His morning labs are significant for: K 3.4 and Mg 1.6. Which of the following magnesium replacement products would be most appropriate?

a.Magnesium sulfate 4 g IV once

b.Magnesium oxide 400 mg PO x 2 doses

c.Magnesium sulfate 2 g IV once

d.Magnesium citrate 195 mL once

BACKGROUND: Hospitalized heart failure (HF) patients are at an increased risk for hypomagnesemia, leading to worsening comorbidities and adverse events. There is limited literature that has assessed the optimal route and dose for magnesium replacement, as well as contributing factors influencing replacement in the HF population. The purpose of this study was to evaluate the efficacy of differing magnesium replacement regimens based on institutional protocols.

METHODOLOGY: This was a single-centered, retrospective, cohort study of an inpatient adult population with HF treated between 5/1/2021 and 9/1/2021. The primary outcome was to evaluate the efficacy of oral and IV magnesium replacement in patients with HF undergoing diuresis with IV loop diuretics by reviewing the mean increase (mg/dL) in serum Mg level from baseline. Secondary outcomes include evaluation of influencing patient-specific factors, normalization of Mg levels, and timing of replacement. Statistical methods for this study included Chi-square test, T-test, and linear regression.

RESULTS/CONCLUSIONS: A total of 99 HF patients were evaluated. Baseline characteristics were similar between groups, except for higher utilization of aldosterone antagonists in the IV magnesium group (p= 0.033). There was no difference in the mean increase in serum Mg level per gram administered between IV magnesium 0.13 (+/-0.13) and oral magnesium 0.13 (+/-0.08) replacement (p=1.00). However, a significantly higher proportion of patients in the IV magnesium group obtained post-replacement Mg level >/= 2 mg/dL (p=0.043). Patient specific characteristics did not appear to affect serum Mg level.

3:10pm – 3:30pm Y **Primary Medication Non-Adherence Rates to Biologic Disease-Modifying Anti-Rheumatic Drugs (bDMARDs) for Rheumatoid Arthritis (RA) Within a Health System Specialty Pharmacy** Room G

Presenters: Laura Petry

TITLE: Primary Medication Non-Adherence Rates to Specialty Disease-Modifying Anti-Rheumatic Drugs (bDMARDs) for Rheumatoid Arthritis (RA) Within a Health System Specialty Pharmacy
AUTHORS: Laura Petry, Joshua DeClerq, Bridget Lynch, Leena Choi, Autumn Zuckerman
OBJECTIVE: Determine rates of and reasons for PMN to specialty DMARDs in rheumatoid arthritis patients.
SELF ASSESSMENT QUESTION: What are some identified reasons for PMN in RA patients?
BACKGROUND: Evaluate reasons for and rates of primary medication non-adherence (PMN) to specialty DMARDS referred to a health systems specialty pharmacy in patients with rheumatoid arthritis.
METHODOLOGY: We conducted a retrospective cohort study examining eligible patients with a specialty DMARD referral from a rheumatology provider to the health system specialty pharmacy. Initially, pharmacy claims were used to identify PMN, defined as the lack of a fill event within 60 days following the medication referral for patients
without a specialty DMARD claim in the 180 days prior. Referrals from 7/1/20-8/31/21 were eligible. Exclusion criteria included duplicate referrals, use for non-RA indications, switches to clinic administered therapies and alternate filling methods. Chart reviews were conducted to confirm referral outcomes. Descriptive statistics were used to summarize sample characteristics and outcomes of interest. Outcomes included rate of and reasons for PMN.
RESULTS: We included 483 eligible patients, 101 of which had no prescriptions filled. Chart review identified 92 patients meeting exclusion criteria, most due to external prescription routing (57.6%). The final PMN rate was 1.9%. Out of the 9 cases of true PMN, 3 patients delayed therapy due to concurrent diseases, 3 patients were unreachable, 3 patients were unable to afford medication, and 3 patients held medication due to another disease state.
CONCLUSIONS: Rates of PMN to specialty DMARDs were low in patients with RA managed by a health-system specialty pharmacy. Reasons for PMN included patient unreachability, financial barriers, and holding therapy due to other disease states.

3:10pm – 3:30pm R **Comparison of 4-factor PCC and andexanet alfa for Xa-inhibitor reversal in intracranial hemorrhage** Room C

Presenters: Samantha Benvie

TITLE: Comparison of 4-factor PCC and andexanet alfa for Xa-inhibitor reversal in intracranial hemorrhage
AUTHORS: Samantha Benvie, Spencer Livengood, April Quidley
OBJECTIVE: Describe the incidence of in-hospital mortality, hemostatic effectiveness, thrombotic events, and discharge disposition following Xa-inhibitor reversal with andexanet alfa and 4F-PCC for intracranial hemorrhage
SELF ASSESSMENT QUESTION: For reversal of Xa-inhibitors in intracranial hemorrhage, is andexanet alfa more efficacious than 4F-PCC?
BACKGROUND: Minimal guidance exists for the management of Xa inhibitor reversal for intracranial hemorrhage (ICH). Andexanet alfa is FDA approved for Xa-inhibitor reversal in the setting of uncontrolled bleeding. Limited studies demonstrated that off-label use for 4F-PCC can adequately achieve hemostasis in major bleeding from Xa inhibitors. The purpose of this study is to evaluate efficacy and safety of andexanet alfa versus 4F-PCC for Xa inhibitor reversal for ICH.
METHODOLOGY: This retrospective analysis included adult patients with confirmed ICH who received either andexanet alfa or 4F-PCC for Xa inhibitor reversal between December 2018 and June 2021. Anticoagulation reversal for other major bleeding events were excluded. The primary endpoint was survival to hospital discharge. Secondary endpoints included hemostatic effectiveness, thrombosis within 30-days post-reversal, Modified Ranking Scale Score (mRS) at discharge, and discharge disposition.
RESULTS: 463 patients were screened and 71 were included for analysis. Survival to hospital discharge was similar with 23 (65%) and 28 patients (66%) who received andexanet alfa and 4F-PCC, respectively (p=0.592). Six (17%) andexanet alfa recipients and two (6%) 4F-PCC recipients had documented thrombosis (p=0.086). The average mRS for each group was 4.71 and 4.79 (p-value = 0.3348), respectively. More patients who received andexanet alfa required admission to a long-term acute care (LTAC) facility compared to 4F-PCC (6 vs 0, p=0.0079).
CONCLUSIONS: There was no significant difference in in-hospital mortality between the two groups. More patients who received andexanet alfa had a documented thrombosis within 30-days post-reversal compared to 4F-PCC. While the overall discharge disposition did not greatly differ between the groups, more patients who received andexanet alfa required LTAC facilities at discharge

3:10pm – 3:30pm R **EVALUATION OF THE EFFICACY OF AN eGLYCEMIC MANAGEMENT SYSTEM FOR TREATMENT OF DIABETIC KETOACIDOSIS IN THE EMERGENCY DEPARTMENT** Room D

Presenters: Lauren Denton

TITLE: EVALUATION OF THE EFFICACY OF AN eGLYCEMIC MANAGEMENT SYSTEM FOR TREATMENT OF DIABETIC KETOACIDOSIS IN THE EMERGENCY DEPARTMENT

AUTHORS: Lauren Denton, Deanna Malone, Julie Thompson, Mark Vestal

OBJECTIVE: To compare the time to DKA resolution for patients who received IV insulin treatment via Glucommander, a computer-based algorithm, versus the Lien-Spratt, a paper-based algorithm.

SELF ASSESSMENT QUESTION: Based on this study, what impact did the use of Glucommander algorithm to IV insulin regimens for treatment of DKA have on patients?

BACKGROUND: Diabetic ketoacidosis (DKA) is a life-threatening condition that requires prompt treatment. While receiving treatment, strict blood glucose (BG) monitoring and timely dose adjustments are made to insulin therapy to prevent hypoglycemic episodes (BG < 70 mg/dL) and to ensure appropriate closure of the anion gap. There are numerous nomograms and computer-based algorithms that guide changes to the insulin regimen, including Glucommander and Lien-Spratt. The purpose of this study is to compare the efficacy and safety of Glucommander versus Lien-Spratt managed insulin treatments in patients with DKA in the emergency department (ED).

METHODS: The primary objective of this retrospective cohort study was to evaluate the time to resolution (in hours) of DKA from presentation in the ED to the transition to a subcutaneous insulin regimen. Secondary objectives were to evaluate the difference in percentage of hypoglycemic episodes (BG 50-69 mg/dL and severe: BG <50 mg/dL) and hyperglycemic episodes (BG >200 mg/dL). Adult patients diagnosed with DKA, whose insulin regimen were initiated in the ED and adjusted using Glucommander or the Lien-Spratt nomogram were included. Subjects were assigned to one of two cohorts based on the protocol used to adjust the IV insulin therapy. Patients were evaluated by collecting BG values while on IV insulin, anion gap trend, and hours to resolution of DKA. . Data analysis of the continuous variables for the primary and secondary endpoints were conducted using independent samples t-tests.

RESULTS: The mean time to reach a blood glucose in target range in the Lien Spratt cohort (n=190) was 7.31 hours and the Glucommander cohort (n=93) was 6.34 hours (p = 0.211). The mean time to anion gap closure in the Lien Spratt cohort was 8.43 hours versus 9.77 hours in the Glucommander cohort (p = 0.222). There was a statistically significant difference in the mean percentage of hyperglycemic episodes in the Glucommander cohort versus the Lien-Spratt cohort (51.37% vs. 36.95%, p <0.001). For hypoglycemic episodes, Glucommander had a lower mean percentage of events than the Lien Spratt cohort, although it was not statistically significant (0.47% vs. 1.08%, p = 0.092). The mean percentage of severe hypoglycemic episodes were similar between cohorts. The overall time to DKA resolution was lower in the Glucommander cohort versus the Lien Spratt cohort (11.3 hours vs. 11.78 hours, p= 0.788).

CONCLUSIONS: Our study found that patients whose IV insulin therapy was adjusted via the Glucommander algorithm, had higher percentages of hyperglycemic episodes. There was no significant difference in the number of hypoglycemic episodes or in the time to DKA resolution between the Glucommander and Lien-Spratt cohorts.

3:10pm – 3:30pm | **Evaluation of the effectiveness of a Best Practice Alert (BPA) notifying providers of antipseudomonal therapy extending beyond 48 hours** Room F

Presenters: Caroline Baer

TITLE: Evaluation of the effectiveness of a Best Practice Alert (BPA) notifying providers of antipseudomonal therapy extending beyond 48 hours

AUTHORS: Caroline Baer, Carmen Faulkner-Fennell, Sarah Withers, Rhett Shirley, Alex Ewing

OBJECTIVE: Determine if the implementation of a BPA alerting providers of specific antipseudomonal beta-lactam therapy extending beyond 48 hours impacts the duration of therapy

SELF ASSESSMENT QUESTION: True or False: Implementing a BPA alerting providers of select antipseudomonal beta-lactam therapy decreases the days of therapy of those agents.

BACKGROUND: The appropriate and timely de-escalation of antibiotics is an important focus of antimicrobial stewardship programs. Antipseudomonal beta-lactams are often empirically prescribed but are rarely required once the causative pathogen is identified. Piperacillin/tazobactam and cefepime represent the most common empiric antibiotic choices for the treatment of suspected Gram-negative infections at Prisma Health—Upstate. The volume of patients receiving empiric cefepime or piperacillin/tazobactam therapy compared with the number of antimicrobial stewardship personnel available to review prolonged courses of these agents provides an opportunity to evaluate the effectiveness of a recently implemented best practice alert (BPA) in the electronic medical record (EMR) encouraging prescriber-led review of these agents at 48 hours.

METHODOLOGY: A single-center, retrospective, pre- and post-intervention analysis was conducted. The pre-BPA implementation period included June to December 2020. The post-BPA implementation period included June to December 2021. Additional data from January 2022 was included. Patients at Prisma Health—Upstate Greenville Memorial Hospital who received treatment of with their first course of piperacillin/tazobactam and/or cefepime per admission for greater than 48 hours were included. The primary outcome was duration of therapy of antipseudomonal beta-lactam therapy (piperacillin/tazobactam and/or cefepime therapy). Key secondary outcomes include the following: time to discontinuation based on culture findings (negative cultures), time to de-escalation, time to escalation (resistance present), microbiology findings, 30-day mortality, 30-day and 90-day Clostridioides difficile infection, 90-day readmission rates, and days of therapy (DOT) of piperacillin/tazobactam and/or cefepime.

RESULTS: In progress

CONCLUSIONS: In progress

3:10pm – 3:30pm O **Safety and Efficacy of Nanoliposomal Irinotecan plus Fluorouracil Without Leucovorin in Previously Treated Metastatic Pancreatic Adenocarcinoma** Room B

Presenters: Brooke Rowling

TITLE: Safety and Efficacy of Nanoliposomal Irinotecan plus Fluorouracil Without Leucovorin in Previously Treated Metastatic Pancreatic Adenocarcinoma

AUTHORS: B. Rowling, E. Tiao, K. Casem, A. Draper, C. Davis, J. Switchenko, B. El-Rayes, O. Alese

OBJECTIVE: Evaluate the safety and efficacy of mNAPOLI-1 regimen.

SELF ASSESSMENT QUESTION: Does the omission of leucovorin affect the safety and efficacy profile the mNAPOLI-1 regimen?

BACKGROUND: The NAPOLI-1 trial established nanoliposomal irinotecan and 5-FU plus leucovorin as a National Comprehensive Cancer Network, category 1 recommendation for subsequent-line treatment of locally advanced/metastatic or recurrent pancreatic adenocarcinoma based on prolonged overall survival (OS), progression free survival (PFS), and time to treatment failure. Leucovorin acts as modulator of 5-FU resulting in pronounced and prolonged inhibition of DNA synthesis in cancer cells; however, prospective trials in metastatic colorectal cancer demonstrated no difference in OS and less toxicity when leucovorin was omitted from the 5-FU based regimen. Similarly, Winship Cancer Institute omits leucovorin (mNAPOLI-1 regimen) from the NAPOLI-1 regimen. It is hypothesized that the benefits of omitting leucovorin demonstrated in metastatic colorectal cancer also apply to the treatment of pancreatic adenocarcinoma.

METHODOLOGY: This was a single-center, retrospective chart review including patients ≥18 years of age who received the mNAPOLI-1 regimen as subsequent-line therapy for metastatic pancreatic adenocarcinoma from 10/22/2015-9/1/2021. Patients were included without regard to first-line therapy. The primary outcome was to describe the safety profile of the mNAPOLI-1 regimen. The safety outcomes of interest were grade 3 or higher neutropenia and thrombocytopenia defined by the Common Terminology Criteria for Adverse Events v5.0, as well as provider documented diarrhea of any severity. Secondary outcomes included OS, PFS, time to treatment failure, and the incidence of dose reductions and treatment delays.

RESULTS: In Progress

CONCLUSIONS: The limitations of current literature highlight the need to define the clinical impact of omitting leucovorin specifically in the mNAPOLI-1 regimen for the treatment of metastatic pancreatic adenocarcinoma.

3:10pm – 3:30pm S **Review of Buprenorphine Extended-Release Injection Use in a Veteran Population** Room E

Presenters: Megan Jackson

TITLE: Review of Buprenorphine Extended-Release Injection Use in a Veteran Population

AUTHORS: Megan B. Jackson, Kyrsten M. Chaplin, Dwight D. Eplin, Timothy J. Atkinson

OBJECTIVE: Compare opioid abstinence while using buprenorphine extended-release injection to sublingual buprenorphine in patients with opioid dependence.

SELF ASSESSMENT QUESTION: Which of the following is NOT a medication with an FDA approved indication for treatment of opioid use disorder?

BACKGROUND: No previous head-to-head studies have been conducted comparing extended-release injectable buprenorphine to other MAT drugs for OUD.

METHODOLOGY: Patients with a diagnosis of opioid dependence will be identified for inclusion if they received at least one dose of buprenorphine extended-release injection from 11/30/2017 through 7/31/2021 at Tennessee Valley Healthcare System (THVS) and previously received sublingual buprenorphine maintenance therapy, defined as at least 28 days of therapy. Chart review for illicit substance use will be completed for the time frame over which each patient was receiving sublingual and injection form of buprenorphine. Illicit substance use will be measured by inappropriate drug screens, self-reported use, and the filling of non-VA controlled substance prescriptions. Data will be identified using manual chart review and the Controlled Substance Monitoring Database program (CSMD).

RESULTS: Percent of opioid abstinence while receiving buprenorphine extended-release injection was 89% and 88% while receiving buprenorphine sublingual. (p = 0.7231)

CONCLUSIONS: There is no difference in rates of opioid abstinence achieved between buprenorphine extended-release injection and buprenorphine sublingual for treatment of opioid use disorder.

3:10pm – 3:30pm 1 **EFFECT OF URINARY TRACT INFECTIONS ON ALLOGRAFT FUNCTION IN KIDNEY TRANSPLANT RECIPIENTS** Room A

Presenters: Emily Rusciano

TITLE: EFFECT OF URINARY TRACT INFECTIONS ON ALLOGRAFT FUNCTION IN KIDNEY TRANSPLANT RECIPIENTS

AUTHORS: Emily Rusciano, Taylor Gish, Chris Larkin, Michelle Wilcox

OBJECTIVE: Identify the effect of UTIs on allograft function in kidney transplant patients.

SELF ASSESSMENT QUESTION: How do UTIs affect outcomes of kidney transplant recipients at Ascension Saint Thomas Hospital West?

BACKGROUND: Urinary tract infections are the most common infections experienced by kidney transplant patients. Majority of UTIs occur within 3 to 6 months post-transplant. Studies on whether UTIs have a negative impact on allograft function are inconclusive. The purpose of this study is to determine if a difference in allograft failure exists between patients who developed a UTI within the first 6 months post-transplant and patients who did not.

METHODOLOGY: This study is a retrospective chart review of adult patients who received one kidney transplant between January 1, 2017 and December 31, 2018. Patients with death within 30 days, dual organ transplant, or prior solid organ transplant were excluded. Patients were separated into two groups: UTI within the first six months post- transplant and those with no UTI. The primary objective was to determine if a difference in allograft failure exists between groups. Secondary objectives included all-cause hospitalizations, acute rejection, all-cause mortality, and emergency department visits.

RESULTS: Eighty-one patients were included with 27 in the UTI group and 54 in the non-UTI group. Twenty-six patients in the UTI group had deceased donor transplants compared to 33 in the non-UTI group (96.3% vs 61.1% p= 0.001). Four patients in the UTI group experienced allograft failure versus one patient in the non-UTI group (14.8% vs 1.19%, p= 0.040). The median number of hospitalizations [IQR] in the UTI group was 3 admissions [1-5] versus 1 admission [0-3] (p= 0.027). There was no significant difference in acute rejection or number of ED visits between groups.

CONCLUSIONS: Patients with a UTI in the first six months post-transplant were more likely to experience allograft failure.

3:40pm – 4:00pm A **EVALUATING THE IMPACT OF A NALOXONE CO-PRESCRIBING INITIATIVE ON MEDICARE ADVANTAGE BENEFICIARIES WITH HIGH OPIOID UTILIZATION** Room L

Presenters: Emily Ragland

TITLE: EVALUATING THE IMPACT OF A NALOXONE CO-PRESCRIBING INITIATIVE ON MEDICARE ADVANTAGE BENEFICIARIES WITH HIGH OPIOID UTILIZATION

AUTHORS: Emily Ragland, Oliver Holmes, Juliet W. Walker, Jennifer Snyders, Ann Schuster, Leon Parks, Kamala Nola

OBJECTIVE: Compare measurable outcomes among Medicare beneficiaries with a paid claim for naloxone following a naloxone co-prescribing prescriber outreach initiative

SELF ASSESSMENT QUESTION: What is one outcome observed in beneficiaries using opioid medications who received a paid claim for naloxone?

BACKGROUND: The Centers for Disease Control and Prevention (CDC) Guideline for Prescribing Opioids for Chronic Pain recommends that clinicians consider co-prescribing naloxone to individuals at increased overdose risk. While some publications examine the rate of naloxone co-prescribing, there is limited published data regarding the impact of naloxone co-prescribing on health and economic outcomes. Cigna Medicare providers were targeted in a December 2019 mailing initiative that encouraged co-prescribing naloxone for individuals prescribed opioid medications at doses ≥ 50 MME per day along with the presence of other risk factors for an overdose.

METHODOLOGY: Two study groups will be evaluated: beneficiaries with a paid claim for naloxone and beneficiaries without a paid claim for naloxone within 12 months after the initiative. Pharmacy and medical claims will be used to retrospectively analyze the differences in total cost of care, hospital admissions, ER visits and other outcomes between the two study groups in the time periods before and after the initiative. Naloxone prescribing patterns will be evaluated by a comparison of all naloxone claims after the co-prescribing initiative, including paid, reversed, and rejected claims.

RESULTS: In Progress

CONCLUSIONS: In Progress

3:40pm – 4:00pm B **Development of a How-To Guide Describing Co-located Services and Use of Telehealth to Treat HIV, Hepatitis C, and Substance Use Disorders in Rural Appalachia** Room J

Presenters: Julia Calandra

TITLE: Development of a How-To Guide Describing Co-located Services and Use of Telehealth to Treat HIV, Hepatitis C, and Substance Use Disorders in Rural Appalachia

AUTHORS: Julia Calandra, Shuchin Shukla, Rebecca Grandy

OBJECTIVE: At the conclusion of my presentation, the participant will be able to describe strategies to increase access to care for treatment of hepatitis C, HIV, and substance use disorders in rural regions.

SELF ASSESSMENT QUESTION: What is one component of a practice model that is conductive to increasing access to care for rural populations?

BACKGROUND: Develop a “how-to” guide to describe a family medicine practice that addresses inequity and access to care for HIV, hepatitis C, and substance use disorders in a co-located manner in rural Appalachia.

METHODOLOGY: A literature review was completed to assess prevalence of HIV, hepatitis C, and substance use disorders in rural Appalachia, practice models used to address these disease states, and persistent gaps in care. An environmental scan provided an understanding of resources already existing in the region. Finally, an informal needs assessment was used to determine all aspects of managing these conditions and meeting patient needs, including personnel and processes.

RESULTS: Rural communities still face numerous barriers to care, especially for treatment of these commonly comorbid conditions. Services have not expanded to the extent that they have in urban areas. These findings drove the development of a “how-to” guide describing a current practice addressing these conditions in a centralized way for patients in rural Appalachia. The guide illustrates a dedicated specialty clinic within the umbrella of primary care that has been established to treat HIV and hepatitis C. Our “how-to” guide describes how utilization of telehealth can allow for continued care despite these barriers.

CONCLUSIONS: Lack of access to co-located care continues to be a barrier for rural populations. Co-location of services requires a team-based model using strategies like incorporation of telehealth to coordinate comprehensive care for patients. The goal of this guide is to provide a scaffolding for other clinical sites to adapt and utilize to implement their own services.

3:40pm – 4:00pm B **Evaluation of a Pharmacist-Led Transitions of Care Model Provided through an Ambulatory Care Clinic** Room I

Presenters: Khalefa King, PharmD

TITLE: Evaluation of a Pharmacist-Led Transitions of Care Model Provided through an Ambulatory Care Clinic

AUTHORS: Khalefa King, Courtney E. Gamston, Salisa Westrick, Emily Blaine, and Kimberly Braxton Lloyd

OBJECTIVE: Describe clinical interventions associated with the TOC program.

SELF ASSESSMENT QUESTION: Name 3 common clinical interventions made by the TOC program.

BACKGROUND: Transitions of care pharmacists play an important role in decreasing the risk for hospital readmission in patients as they move from one health care setting to another. Previous research has shown patients who are frequently admitted to the hospital are at an increased risk of poor health outcomes and repeat hospital admission. The purpose of this project is to evaluate a new transitions of care model that partners a pharmacist-led ambulatory care clinic with an inpatient practice to provide care for patients transitioning from the hospital to the community setting.

METHODOLOGY: An interdisciplinary healthcare collaboration between inpatient and outpatient facilities was established to provide care to patients transitioning from the hospital to community setting. Participants were identified using the hospital’s population health dashboards and provider referrals. Eligible participants were taking at least one chronic medication and had either an admission diagnosis of heart failure or three admissions within the last year. The outpatient team engaged eligible patients, initiated communication with community providers, identified and addressed potential barriers to care, and provided counseling prior to discharge. Patients completed follow-up visits with the outpatient team via telehealth technologies after discharge on days 3, 7 and 12 to assess adherence to the discharge care plan, barriers to care, gaps in care, medication-related problems, and the need for referral for additional care. Primary outcomes include 30-day readmission rate and 30-day emergency department utilization. Secondary outcomes include time to readmission, annualized rate of readmission, number and types of medication-related problems, gaps in care, and barriers to care identified, addressed, and resolved.

RESULTS: In progress

CONCLUSIONS: In progress

3:40pm – 4:00pm R **Effect of midodrine in COVID-19 patients with septic shock in the intensive care unit on time to vasopressor discontinuation** Room D

Presenters: Bethany Taylor

TITLE: Effect of midodrine in COVID-19 patients with septic shock in the intensive care unit on time to vasopressor discontinuation

AUTHORS: Bethany Taylor, Rachel Tendler, William Bender

OBJECTIVE: Assess the effect of midodrine use in COVID-19 patients with prolonged use of IV vasopressors in the ICU.

SELF ASSESSMENT QUESTION: Does midodrine use in ICU patients with COVID-19 decrease time to vasopressor discontinuation?

BACKGROUND: Septic Shock is life-threatening organ dysfunction and severe hypotension due to infectious etiology. Intravenous (IV) Vasopressors are used if IV fluids are unsuccessful at restoring hemodynamic stability. IV vasopressors can become a barrier to ICU discharge and prolonged hospital stay. Midodrine, an oral alpha-adrenergic agonist, has expanded into more off-label uses such as the facilitation of transitioning patients off of IV vasopressors.

METHODOLOGY: Eligible participants included hypotensive patients aged 18 years or older who were admitted to an intensive care unit (ICU) and on at least 0.1 mcg/kg/min of norepinephrine for 24hrs with a diagnosis of septic shock and COVID-19. The intervention group included patients that received at least one dose of midodrine and the control group included patients on comparable IV vasopressors not receiving midodrine. A retrospective chart review was performed on COVID-19 sepsis patients receiving vasopressors and on midodrine in the ICU at Emory Saint Joseph's Hospital by using electronic medical record.

RESULTS: 72 patients were included in the IRB-approved study. The median time to IV vasopressor discontinuation was 13 days for the midodrine group and 8 days for the control group. The mean ICU length of stay and Hospital length of stay was 31.4 days and 38.9 days in the midodrine group and 16.4 days and 23.6 days in the control group. The average dose of midodrine was 25.7 mg/day. Statistical analysis is still ongoing to assess statistical significance.

CONCLUSIONS: We observed that there was not a decrease in time to vasopressor discontinuation in COVID-19 patients receiving vasopressors on midodrine than in the control group possibly due to confounding variables. Therefore, it is possible that there is not a benefit in early initiation of midodrine in COVID-19 patients with increased need for IV vasopressors to improve time to discontinuation of IV vasopressors.

3:40pm – 4:00pm R **Evaluation of an Open Fracture Antibiotic Prophylaxis Protocol** Room E

Presenters: Lindsey Lindsey

TITLE: Evaluation of an Open Fracture Antibiotic Prophylaxis Protocol

AUTHORS: Lindsey Lindsey, Casey Boyer, Christopher Morrison, John Patka

OBJECTIVE: The objective of this study was to assess compliance to a open fracture antibiotic prophylaxis protocol and identify points for improvement or education to promote adherence.

SELF ASSESSMENT QUESTION: How does current literature differ from guideline recommended antibiotic prophylaxis regimens for grade III open fractures?

BACKGROUND: The purpose of this study was to assess compliance to a open fracture antibiotic prophylaxis protocol. The protocol included cefazolin for all open fractures until fractures are graded. Treatment of grade III open fractures recommend the use of vancomycin and ceftriaxone, removing the use of an aminoglycoside. Assessing adherence to the protocol may identify an ideal approach to the management of Grade III open fractures.

METHODOLOGY: A single–center retrospective study was conducted at a level one trauma center evaluating patients with a graded open fracture between March 2021- August 2021. The primary outcome was the rate of protocol compliance to the open fracture protocol. Compliance was defined as correct agent and correct duration based on fracture grading. The secondary outcomes were time from arrival to complete antibiotic regimen initiation, time to any antibiotic administration and service provider ordering antibiotics.

RESULTS: There were 246 patients included the study. Open fracture protocol compliance rates were 47%. The median time to first antibiotic was 23.4 minutes and with complete antibiotic regimen at 11.2 hours. The appropriate ordering team placed 61% of antibiotic orders.

CONCLUSIONS: Open fracture protocol compliance rates were 47% with incorrect regimen as the most common cause for non-adherence. Education on the updated protocol and promoting use of the open fracture orderset may improve protocol compliance.

3:40pm – 4:00pm R **Evaluation of baricitinib use in hospitalized COVID-19 patients in a rural community hospital** Room C

Presenters: Brooke Mudgett

TITLE: Evaluation of baricitinib use in hospitalized COVID-19 patients in a rural community hospital

AUTHORS: Brooke Mudgett, PharmD; Christina Thurber, PharmD, BCPS, BCCCP; Matt Bamber, PharmD, MBA, BCCCP; Drew Kessell, PharmD, MBA, MS

OBJECTIVE: Identify the impact of baricitinib on hospitalized COVID-19 patients who require supplemental oxygen.

SELF ASSESSMENT QUESTION: True or False: Baricitinib therapy is indicated for hospitalized COVID-19 patients requiring supplemental oxygen, non-invasive or invasive ventilation, or ECMO

BACKGROUND: Coronavirus disease 2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has been associated with a hyperinflammatory state that can lead to multiple organ dysfunction and increased mortality. Despite treatment developments with agents such as remdesivir, dexamethasone, and tocilizumab; mortality rates and oxygen requirements have yet to be significantly altered. Baricitinib is a janus kinase inhibitor with potential anti-inflammatory and immuno-modulatory effects. Current evidence suggests baricitinib may delay the progression of oxygen requirements and severity of COVID-19 infection among patients receiving standard of care therapies. The purpose of this study is to evaluate the use of baricitinib in hospitalized patients based on Emergency Use Authorization guidance at a community hospital and assess any potential risks/benefits associated with therapy.

METHODOLOGY: This was a single center, IRB-approved study. A retrospective observational study was conducted to evaluate the use and length of baricitinib therapy in COVID-19 patients admitted to Moore Regional Hospital between August 1, 2021 and September 30, 2021. Patients aged 18 and older were identified based on ICD-10 diagnosis of COVID-19 and included if they required supplemental oxygen.

Patients were excluded from analysis if they were under 18 years of age, pregnant, had an eGFR 5x ULN, or presence of neutropenia (defined as ANC

3:40pm – 4:00pm I **Combination therapy versus monotherapy for MRSA bacteremia after culture clearance** Room F

Presenters: Summer Sizemore

TITLE: Combination therapy versus monotherapy for MRSA bacteremia after culture clearance

AUTHORS: Summer Sizemore; Trinh Vu; Sarah Green; Benjamin Albrecht; K. Ashley Jones; Kristen Paciullo; Taylor Smith; Jessica Howard-Anderson; Zanthia Wiley; Mary Elizabeth Sexton

OBJECTIVE: To assess clinical outcome differences in patients who receive ongoing combination therapy versus de-escalation to monotherapy following clearance of MRSA bacteremia (MRSA-B)

SELF ASSESSMENT QUESTION: Should patients with MRSA-B receive continued combination therapy following blood culture clearance?

BACKGROUND: Increasing evidence supports use of combination therapy with vancomycin or daptomycin plus an anti-staphylococcal beta-lactam for treatment of persistent Staphylococcus aureus bacteremia, but it is unclear whether continuation of combination therapy after culture clearance for all cases of MRSA-B has ongoing benefits.

METHODOLOGY: This is a retrospective cohort study of adult patients with at least one positive MRSA blood culture (BC) and concurrent orders for vancomycin or daptomycin and ceftaroline or cefazolin between January 1, 2014 and April 30, 2021. Included patients had documented BC clearance following >/= 24 hours of combination therapy. Outcomes of patients subsequently transitioned to monotherapy were compared to those with ongoing combination therapy. Patients with polymicrobial bacteremia or ≥ 7 days of persistent bacteremia on combination therapy were excluded.

The primary objective was inpatient mortality. Secondary outcomes compared 90-day MRSA-B relapse, acute kidney injury, time to de-escalation from combination therapy to monotherapy, length of stay, and 30-day re-admission rates. Chi-Square test was used for categorical variables and Mann-Whitney U test for continuous variables.

RESULTS: Inpatient mortality occurred in 23.1% (3/13) of patients in the continued combination therapy group and 3.8% (1/26) of the monotherapy de-escalation group (p=.10). Secondary outcomes did not differ significantly between groups.

CONCLUSIONS: Similar studies differ in outcome results, but we found that de-escalation to monotherapy following clearance of MRSA-B did not result in statistically significant differences in patient outcomes.

3:40pm – 4:00pm | **Evaluation of the Legionella Urinary Antigen on Azithromycin Discontinuation** | Room G

Presenters: Taylor Gregory

TITLE: Evaluation of the Legionella Urinary Antigen on Azithromycin Discontinuation

AUTHORS: Taylor Gregory, Cortney Dodson, Joseph Kohn

OBJECTIVE: To describe the use of the Legionella urinary antigen at a single academic medical center.

SELF ASSESSMENT QUESTION: True or false: The BinaxNOW LUA has a 95% sensitivity and when negative the discontinuation of azithromycin should be strongly encouraged?

BACKGROUND: Community-acquired pneumonia (CAP) is a leading cause of death and hospitalization in the United States. Legionella urinary antigens (LUA) can aid in the discontinuation of unwarranted macrolide therapy. Current guidelines recommend obtaining a LUA only in the context of known association with an outbreak, recent travel, or a diagnosis of severe CAP. This study aimed to describe how LUAs are utilized at a single academic medical center

METHODOLOGY: This was a single center, retrospective cohort study that included adult patients admitted to Prisma Health Richland for CAP, and who received at least 1 dose of azithromycin between January 1, 2018, and July 31, 2021. A list of negative LUAs was obtained and processed using a random number generator prior to screening for azithromycin administration. Patients were stratified based on those that continued azithromycin therapy versus those that did not in the setting of a negative LUA. The primary endpoint was the rate of azithromycin discontinuation. Secondary endpoints included the use of a respiratory viral pathogen panel, doses of azithromycin recieved, ICU and hospital length of stay, and the effect of the COVID19 pandemic on azithromycin discontiuation.

RESULTS: There were 4284 negative LUAs within the study period. Of this, 11 LUAs were positive and 6 were inconclusive. This study targeted 100 patients for inconclusion, to achieve this goal 315 patients were screened. Of the 100 patients included, 65 (65%) continued azithromycin therapy in the setting of a negative LUA. Continuation was defined as receiving the next scheduled dose of azithromycin with $\geq$12 hours to view the negative LUA result. There were no significant differences regarding baseline characteristics. This study found no difference in azithromycin discontinuation rates when comparing the pre-pandemic and pandemic study period, RR 1.19 (CI 95%: 0.89 to 1.57, p=0.2427). The doses of azithromycin received were significantly more in the continuation group 3.35 doses/pt. vs. 1.3 doses/pt. in the discontinuation group (p <0.0001). There were no other significant differences among the secondary endpoints, though notability 39 (60%) of the continued population did so in the setting of both a negative respiratory viral pathogen panel and a negative LUA.

CONCLUSION: The *Legionella* urinary antigen's negative predictive value is likely being underused at Prisma Health Richland. Cost must be considered when ordering diagnostic tools such as the respiratory viral pathogen panel and the urinary antigen. If diagnostics such as these are pursued, utilizing the information they provide is of upmost importance.

3:40pm – 4:00pm L **EVALUATING THE USE OF STANDARD LOADING DOSE APIXABAN VS REDUCED LOADING DOSE AFTER PARENTERAL ANTICOAGULATION IN THE TREATMENT OF ACUTE VENOUS THROMBOEMBOLISM** Room K

Presenters: Kellie Ball

TITLE: Evaluating the Use of Standard Loading Dose Apixaban vs Reduced Loading Dose After Parenteral Anticoagulation in the Treatment Of Acute Venous Thromboembolism

AUTHORS: Kellie Ball, Skyler Brown, Sarah Hardeman, A. Shaun Rowe, Kim Keller

OBJECTIVE: Determine if a reduced loading dose of apixaban is noninferior to standard loading dose.

SELF ASSESSMENT QUESTION: What is a potential benefit of a reduced duration of apixaban loading dose?

A) Increased cost

B) Decreased bleeding risk

C) Increased patient confusion

BACKGROUND: To determine if a reduced loading dose of apixaban after greater than or equal to 48 hours of parenteral anticoagulation is noninferior to 7 days of apixaban 10mg twice daily in the treatment of acute venous thromboembolism (VTE).

METHODOLOGY: A retrospective cohort study was completed for inpatients at an academic medical center who were diagnosed with an acute deep vein thrombosis (DVT) or pulmonary embolism (PE) who received >48 hours of parenteral anticoagulation and were also prescribed apixaban 5 mg twice daily as maintenance therapy at discharge. Patients were divided into two groups based on whether they received a full loading dose of apixaban 10 mg twice daily for 7 days or if the loading dose was 6 days or less. Patients were excluded if they were prescribed apixaban 2.5 mg twice daily as the maintenance dose, prescribed apixaban prior to admission, or were prescribed a concurrent CYP3A4/PGP inducer or dual antiplatelet therapy at discharge.

RESULTS: 1500 patients were screened with a total of 324 patients included. 197 pateints were included in the full loading dose group and 127 patients in the reduced loading dose group. The rate of recurrent VTE was found to have a risk difference of 2.8% (90% CI -1.4% to 6.9%, p=0.001) when comparing reduced loading dose to standard loading dose. There were no differences in major or minor bleeding found.

CONCLUSION: Reduced loading dose was found to be non-inferior to the standard regimen as it relates to the recurrence of VTE. There was no difference between groups in major or minor bleeding.

3:40pm – 4:00pm P **Impact of Implementing a Pharmacist-Driven Opioid Conversion Protocol in a Community Hospital** Room B

Presenters: Austin Winkler

TITLE: Impact of Implementing a Pharmacist-Driven Opioid Conversion Protocol in a Community Hospital

AUTHORS: Austin Winkler, Brianna Qualls

OBJECTIVE: Describe why pharmacist intervention to convert IV opioid therapy to oral formulations, when appropriate, may be beneficial for patients.

SELF ASSESSMENT QUESTION: What is one advantage to using oral opioids over IV opioids when appropriate in admitted patients?

BACKGROUND: To determine the extent to which implementation of a pharmacist-driven opioid conversion protocol can decrease administrations of intravenous opioids in a community hospital.

METHODOLOGY: An automatic opioid conversion protocol was developed and implemented in our institution allowing pharmacists to change IV opioid medications to equivalent oral formulations under appropriate parameters. Patients administered IV opioid medications were randomized to evaluate the amount of IV vs. PO opioid medications received during their admission, as well as the number of naloxone doses administered during admission. These patients were divided into pre- and post-protocol implementation groups. Patients eligible for inclusion included those that were ≥18 years of age, under the care of a hospitalist, hemodynamically stable, had no allergies to oral opioids included in the protocol, were not cirrhotic or experiencing transaminitis, were not receiving IV opioids for chest pain, were not experiencing GI bleed or signs of malabsorption, and were able to tolerate oral medications.

RESULTS: 64 patient were included in this study. Preliminary results showed an IV to oral opioid administration ratio of 1.73 to 1 in the pre-implementation group, vs. a post-implementation ratio of 1.64 to 1. In the pre-implementation group, 2 patients received naloxone, with each patient receiving 1 dose. In the post-implementation group, 1 patient received 1 dose of naloxone.

CONCLUSIONS: Results show a reduction in the IV to opioid administration ratio, though this failed to meet statistical significance. Naloxone administration was comparable in both groups. A follow-up study further out from implementation of the pharmacist-driven protocol may be beneficial.

3:40pm – 4:00pm D **IMPROVING TIME TO ADMINISTRATION OF TIME-CRITICAL MEDICATIONS IN THE PEDIATRIC EMERGENCY DEPARTMENT** Room H

Presenters: Ashley Robertson

TITLE: IMPROVING TIME TO ADMINISTRATION OF TIME-CRITICAL MEDICATIONS IN THE PEDIATRIC EMERGENCY DEPARTMENT

AUTHORS: Ashley Robertson, Katie Fulks, Laura Hagan, Matthew McAllister

OBJECTIVE: Describe the difference in time from order entry to medication administration of ceftriaxone, piperacillin-tazobactam, and levetiracetam between pre-protocol implementation and post-protocol implementation.

SELF ASSESSMENT QUESTION: Does streamlining the preparation process for ceftriaxone, piperacillin-tazobactam, and levetiracetam in the pediatric emergency department improve time to administration of these medications?

BACKGROUND: Current concentrations of time-critical intravenous medications being prepared for the pediatric emergency department at the study facility involve multi-step dilution processes and a double check verification in the pharmacy before preparation and delivery of the medication. These multi-step processes have the potential to create a delay in time to administration which, ultimately, can impact patient care. Streamlining the process of preparation of these medications has the potential to improve time to administration of these time-critical medications thus impacting patient outcomes. The purpose of this study was to assess the difference in time to administration of time-critical medications including ceftriaxone, levetiracetam, and piperacillin/tazobactam in the pediatric emergency department between pre-protocol implementation and post-protocol implementation.

METHODOLOGY: A retrospective chart review was conducted of pediatric patients that visited the pediatric emergency department at the study facility and received one-time doses of either ceftriaxone, piperacillin-tazobactam, or levetiracetam during a 3-month pre-protocol implementation phase. Following implementation of a streamlined preparation process of these medications, a retrospective chart review of similar patients visiting the pediatric emergency department was conducted during a 3-month post-protocol implementation phase. The primary objective was to assess the difference in time from order verification to dispensing of time-critical medications including ceftriaxone, levetiracetam, and piperacillin/tazobactam in the pediatric emergency department between pre-protocol implementation and post-protocol implementation.

RESULTS: In Progress

CONCLUSIONS: In Progress

3:40pm – 4:00pm T **Pharmacist-Led Post Discharge Clinic for Patients with Cancer** Room A

Presenters: Campbell Scott

TITLE: Pharmacist-Led Post Discharge Clinic for Patients with Cancer

AUTHORS: Campbell Scott, Katherine Saunders, Kaitlyn Bartley, Meredith Lopez

OBJECTIVE: List potential interventions made post-discharge by pharmacists for patients with solid tumors.

SELF ASSESSMENT QUESTION: Which of the following are interventions made by pharmacists in a post-discharge clinic?

a. Medication reconciliation

b. Medication education

c. Supportive care plan modification

d. All of the above

Answer: D

BACKGROUND: Given the complexity of medication regimens that patients with cancer typically have, these patients are at increased risk of having medication errors that lead to preventable hospital readmissions. To date, there has been literature suggesting that post-discharge follow-up clinics can significantly reduce 30-day readmission rates in patients with cancer. The purpose of this study is to determine the feasibility of a pharmacist-led post-discharge follow-up service in patients with select solid tumor cancers at an academic medical center. Additionally, the study will examine if a pharmacist-led post-discharge program will successfully reduce the 30-day readmission rates in this patient population.

METHODOLOGY: This single-center, observational study included adult patients with select solid tumors who received a post-discharge follow-up with a pharmacist between November 1, 2021 and February 28, 2022. Eligible participants are those >18 years old who are established at the Georgia Cancer Center-Laney Walker location and have been discharged from Augusta University Medical Center between November 15, 2021 and February 28, 2022. Patients must also meet pre-determined criteria for a high risk of readmission and have a confirmed solid tumor malignancy. Feasibility of a pharmacist-led post-discharge clinic was determined by collecting date of discharge, date of follow-up, time spent on post-discharge follow-up, the number of interventions made, and the type of interventions made.

RESULTS: A total of 36 patients were enrolled in post discharge follow-up and all were included in this IRB-approved study. All 36 patients had at least one intervention made and in total pharmacists made 60 interventions. Interventions included medication reconciliation, referral to patient assistance, cancer treatment modification, supportive care modification and recommendations to order labs or other monitoring. Additionally, all patients received medication counseling from the pharmacist. In total 10.1 hours were spent over the study period on post discharge follow-up with a mean of 10 minutes per intervention made and 16.8 minutes per patient seen. Patients were followed up a mean of 5.1 days after discharge, which was significantly sooner when compared follow up with their oncologists (Mean: 12.4 days, p=0.0006). The 30-day readmission rate for patients included in the study was 22.2%.

CONCLUSIONS: All solid tumor patients discharged from the hospital that are at high risk for readmission have an opportunity for interventions by pharmacists. Oncology trained pharmacists can bridge the gap between hospital discharge and follow-up with oncology providers.

4:00pm – 4:20pm B **Evaluating Rates of Chemotherapy Induced Nausea and Vomiting in an Outpatient Oncology Clinic** Room J

Presenters: Brian Tran

TITLE: Evaluating Rates of Chemotherapy-Induced Nausea and Vomiting in an Outpatient Oncology Clinic: A Retrospective Study

AUTHORS: Brian Tran, Alexandria Balkcom, Sajia Kotwal, Valana Vannoy

OBJECTIVE: Compare CINV rates to NCCN standards and evaluate patient specific risk factors associated with CINV.

SELF ASSESSMENT QUESTION: Which patient specific risk factor seems to have the highest impact on rates of CINV?

BACKGROUND: NCCN provides CINV recommendations, but various patient factors make it difficult to standardize regimens. The purpose of this study was to assess rates of CINV at an outpatient oncology clinic and correlate these rates with patient risk factors and chemotherapy emetogenic risk.

METHODOLOGY: This was a retrospective chart review of outpatient oncology adults receiving chemotherapy between March 2021 to September 2021. Chemotherapy emetic risk and patient risk factors were evaluated. The primary outcome was composite incidence of CINV defined as need for emergent antiemetics during chemotherapy, CINV complaints during clinic follow up visits, or 14-day acute care admissions. Secondary outcomes were the individual components of the primary outcome.

RESULTS: 112 patients received minimal (22%), low (27%), moderate (30%), and high (21%) emetogenic regimens. Out of 112 patients, 30 (26.8% p value 0.0136) patients experienced the primary composite CINV endpoint. Of the 30 patients that experienced CINV, 24 (20.5%) had documented CINV complaints during follow up visits, 8 (7.1%) experienced an acute care admission 14 days after chemotherapy, and 7 (6.3%) required emergent antiemetics. Also, out of these 30 patients, 24 (80%) had history of CINV, 24 (80%) were female, 20 (66.7%) had little to no previous alcohol use, and 3 (10%) were age ≤ 50 years.

CONCLUSIONS: Breakdown of chemotherapy emetogenic risk was relatively even and supported a positive correlation between emetogenic risk and rates of CINV. History of CINV, female gender, and little to no previous alcohol use were supported as risk factors for CINV whereas age ≤ 50 years was not. The predominant patient population of this study was older female patients, which may have served as confounders.

4:00pm – 4:20pm B **Treatment Outcomes in a Multidisciplinary Hepatitis Clinic** Room I

Presenters: Demi Leara

TITLE: Treatment Outcomes in a Multidisciplinary Hepatitis Clinic

AUTHORS: Demi Leara, DeAnn Jones

OBJECTIVE: Recognize the difference in documented cure rates of Hepatitis C among patients with different methods of medication acquisition within a single outpatient hepatitis clinic.

SELF ASSESSMENT QUESTION: True or False:

There was a significantly higher documented HCV cure rate seen in patients who filled their prescriptions with UAB's Specialty Pharmacy.

BACKGROUND: Undetectable Hepatitis C Virus (HCV) RNA 12 weeks or longer after treatment completion is considered a sustained virologic response (SVR), which is consistent with HCV cure. Direct-Acting Antiviral treatments are highly efficacious, with published cure rates of 95-98%, but the HCV cure rates are unknown in the multidisciplinary hepatitis clinic at UAB. This study will determine SVR for patients treated at University of Alabama at Birmingham (UAB) Hospital Digestive Health Clinic between 2015 and 2021. UAB utilizes an institutional Specialty Pharmacy to provide HCV treatment medications for patients initiated on treatment through UAB's multidisciplinary hepatitis clinic. Pharmacy involvement helps streamline the insurance approval process and medication delivery to patients. This study will compare SVR outcomes of patients filling through UAB Specialty Pharmacy to patients who had to utilize an outside pharmacy due to insurance contract requirements. This study will describe HCV treatment uptake, SVR, and potential barriers to patient follow- up to determine HCV cure.

METHODOLOGY: This study is a retrospective chart review of all patients initiated on HCV treatment through UAB Digestive Health Clinic from January 1, 2015 – July 31, 2021. Patients who have undergone a liver transplant and those who filled through the Patient Assistance Program were excluded.

RESULTS: A total of 2,202 patients were screened for inclusion in the study. After excluding 595 patients (242 transplant, 22 never initiated treatment, 331 patient assistance), 1,607 patients were included in final analyses for primary and secondary outcomes. Documented SVR12 rates for UAB Specialty Pharmacy and outside pharmacies were 80% and 62%, respectively (P<0.0001). Without including patients that were lost to follow-up, the documetned SVR12 rates for the two groups were 95% and 99%, respectively (P=0.054). Sixteen percent of patients filling with UAB Specialty Pharmacy and 37% of patients filling with outside pharmacies were considered lost to follow-up (P<0.0001).

CONCLUSIONS: Among individuals initiated on treatment for HCV through UAB Hospital Digestive Health Clinic, there was a significantly higher rate in documented SVR12 in the population who filled prescriptions at UAB Specialty Pharmacy compared to outside pharmacies. There was also a significantly larger percent of patients lost to follow-up in the population who filled their prescriptions at other pharmacies.

4:00pm – 4:20pm C **A Retrospective Study Assessing Access to PCSK-9 Inhibitors for Cardiology Patients in the Outpatient Setting** Room H

Presenters: Deirdre Kaan

TITLE: A Retrospective Study Assessing Access to PCSK-9 Inhibitors for Cardiology Patients in the Outpatient Setting

AUTHORS: Deirdre Kaan, Laura Sleater, William Pomeroy, Elizabeth Ramsaur, Christie Dresback

OBJECTIVE: Describe potential barriers to PCSK-9 inhibitor initiation for patients of an outpatient cardiology group.

SELF ASSESSMENT QUESTION: What are potential barriers that could prevent PCSK-9 inhibitor initiation in the outpatient setting?

BACKGROUND: Proprotein convertase subtilisin/kexin type 9 inhibitors (PCSK-9i), alirocumab and evolocumab, are approved to treat clinical atherosclerotic cardiovascular disease (ASCVD), requiring lipid lowering beyond baseline therapy or in high-risk patients with familial hypercholesterolemia. PCSK-9i can lower low-density lipoprotein by 55-60% at their maximum doses. Despite the proven efficacy of PCSK-9i, insurers may not cover these medications. The PCSK-9i class consists of brand-name-only biologic agents and insurers typically require prior authorizations. A study found that 80% of prescriptions written for PCSK-9i were initially rejected by insurance companies. Another study utilizing nationwide pharmacy claims data found that the insurance payer was the greatest influence in the likelihood of approval or denial of PCSK-9i coverage.

METHODOLOGY: This study is a retrospective chart review conducted at an outpatient cardiology clinic and its outlying affiliates. The primary focus of this study is to assess the access of patients to PCSK-9i prescriptions initiated in a cardiology office group. This study examines the overall rate of approvals, the provider rate of approvals, and the practice-specific rate of approvals. Additional data points collected include the time to PCSK-9i approval, indication for PCSK-9i therapy, number of patients that discontinued therapy during the study period, insurance status of the patients, and estimated prescription copay.

The study population included patients who were prescribed a PCSK-9i at the cardiology office group from 7/20/2020-7/20/2021. Patients

4:00pm – 4:20pm R **Changes in Intracranial Pressure after Administration of Hypertonic Saline Boluses** Room E

Presenters: Caitlin Rousseau

TITLE: Changes in Intracranial Pressure after Administration of Hypertonic Saline Boluses

AUTHORS: Caitlin Rousseau, Katherine Beach, H Wilsey, Grace Cooksey, Alexandra Barber, Micheal Strein

OBJECTIVE: Assess if serum sodium values impact changes in intracranial pressure (ICP) after administration of hypertonic saline (HTS) boluses.

SELF ASSESSMENT QUESTION: Are hypertonic saline boluses more efficacious at lowering ICP in a normonatremic or hypernatremic state?

BACKGROUND: Severe head trauma is often associated with cerebral edema and increased ICP. HTS is one of the recommended treatment options for elevated ICP due to the osmotic gradient it creates between the brain and intravascular space, relieving excess ICP. One treatment approach to elevated ICPs is targeting higher serum sodium values to increase plasma osmolarity. However, the 2020 Neurocritical Care Society guidelines recommend symptom-based administration of HTS over targeting specific sodium goals. The purpose of this study was to assess whether serum sodium values impact the change in ICP in response to HTS boluses.

METHODOLOGY: Patients were eligible for inclusion if they had any type of intracranial hemorrhage or TBI, > 18 years of age, had invasive ICP monitoring (extraventricular drain or subdural bolt), and received at least one HTS bolus. Retrospective chart review was conducted for patient's that met these criteria from July 1, 2017 to October 25, 2021.

RESULTS: Fifty-two patients were included, with 132 boluses administered during a normonatremic state and 80 administered during a hypernatremic state. The study population primarily represented young males with TBIs and invasive monitoring with an EVD. There was no difference in the change in ICP after a HTS between patients who were normonatremic vs hypernatremic (-5.23$\pm$10.36 vs -3.83$\pm$9.95, p=0.3261). The average time to from bolus to first ICP measurement in minutes was similar between groups (59.12 $\pm$ 16.54 vs 60.26 $\pm$ 18.73, p=0.6540). Patients were significantly more likely to receive a 23.4% NaCl bolus when they were hypernatremic (46.97% vs 75% respectively, p<0.0001). Most patients received an HTS bolus when their ICP was less than 20 mmHg (75.76% vs 70%, p=0.3567).

CONCLUSIONS: In conclusion, there was no significant difference in the change in ICP at approximately one hour post-bolus in the normonatremic and hypernatremic groups. Larger prospective studies are needed to confirm these results.

4:00pm – 4:20pm R **Enteral nutrition alone versus enteral nutrition plus pharmacologic stress ulcer prophylaxis in a trauma-surgical intensive care unit** Room D

Presenters: Austin Roe

TITLE: Enteral nutrition alone versus enteral nutrition plus pharmacologic stress ulcer prophylaxis in a trauma-surgical intensive care unit

AUTHORS: Austin Roe, Daniel Streetman, Eric Shaw, Heather MacNew, James Dunne, Audrey Johnson

OBJECTIVE: Identify the difference in the incidence of stress ulcer complications in patients that received stress ulcer prophylaxis compared to patients that received enteral nutrition alone.

SELF ASSESSMENT QUESTION: Which medications are used for stress ulcer prophylaxis?

BACKGROUND: Critically ill patients are at risk of developing clinically important gastrointestinal (GI) bleeding from stress ulceration. Exposure to pharmacologic stress ulcer prophylaxis (SUP) may increase risk of adverse events such as hospital-acquired pneumonia and Clostridioides difficile infection. The routine use of pharmacologic SUP remains controversial. Some data suggest that enteral nutrition alone may be sufficient for SUP.

METHODOLOGY: This study was a single center, retrospective, observational chart review at an academic, level I trauma center. Patients were included if they were admitted to the trauma-surgical intensive care service and had documented enteral intake on the electronic medical record during the admission. The primary outcome was a composite of clinically important GI bleeding (defined as overt blood associated with a decrease in hemoglobin of two g/dL or more or receipt of a red blood cell transfusion of two or more units within 48 hours), esophagogastroduodenoscopy (EGD) performed for a GI bleed, and surgical interventions performed for a GI bleed or stress ulcer.

RESULTS: A total of 200 patients were included. In the pharmacologic SUP group, two patients met the primary outcome and zero patients met the primary outcome in the enteral nutrition alone group (p value = 0.24). Pharmacologic stress ulcer prophylaxis was continued in 23.5% of patients on intensive care unit (ICU) discharge and 8.5% on hospital discharge in the pharmacologic SUP group. No other secondary outcomes were statistically significant.

CONCLUSIONS: There was no statistically significant difference in the incidence of clinically important GI bleeding, EGD, or surgical intervention for GI bleeding. Continuation of pharmacologic SUP agents on ICU and hospital discharge happened more frequently in the pharmacologic SUP group.

4:00pm – 4:20pm R **The Impact of Lokelma Use in the Emergency Department on Throughput at a Community Hospital** Room C

Presenters: Heather Young

TITLE: The Impact of Lokelma Use in the Emergency Department on Throughput at a Community Hospital

AUTHORS: Heather Young, PharmD; Charmaine Emelife, MD MHA FASN; Pamela Moye-Dickerson, PharmD, BCPS, AAHIVP; Tina Simpson, PharmD; Simon Tarpav, PharmD

OBJECTIVE: At the conclusion of my presentation, the participant will be able to assess how the use of Lokelma decreases throughput in the ED and its effect on hospital admissions and length of stay.

SELF ASSESSMENT QUESTION: Does Lokelma or Kayexalate have the fastest on set of action between the two?

BACKGROUND: Now more than ever, Emergency Departments (ED) are finding it increasingly difficult to counter crowding and effectively manage patient flow. ED crowding presents when there is an influx of patients admitted to the department; the surge in demand is more significant than the staff available. Crowding in the ED can negatively impact patient care and may lead to delays in critically needed treatments. ED crowding can effectively be overcome by decreasing patient length of stay.

Approximately 800,000 patients are admitted to the ED with hyperkalemia every year in the United States. Hyperkalemia is an electrolyte disorder characterized by elevated extracellular potassium levels. It is a potentially fatal condition associated with the development of cardiac arrhythmias, a potentially life-threatening situation with a poor prognosis in various patient populations.

Sodium zirconium cyclosilicate (Lokelma®) has been approved by the Food and Drug Administration (FDA) to treat hyperkalemia. Lokelma is an oral medication that contains the chemical sodium zirconium cyclosilicate (ZS-9), an insoluble and non-absorbable compound that selectively binds to potassium ions, thereby lowering plasma potassium level.Research has shown that Lokelma appears to work better than sodium polystyrene sulfonate (Kayexalate), reducing serum potassium levels within an hour and restoring normal levels after about 2 hours in most patients. However, the Lokelma was tested against a placebo and not Kayexalate in the clinical trials that resulted in its approval.

METHODOLOGY: This IRB-approved, retrospective, multi-centered, cohort study identified patients ≥ 18 years of age who presented to the ED at Wellstar Atlanta Medical Center Downtown or South Campuses from 08/01/2020 to 08/31/2021 with a diagnosis of hyperkalemia and treated with Lokelma or Kayexalate. The data collected and analyzed include age, race, gender, weight, and body mass index. The following parameters were collected at baseline and daily until discharge (when available): medications used to treat hyperkalemia, basic metabolic panel, and creatinine clearance. Other variables include total time in the ED, hospital length of stay, comorbidities, and reason for hyperkalemia, as stated in the provider notes. The primary outcome was to examine how the use of Lokelma in the ED improves patient flow by reducing patient length of stay in the ED. Secondary outcomes included time spent in ED before hospital admission and the average potassium level for patients treated with Lokelma compared to Kayexalate and other potassium-reducing agents.

RESULTS: Improving patient flow, there was no statistically significant difference seen in reducing patient length of stay in the ED between Lokelma® and Kayexalate® (92% vs. 82%, p=0.757).

CONCLUSION: Adding Lokelma® to hyperkalemia order sets could be beneficial. However, further research is needed to provide evidence.

4:00pm – 4:20pm | **BACITRACIN INJECTION MARKET REMOVAL: DEFINING THE IMPACT ON ALTERNATIVE IRRIGATION SOLUTION USAGE** Room F

Presenters: Omar Chaker

TITLE: BACITRACIN INJECTION MARKET REMOVAL: DEFINING THE IMPACT ON ALTERNATIVE IRRIGATION SOLUTION USAGE

AUTHORS: Omar Chaker, Lisa Bendz, Sarah Lewis, Frances Hung, Hui-Jie Lee, Connor R. Deri

OBJECTIVE: Describe the impact of bacitracin injection market removal on the rate of select non-bacitracin irrigation product use and surgical site infection rates (SSIs) at Duke University Health System (DUHS).

SELF ASSESSMENT QUESTION: List non-bacitracin irrigation products used in surgical site infection prophylaxis.

BACKGROUND: On January 31st, 2020, the FDA issued a voluntary recall of bacitracin for injection after evaluating its risk-benefit profile. The routine use of antibiotic irrigations in surgical operations lacks the support of clinical guideline recommendations. Bacitracin market removal necessitates bacitracin prescribers (i.e. surgeons) to reevaluate irrigation practices. This study aimed to evaluate the impact of bacitracin injection market removal on the rate of select non-bacitracin irrigation product use, including antibacterial and antiseptic irrigations, and SSIs at Duke University Health System (DUHS).

METHODOLOGY: This descriptive retrospective health system study included adults 18 years of age or older admitted to DUHS between January 1st, 2019 – December 31st, 2019 (pre-market removal) and July 1st, 2020 – June 30th, 2021 (post-market removal) with an NHSN-defined hip arthroplasty (HPRO), knee arthroplasty (KPRO), or fracture repair (FX) procedure defined by ICD-10 codes. Patients with a documented bacitracin allergy were excluded from this study. Three percent of included study patients were randomly selected for chart review of various data points, including date of surgery, race/ethnicity, and irrigation solutions, for data validation. The primary endpoint was the rate of non-bacitracin irrigation use in orthopedic surgery pre- and post-market removal of bacitracin injection. Secondary endpoints included SSI rate, severity of SSI using predefined NHSN severity classifications, and systemic antibiotic use within 14 days of OR date with a “Skin and soft tissue infection” indication.

RESULTS: 9,233 unique patients associated with 10,307 total surgeries.

Statistically significant changes (pre-market to post-market removal):

Non-bacterial irrigation increased by 28.1%. Antibacterial irrigation (not including bacitracin) decreased by 19.9%. Vancomycin irrigation increased by 59.1%. Antiseptic irrigation increased by 2.7%. SSI rates were similar between groups. The pre-market removal group had a slightly higher rate of post-operative antibiotic use with a skin and soft tissue indication compared to post-market removal.

Non-bacterial and antiseptic irrigation use increased after bacitracin market removal. Non-bacitracin antibacterial irrigation use decreased after bacitracin market removal. Bacitracin market removal and change in irrigation use were not associated with a change in SSI rate. Surgery type, smoking status and BMI are significant factors for predicting SSI incidence.

CONCLUSIONS: Bacitracin market removal has significantly affected the rate of use of alternate irrigations. Irrigation type and rate of use of irrigation were not correlated with a significant change in SSI incidence. Surgery type, smoking status and BMI are significant factors for predicting SSI incidence.

4:00pm – 4:20pm | **Benchmarking the Utilization of New β-lactam Antibiotics Using Novel Metric of Microbiological Burden** Room G

Presenters: Y. Vivian Tsai

TITLE: Benchmarking the Utilization of New β-lactam Antibiotics Using Novel Metric of Microbiological Burden

AUTHORS: Y. Vivian Tsai, PharmD, Kayla Antosz, PharmD, Julie Ann Justo, PharmD, MS, Joseph Kohn, PharmD, Hana Winders, PharmD, Pamela Bailey, DO, MPH, Majdi Al-Hasan, MBBS, P. Brandon Bookstaver, PharmD

OBJECTIVE: To benchmark the use of novel β-lactam antibiotics for the treatment of infections due to DTR gram-negative bacilli by using novel metric of microbiological burden.

SELF ASSESSMENT QUESTION: Gram-negative bacteria with DTR are no-susceptible to all of the following classes of antimicrobials EXCEPT?

a)Carbapenems

b)Cephalosporins

c)Aminoglycosides

d)Fluoroquinolones

BACKGROUND: In recent years, multiple, novel, broad-spectrum β-lactam antibiotics have been developed to combat the rising prevalence of gram-negative bacilli with difficult-to-treat resistance (DTR). With the increasing use of these novel agents, it is imperative, from a stewardship standpoint, to benchmark their use in order to reduce antimicrobial costs and prevent further development of resistant bacteria. Recently, our local investigators proposed and validated a new antibiotic use (AU) metric that adjusts antibiotic utilization by the prevalence of bacteria observed at a given institution to allow for more balanced comparison of antibiotic use across heterogenous hospitals.

METHODOLOGY: The AU in days of therapy per 1,000 patient days and microbiological data from 2015 to 2020 were requested from 14 hospitals in the Southeastern Research Group Endeavor-45 (SERGE-45) research network located in the southeastern United States. Data were collected on characteristics of the hospitals and their antimicrobial stewardship programs. Total AU of novel β-lactam antibiotics included ceftolozane/tazobactam, ceftazidime/avibactam, meropenem/vaborbactm, imipenem/cilastatin/relebactam, and cefiderocol. The prevalence of DTR gram-negative bacilli including Pseudomonas aeruginosa, Enterobacterales, and Acientobacter species was calculated by dividing the total gram-negative isolate count. DTR organisms was defined as non-susceptible to extended-spectrum cephalosporins (either ceftazidime or cefepime), carbapenems (either meropenem or imipenem/cilastatin), fluoroquinolones (ciprofloxacin or levofloxacin) and piperacillin/tazobactam. Bivariate and descriptive statistics will be used to analyze study outcomes.

RESULTS: In progress.

CONCLUSIONS: In progress.

4:00pm – 4:20pm L **Efficacy and Safety of Dose-adjusted VTE Prophylaxis in Non-Critically Ill Patients with Class III Obesity** Room K

Presenters: Brooke Hendrix

TITLE: Efficacy and Safety of Dose-adjusted VTE Prophylaxis in Non-Critically Ill Patients with Class III Obesity
AUTHORS: Brooke Hendrix, Sampaguita Wright, Sara Catherine Pearson, Libby Dierkes
OBJECTIVE: Evaluate whether dose-adjusted VTE prophylaxis is safe and efficacious for patients with class III obesity
SELF ASSESSMENT QUESTION: Approximately how much does obesity increase the risk of hospital-acquired VTE?
BACKGROUND: Determine the safety and efficacy of standard-dose versus dose-adjusted heparin and enoxaparin in the medically ill population with a BMI of greater than or equal to forty.
METHODOLOGY: This retrospective cohort study begins January 1, 2018 and ends July 31, 2021. Patients receiving enoxaparin 40mg daily were compared with those receiving enoxaparin 40mg twice daily. Patients receiving heparin 5,000 units every eight hours were compared with those receiving heparin 7,500 units every eight hours. Eligible participants are those who are at least 18 years of age with a BMI of greater than or equal to forty, are admitted to a non-ICU floor, and received one of four included doses of VTE prophylaxis previously mentioned. Participants will be excluded for the following reasons: height or weight unavailable, active COVID-19 infection, pregnant/peripartum, bariatric surgery, orthopedic surgery, DVT or PE prior to beginning VTE prophylaxis, or indication for treatment dose anticoagulants.
RESULTS: 428 patients were included in this IRB-approved study. The primary composite endpoint of any clinically significant bleeding event or VTE diagnosed during hospitalization was met in one patient in each enoxaparin group, three patients in the standard-dose heparin group, and two patients in the adjusted-dose heparin group. The secondary endpoint of incidence of any clinically significant bleeding was met once with adjusted-dose enoxaparin, once with standard-dose heparin, and twice with dose-adjusted heparin. The secondary endpoint of incidence of VTE was met once with standard-dose enoxaparin and twice with standard-dose heparin. This study did not meet statistical power so analyses could not be performed.
CONCLUSIONS: Adjusted-dose VTE prophylaxis in the medically ill population with a BMI of greater than or equal to forty seems to be safe and efficacious based on low rates of VTE and bleeding events.

4:00pm – 4:20pm M **Evaluating the Impact of System-Wide Changes to Heparin Prescribing and Titration Protocols** Room L

Presenters: Macy Biddulph

TITLE: Evaluating the Impact of System-Wide Changes to Heparin Prescribing and Titration Protocols
AUTHORS: Macy Biddulph, Amy Knauss, Shannon McAtee
OBJECTIVE: To evaluate the impact of system-wide changes to heparin prescribing and titration protocols.
SELF ASSESSMENT QUESTION: What impact do the majority of direct oral anticoagulants have on Anti-Xa levels?
BACKGROUND: The occurrence of a serious safety event lead to the formation of an interdisciplinary heparin task force. An optimization project was created including order set changes and the addition of a heparin calculator into the medication administration record. The purpose of this study is to determine if ordering and administering heparin infusion is safer after implementation of system-wide changes.
METHODOLOGY: The electronic health record was utilized to perform an IRB-approved retrospective chart review of patients initiated on heparin infusion from June 11th, 2021 to December 12, 2021. The primary outcome measure was the incidence of protocol violations before and after the implementation of system wide changes. Secondary outcomes were time to reach first therapeutic level, occurrence of a critical Anti-Xa or aPTT value, length of time patients were on aPTT protocol, appropriate transition from DOAC, and utilization of the heparin calculator.
RESULTS: No significant difference was found in the incidence of protocol violations following implementation of system wide changes. However, there was a significant decrease in the number of incorrect initial infusion rates. Regarding secondary outcomes, there was a significant decrease in correct transition from DOAC in the post implementation group. Utilization of the heparin calculator by nursing staff was 97% at implementation but fell to 51.5% at first titration.
CONCLUSIONS: While no significant difference was found in protocol violations there was a numerical decrease in the violations as well as wrong infusion start times and number of critical levels. In terms of safety for our patients this is an important and clinically relevant finding. The suboptimal use of the heparin calculator by nursing staff is an area for future optimization efforts.

4:00pm – 4:20pm P **Veteran Perceptions of Naloxone Prescribing and Education Practices at a Veterans Affairs Health Care System** Room B

Presenters: Madison Stanley

TITLE: Veteran Perceptions of Naloxone Prescribing and Education Practices at a Veterans Affairs Health Care System

AUTHORS: Madison Stanley and Ripple Sekhon

OBJECTIVE: At the conclusion of my presentation, the participant will be able to describe how Veterans felt about being offered Naloxone.

SELF ASSESSMENT QUESTION: How did most Veterans feel after being offered naloxone by their provider?

BACKGROUND: All Veterans with opioid use disorder or active opioid prescriptions should be prescribed Naloxone with appropriate education. However, providers are often hesitant to offer naloxone due to fear of Veteran response. Better understanding of Veteran perceptions will empower prescribers to enter difficult conversations with confidence and improve prescribing practices.

METHODOLOGY: Forty-eight (48) Veterans at risk for opioid overdose were identified through the Opioid Overdose Education and Naloxone Distribution (OEND) Patient Dashboard. Veterans were included if they received a naloxone prescription within the previous year, had a diagnosed opioid use disorder, and were moderate to high risk for opioid overdose. Veterans were surveyed regarding naloxone including knowledge of the medication and its use, the education they received, subsequent feelings toward their provider, and suggestions for improvement. Survey results were presented to providers with specific methods to improve education and increase prescribing.

RESULTS: Thirty (30) Veterans were surveyed (90.0% male, mean age 56.8 years, 70.0% white, average Risk Index for Overdose or Serious Opioid-Induced Respiratory Depression (RIOSORD) Score 51.5, 70.0% substance use disorder, 43.3% active opioid prescription). The majority of Veterans surveyed understood the purpose of naloxone (96.7%), were taught how to use it (76.7%), and felt confident to use it (76.7%). Only 3 (10.0%) Veterans surveyed felt negatively about the offer and toward their provider.

CONCLUSIONS: Very few Veterans felt negatively when offered naloxone and many believed naloxone should be available to anyone at risk of overdose. Opinions toward providers remained positive or neutral, except when education was not provided. To better meet the needs of this high-risk population, formal medication education should be provided to increase acceptance upon prescribing of naloxone for opioid overdose prevention.

4:00pm – 4:20pm T **Resuming At-Home Doses of Antiepileptic Therapies to Avoid Negative Outcomes in an Inpatient Setting** Room A

Presenters: Alena Mitchell

TITLE: Resuming At-Home Doses of Antiepileptic Therapies to Avoid Negative Outcomes in an Inpatient Setting

AUTHORS: Alena Mitchell, Kelly Huff, and Rachel Simons

OBJECTIVE: To avoid serious safety events associated with delays in resuming home antiepileptic therapies, this study seeks to determine and address common factors that impact initiation of home antiepileptic therapies after inpatient admission.

SELF ASSESSMENT QUESTION: On average, what percentage of patients non-adherent to their antiepilectic therapies will experience breakthrough seizures? Answer: 21%

BACKGROUND: Because acute health needs are often the priority for patients admitted to hospital facilities, chronic disease management can easily be overlooked. In these settings, resuming home medications can be challenging due to PO to IV conversions, institutional formularies, and drug interactions. For patients with seizure disorders, this trend can be life-threatening if their home antiepileptic therapy is not initiated in a timely manner, leading to seizure activity and worsening of their acute state. To avoid these serious safety events, this study seeks to determine and address common factors that impact initiation of home antiepileptic therapies after inpatient admission.

METHODOLOGY: A single-center retroactive study is conducted to identify patients at risk for delayed antiepileptic therapies. Admitted patients prescribed home antiepileptic medications are identified and followed throughout their hospital stay to determine factors contributing to the length of time between admission and re-starting of antiepileptic home medications. These factors, potentially such as drug class, drug dose, seizure history, practitioner type, and outcome severity, are collected and analyzed for association with delay in initiation of antiepileptic therapy. This data will then be used to propose safety measures for the purpose of improving overall outcomes and length of stay in patients with seizure disorders.

RESULTS: This research is still in progress; the following results are preliminary data gathered up to this point. For the primary endpoint of time from admission to resuming antiepileptics, study participants waited an average of 37.3 hours before their medications were resumed. Approximately 31% of the patients never resumed therapy at all while in the facility, only 50% were started on appropriate equivalent therapy to their outpatient medications, and 12% experienced breakthrough seizures. Additional data will be forthcoming as the research progresses.

CONCLUSIONS: As research is still in progress, there can be few conclusions made at this point other than significant interventions will need to be developed and implemented to improve the results mentioned above and ensure that every patient with seizure history can receive appropriate antiepileptic therapies throughout their inpatient stay.

4:20pm – 4:40pm B **A Pharmacist's Impact in the Medication Optimization for Veterans with Heart Failure** Room J

Presenters: Hanie Barakat

TITLE: A Pharmacist's Impact in the Medication Optimization for Veterans with Heart Failure

AUTHORS: Hanie B. Barakat; Thomas J. Worrall; Jonathan C. Mansfield

OBJECTIVE: The purpose of this project is to review dashboard accuracy and optimize GDMT in veterans with HFrEF in a primary care setting.

SELF ASSESSMENT QUESTION: Which of the following statements about HFrEF GDMT management is true?
a) ARNI/ACEI/ARB and Evidence-Based Beta Blockers are recommended for HFrEF Stage C Treatment
b) The goals of therapy for GDMT are to decrease mortality, increase quality of life, and reduce hospitalizations
c) GDMT recommendations suggest optimal mortality benefits when titrated to highest tolerated doses
d) All of the above

BACKGROUND: Heart Failure is a progressive clinical disease that effects over 6.5 million adults in the United States with a 5-year mortality rate of 42%. Guideline-Directed Medical Therapy (GDMT) for patients with heart failure with a reduced ejection fraction (HFrEF) focuses on medication use at targeted doses based on clinical trials with robust evidence to support mortality benefit for the medications at their respective targeted dose. The VA Academic Detailing Heart Failure Campaign designed a population management tool in 2019 to ensure proper optimization of GDMT.

METHODOLOGY: This quality improvement project ensures standards of care are implemented by Clinical Pharmacy Specialists at the Goose Creek community-based outpatient clinic. Actionable patients are identified using the VA Academic Detailing Heart Failure Dashboard. Those patients are, then contacted for optimization every 2-4 weeks until GDMT is achieved at maximally tolerated doses.

RESULTS: 95 patients were identified by the Academic Detailing Heart Failure Dashboard for evaluation on December 1, 2021. 14 were determined to be actionable and contacted for GDMT optimization. After the intervention period, 100% of PharmD determined actionable patients were initiated on an ACE/ARB/ARNI and evidence-based beta-blocker. 57.1% and 75% of the actionable patients were titrated to maximally tolerated doses of an ACE/ARB/ARNI and beta-blocker, respectively. 85% of patients evaluated were excluded, warranting suggestions for defining parameters set by the population management tool.

CONCLUSIONS: Primary care Clinical Pharmacy Specialists are an asset in the optimization of GDMT for patients with HFrEF. Population Management tools are useful to increase primary care clinical pharmacy services. Suggestions for optimization of the HF Dashboard will be communicated with the VA Academic Detailing Services and VA Informatics and Computing Infrastructure at a later date.

4:20pm – 4:40pm B **Impact of the COVID-19 Pandemic on Direct Oral Anticoagulant Persistence** Room I

Presenters: Emily Lee

TITLE: Impact of the COVID-19 Pandemic on Direct Oral Anticoagulant Persistence

AUTHORS: Emily Lee, Annalise Labatut, Alyssa Utz, Michael Knauss, Mikhail Akbashev

OBJECTIVE: Identify patient characteristics that may decrease DOAC and appointment persistence due to the COVID-19 pandemic.

SELF ASSESSMENT QUESTION: As a result of the COVID-19 Pandemic and transition to telehealth, medication persistence has _____ and appointment persistence has _____.

BACKGROUND: The use of direct oral anticoagulants (DOACs) continues to increase for the treatment of venous thromboembolism (VTE). Increased utilization of DOACs can be attributed to their dosing parameters, monitoring and fewer drug interactions compared to warfarin. DOACs often require less monitoring and there are fewer opportunities to routinely assess patient persistence, potentially exposing patients to greater risk of bleeding or recurrent VTE. As a result of the COVID-19 pandemic many outpatient appointments have transitioned to telehealth; however, the potential outcomes of telehealth compared to usual care for oral anticoagulation management remain unclear.

METHODOLOGY: This single-center, retrospective chart review included two patient groups from June 1, 2019 to November 30, 2019 and July 1, 2020 to December 31, 2020. Included patients were prescribed a DOAC starter pack for VTE treatment which is filled at the institution's outpatient pharmacy. Excluded patients were under the age of 18, pregnant, incarcerated, or discharged to a long-term care facility. Medication persistence is defined as filling three months of a DOAC for a VTE. The primary objective was to evaluate DOAC persistence after the transition to telehealth due to the COVID-19 pandemic.

RESULTS: Medication persistence declined after the transition to telehealth appointments, notably at the three-month mark as represented with a p value of 0.001. If patients obtained one refill, they were more likely to complete 3 months of therapy. However, it should be noted that the majority of patients did not complete 3 months of therapy. Overall appointment completion rates have increased with the transition to telehealth.

CONCLUSIONS: Medication persistence has decreased while appointment persistence has increased after the transition to telehealth due to the COVID-19 pandemic.

4:20pm – 4:40pm C **Evaluating Outcomes Based on Dosing for VTE Prophylaxis Anticoagulation in Patients with COVID-19 Infection: A Retrospective Cohort Study** Room H

Presenters: Shelby Harris

TITLE: Evaluating Outcomes Based on Dosing for VTE Prophylaxis Anticoagulation in Patients with COVID-19 Infection: A Retrospective Cohort Study

AUTHORS: Shelby Harris, Trey Willoughby, Matthew Laws, Sarah Anne Blackburn, Amber Hutchison

OBJECTIVE: To evaluate the efficacy and safety of standard versus intermediate-dose enoxaparin as venous thromboembolism (VTE) prophylaxis in acutely ill patients with COVID-19.

SELF ASSESSMENT QUESTION: What is the role of intermediate-dose enoxaparin for VTE prophylaxis in patients with COVID-19?

BACKGROUND: COVID-19 has increased hospitalization rates worldwide. COVID-19 patients are at a higher risk of thrombosis leading to development of deep vein thromboses (DVT) and pulmonary embolisms (PE).

METHODOLOGY: This was a retrospective, observational study evaluating the effectiveness of prophylactic enoxaparin in patients with COVID-19 admitted to a community hospital from May 2020 through May 2021. Study groups were standard versus intermediate-intensity enoxaparin dosing for VTE prophylaxis, defined as 40 mg once daily versus 40 mg twice daily, respectively. Inclusion criteria included a minimum age of 19, laboratory confirmed COVID-19 infection, admission to a medical floor, and receipt of at least two doses of prophylactic enoxaparin. Exclusion criteria included initial admission or transfer to ICU within 18 hours of admission, baseline creatinine clearance (CrCl) below 30 mL/min, and patients receiving alternative VTE prophylaxis besides enoxaparin. The primary outcome was incidence of VTE during hospitalization or within 28 days of discharge. Secondary outcomes included incidence of bleeding, all-cause mortality, and hospital length of stay (LOS).

RESULTS: Ninety-six and 100 patients met inclusion criteria in the intermediate-dose and standard-dose groups, respectively. Patients in the intermediate-dose group were significantly younger and had a higher baseline body mass index and CrCl than patients in the standard-dose group. There were two cases of PE in the standard-dose group versus two cases of DVT in the intermediate-dose group (p=0.135). There was no significant difference in bleeding, all-cause mortality, or LOS.

CONCLUSIONS: In non-critically ill patients with COVID-19, intermediate-dose VTE prophylaxis with enoxaparin was not superior to standard dosing. Intermediate dosing did not change mortality, bleeding, LOS, or 90-day readmission as compared with standard dosing.

4:20pm – 4:40pm R **Continuation of Newly Initiated Intensive Care Therapies at ICU Discharge: A Single-Center Retrospective Study** Room C

Presenters: Madissen Humphries

TITLE: Continuation of Newly Initiated Intensive Care Therapies at ICU Discharge: A Single-Center Retrospective Study

AUTHORS: Madissen Humphries, Christen Freeman, Douglas Carroll

OBJECTIVE: Identify medications that are initiated in critically ill patients and often inappropriately continued at ICU discharge

SELF ASSESSMENT QUESTION: True/False: If an atypical antipsychotic is initiated for delirium treatment in a critically ill patient, it should be discontinued immediately following the resolution of the patient's distressful symptoms.

BACKGROUND: Patients in the ICU are more likely to experience medication errors than other hospitalized patients. One common error is drug therapy initiated in the ICU for short-term use may be inadvertently continued at ICU and hospital discharge. Multiple medication classes have historically been investigated for their inappropriate continuation. There is new literature showing continuation of atypical antipsychotics, midodrine, and opioids at rates even higher than the historically studied classes.

METHODOLOGY: We conducted a single-center, retrospective chart review of patients who received either an atypical antipsychotic, midodrine, or a continuous fentanyl infusion in the ICU between January 1, 2020, and August 15, 2021. Because fentanyl infusions are often utilized for analgosedation in intubated patients and discontinued at ICU discharge, we evaluated for continuation of other opioids post-fentanyl infusion. Patients were evaluated in reverse chronological order from date of admission for inclusion and exclusion criteria until 30 patients from each class were identified or all patients were evaluated. The primary outcome was to quantify the percentage of continuation of each therapy at ICU discharge.

RESULTS: Four hundred two patients were evaluated with eighty-five included in the study: atypical antipsychotics=25, midodrine=30, opioids=30. The percentage of continuation at ICU discharge was 48% for atypical antipsychotics, 63% for midodrine, and 13% for opioids.

CONCLUSIONS: Similar to previously published literature, we identified a relatively large percentage of newly initiated ICU therapies continued at ICU discharge. Additional larger studies are needed to evaluate inappropriate vs appropriate continuation as well as clinical implications of continuation.

4:20pm – 4:40pm R **Evaluating the appropriateness of antibiotic usage in the empiric treatment of sexually transmitted infections in the emergency department** Room D

Presenters: Amanda Bass

TITLE: Evaluating the appropriateness of antibiotic usage in the empiric treatment of sexually transmitted infections in the emergency department

AUTHORS: Amanda Bass, Erica Merritt, Joseph Crosby, Logan Bradley

OBJECTIVE: Evaluate the appropriateness of antibiotic usage in patients being tested for Neisseria gonorrhea and/or Chlamydia trachomatis in the emergency department.

SELF ASSESSMENT QUESTION: How can Neisseria gonorrhea and Chlamydia trachomatis treatment be improved within the emergency department?

BACKGROUND: The purpose of this study is to evaluate the appropriateness of antibiotic usage in patients receiving testing for Neisseria gonorrhea and/or Chlamydia trachomatis in the emergency department and to determine areas of treatment improvement.

METHODOLOGY: This investigation was a retrospective, observational analysis evaluating the appropriateness of antibiotic administration in patients receiving testing for Neisseria gonorrhea and/or Chlamydia trachomatis in the emergency departments at St. Joseph's Hospital and Candler Hospital between March 1, 2021 to May 31, 2021. A computer-generated list was used to identify patients who received testing during the forementioned time period. Subjects were then reviewed for study inclusion and exclusion criteria.

RESULTS: 576 of 708 patients were considered eligible for inclusion in the study. The treatment decision designated to 311 of the 576 eligible patients (53.9%) was appropriate per the 2021 Sexually Transmitted Infection Guidelines. Of the 265 patients who were inappropriately treated for Neisseria gonorrhea and/or Chlamydia trachomatis, 240 patients received unnecessary antibiotic therapy leading to an overtreatment rate of 90.5%, while 21 did not receive antibiotic therapy when needed leading to an undertreatment rate of 7.9%. The remaining 1.5% of the patients either received an incorrect medication or an incorrect dose.

CONCLUSIONS: Patients tested for Neisseria gonorrhea and/or Chlamydia trachomatis in the emergency department are being provided treatment that is considered guideline appropriate approximately 53.9% of the time. Within the 46.1% of patients who are being inappropriately treated for Neisseria gonorrhea and/or Chlamydia trachomatis, there is a 90.5% rate of overtreatment and a 7.9% rate of undertreatment which could be improved by implementing the use of point-of-care chlamydia and gonorrhea tests in the emergency departments.

4:20pm – 4:40pm R **Evaluation of secondary infections associated with tocilizumab administration in critically ill COVID-19 patients** Room E

Presenters: Nick Kane

TITLE: Evaluation of secondary infections associated with tocilizumab administration in critically ill COVID-19 patients

AUTHORS: Nicholas Kane, Katherine Gershner, Becky Korona, Grace Cooksey, Alexandra Barber

OBJECTIVE: Identify risk factors associated with higher rates of secondary infection in critically-ill COVID-19 patients.

SELF ASSESSMENT QUESTION: What patient-specific factors are associated with increased risk for secondary infection in COVID-19?

BACKGROUND: Tocilizumab has been associated with reduced all-cause mortality in two large randomized controlled trials, however safety data surrounding risk for secondary infections is not well established. The objective of this study was to compare the proportion of secondary nosocomial infections in patients treated with standard of care with versus without tocilizumab in the medical intensive care unit (MICU) at Atrium Health Wake Forest Baptist.

METHODOLOGY: This single-center, retrospective cohort study included patients ≥ 18 years old that received dexamethasone for COVID-19 in a MICU. Patients were excluded if immunocompromised, do-not-resuscitate/do-not-intubate, or received another immunomodulator during their COVID-19 course. Patients were divided into two cohorts based on date of tocilizumab inclusion in standard of care at the study institution. The pre-tocilizumab cohort was collected from July 1, 2020 to February 28, 2021. The tocilizumab cohort was collected from March 1, 2021 to September 30, 2021. The primary endpoint was the proportion of secondary, laboratory-confirmed nosocomial infections necessitating antimicrobial therapy. Secondary endpoints included progression to mechanical ventilation, ECMO or death, mechanical ventilation-free days, ICU and hospital length of stay, all-cause ICU and hospital mortality, vasopressor days, and days of antimicrobial therapy.

RESULTS: A total of 272 patients were screened for study eligibility. Of those, 164 patients were included in the analysis. Baseline characteristics were similar between cohorts, with the pre-tocilizumab cohort having significantly older patients, lower vaccination rates, and higher body mass indices. Without adjustment, the proportion of secondary infections was 14/82 (17.07%) in the pre-tocilizumab cohort and 32/82 (39.01%) in the tocilizumab cohort (p=0.0018). Analysis of the secondary outcomes and a multivariate regression analysis remain in progress.

CONCLUSIONS: The preliminary data shows a higher proportion of secondary, nosocomial infections in the tocilizumab cohort. Additional data analysis is required before results are fully analyzable. Limitations of this study include the retrospective design, timing of cohorts per circulating SARS-CoV-2 strains, and exclusion of clinically-diagnosed infections lacking laboratory confirmation.

4:20pm – 4:40pm | **Daptomycin Monotherapy or Daptomycin Plus Ceftaroline Combination Therapy in Methicillin Resistant Staphylococcus Aureus Bacteremia** Room G

Presenters: Timothy Jones

TITLE: Daptomycin Monotherapy or Daptomycin Plus Ceftaroline Combination Therapy in Methicillin Resistant Staphylococcus Aureus Bacteremia

AUTHORS: Timothy W Jones, Essilvo Sulejmani, Kaitlyn Haas, Christy Forehand, Daniel Anderson, Joshua EudyOBJECTIVE: To determine if daptomycin plus ceftaroline is associated with shorter duration of bacteremia compared to monotherapy in persistent MRSA bacteremiaSELF ASSESSMENT QUESTION: Daptomycin and ceftaroline combination therapy was used most in what kind of infections?

BACKGROUND: Persistent methicillin-resistant Staphylococcus aureus (MRSA) bacteremia is associated with poor outcomes and often requires escalation of therapy beyond the standard of care. Limited data compare treatments for persistent MRSA bacteremia, yet combination therapies have been proposed. Specifically, daptomycin (DAP) plus ceftaroline (CPT) has been compared for treatment of MRSA against standard of care, primarily vancomycin. Additionally, DAP monotherapy has shown benefits following vancomycin as an escalation of care for persistent MRSA bacteremia leaving the benefit of adding CPT to DAP unknown. The objective of this study was to compare DAP plus CPT combination to monotherapy in patients with persistent MRSA bacteremia.

METHODOLOGY: A single center, retrospective, matched cohort study of patients with persistent MRSA bacteremia (positive blood cultures for five or more days) between January 1st, 2014, and October 31st, 2021 was conducted. Pertinent patient demographics, baseline characteristics, and outcome data were collected via retrospective chart review from the electronic medical record. The primary outcome assessed the duration of MRSA bacteremia after the initiation of either DAP plus CPT or monotherapy with DAP, CPT or vancomycin.

RESULTS: Fifty-four patients were included, with 29 in the combination group and 25 in the monotherapy group. Endovascular infections were found in 62% of patients treated with combination and 40% ($p = 0.12$). The median time to source control was 3.4 days and 4.3 days ($p = 0.68$) in the combination and monotherapy groups, respectively. The median total duration of bacteremia was longer in the combination group (10 days vs. 6.9 days, $p = 0.00001$).

CONCLUSIONS: The total duration of bacteremia was longer in patients treated with DAP plus CPT, likely related to a higher number of endovascular infections in the combination group.

4:20pm – 4:40pm | **Impact of Methicillin-resistant Staphylococcus aureus (MRSA) Nasal Screening on Duration of Vancomycin for Pneumonia at a Community Hospital** Room F

Presenters: James Miracle

TITLE: Impact of Methicillin-resistant Staphylococcus aureus (MRSA) Nasal Screening on Duration of Vancomycin for Pneumonia at a Community Hospital

AUTHORS: James Miracle, Alanna Rufe, Elizabeth Covington, Nancy Bailey

OBJECTIVE: Identify the different types of MRSA nasal screens utilized and the average turnaround time of each.

SELF ASSESSMENT QUESTION: Which type of MRSA nasal screen has the fastest turnaround time to result?

BACKGROUND: Vancomycin is frequently prescribed empirically for pneumonia although MRSA is less commonly the causative pathogen. Guidelines recommend de-escalation based on culture results, but respiratory cultures can be difficult to obtain.

METHODOLOGY: Patients admitted to Jackson Hospital between April 1st, 2019 and December 31st, 2019 being treated for pneumonia with vancomycin were reviewed. Patients who were being treated for pneumonia who received more than 24 hours of vancomycin therapy were included in the study. Those who underwent MRSA nasal screening within seven days before and seventy-two hours after vancomycin initiation were placed in the case group (n equals 51) and those who did not were placed in the control group (n equals 51).

RESULTS: There was no significant difference found in the length of vancomycin therapy between the MRSA screen (case) and no MRSA screen (control) groups (4.1 days vs 4.0 days, respectively). Among the secondary outcomes, a significantly longer total duration of antibiotic therapy was observed in the case group compared with the control group (8.0 days vs 6.4 days, respectively) as well as a significantly longer length of ICU stay (4.2 days vs 0.9 days, respectively). There was no difference in mortality, AKI attributable to vancomycin, or readmission rates between groups.

CONCLUSIONS: MRSA nasal screening with chromogenic agar in patients being treated for pneumonia with vancomycin did not shorten the duration of vancomycin therapy. Additionally, patients who received an MRSA nasal screen had a longer length of antibiotic therapy and longer ICU stays. This finding could be due to sampling bias as MRSA nasal screenings are performed, per protocol, upon ICU admission thus increasing ICU patient inclusion into the case group.

4:20pm – 4:40pm L **Evaluation of the safety of as-needed intravenous labetalol and hydralazine for the management of hypertension in non-critically ill hospitalized patients** Room K

Presenters: Katy Wolfe

TITLE: Evaluation of the safety of as-needed intravenous labetalol and hydralazine for the management of hypertension in non-critically ill hospitalized patients

AUTHORS: Katy Wolfe, Stefanie Sarratt, Alex McDonald, Miles Lane

OBJECTIVE: At the conclusion of the presentation, the participant should be able to describe differences in safety outcomes of as-needed intravenous (IV) labetalol or hydralazine for non-critically ill hospitalized patients.

SELF ASSESSMENT QUESTION: Is there a difference in hypotensive events when as-needed IV labetalol or hydralazine are utilized for asymptomatic hypertension in non-critically ill hospitalized patients?

BACKGROUND: The optimal management of hospitalized patients who have acute elevations in blood pressure remains unclear. Despite the lack of knowledge regarding optimal treatment strategies and apparent benefit for hospitalized patients, many patients are treated with as-needed IV antihypertensives for asymptomatic hypertension during their hospital admission. The purpose of this study was to evaluate the incidence of hypotensive events and other clinically relevant safety outcomes in non-critically ill patients treated with either as-needed IV labetalol or hydralazine.

METHODOLOGY: This was a single-center, retrospective analysis of non-critically ill patients who were admitted for at least 24 hours and received at least one dose of either IV labetalol or hydralazine. The primary outcome was the number of hypotensive events defined as a greater than 25% reduction in either systolic or diastolic blood pressure. Secondary outcomes included the average blood pre- and 6 hours post-administration of either IV labetalol or hydralazine, length of hospital stay, hypotension requiring an intervention, and number and type of hypertensive sequelae events.

RESULTS: A total of 201 patients were included in the analysis, 100 received hydralazine and 101 received labetalol. Baseline characteristics were similar between groups except for patients who received hydralazine were significantly higher in age (mean 70 years versus 66 years, $p = 0.029$) and had home blood pressure medications restarted (94 versus 79, $p=0.006$). There was no difference in pre-administration systolic blood pressures but patients in the labetalol group had significantly higher diastolic blood pressures (98 mmHg versus 89 mmHg, $p<0.001$). A significantly higher number of patients treated with hydralazine experienced hypotensive events within 6 hours post-administration (83 events versus 60 events, $p=0.004$). The systolic blood pressure did not differ significantly during each 6-hour timeframe. There was no difference in length of stay, incidence of hypertension sequelae, and hypotensive events requiring intervention.

CONCLUSIONS: Patients treated with IV hydralazine experienced a higher number of hypotensive events within 6-hours post-administration. The higher incidence of hypotensive events may be related to having a higher number of patients in whom home blood pressure medications had been restarted. This study highlights the potential risk of overtreating asymptomatic patients with IV antihypertensives rather than optimizing home blood pressure medications.

4:20pm – 4:40pm M **Evaluation of the use of a heparin infusion calculator in the electronic medical record at a multi-hospital health system** Room L

Presenters: Timothy Coyle

TITLE: Evaluation of the use of a heparin infusion calculator in the electronic medical record at a multi-hospital health system

AUTHORS: Timothy Coyle, Trey Jenkins, Donna Hunter, Jerri Jenkins, Jaimi Allers, Ambra Hannah

OBJECTIVE: Describe the use of an electronic heparin infusion calculator within a health system

SELF ASSESSMENT QUESTION: In this study, approximately what percentage of resulted anti-Xa levels were evaluated using the heparin infusion calculator?

BACKGROUND: Evaluate the compliance of heparin infusion calculator use and determine if increased use is related to greater therapeutic efficacy and safety of heparin infusions.

METHODOLOGY: A multicenter retrospective chart review was conducted evaluating 150 randomly selected patients ≥18 years old who presented to an inpatient facility and received a high-dose heparin infusion for ≥48 hours. The primary outcome measure was compliance with use of the heparin infusion calculator. The secondary endpoints were accuracy of heparin infusion adjustments with the calculator as compared to the protocol, association of calculator use with the therapeutic efficacy of heparin, and association of calculator use with incidence of major and minor bleeding.

RESULTS: One-hundred and fifty patients were evaluated for compliance with heparin calculator use. Among this sample, 1,285 heparin anti-Xa levels were drawn, and 604 (47%) of the returned values were assessed using the heparin infusion calculator. A total of 503 adjustments were made, and 321 (63.8%) were made utilizing the heparin infusion calculator. Incorrect adjustments were noted at 2.5% with heparin calculator use and 8.9% without heparin calculator use. There was no correlation between electronic calculator use and time to therapeutic anti-Xa level. Twelve patients in this study experienced bleeding from any cause.

CONCLUSIONS: The compliance rate of heparin calculator use was 47% for anti-Xa levels and 64% for infusion adjustments. Utilization of the calculator was associated with a lower rate of incorrect heparin infusion adjustments. There was no correlation between heparin calculator use and time to therapeutic anti-Xa level. Further studies would be required to determine safety and efficacy outcomes.

4:20pm – 4:40pm

O **Relative Incidence of Immune-Mediated Adverse Events in Patients Receiving Immune Checkpoint Inhibitors for Cancer** Room B

Presenters: Arzu Patel

TITLE: Relative Incidence of Immune-Mediated Adverse Events in Patients Receiving Immune Checkpoint Inhibitors for Cancer

AUTHORS: Arzu Patel, Thomas Morris

OBJECTIVE: To examine the relative incidence of irAEs at FirstHealth of the Carolinas/Moore Regional Hospital in comparison to reported incidence per NCCN guidelines and manufacturer data.

SELF ASSESSMENT QUESTION: Of the available agents, which immune checkpoint inhibitor was associated with higher rates of immune-related adverse events?

BACKGROUND: Immune checkpoint inhibitors (ICIs) have demonstrated effective targeting against cancers that decrease immune activity. CTLA-4 and PD-1 are immune checkpoint proteins that suppress T-cell activation when bound by endogenous ligands, limiting immune response. CTLA-4, PD-1/PDL-1 inhibitors are antibodies designed to prevent deactivation of immune response preventing endogenous receptor-ligand interactions, allowing for immune antitumor response. (Li, Sukari)

Analysis of comprehensive data related to immune-related adverse effects (irAEs) are in progress or limited to trials of ipilimumab, pembrolizumab, and nivolumab. Due to the nature of irAEs, it is challenging to acquire and review data from consistent reporting. (Puzanov,Osorio,Thompson) A better understanding of the actual occurrence of irAEs is vital, as these can often lead to treatment interruption or discontinuation. The objective of this study is to examine the relative incidence of irAEs at FirstHealth of the Carolinas/Moore Regional Hospital in comparison to reported incidence per NCCN guidelines and manufacturer data.

METHODOLOGY: This retrospective chart review study is pending approval by the institutional review board at FirstHealth of the Carolinas/Moore Regional Hospital. Patients will be identified for review by utilizing the SlicerDicer application, filtering initially to include Patients with Cancer. Additional filters will be applied to narrow down the study population, including history of immune checkpoint inhibitor use and intolerance and ICD 10 codes for immune-mediated reactions. Baseline characteristics will be recorded, including age, sex, race, cancer type and stage, presence of metastases, cancer therapy regimen, and corticosteroid use. The primary outcome of this study is the overall incidence of irAEs. The secondary outcomes of this study are grades of IMARs occurring, length of stay for patients hospitalized due to IMARs, and if NCCN guideline-directed therapy was utilized for management of irAEs. To ensure appropriate PHI protection and data security, data collected will be deidentified and available only to the investigators.

RESULTS: In progress

CONCLUSIONS: In progress

4:20pm – 4:40pm T **Impact of pharmacist-completed discharge follow-up phone calls on 30-day readmission rates in Medicare patients** Room A

Presenters: Amy Wangerin

TITLE: Impact of pharmacist-completed discharge follow-up phone calls on 30-day readmission rates in Medicare patients

AUTHORS: Amy Wangerin, Autumn Mittleider, Elizabeth Hudson, Taylor Wells

OBJECTIVE: At the conclusion of this presentation the participant will be able to compare the difference in 30-day readmission rates between pharmacist-led and CNA-led discharge follow-up phone calls.

SELF ASSESSMENT QUESTION: Which of the following are barriers to implementing a pharmacist-led transitions of care phone call program? (Select all that apply)

A. Pharmacist access to pharmacy fill history

B. Patients meeting TOC billing requirements

C. Pharmacist knowledge of patient assistance programs

D. Provider acceptance of pharmacist recommendations

BACKGROUND: The transitional care management (TCM) phone calls at Cape Fear Valley Medical Center (CFVMC) have traditionally been completed by certified nursing assistants (CNA's) through the Accountable Care Organization (ACO). Pharmacists have the access and knowledge to determine medication adherence problems, address financial issues and refer patients to medication assistance programs to assist with medication affordability. The purpose of this study is to evaluate the impact of pharmacist-led hospital discharge phone calls on 30-day readmission rates for patients classified as moderate and high risk for readmission.

METHODOLOGY: This is a single-center, quasi-experimental study with a historical control. Patients met inclusion criteria if they were Medicare patients, ≥18 years of age, and had a LACE score ≥ 29 at time of discharge from CFVMC. Exclusion criteria included discharge to a nursing/rehabilitation facility, death prior to trial conclusion, primary care provider was not affiliated with CFVMC, missing data for the primary endpoint, and pregnancy. Patients receiving calls from CNAs from 7/1/21 to 7/31/21 served as the historical control group. Patients meeting the inclusion criteria between 10/1/21 to 10/31/21 received the intervention of follow-up phone calls from the CNAs and the pharmacist. The primary outcome was the 30-day readmission rates before and after implementation of a pharmacist-led discharge phone call. Secondary outcomes included the number and type of interventions proposed to the primary care provider, the acceptance rate of pharmacist-based recommendations, and the percentage of patients attending their follow-up appointment and eligibility for TCM billing.

RESULTS: In progress

CONCLUSIONS: In progress

4:40pm – 5:00pm B **Impact of clinical pharmacy expansion within a rural Federally Qualified Health Center through implementation of pharmacy-led Medicare Annual Wellness Visits** Room I

Presenters: Carrington Royals

TITLE: Impact of clinical pharmacy expansion within a rural Federally Qualified Health Center through implementation of pharmacy-led Medicare Annual Wellness Visits

AUTHORS: Carrington Royals, Mary Francis Newman, Reagan Barfield, P. Brandon Bookstaver

OBJECTIVE: Identify ways in which pharmacists contribute to the betterment of patient care through MAWV service implementation.

SELF ASSESSMENT QUESTION: In what ways can pharmacy-led MAWV impact patients and the practice site?

BACKGROUND: Medicare Annual Wellness Visits (MAWVs) are yearly appointments with the primary care team to establish and update personalized prevention plans, allowing dedicated time in the outpatient setting to focus on gaps in care. MAWVs are more time-intensive than regular follow-up visits and require thorough patient interviews and screenings. Due to the time commitment and schedule inflexibility of providers, it is beneficial for pharmacists to complete these visits. Tandem Health is a Federally Qualified Health Center (FQHC) with a large Medicare population. Prior to October 1, 2021, all MAWVs were conducted by physicians. Clinical pharmacists leveraged the opportunity to increase MAWV completion rates and reduce the burden on provider colleagues through expansion of pharmacy services. This study assesses the value of newly implemented pharmacy-led MAWVs at an FQHC.

METHODOLOGY: Patients were included if they completed a MAWV between October 1, 2021, and February 14, 2022, at Tandem Health. The primary objective is to compare the per clinician rate of completed MAWVs between pharmacists and providers. The secondary objectives are to evaluate the clinical and economic value of pharmacist versus provider visits as evidenced by revenue, time spent with patient, interventions recommended and completed, and patient satisfaction. All interventions will be analyzed as time-to-event. Student t-test or chi-square tests will be used to compare outcomes between groups.

RESULTS (preliminary): Within the four-and-a-half-month period of conducting MAWVs, nine providers completed 139 visits (per clinician rate of 15.4) and two pharmacists completed 116 visits (per clinician rate of 58). The additional revenue generated by pharmacists-led MAWVs was just over $26,400. Of the 139 screenings eligible for pharmacist patients, 92 were ordered (66.2%) as compared to 87 ordered of 142 eligible by providers (61.3%). Of the 251 vaccines eligible for pharmacist patients, 95 were ordered and/or administered (37.8%) compared to 127 ordered/administered of 337 eligible by providers (37.7%). The average time it took pharmacy to complete MAWVs was 36 minutes compared to an average of 42 minutes for medical assistants and providers. When surveyed, majority of providers and medical assistants stated MAWVs were their least favorite visit to complete. No difference was seen between patient satisfaction surveys between the two groups as most patients were either satisfied or very satisfied with their MAWVs.

CONCLUSIONS (reached to date): Pharmacists increased completion rates of MAWVs by 83% between October 1, 2021 and February 14, 2022. Pharmacists have decreased provider and medical assistant burden while continuing to provide similar care resulting in continued patient satisfaction.

4:40pm – 5:00pm B **IMPACT OF PACT PHARMACISTS ON COPD MEASURES IN VETERAN AFFAIRS PATIENTS WHO HAVE RECENTLY BEEN HOSPITALIZED FOR A COPD EXACERBATION** Room J

Presenters: Johnathan Jernigan

TITLE: IMPACT OF PACT PHARMACISTS ON COPD MEASURES IN VETERAN AFFAIRS PATIENTS WHO HAVE RECENTLY BEEN HOSPITALIZED FOR A COPD EXACERBATION

AUTHORS: Johnathan Jernigan, Tiffany Jagel

OBJECTIVE: List various interventions made by PACT pharmacists in patients seen post hospital discharge for acute exacerbation of COPD.

SELF ASSESSMENT QUESTION: What is one intervention pharmacists are able to make in patients seen post hospital discharge for acute exacerbation for COPD?

BACKGROUND: Implement model for PACT Clinical Pharmacy Specialists to manage COPD patients post hospital discharge due to acute exacerbation and for follow-up. Pharmacists will also manage a COPD dashboard making a variety of interventions in patients' COPD therapy.

METHODOLOGY: PACT pharmacists will utilize the COPD dashboard to identify patients assigned to their team with a recent admission for acute COPD exacerbation. A visit with PACT pharmacist and RN care manager will take place within two weeks, at thirty days, then a PCP annual follow-up will be scheduled. Data on readmission rates, percentage of COPD discharges with follow-up in 14 days, and ICS prescribed without LABA or LAMA will be collected via the COPD dashboard. In addition, PharmD tool use for COPD will be monitored quarterly. Each PACT pharmacist will have a spreadsheet tracking patients seen per site for COPD Care. Interventions being made at the time of appointment will be documented.

RESULTS: In Progress

CONCLUSIONS: In Progress

4:40pm – 5:00pm C **Optimal Anti-Thrombotic Regimen for Surgical Mitral Valve Repair** Room H

Presenters: Olivia Randazza

TITLE: Optimal Anti-Thrombotic Regimen for Surgical Mitral Valve Repair

AUTHORS: Olivia Randazza, H Andrew Wilsey, Adrian Lata

OBJECTIVE: Describe anti-thrombotic medication options post-surgical mitral valve repair (sMVR) and compare bleeding and thromboembolic events between anticoagulation and antiplatelet regimens

SELF ASSESSMENT QUESTION: Which anti-thrombotic option had the highest rate of bleeding events or thromboembolic events?

BACKGROUND/PURPOSE: To determine the optimal anti-thrombotic regimen for patients who undergo sMVR and examine prescribing practices related to this surgery within a large, academic medical center. Previous studies have primarily examined the use of warfarin or aspirin post-sMVR.

METHODOLOGY: Patients who were ≥18 years of age and had undergone sMVR between January 2011 and November 2021 were identified for inclusion from the electronic health record through the use of 3 CPT codes. Exclusion criteria included percutaneous MVR, concurrent cardiac surgeries, history of valve replacement or repair, and pre-existing bleeding or clotting disorders. Patients were divided into two arms based on anti-thrombotic regimen prescribed at discharge. All patients prescribed anticoagulation, with or without an antiplatelet, were placed in the anticoagulation arm. All patients prescribed antiplatelet monotherapy or dual therapy were placed in the antiplatelet arm. The primary outcomes included bleeding events, as defined by the Bleeding Academic Research Consortium (BARC) criteria, and thromboembolic events, as defined by stroke, transient ischemic attack, pulmonary embolism and cardiac or peripheral thrombus. Secondary outcomes included hospital readmission and mortality. All outcomes measured were within 6 months of sMVR.

RESULTS: 221 patients were included in the study with 55 in the anticoagulation arm and 166 in the antiplatelet arm. The majority of the population consisted of white males with high rates of baseline hypertension and smoking in both groups. Significantly more patients in the anticoagulantion arm were older, had conconmitant left atrial appendage clipping or MAZE procedures, and presented with atrial fibrillation and vascular disease at baseline. The most common regimen at discharge was dual-antiplatelet therapy (52%). Significantly more patients in the anticoagulantion arm had bleeding events (18% vs. 3%, p=0.0005). There was no significant difference between groups in regards to thromboembolic events when comparing anticoagulation to antiplatelet regimens (0% vs. 6%, p=0.07). Additionally, there was no difference in hospital readmission or mortality.

CONCLUSIONS: In conclusion, the results of this study will contribute to the literature by providing evidence on the use of dual antiplatelet therapy in sMVR. The anticoagulation group had significantly higher bleeding events. For our institution, these findings will help to guide selection of sMVR anti-thrombotic discharge regimens particularly in patients with high bleed risks.

4:40pm – 5:00pm Y **Evaluation of a Pharmacist-Led Intervention on Increasing Adherence to Pre-Exposure Prophylaxis** Room G

Presenters: Victoria Araujo

TITLE: Evaluation of a Pharmacist-Led Intervention on Increasing Adherence to Pre-Exposure Prophylaxis
AUTHORS: Victoria Araujo, Paige Brockington, Jennifer Duckett, Hilary Ozden, Whitney Testorf
OBJECTIVE: The objective of this multicenter, prospective study is to evaluate if additional pharmacist-led medication adherence counseling increases medication adherence among patients taking PrEP.
SELF ASSESSMENT QUESTION: How can pharmacists assist in overcoming barriers to improve adherence to PrEP?
BACKGROUND: Maintaining high adherence rates to pre-exposure prophylaxis (PrEP) is crucial to preventing the development of HIV infection among high-risk individuals. Various barriers exist, such as fitting the medication into a routine, forgetfulness, side effects, and financial burden, making sustaining adequate adherence challenging for patients. Pharmacists are in the optimal position to help patients overcome these barriers.
METHODOLOGY: A system review was conducted from March 2020 – December 2021 to identify patients taking Truvada or Descovy for PrEP at two Walgreens specialty pharmacy locations located in Atlanta, GA. Patients on a once-daily PrEP regimen that were found to have low adherence rates as defined as refilling a 30 or 90-day prescription ≥3 days overdue from the previous prescription sold date were screened for study inclusion. Patients that meet enrollment criteria are consented to participate in a brief survey and provided comprehensive medication adherence counseling in between medication refills. Counseling is individualized and addresses barriers to adherence that the patient provides, not limited to dosing schedule, side effects, and financial burden. The primary outcome is medication adherence rates as determined by refill history before and after the pharmacist intervention. Secondary outcomes include barriers or reason for nonadherence, number of patients converted to a 90-day supply, HIV seroconversion rates, and patient-provided reason for discontinuation, if applicable. Descriptive statistics will be used to characterize the sample and bivariate correlations will be used to evaluate associations among adherence variables.
RESULTS: Research results and conclusion are in progress.
CONCLUSIONS: Research results and conclusion are in progress.

4:40pm – 5:00pm R **Evaluation of Antipsychotics for Delirium from the Intensive Care Unit to Hospital Discharge in a Community Hospital** Room E

Presenters: Johnathon Proctor

TITLE: Evaluation of Antipsychotics for Delirium from the Intensive Care Unit to Hospital Discharge in a Community Hospital
AUTHORS: Johnathon Proctor, K. Allmond, J. Brinkley, A. Porter, M. Iman, N. Sowards
OBJECTIVE: At the conclusion of my presentation, the participant will be able to describe the rate of continuation of antipsychotics after transfer from the intensive care unit at our institution and identify risk factors leading to inappropriate continuation of antipsychotics.
SELF ASSESSMENT QUESTION: What are common risk factors leading to inappropriate continuation of antipsychotics after transfer from the intensive care unit?
BACKGROUND: Antipsychotics are often ordered for the treatment of acute delirium in the intensive care setting. However, continuation of these agents beyond transfer from the intensive care setting is not always appropriate and can lead to significant patient harm. This project aims to evaluate the use of first- and second-generation antipsychotics in the intensive care setting and assess appropriate continuation of these agents at each transfer of care in a 304 bed community hospital.
METHODOLOGY: This retrospective, observational, single-center, pre-intervention study was granted approval by the institutional review board prior to its initiation. Adult patients aged 18 years and older who received a first- or second-generation antipsychotic at least 24 hours prior to discharge from the intensive care unit will be included. Patients receiving antipsychotics prior to admission to the intensive care unit and those transferred from the intensive care unit to a non-medical floor will be excluded from the study. The primary endpoint will be the percentage of patients started on an antipsychotic in the intensive care unit and continued on that agent beyond transfer from the unit. Secondary endpoints will evaluate differences between patients continued or not continued on antipsychotic based on past medical history, demographics, and other related factors. The appropriateness of continuation of antipsychotic therapy at each transfer of care will also be evaluated.
RESULTS: In Progress
CONCLUSIONS: In Progress

4:40pm – 5:00pm R **EVALUATION OF FIXED VERSUS WEIGHT-BASED DOSE FOUR-FACTOR PROTHROMBIN COMPLEX CONCENTRATE FOR DIRECT ORAL ANTICOAGULANT ASSOCIATED BLEEDING**

Presenters: Kelsey Lock Room C

TITLE: EVALUATION OF FIXED VERSUS WEIGHT-BASED DOSE FOUR-FACTOR PROTHROMBIN COMPLEX CONCENTRATE FOR DIRECT ORAL ANTICOAGULANT ASSOCIATED BLEEDING
AUTHORS: Kelsey Lock; Melanie Jaeger; Rylee Rankin
OBJECTIVE: Outline potential benefits and risks of fixed dosing versus weight-based dosing of 4F-PCC for DOAC-associated bleeding.
SELF ASSESSMENT QUESTION: What is the standard weight-based dose of 4F-PCC recommended by the Neurocritical Care Society for DOAC-associated bleeding?

BACKGROUND: Four-factor prothrombin complex concentrate (4F-PCC) is FDA approved for reversal of vitamin K antagonist-induced acute major bleeding. It may also be beneficial in management of bleeding associated with direct oral anticoagulants (DOACs). Limited evidence exists on optimal dosing for this off-label use. Recent studies show no difference in efficacy for fixed-dosing versus weight-based dosing, and fixed-dosing may improve time to administration and result in cost-savings. Compare the efficacy and safety of fixed versus weight-based 4F-PCC dosing for management of DOAC-associated major bleeding.
METHODOLOGY: : This is a multi-center, retrospective pre-/post-study of patients ≥ 18 years old who presented to 6 hospitals within Mission Health System from January 2019 to March 2022 and received treatment with 4F-PCC for DOAC-associated major bleeding. Eligible patients were on a DOAC and had 4F-PCC ordered on the weight-based or fixed-dose order set for DOAC-associated bleeding management. Exclusion criteria include: pregnant, incarcerated, 4F-PCC only for pre-surgery reversal, elevated INR related to liver disease only, received 4F-PCC or blood products at outside hospitals, received other factor products, 4F-PCC not ordered via weight-based or fixed-dose order set, acute coronary syndrome or ischemic stroke within past 30 days. Groups will be compared by hemostatic efficacy (intracranial hemorrhage [ICH]:

4:40pm – 5:00pm R **Phenobarbital vs. Symptom-Triggered Benzodiazepines for Alcohol Withdrawal Syndrome in the Trauma Surgical ICU** Room D

Presenters: Spencer Roper

TITLE: Phenobarbital vs. Symptom-Triggered Benzodiazepines for Alcohol Withdrawal Syndrome in the Trauma Surgical ICU
AUTHORS: Spencer Roper, Amanda McKinney, Cassey Starnes, Josh Rains, Shaun Rowe
OBJECTIVE: Identify differences in outcomes between patients receiving phenobarbital and those receiving benzodiazepines for alcohol withdrawal syndrome.
SELF ASSESSMENT QUESTION: The use of phenobarbital is associated with an improvement in what outcomes?
BACKGROUND: Alcohol is the leading abused drug in the United States with up to 40% of trauma patients estimated to be dependent on alcohol at time of injury. Many of those patients develop alcohol withdrawal syndrome (AWS) while inpatient. The purpose of this study is to compare outcomes of phenobarbital versus symptom-triggered benzodiazepines for the treatment of AWS in the TSICU population.
METHODOLOGY: Eligibility criteria include adult patients admitted to the TSICU within 48 hours of admission who were treated for new onset or prevention of AWS from January 1, 2018 through June 30, 2022. Patients are excluded from this study if they have a documented history of taking phenobarbital chronically, are pregnant, did not receive doses of either study medication, received both treatment protocols concomitantly, or if they are mechanically ventilated at the start of protocol initiation. The primary outcome of this study is ICU length of stay (LOS). Other secondary outcomes include mortality, hospital LOS, use of adjunctive agents for sedation, and mechanical ventilation rates.
RESULTS: 128 Patients were included in this study. The median ICU length of stay was 2.6 days in the benzodiazepine group and 2.8 days in the phenobarbital group (p=0.986), however power was not met. No statistical difference was found in hospital LOS, ventilation rates, or mortality. A statistically significant decrease in benzodiazepine use was found in the phenobarbital group (median of 1.5 lorazepam equivalents vs. 6.3 lorazepam equivalents; p<0.001).
CONCLUSIONS: A fixed-dose phenobarbital did not lead to a statistical difference in ICU length of stay when compared to a symptom-triggered benzodiazepine protocol.

4:40pm – 5:00pm I **Carbapenems Versus Fluoroquinolones for the Treatment of Non-Bacteremic UTIs due to ESBL-producing Enterobacteriaceae** Room F

Presenters: Jayna Sharma

TITLE: Carbapenems Versus Fluoroquinolones for the Treatment of Non-Bacteremic UTIs due to ESBL-producing Enterobacteriaceae

AUTHORS: Jayna Sharma, Jarett Worden, Jordan Bibb

OBJECTIVE: To determine if any difference in treatment failure exists for patients receiving carbapenems versus fluoroquinolones for UTIs caused by ESBL-producing Enterobacteriaceae.

SELF ASSESSMENT QUESTION: Are fluoroquinolones an effective alternative to carbapenems for treatment of UTIs due to ESBL-producing organisms?

BACKGROUND: To determine if fluoroquinolones are an effective alternative to carbapenems for the definitive treatment of Urinary Tract infections (UTIs) due to Extended-spectrum Beta-lactamase-producing (ESBL) Enterobacteriaceae.

METHODOLOGY: This is an IRB-approved, multicenter, retrospective chart review that included adult patients admitted to one of the three Ascension Saint Thomas Hospitals in Middle Tennessee who received either carbapenems or fluoroquinolones for UTIs due to ESBL-producing Enterobacteriaceae between January 1, 2019 and December 31, 2020. Patients were excluded if they had a bacteremia present at baseline, change in therapy due to concurrent infections, or if ESBL-producing organisms were resistant to antimicrobials used for treatment. Primary endpoint was treatment failure. Treatment failure was defined as recurrence of UTIs with ESBL-producing organisms within 6 months of being discharged or change in definitive therapy due to lack of clinical improvement per provider.

RESULTS: A total of 83 patients were included in the study (carbapenem, n= 57; fluoroquinolone, n=26). No significant difference was seen in treatment failure between the carbapenem and fluoroquinolone groups (18% versus 8%; p=0.324). The hospital length of stay was significantly shorter in the fluoroquinolone group (7.9 days versus 5.5 days; p= 0.013). No difference was seen for duration of treatment or development of bacteremia between the carbapenem and fluoroquinolone groups.

CONCLUSIONS: Fluoroquinolones may be an effective alternative to carbapenems for the treatment of UTIs due to ESBL-producing Enterobacteriaceae, with a shorter length of hospital stay.

4:40pm – 5:00pm L **Evaluation of risk factors for valproic acid level discordance among hospitalized patients** Room K

Presenters: Gadison Quick

TITLE: Evaluation of risk factors for valproic acid level discordance among hospitalized patients

AUTHORS: Gadison Quick; Amanda Moyer; Jackie Cooney

OBJECTIVE: To enhance the description of valproic acid therapeutic drug monitoring by validating risk factors leading to discordant levels.

SELF ASSESSMENT QUESTION: What are examples of risk factors that may lead to displacement of valproic acid from serum plasma proteins, thus discordant levels?

BACKGROUND: Valproic acid (VPA) and its derivatives exhibit high and saturable protein binding which drastically affect serum concentrations. Therapeutic drug monitoring (TDM) is needed to evaluate efficacy and toxicity. VPA can be monitored by total and free serum concentrations. A free VPA level should represent approximately 10% of the total concentration. However, this percentage can vary significantly due to factors that alter protein binding like hypoalbuminemia, drug interactions, and certain endogenous substances. A free level is more accurate for TDM, however is currently underutilized in clinical practice and may be associated with higher costs. The purpose of this study is to evaluate risk factors that may lead to discordant VPA levels, better characterize VPA level monitoring in the acute care setting and establish institutional guidance for VPA monitoring.

METHODOLOGY: This retrospective, observational case-control study of hospitalized adult patients who had at least one simultaneously drawn total and free VPA level from January 1, 2018, through June 30, 2021, included patients categorized as cases (>15% discordance between total and free VPA levels) or controls (≤15% discordance between total and free VPA levels). Patients were evaluated for discordant risk factors, including age, serum albumin, presence of renal and/or hepatic dysfunction, and drug-drug interactions. Presence of VPA-related adverse effects were also evaluated. Univariate and multivariate logistic regression analyses were utilized to determine the relationship between patient specific factors and risk of discordance. Descriptive statistics were utilized to characterize VPA level monitoring in the acute care setting.

RESULTS: In progress

CONCLUSIONS: In progress

4:40pm – 5:00pm N **The Change in Efficacy of Erenumab-aooe When Used Long-Term for Migraine Prevention** Room L

Presenters: Mara Cubellis

TITLE: The Change in Efficacy of Erenumab-aooe When Used Long-Term for Migraine Prevention

AUTHORS: Mara Cubellis, Alison Martin

OBJECTIVE: Identify if there is a change in the efficacy of erenumab-aooe when used long-term for migraine prevention.

SELF ASSESSMENT QUESTION: Which of the following medications works by binding to the CGRP receptor to block the effects of the peptide?

A. Galcanezumab-gnlm (Emgality)
B. Erenumab-aooe (Aimovig)
C. Fremanezumab-vfrm (Ajovy)
D. Eptinezumab-jjmr (Vyepti)

BACKGROUND: Clinical trials for erenumab-aooe, a CGRP receptor antagonist, have shown promising short-term results. However, it has been observed that veterans treated with erenumab-aooe at the Ralph H. Johnson VA Medical Center (RHJVAMC) have occasionally reported a “wearing-off” effect with prolonged use of the medication. For this reason, the purpose of this project was to determine if there is a change in the efficacy of erenumab-aooe when used long-term for migraine prevention.

METHODOLOGY: This quality improvement project included the following patients seen at the RHJVAMC neurology clinic: veterans with a documented prescription for erenumab-aooe 70 mg between June 1, 2018, and May 31, 2021, > 18 years of age or older, primary diagnosis of migraine, and initial response to erenumab-aooe (> 50% reduction in mean monthly migraine days (MMDs) by month three of therapy). Excluded patient with an initial prescription for erenumab-aooe 140 mg, hypersensitivity reaction to any CGRP antagonist, or a documented latex allergy.

RESULTS: Ninety-three patients were included in the final cohort for analysis. The average number of MMDs at baseline was found to be 16, and the time to establish initial response was 2.6 months. Patients experienced an average decrease in MMDs of 10 during this timeframe. Approximately 70% of patients required a dose increase or change in medication to galcanezumab after initial response and experienced a statistically significant increase in MMDs each month after month 3 of therapy. The average time to change in dose or alternative medication was 7.8 months.

CONCLUSIONS: A decrease in efficacy with long-term use of erenumab-aooe was observed throughout this quality improvement project. Completing this project may provide additional data to determine realistic treatment expectations for patients using erenumab-aooe long-term. Providers may also use this information to develop better follow-up practices to promptly identify patients that experience a wearing-off affect.

4:40pm – 5:00pm O **Isavuconazonium or Posaconazole for Antifungal Prophylaxis in Patients with Acute Myeloid Leukemia** Room B

Presenters: Olivia White

TITLE: Isavuconazonium or Posaconazole for Antifungal Prophylaxis in Patients with Acute Myeloid Leukemia

AUTHORS: O White, D Lindquist, E Kennedy, E Rogers, J Baskett, TW LeBlanc

OBJECTIVE: Describe the role of antifungal prophylaxis in AML induction and the differences between posaconazole and isavuconazonium prophylaxis.

SELF ASSESSMENT QUESTION: True or false, posaconazole is considered standard of care for the prevention of invasive fungal infections in AML patients receiving induction chemotherapy?

BACKGROUND: Invasive fungal infection (IFI) prophylaxis is routinely recommended in patients with acute myeloid leukemia (AML) receiving induction chemotherapy. The incidence of IFIs, according to the revised European Organization of Research and Treatment of Cancer criteria, has been reported to be up to 34.6% and has demonstrated to increase mortality for these patients. Currently, the antifungal agent of choice for prophylaxis is posaconazole. However, due to posaconazole's inhibition of cytochrome p450 3A4, its prolongation of the QTc interval, and hepatotoxicity risk, posaconazole can add complexity to planning both anti-emetic and anti-neoplastic regimens. Isavuconazonium (ISAV) has demonstrated an extended spectrum of activity against both aspergillus and mucormycosis, and also has the potential benefit of fewer significant drug interactions and improved tolerability. To date, there are three primary studies that have assessed prophylaxis with ISAV. However, these have provided conflicting efficacy data and only one has addressed drug monitoring of ISAV. The outcomes of this study will improve the understanding of IFI prophylactic strategies in AML patients and contribute to the understanding of drug monitoring ISAV levels.

METHODOLOGY: Adult patients aged ≥ 18 years with AML who were admitted to Duke University Hospital between June 30, 2016 and June 30, 2021, who received induction chemotherapy, and who received posaconazole or ISAV for ≥ 7 days as primary IFI prophylaxis were included in this retrospective, cohort study. Exclusion criteria included patients who received concomitant antifungal agents and patients who received antifungal agents as secondary prophylaxis. The primary endpoint of the study is the incidence of proven or probable IFI. Secondary endpoints include assessment of triazole levels and efficacy, assessment of toxicity from triazole prophylaxis, efficacy of loading doses when beginning prophylaxis, and 30-day mortality following IFI.

RESULTS: 474 patients were assessed for eligibility with 241 patients included. 229 patients were evaluated in the posaconazole group and 12 in the ISAV group. Suspected IFIs occurred in 33 patients in the posaconazole group and none in the ISAV group (p=0.381). Of the 33 suspected infections, 3 of these met criteria to be probable. Secondary endpoints of this study could not be fully analyzed to compare both arms; however, it is notable that 42% of patients with suspected IFIs did not receive loading doses of posaconazole. Each of the three probable cases occurred within 10 days of initiating prophylaxis.

CONCLUSIONS: No statistical difference was found between the ISAV or posaconazole group. This potentially could be due to ISAV efficacy being comparable to posaconazole or due to the low population of ISAV patients. Of the patients that did receive ISAV, this medication was well tolerated with only one patient requiring the change from ISAV to an alternative. In the posaconazole group, IFIs seemed to occur at higher rates in the patients who did not receive loading doses or if they required changes in their prophylaxis. In conclusion, posaconazole and ISAV did not demonstrate different efficacy profiles at preventing IFIs in patients with AML.

4:40pm – 5:00pm 1 **Composite CYP3A (CYP3A4 and CYP3A5) phenotypes and influences on tacrolimus dose-adjusted concentration in adult heart transplant recipients** Room A

Presenters: Savine Hernandez

TITLE: Composite CYP3A (CYP3A4 and CYP3A5) phenotypes and influences on tacrolimus dose-adjusted concentration in adult heart transplant recipients

AUTHORS: Savine Hernandez, Michelle Liu, Kelli Rumbaugh

OBJECTIVE: Describe the effect of a combined CYP3A phenotype on tacrolimus dose-adjusted concentration in heart transplant recipients

SELF ASSESSMENT QUESTION: CYP3A poor expressers had higher tacrolimus C0/D compared to CYP3A rapid expressers. (True/False)

BACKGROUND: Tacrolimus is an immunosuppressive medication commonly used in solid organ transplantation to prevent graft rejection. It has a narrow therapeutic index and large inter-patient pharmacokinetic variability that is partially attributable to genetic variations in the CYP3A enzymes responsible for the metabolism of tacrolimus. Currently, there are guideline recommendations on how to use CYP3A5 genotype information for initial tacrolimus dose. However, emerging data demonstrates that genetic variations in CYP3A4 can also influence the dose-adjusted concentration (C0/D) of tacrolimus in solid organ transplant recipients. The purpose of this study is to describe the effect of a combined CYP3A phenotype including CYP3A5 (*CYP3A5*3, CYP3A5*6, CYP3A5*7*) and CYP3A4 (*CYP3A4*1B, CYP3A4*1G, CYP3A4*22*) alleles on tacrolimus C0/D in heart transplant recipients

METHODOLOGY: This is a single center, retrospective study conducted at Vanderbilt University Medical Center. Adult heart transplant recipients who received tacrolimus oral capsules and suspension for immunosuppression post-operatively and had available *CYP3A4* and *CYP3A5* genotype data were included. Patients were excluded if they received a combined organ transplant, were under 21 years of age at the time of transplant, or were administered IV tacrolimus. The primary outcomes are the C0/D of tacrolimus from post-operative day 2 to discharge and post-operative day 14 to day 30 assessed in the combined CYP3A phenotypes. The secondary outcomes are the C0/D of tacrolimus at discharge, two, three-, and six-months post-transplant, and the effect of drug-drug interactions.

RESULTS: There were 177 patients included in this study. Most patients (92) were CYP3A group 2. The median tacrolimus C0/D differed significantly between the four CYP3A groups from post-operative day 2 to discharge (P=0.0001) and post-operative day 14 to day 30 (P=0.0001). CYP3A group 4 (highest functioning CYP3A enzymes) median tacrolimus C0/D from day 2 to discharge was significantly lower than group 1 (P< 0.0005), group 2 (P<0.0005), and group 3 (P=0.0016). The median tacrolimus C0/D also different significantly between the four CYP3A groups at discharge, 2 months, 3 months, and 6 months. There was no significant different in tacrolimus C0/D between the four groups in patients who were on moderate or strong CYP3A inhibitors

CONCLUSIONS: The combined CYP3A phenotype that includes both increase and decrease function variants in *CYP3A4* in addition to *CYP3A5* may significantly influence tacrolimus C0/D immediately after heart transplant and during follow-up. Patients with the highest functioning CYP3A enzymes (group 4) had significantly lower tacrolimus C0/D compared to groups with lower functioning CYP3A enzymes (groups 1, 2, 3).

5:00pm – 5:20pm B **Implementation and Analysis of a Pharmacist-driven HIV Adherence and Pre-Exposure Prophylaxis Clinic in a Veteran Population** Room I

Presenters: Jeewar Kokoy

TITLE: Implementation and Analysis of a Pharmacist-driven HIV Adherence and Pre-Exposure Prophylaxis Clinic in a Veteran Population

AUTHORS: Jeewar Kokoy, Paula Newberry

OBJECTIVE: At the conclusion of this presentation, the participant will be able to identify the impact of a pharmacist on ART adherence, viral suppression, and medication interventions.

SELF ASSESSMENT QUESTION:

True or False: per the Veterans Aging Cohort Study, Veterans diagnosed with HIV with an elevated HIV viral load or low CD4 cell count, have an increased risk of sudden cardiac death.

a. True

b. False

BACKGROUND: Human immunodeficiency Virus (HIV) affects more than 36 million people worldwide. In order to maintain efficacy, 95% adherence is needed for successful anti-retroviral therapy (ART). With the demand for optimizing HIV adherence, and the advancements of telehealth, patients in rural areas can be followed more frequently. A pharmacist driven adherence clinic for patients with HIV and HIV pre-exposure prophylaxis (PrEP) care, may directly affect proportion of days covered, medication possession ratios, and incidence of resistance to current therapy. Thereby, potentially enhancing medication adherence and viral suppression.

METHODOLOGY: This was a single-center, prospective, quality improvement initiative. Patients were identified for clinic enrollment via referral from the infectious disease (ID) team (Nurse practitioners and ID physicians) and the HIV/HIV PrEP dashboards. Patients requiring concomitant ambulatory care management within the clinic were also assessed and treated. The focus of the initial visit was to assess the baseline ART regimen including number of medications, pill burden/day, day supply, the medication possession ratio (MPR), proportion of days covered (PDC), medication reconciliation, assessing for need of ambulatory care management, CD4 count, HIV viral load, and history of non-adherence. Follow-up was conducted based on patient-specific factors and included ambulatory management and medication reconciliation. Patients were offered face-to-face, VA Video Connect, and/or telephone visits. Baseline patient characteristics included age, gender, race, assigned primary care provider (PCP), current adherence tools, ART adherence barriers, HIV pill burden, total pill burden, and hepatitis C virus (HCV) co-infection.

RESULTS: Eighteen patients were seen in the HIV Adherence (n=11) and HIV PrEP clinic (n=7). A total of 28 visits were completed out of 37. Patients in both groups did not demonstrate a statistically significant difference in MPR, PDC, and VAS measures. Of the secondary endpoints in the HIV adherence group a significant difference was noted in the .log10 HIV-1 RNA decreasing from 2.82 ± 1.37 to 2.19 ± 1.58 (p=0.01). HIV-1 RNA viral load notably trended down from baseline from 13750 ± 26902 copies/ml to 5330 ± 10447 copies/ml (p=0.38). Two patients out of the eleven in the HIV adherence clinic achieved viral suppression. There were a total of 11 medication interventions with two of the interactions involving adjusting therapy based on drug-drug interactions.

CONCLUSIONS: With the inclusion of a clinical pharmacist on the inter-disciplinary team, a significant reduction in HIV-1 RNA .log10 levels were demonstrated, with an overall trend of HIV-1 RNA levels decreasing from baseline. Optimization and management of adherence strategies were also conducted to improve adherence rates. In addition, patients without routine primary care follow-up requiring ambulatory care interventions were additionally managed including the initiation and use of statins to lower cardiovascular risk in HIV patients. There were several limitations to the study including the short duration with rolling data beginning from November 18, 2021. Due to the short duration a small sample size was collected, increasing the difficulty to measure change based on scheduling follow-up labs and clinic no-show frequency of 32%. Due to the nature of telephone visits and no-show frequency, the VAS, MPR, and PDC, were difficult to measure and maintain. Future considerations include increasing sample size, incorporating the use of clinical video-telehealth, and optimizing follow-up/clinic adherence.

5:00pm – 5:20pm B **Real-world use of proprotein convertase subtilisin kexin-9 inhibitors** Room J

Presenters: Tatyana Givens

TITLE: Real-world use of proprotein convertase subtilisin kexin-9 inhibitors

AUTHORS: Olivia Kim, Emily Tang, Tatyana Givens, Jennifer Schimmer, Kari Olsen, Kayla Boyd

OBJECTIVE: Describe the real-world use of PCSK9i therapy within an integrated healthcare delivery system.

SELF ASSESSMENT QUESTION: Which patient population is commonly prescribed PCSK9i therapy in this integrated healthcare delivery system?

BACKGROUND: Alirocumab and evolocumab are proprotein convertase subtilisin kexin-9 inhibitors (PCSK9i) used in the management of hyperlipidemia. While efficacy is well established, there is a lack of long-term data on the use of these agents in real-world clinical settings. This study aimed to describe the real-world use and compare the safety and effectiveness of PCSK9i to a control group of patients who received conventional anti-hyperlipidemia pharmacotherapy within an integrated healthcare delivery system.

METHODOLOGY: This is a retrospective, longitudinal, cohort analysis approved by the Institutional Review Boards. The primary objective will be to describe the patient population who received PCSK9i therapy, and the secondary objective will be comparative effectiveness between patients with familial hypercholesterolemia (FH) or atherosclerotic cardiovascular disease (ASCVD) who had and had not received a PCSK9i. All patients dispensed a PCSK9i between 4/1/2016 and 6/30/2020 within three integrated healthcare delivery systems will be identified from administrative records and described based on their clinical characteristics. Administrative data will be utilized to identify a contemporary control group of patients with FH/ASCVD who were not dispensed a PCSK9i during this time. Clinical outcomes include recurrent major cardiac adverse events, all-cause mortality, healthcare utilization (emergency department visits, hospitalizations, and medical office visits), and changes in lipid values. Outcomes will be validated with manual chart review.

RESULTS: In progress

CONCLUSIONS: In progress

5:00pm – 5:20pm B **Transitioning high-risk warfarin patients to direct oral anticoagulants in a rural pharmacy care clinic** Room K

Presenters: Elizabeth Newton

TITLE: Transitioning high-risk warfarin patients to direct oral anticoagulants in a rural pharmacy care clinic

AUTHORS: Elizabeth Newton, Dezia Chavis, Katherine Miller

OBJECTIVE: Identify high-risk warfarin patients, who visit the pharmacy care clinic and require anticoagulation for either atrial fibrillation or venous thromboembolism, who are eligible to transition to a direct oral anticoagulant.

SELF ASSESSMENT QUESTION: T/F – A patient with atrial fibrillation and a mechanical heart valve, anticoagulated with warfarin, is eligible to be transitioned to a direct oral anticoagulant.

BACKGROUND: The purpose of this study was to identify and switch high-risk warfarin patients to a direct oral anticoagulant for the indications of nonvalvular atrial fibrillation or venous thromboembolism. Identifying patients who are non-compliant and sub-therapeutic key components of optimizing anticoagulation therapy to prevent ischemic strokes and clotting events, while minimizing bleeding risks.

METHODOLOGY: Chart reviews were completed on pharmacy care clinic patients from July 2020 to September 2021. Warfarin indication, duration, and previous DOAC use were assessed. High-risk warfarin patients were identified based on two criteria, including clinic attendance less than 75% in the last year and SAMe-TT2R2 score greater than 2, indicating patients who had a high probability of sub-therapeutic warfarin control. Eligible patients were interviewed and informed of the benefits of transitioning to a DOAC. Patients who accepted transition are being followed to monitor adverse events, such as bleeding or thrombotic events and overall satisfaction of therapy.

RESULTS: Of 195 patients anticoagulated with warfarin and diagnosed with atrial fibrillation or venous thromboembolism, 48 were identified as high-risk. Of 48 high-risk warfarin patients, 14.6% were successfully transitioned to a direct oral anticoagulant. Six patients were transitioned to apixaban, and one patient was transitioned to rivaroxaban, each at their provider’s discretion. No bleeding events, thrombotic events, or attributable side effects occurred by 1-month follow up.

CONCLUSIONS: Fourteen percent of high-risk warfarin patients, who visit the UNC Health Southeastern Pharmacy Care Clinic and are diagnosed with atrial fibrillation or venous thromboembolism, were transitioned to a direct oral anticoagulant with no bleeding or thrombotic events reported at 1-month follow up.

5:00pm – 5:20pm C **An Examination of Purge Reliability in Impella Devices with Multiple Heparin Concentrations**

Presenters: Taylor Teshon Room H

TITLE: An Examination of Purge Reliability in Impella Devices with Multiple Heparin Concentrations

AUTHORS: Taylor R. Teshon, James O. Ampadu, Chao Cai, Jenna F. Cox

OBJECTIVE: To examine the purge reliability over time in Impella purge solutions containing 12.5 units/mL, 25 units/mL, and 50 units/mL of heparin.

SELF ASSESSMENT QUESTION: Which concentration of heparin had the highest purge reliability?

BACKGROUND: The Impella catheter is a percutaneously inserted ventricular assist device that increases cardiac output by pumping blood from the left ventricle into systemic circulation. As blood is pumped through the Impella catheter, a purge solution runs countercurrent to the flow of blood to create positive internal purge pressure and to prevent the deposition of protein and thrombus within purge gaps in the catheter. The manufacturer recommends the purge solution contain 25 units/mL of heparin. Previously 50 units/mL was recommended, and many institutions utilize 12.5 units/mL. The purpose of this project is to examine the purge reliability over time in Impella purge solutions containing 12.5 units/mL, 25 units/mL, and 50 units/mL of heparin.

METHODOLOGY: A retrospective study was conducted among all adult patients who were admitted to Prisma Health Richland hospital or Prisma Health Greenville Memorial hospital from January 1, 2012 through July 1, 2021, received mechanical circulatory support with an Impella device, and received a heparin-based purge solution within 24 hours of Impella placement. Patients were excluded if they received the heparin-based purge solution for less than 12 hours. The primary endpoint was purge reliability over time. Impella purge solution was considered unreliable if there was an increase in purge pressure by 25% from index purge pressure or a decrease in purge flow rate by 30% or 50% from index purge flow, dependent on initial flow rate. Secondary endpoints included the use of alteplase in the purge solution as well as the variance in purge flow rate or purge pressures.

RESULTS: 91 patients were included in the study. The average duration of Impella support was around 3 days in each of the heparin-based purge solution arms, although the 50 units/mL heparin-based heparin group had a wider range of support than the other groups. For the primary outcome, there was no significant difference in the purge reliability between the differing heparin-based purge solution concentrations ($p = 0.28$).There was also no difference in the use of alteplase in the purge solution between the differing concentrations ($p = 0.28$). Finally, there was no difference in the likelihood of reliability between the differing concentrations.

CONCLUSIONS: There was no significant difference in purge reliability between the various heparin concentrations in the Impella purge solution over a duration of 3 days.

5:00pm – 5:20pm Y **Patient and Pharmacist Perceptions of Cognitive Screening Services and their Implementation into an Independent Community Pharmacy** Room G

Presenters: Mackenzie Currie

TITLE: Patient and Pharmacist Perceptions of Cognitive Screening Services and their Implementation into an Independent Community Pharmacy

AUTHORS: Mackenzie Currie, PharmD, MHIT, Patricia Fabel, PharmD, BCPS, Tessa Hastings, PhD

OBJECTIVE: The primary objectives of this study were to 1) analyze patient perceptions of community pharmacy-based cognitive screening services, including general perceptions of cognitive screening services, pharmacist administration, and willingness to pay and 2) identify community pharmacists' perceived barriers and facilitators of cognitive screening services.

SELF ASSESSMENT QUESTION: What are the 2 most common barriers that pharmacists have to implementing this service into the pharmacy?

BACKGROUND: Deaths from Alzheimer's dementia have increased by 145% since the year 2000, whereas deaths due to many other chronic illnesses, like cardiovascular disease, have slowly been on the decline. Currently, 6.2 million Americans have Alzheimer's dementia, and healthcare costs for the disease are at a staggering $256.7 billion per year. Because of the increased prevalence and the extremely high cost, it is imperative that healthcare providers are screening patients for all forms of dementia and are proactively treating them if necessary. Unfortunately, a diagnosis of Alzheimer's is very difficult to obtain and can even take several years.

Through early screening and detection, patients can initiate medications that will slow the progression of the disease much sooner and begin to implement lifestyle modifications that improve cognitive function and memory. A study by Robert Wilson et al revealed that the length of the prodromal period of Alzheimer's dementia is normally around 6-7 years. These are the first true stages of dementia, and unfortunately, these symptoms are the least obvious to detect. Since pharmacists are the most accessible healthcare providers and see patients most often, providing cognitive screenings could help detect these mild symptoms in patients sooner, and potentially prevent further rapid decline in cognitive function. Due to the frequency of these interactions, community pharmacists are uniquely positioned to offer cognitive screening services that may identify small changes during the Alzheimer's prodromal period. However, very few pharmacies currently offer cognitive screening service to patients, likely due to a lack of comfortability providing the service as well as a lack of buy in for the service from patients. Determining the barriers that are currently preventing pharmacists from implementing this service in their practices is imperative so that they can be addressed and overcome. Although there is a need for cognitive testing in the community pharmacy setting, it is important to first assess patient perceptions of these tests, as well as their willingness to receive these tests at a community pharmacy. Additionally, there is little literature exploring pharmacists' perceived barriers and facilitators to implementing cognitive testing services in the community pharmacy setting. This study was designed to target both the patient and pharmacist audiences with surveys to assess each item listed above.

METHODOLOGY: Two cross-sectional surveys were used to assess patient and pharmacist perceptions of cognitive screening services. First, a survey containing 34 items was distributed to patients to identify general perceptions of cognitive screening services, pharmacist administration, and willingness to pay. Patients 40 years of age and older of an independently owned pharmacy with 8 locations in South Carolina were offered the survey via the pharmacy's monthly newsletter. Around age 40, people may start to develop mild cognitive impairment (MCI) or very early signs of Alzheimer's dementia, therefore, 40 was chosen as the minimum age for survey completion. Patients were excluded if they did not meet these criteria or if they completed

5:00pm – 5:20pm R **Characterization of club cell secretory protein (CC16) in plasma samples from the FACTT trial**

Presenters: Aaron Michael Chase Room C

TITLE: Characterization of club cell secretory protein (CC16) in plasma samples from the FACTT trial

AUTHORS: Aaron Chase, Sultan Almuntashiri, Andrea Sikora Newsome, Duo Zhang

OBJECTIVE: To characterize plasma CC16 from patients enrolled in the Fluid and Catheter Treatment Trial (FACTT) and determine the prognostic value for patient outcomes.

SELF ASSESSMENT QUESTION: The FACTT trial demonstrated which strategy was beneficial to ARDS patients?

a. Liberal fluid

b. Conservative fluid

c. Albumin

BACKGROUND: Club cell secretory protein (CC16) is a protein secreted by lung epithelium and has potential utility as an acute respiratory distress syndrome (ARDS) biomarker. CC16 has shown predictive value for patient outcomes (e.g., mortality, length of stay), but has never been assessed in context of a randomized-controlled trial (RCT).

METHODOLOGY: The primary outcome was area under the receiver operating curve (AUROC) of CC16 for prediction of 90-day mortality. Secondary outcomes included CC16 levels by ARDS etiology, intervention group, and change in CC16 over time. CC16 concentration was measured by enzyme-linked immunosorbent assay FACTT patients on days 0, 1, 3, and 7. Data were analyzed using AUROC analysis, t-test, chi-squared, and descriptive statistics as appropriate in IBM SPSS Statistics.

RESULTS: We included 88 subjects, 68 from FACTT and 20 healthy controls. The FACTT subgroup was an average of 48 (SD: 16.7) years old and 51.5% male. AUROC analysis demonstrated an AUROC of 0.78 for mortality (OR: 1.011, 95%CI: 1.003-1.024) with an optimal cut-off value of 45ng/mL. Patients in the low CC16 group (

5:00pm – 5:20pm R **Pre and post study of protocolized antibiotic prophylaxis for external ventricular drains and intracranial pressure monitors** Room D

Presenters: Jennifer Gentile

TITLE: Pre and post study of protocolized antibiotic prophylaxis for external ventricular drains and intracranial pressure monitors

AUTHORS: Jennifer Gentile, Leslie Hamilton, Mary Walton, A. Shaun Rowe, Brandon Hawkins, Satya Yaramati

OBJECTIVE: Identify if an EVD care bundle and ICP monitor prophylaxis guideline increases CNS infections compared to patients who did not receive the bundle or guideline.

SELF ASSESSMENT QUESTION: Does an EVD care bundle and ICP monitor prophylaxis guideline increase CNS infections compared to patients who did not receive the bundle or guideline?

BACKGROUND: Current Infectious Diseases Society of America (IDSA) guidelines recommend perioperative antibiotic administration prior to the placement of external ventricular drains (EVD) or intracranial pressure (ICP) monitors, but no longer than 24 hours after surgery. However, there is no consensus concerning the continuation of antibiotics after placement. In April 2020, a care bundle was implemented that included a protocolized antibiotic regimen. The objective of this study is to determine if infection rates are different for patients who received a protocolized antibiotic regimen verses patients who did not.

METHODOLOGY: This is an institutional review board-approved retrospective, cohort. Patients 16 years of age and older who had an EVD or ICP monitor placed and were admitted to the trauma/surgical and neuro intensive care units from July 1, 2016, to December 31, 2021, will be included. Patients less than 16 years of age or had a documented central nervous system infection before device insertion will be excluded. All patients will be separated into before and after protocol implementation. The protocolized antibiotic regimen is a one-time dose of either cefazolin 2 grams, cefazolin 3 grams, clindamycin 600 milligrams or vancomycin 15 milligrams per kilogram depending on patient weight and allergies. The primary outcome of this study is to determine CNS infection rates. Secondary outcomes will include adverse events of antibiotic use, duration of EVD or ICP monitor, all-cause mortality within 28 and 90 days of ICU admission, ICU length of stay, and hospital length of stay.

RESULTS: 394 patients were included in the study. CNS infections occured in 44 of 233 (18.9%) of patients in the pre group and 25 of 161 (15.5%) patients in the post group. This gave a p-value of 0.389. A subgroup analysis of patients was done to look at EVDs and ICPs individually. CNS infections in patients with EVDs occured in 32 of 44 patients in the pre group versus 13 of 25 patients in the post group. CNS infections in patients with ICPs occured in 13 of 44 patients in the pre group versus 12 of 25 patients in the post group. No difference was found in ICU or hospital length of stay and in hospital mortality.

CONCLUSIONS: The results of this study showed no difference in incidence of CNS infections, length of stay or hospital mortality between the pre and post implementation groups.

5:00pm – 5:20pm G **Deprescribing Practices: Impact of Incorporation of VIONE dashboard in Veterans enrolled in Home Based Primary Care (HBPC) at the Salisbury Veterans Affairs Medical Center (SVAMC)**

Presenters: Tabbitha Stockman Room L

TITLE: Deprescribing Practices: Impact of Incorporation of VIONE Dashboard in Veterans Enrolled in Home Based Primary Care (HBPC) at the Salisbury Veterans Affairs Medical Center (SVAMC)

AUTHORS: Tabbitha Stockman, Mary Caputi, Courtney Hines

OBJECTIVE: To implement the VIONE Dashboard and evaluate the use and impact of the deprescribing dashboard within HBPC at the SVAMC.

SELF ASSESSMENT QUESTION: Can use of the VIONE dashboard reduce medication burden?

BACKGROUND: Older adults are more likely to experience polypharmacy and receive a potentially inappropriate medication (PIM). The VIONE dashboard is able to identify PIMs by HBPC provider. The dashboard identifies medications from Beers Criteria, START/STOP Criteria, and guideline-directed therapy. This project assessed the feasibility of application of this dashboard in HBPC.

METHODOLOGY: A prospective quality improvement project was conducted in HBPC teams in Kernersville and Salisbury, North Carolina. Patients were identified by the VIONE Dashboard as having one or more active PIMs and were randomly selected for review. Upon selection, PIMs were evaluated by the resident and a medication review was completed. Upon completion, the recommendations were forwarded to the NP and the Clinical Pharmacy Specialist for the respective team. Data collection included patient-specific characteristics and the frequency of recommendation acceptance by both the NP and Veteran. The primary outcome focused on recommendations made based on the dashboard. Secondary outcomes included recommendations made within the medical record, but directly through the VIONE review process. Data was analyzed using descriptive statistics.

RESULTS: Twenty-six Veterans were randomly selected from the VIONE dashboard. All of the Veterans reviewed were male: 21 (80.8%) were Caucasian with an average age of 81 years. The 26 Veterans were collectively receiving 556 medications/supplies, with a mean VIONE risk score of 6.4 and a mean anticholinergic risk score of 1.4. The VIONE dashboard flagged 28 medications (53.8%) from guideline recommendations and the remainder were based on Beers Criteria. Of the 52 alerts from this Veteran population, 12 were for docusate, 7 for benzodiazepines, 6 for beta blockers, 6 for loop diuretics, 5 for anticholinergics, 5 for proton pump inhibitor, 4 for aspirin, 3 for antipsychotic, 3 for Z-drugs, and 1 muscle relaxer. Of the 23 VIONE reviews completed to date, 21 (84%) recommendations from the VIONE dashboard were accepted by the Veteran and NP. The most common recommendation made and accepted was regarding docusate monotherapy. When the recommendations were not directly identified by the VIONE dashboard (within the progress note), 150 (81.5%) recommendations were accepted. Of the 150 recommendations accepted within the medical record, 109 were associated with items such as updating the problem list and assessing resolution of acute medical needs for the Veteran.

CONCLUSIONS: Although a greater number of recommendations were identified within the medical record, the results of this study highlight how the implementation of the VIONE dashboard can lead to a reduction in PIMs. The VIONE dashboard is not a validated tool, but it does enable identification of high risk Veterans who are receiving PIMs.

5:00pm – 5:20pm | **Clinical Impact of Antipseudomonal Coverage in Patients with Diabetic Foot Infections** | Room F

Presenters: Emily McTish

TITLE: Clinical Impact of Antipseudomonal Coverage in Patients with Diabetic Foot Infections

AUTHORS: Emily McTish, Benjamin Casey, Alexandria Fagan

OBJECTIVE: Evaluate the clinical impacts of empiric antipseudomonal antibiotic use on DFI in an inpatient setting.

SELF ASSESSMENT QUESTION: This study found that antipseudomonal antibiotic use was associated with which of the following? A. Increased rate of re-admission B. Longer hospital length of stay C. Shorter duration of all antibiotic therapy D. None of the above

BACKGROUND: Diabetic foot infections (DFI) and ulcerations are a severe complication in patients with diabetes mellitus with a lifetime risk of development between 19-34%. The majority of DFI are polymicrobial; Pseudomonas aeruginosa has been implicated as a pathogen in 4.5-26% of DFI. Empiric therapy directed at P. aeruginosa is not recommended by guidelines in patients without risk factors. The purpose of this study is to evaluate the clinical impact of empiric antipseudomonal therapy for patients with DFI.

METHODOLOGY: This study was a retrospective chart review evaluating clinical outcomes in patients with DFI who received empiric antipseudomonal therapy versus patients who did not. Eligible patients were admitted with a diagnosed DFI and received antimicrobial therapy. The primary objective was rate of readmission within 30 days from discharge. Secondary objectives included duration of hospitalization, duration of therapy, and incidence of positive cultures.

RESULTS: A total of 190 patients were were identified by their admission ICD-10 code and screened for inclusion in this study. Ninety-three patients were enrolled and included in the primary analysis. For the primary endpoint of re-admission within 30 days, there was no significant difference between the treatment groups ($p=0.81$). There was no difference in duration of hospitalization, duration of all antibiotic therapy, and incidence of positive cultures between the treatment groups. There was a significant difference in the duration of Gram negative therapy between the two treatment groups ($p<0.05$), with reduced treatment duration seen in the non-antipseudomonal group.

CONCLUSIONS: No difference in re-admission rates was found in patients who were empirically treated with antipseudomonal antibiotics for DFI versus those who were not. Few patients reviewed had *P. aeruginosa* isolated in culture even though the majority of patients had moderate to severe DFI. A larger trial is needed to assess for significant differences in outcomes in patients who are treated with antibiotic therapy for DFI.

5:00pm – 5:20pm O **Impact of oncology pharmacist review on near miss identification for parenteral anticancer treatment** Room B

Presenters: Annalise Labatut

TITLE: Impact of oncology pharmacist review on near miss identification for parenteral anticancer treatment
AUTHORS: Annalise Labatut, PharmD; Haley Adams, PharmD, BCOP; Jennifer Lafollette, PharmD, BCOP; Marjorie Adams Curry, PharmD, BCOP, Julianna Cebollero, PharmD, BCOP
OBJECTIVE: Discuss the impact of an oncology-trained clinical pharmacist in infusion center workflow
SELF ASSESSMENT QUESTION: What are examples of near misses that can be identified by an oncology pharmacist?
BACKGROUND: Computerized Physician Order Entry (CPOE), including EPIC Beacon, is designed to reduce medication errors. Beacon treatment plans provide standardized order sets that can be customized by providers; however, it does not make patient specific adjustments.

At Grady Health System, pharmacists create standardized Beacon templates that are vetted by providers. Providers enter and sign orders for specific patients. The current workflow at our institution does not incorporate patient specific treatment plan review by an oncology-trained clinical pharmacist prior to the release of orders on the day of the infusion visit

The purpose of this study was to have an oncology pharmacist identify and address near misses by evaluating chemotherapy treatment days in Beacon prior to patient arrival in the infusion center.
METHODOLOGY: This was a single-center, prospective concurrent quality improvement project conducted from July-October 2021. Each treatment day was reviewed for chemotherapy consent, laboratory orders, take-home oral chemotherapy, supportive care, treatment conditions, scheduling, and drug interactions.
RESULTS: During the evaluation period, 116 treatment days were reviewed and one hundred days met criteria for inclusion. Overall, 37% of treatment days contained a near miss and required an oncology pharmacist intervention. Of the near misses identified, 10% included a significant chemotherapy drug-drug interaction.
CONCLUSIONS: An oncology pharmacist possesses the specialized knowledge to identify and address clinically impactful chemotherapy-related errors. Implementation of oncology pharmacist treatment plan review prior to the day of infusion may minimize preventable medication errors, adverse drug reactions, and delays in therapy.

5:00pm – 5:20pm S **A Retrospective Review of Discharge Medication Prescribing Practices in Adult Patients Admitted to an Inpatient Psychiatric Unit for Methamphetamine Induced Psychosis** Room E

Presenters: Meena Mattamana

TITLE: A Retrospective Review of Discharge Medication Prescribing Practices in Adult Patients Admitted to an Inpatient Psychiatric Unit for Methamphetamine Induced Psychosis
AUTHORS: Meena Mattamana, Nicole Whitener, Laurie Pennell
OBJECTIVE: List pharmacologic agents theorized to aide in methamphetamine use disorder.
SELF ASSESSMENT QUESTION: What are potential treatment options for methamphetamine use disorder?
BACKGROUND: Currently no guideline-directed therapy for treatment of methamphetamine dependence exists; however, this is becoming a growing concern as methamphetamine addiction increases and causes recidivism in psychiatric treatment facilities. Several studies have investigated numerous pharmacologic agents for the treatment of methamphetamine dependence, without clear consensus. The purpose of this retrospective chart review is to describe the pharmacologic agents used in the aftercare of patients admitted for methamphetamine induced psychosis and/or methamphetamine dependence. Discharge medications will be reviewed by investigators and compared to pharmacologic options from literature in an effort to formulate and implement a standardized discharge plan for this patient population.
METHODOLOGY: This study has been approved by Institutional Review Board. The electronic medical record system will be used to identify patients who have been admitted to an adult inpatient psychiatric unit with a methamphetamine positive urine drug screen. In addition to patient demographics, the following data will be collected: current and historic drug use, comorbid psychiatric diagnosis, ADHD status, housing status, inpatient medications, medications initiated at discharge, use of methadone or buprenorphine, cigarette use history, Medicaid status, use of bupropion, admission history, and length of stay. All data will be recorded without patient identifiers and maintained confidentially.
RESULTS: In progress
CONCLUSIONS: In progress

5:00pm – 5:20pm 1 **Duration of Therapy for Gram-negative Bacteremia in Solid Organ Transplant Recipient** Room A

Presenters: Katie McCrory

TITLE: Duration of Therapy for Gram-negative Bacteremia in Solid Organ Transplant Recipient

AUTHORS: Katie McCrory, Stephanie Pouch, Michael Hurtik

OBJECTIVE: Describe the impact of various therapeutic strategies for treating gram-negative bacteremia in solid organ transplant recipients.

SELF ASSESSMENT QUESTION: Does treating gram negative bacteremia in transplant patients for less than 14 days increase patient mortality?

BACKGROUND: The purpose of this study is to evaluate the efficacy of the treatment of gram-negative bacteremia in solid organ transplant recipients in regards to duration of antibiotic therapy and transition from intravenous to oral therapy, given a lack of evidence-based clinical guidelines for the transplant population.

METHODOLOGY: A retrospective chart review was performed of solid organ transplant recipients admitted to our institution and treated for confirmed gram-negative bacteremia between October 1, 2016 and October 1, 2021. The primary outcome was a composite of mortality and relapse of bacteremia within 30 days of completing treatment, comparing patients who received less than 14 days of antibiotics to those receiving 14 days or more.

RESULTS: The final analysis included 313 patients. The average duration of therapy for gram-negative bacteremia was 16.2 days in the entire cohort, with 38 (12.1%) receiving less than 14 days. The primary endpoint was experienced by 4 (10.5%) patients in the group receiving less than 14 days of therapy and 17 (6.2%) patients in the group receiving 14 days or more (p=0.30). Overall, the average age was 63 years and 195 (62.3%) of the study subjects had a kidney transplant. One hundred and eighty-two patients (58.1%) were transitioned to oral antibiotics; of these, 167 (91.8%) were transitioned to levofloxacin.

CONCLUSIONS: No significant difference was found in regards to 30-day mortality or relapse of bacteremia between patients who received less than 14 days of antibiotic therapy and those who received 14 days or more in this group of solid organ transplant patients. Use of oral antibiotics to complete therapy was common in this cohort.

A Administration (ADM) B Ambulatory Care (AMB) C Cardiology (CAR) Y Community Pharmacy (CP)

R Critical Care/Emergency Medicine (CCM) G Geriatrics (GER) I Infectious Disease (ID)

L Internal Medicine (IM) M Medication Safety (MES) N Neurology (NEU) O Oncology (ONC)

P Pain Management (PM) D Pediatric (PED) S Psychiatric Pharmacy (PSY) T Transitional Care (TC)

1 Transplant (TRP)

APRIL 22 • FRIDAY

8:30am – 8:50am A **Clinical Pharmacist Impact on HCAHPS Scores in the Inpatient Setting** Room L

Presenters: Sarah Aycock

TITLE: Clinical Pharmacist Impact on HCAHPS Scores in the Inpatient Setting

AUTHORS: Sarah Aycock, Matthew McAllister, Jorda Baxley

OBJECTIVE: Describe the impact of a clinical pharmacist on patients' perspective on communication about medication and the subsequent impact on HCAHPS scores.

SELF ASSESSMENT QUESTION: What are three topics related to the "communication about medications" domain on the HCAHPS survey?

BACKGROUND: The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAPHS) survey is used to assess patients' hospital visit satisfaction and functions as a national standard to compare several domains across institutions. One domain on the survey is communication about medications, and pharmacists have the opportunity to make a positive impact on this domain, thereby improving patient experiences. The purpose of this study is to assess the impact of clinical pharmacists on HCAHPS survey responses pertaining to communication about medications, overall HCAHPS scores, hospital readmission rates, and emergency department (ED) visits.

METHODOLOGY: This quality improvement initiative will be implemented to assess the impact of clinical pharmacists on HCAHPS scores for patients admitted to one institution from August 2021 to March 2022. Inclusion criteria will consist of patients >18 years old admitted to the 8th floor (8 main) of our institution. Exclusion criteria will consist of patients with COVID-19, on isolation, unable to receive education due to altered mental status, and 8th floor patients in the progressive care unit. For implementation, four inpatient clinical pharmacists will select 4-5 patients to follow throughout the course of their hospital stay, acting as their "personal pharmacist." The pharmacists will visit the patients daily with the ultimate goal of establishing relationships with the patients, and it is anticipated that conversations about medications will naturally occur through this process. The primary objective is to compare HCAHPS survey domains related to communication about medications in the inpatient setting before and after initiative implementation.

RESULTS: In progress

CONCLUSIONS: In progress

8:30am – 8:50am B **Improving Blood Pressure Management for Veterans Through the Establishment of a Population Health-Based Telepharmacy Service** Room J

Presenters: Mafe Zmajevac, PharmD

TITLE: Improving Blood Pressure Management for Veterans Through the Establishment of a Population Health-Based Telepharmacy Service

AUTHORS: Mafe Zmajevac, Courtney E. Gamston, Kimberly Braxton Lloyd, Garrett Aikens, Pamela Stamm

OBJECTIVE: Describe the impact of a population health-based telepharmacy service on blood pressure management in Veterans with uncontrolled hypertension.

SELF ASSESSMENT QUESTION: Which of the following statements is **NOT** correct regarding pharmacist-led telepharmacy visits?

BACKGROUND: Hypertension is a prevalent chronic disease state in the U.S. and is often uncontrolled. Telehealth communications have improved accessibility to clinical services and high-quality care for patients in rural communities. The objective of this study is to evaluate the impact of a population health-based telepharmacy service on blood pressure (BP) management in Veterans with uncontrolled hypertension.

METHODOLOGY: A Veterans Affairs (VA) population health dashboard identified patients with a BP of 140/90 mmHg or greater within the previous year. Participants were excluded from medication management if they were pregnant or received anti-hypertensive medications from non-VA providers. Eligible patients were recruited by phone and provided with home BP monitoring equipment as needed. Pharmacists and student pharmacists, collaborating with a Tuscaloosa VA nurse practitioner, led interventions including medication adjustments, counseling, and referrals. Patient questions and concerns, recent BP readings, medications, and lifestyle behaviors were assessed at each visit. Outcomes included the percentage of Veterans with improvement in BP control and adherence, change from baseline in lifestyle habits, BP, medications, and drug-related problems.

RESULTS: The 180 dashboard-identified Veterans with uncontrolled hypertension had an average BP of 154/83 mmHg. Twenty-five chart reviews and 14 calls were completed. Three patients with an average BP of 189/102 mmHg were reached, and 2 participants enrolled. Interventions implemented included identifying medication-related problems, addressing medication adherence, and counseling on appropriate BP monitoring techniques. The service's impact on Veteran BP management can be evaluated further with growing participation rates.

CONCLUSIONS: Pharmacist-led telehealth services and population health measures may potentially change the health care accessibility landscape in rural communities and across the country.

8:30am – 8:50am B **Insulin dosing in Obese Women with Gestational or Type 2 Diabetes Mellitus in Pregnancy** Room I

Presenters: McCall Cannon

TITLE: Insulin dosing in Obese Women with Gestational or Type 2 Diabetes Mellitus in Pregnancy

AUTHORS: Jessica Odom, McCall Cannon, Megan Schellinger, Alex Ewing

OBJECTIVE: Compare the incidence of hypoglycemia in pregnant patients with a body mass index of 35 or greater who initiate weight-based basal insulin compared to those who were initiated on a reduced basal insulin dose.

SELF ASSESSMENT QUESTION: What is the definition of hypoglycemia in pregnancy?

BACKGROUND: Maternal hyperglycemia has been associated with congenital abnormalities, increased birth weight, and hyperinsulinemia in neonates. In pregnancy complicated by diabetes, insulin is the preferred medication as it does not cross the placenta, and studies have demonstrated beneficial maternal and neonatal outcomes. Careful monitoring of blood glucose is needed as hypoglycemia has been associated with fetal growth restrictions. The risks of harming the child and the mother with insulin treatment due to hypoglycemia must be weighed with the risks associated with prolonged hyperglycemia. Additionally, obesity is a risk factor for developing diabetes and affects 31.6% of women of childbearing age. The optimal dosing of insulin for obstetric patients with diabetes has been established in prior literature, however, evidence is lacking for dosing of insulin in obese pregnant patients.

METHODOLOGY: A retrospective, single-center, chart review was conducted from January 2018 to December 2020. Inclusion criteria consisted of patients diagnosed with gestational or type 2 diabetes, 18 years of age or older, BMI ≥35, and who were treated with basal or basal-bolus insulin. Patients with type 1 diabetes, previously using insulin, or who had no follow-up outpatient appointments were excluded. The primary outcome was the incidence of hypoglycemia (blood glucose ≤ 60mg/dL) at the first outpatient follow-up appointment within 14 days after a new insulin regimen initiation. Secondary outcomes included the percentage of patients that require insulin titration at first follow up, any hospital or emergency department admissions for hypoglycemia or hyperglycemia prior to delivery, and maternal and neonatal complications.

RESULTS: In progress

CONCLUSIONS: In progress

8:30am – 8:50am R **EVALUATION OF VANCOMYCIN DOSING IN CRITICALLY ILL ADULTS RECEIVING PIRRT: A RETROSPECTIVE COHORT STUDY** Room D

Presenters: Cecily Groves

TITLE: EVALUATION OF VANCOMYCIN DOSING IN CRITICALLY ILL ADULTS RECEIVING PIRRT: A RETROSPECTIVE COHORT STUDY

AUTHORS: Lynn Bass, Dustin Bryan, Michael Crawford, Peter Ginn, Melissa Steedly

OBJECTIVE: Determine if 10 mg/kg vancomycin dosing achieves target attainment with initial serum level compared to 15 mg/kg dosing in patients receiving PIRRT.

SELF ASSESSMENT QUESTION: Current literature recommends what mg/kg dosing post-PIRRT?

A.25 mg/kg

B.10 mg/kg

C.9 mg/kg

D.15 mg/kg

BACKGROUND: Prolonged intermittent renal replacement therapy (PIRRT) is a hybrid between continuous renal replacement therapy and intermittent hemodialysis, usually lasting 6-12 hours. PIRRT is better tolerated than intermittent hemodialysis in hemodynamically unstable patients. The recommended dosing of vancomycin for patients receiving PIRRT is a 15-25 mg/kg loading dose and 15mg/kg dose post-PIRRT. However, this regimen resulted in supratherapeutic vancomycin levels at Cape Fear Valley Medical Center (CFVMC). In December of 2020, a 10 mg/kg vancomycin dosing protocol post-PIRRT was implemented. The purpose of this study is to determine if 10 mg/kg vancomycin dosing achieves target attainment (15 to 20 mg/mL or an AUC/MIC of 400 to 600 mg h/L) with initial serum level compared to 15 mg/kg dosing in patients receiving PIRRT.

METHODOLOGY: A single-center, retrospective cohort study was conducted on adult patients admitted to the ICU from November 2019 to November 2021. Eligible patients received both PIRRT and IV vancomycin concurrently and had at least one vancomycin serum level obtained while on PIRRT. Exclusion criteria included women who were pregnant. The primary outcome was to determine if 10 mg/kg vancomycin dosing achieves target attainment with initial serum level compared to 15 mg/kg dosing in patients receiving PIRRT. Secondary outcomes described the number of supratherapeutic or subtherapeutic levels with 10 mg/kg dosing and to describe how patient weight impacts the attainment of initial therapeutic level in a 10 mg/kg dosing.

RESULTS: In process

CONCLUSIONS: In process

8:30am – 8:50am R **Impact of intraoperative methadone combined with an enhanced recovery after surgery protocol on postoperative outcomes in cardiac surgery patients** Room E

Presenters: Katelyn Jimison

TITLE: Impact of intraoperative methadone combined with an enhanced recovery after surgery protocol on postoperative outcomes in cardiac surgery patients

AUTHORS: Katelyn Jimison, Brittany Wills, Michael Bates, Samara Boyd, Joseph Elbeery

OBJECTIVE: Evaluate the impact of intraoperative methadone in combination with a postoperative ERAS protocol on recovery and postoperative opioid use in cardiac surgery patients.

SELF ASSESSMENT QUESTION: What is the benefit of intraoperative methadone in patients undergoing cardiac surgery?

BACKGROUND: Pain is common in the postoperative setting, and uncontrolled pain is associated with complications including atelectasis, pneumonia, longer duration of mechanical ventilation, and increased likelihood of chronic pain after surgery. Enhanced Recovery After Surgery (ERAS) protocols are multimodal care pathways designed to decrease perioperative complications, decrease postoperative opioid use, and expedite return to baseline functional status. Methadone is a unique opioid with favorable qualities in the perioperative setting, including a long half-life and multimodal analgesia. Although intravenous (IV) methadone has demonstrated benefit in spinal and pediatric surgeries, limited data exist regarding its use in cardiac surgery patients.

METHODOLOGY: This retrospective cohort study included adult patients receiving postoperative care following coronary artery bypass graft (CABG) or valve procedures. The primary objective of this study was to determine if utilization of intraoperative methadone in combination with a postoperative ERAS protocol decreased the use of postoperative opioids compared to an ERAS protocol alone. Secondary objectives include postoperative length of stay, postoperative pain scores, and incidence of opioid-related adverse effects.

RESULTS: Final analysis included 487 patients admitted to the CVICU following cardiac surgery, including 120 who received intraoperative methadone. A preliminary analysis using a multivariate regression model demonstrated that methadone use was associated with significantly lower opioid consumption in the first 24 hours following surgery.

CONCLUSIONS: Preliminary results suggest that administration of intraoperative methadone during cardiac surgery resulted in significantly lower opioid utilization within 24 hours postoperatively.

8:30am – 8:50am R **Implementation of a QTc-Interval Monitoring Tool to Decrease Arrhythmia Risks in Patients at a Large Community Hospital** Room C

Presenters: John Shadowen

TITLE: Implementation of a QTc-Interval Monitoring Tool to Decrease Arrhythmia Risks in Patients at a Large Community Hospital

AUTHORS: John Shadowen, Hong Duong, Stephen Turner, Charles Durant

OBJECTIVE: Provide ways to evaluate QTc prolonging medications and risk factors.

SELF ASSESSMENT QUESTION: What is one way in which pharmacists can improve patient safety and outcomes when evaluating QTc-prolonging medications?

BACKGROUND: A prolonged QTc-interval is a disorder of myocardial repolarization that can result in an increased risk of a potentially life-threatening polymorphic ventricular tachycardia known as Torsades de pointes (TdP). The risk of drug induced TdP is estimated to be much greater in hospitalized patients than outpatients because of the numerous acute events/conditions they are experiencing among admission, as well as the various medications they may receive during their stay. An online database known as CredibleMeds was launched in order to provide information regarding drug-drug interactions with QTc prolongation and to help measure the quality of healthcare providing at facilities by the Center for Medicare and Medicaid Services3. By utilizing this database and previous research, Tisdale et al. was able to create a QTc monitoring tool to assess the risk of QTc prolongation and ultimately help guide treatment interventions. Because of the large number of drugs that contribute to QTc prolongation, clinicians may experience difficulty in quickly evaluating patient's for QTc prolongation. This study aims to improve the efficiency of patient risk assessment for QTc prolongation by providing a simplified tool in EPIC that can categorize a patient's risk based on several factors.

METHODOLOGY: A retrospective chart review will be conducted in patients who were at high risk for QTc prolongation during admission. The patient population will consist of adults aged 18 years of age and older, who were initiated on a drug with known moderate to high-risk per the Credible Meds List and with other risk factors for QTc prolongation such as elderly, prolonged baseline QTc-interval, electrolyte abnormalities, acute adverse events, etc. Data for patients meeting criteria will be collected and analyzed over approximately a one-year period. integrate a systemwide QTc monitoring tool.

RESULTS: Sevnty two elgibile participants were included out of the one hundred and fifteen total pateints screened. The proprotion of pateints with a QTc interval of 500 ms or greater was 25%. Repeat ECGs were conducted in 68% of patients. The percent of patients that developed an arrythmia was 15%. SImilarly, the percent of patients with a medication adjustment was 15%. None of the patients included expired. The median length of hospital stay was 24 days.

CONCLUSIONS: Arrhythmias were prevelant in the patients we observed, most notably the olanzapine group in the subanalysis. There were medication adjustments in each of the patients that developed arrythmias. However, the development of arrhythmias and lack of initial adjustments may have contributed to increased lengths of stay in some patients. Our goal is to improve awareness, provide education, and standardize the assessment approach of potential QTc prolongation due to both medications and risk factors to improve patient outcomes.

8:30am – 8:50am | **EVALUATING THE CLINICAL IMPACT OF THE PCR-BASED BLOODSTREAM CULTURE IDENTIFICATION PANELS IN CRITICALLY ILL PATIENTS AT A COMMUNITY HOSPITAL** Room F

Presenters: Zayd Ahmad

TITLE: EVALUATING THE CLINICAL IMPACT OF THE PCR-BASED BLOODSTREAM CULTURE IDENTIFICATION PANELS IN CRITICALLY ILL PATIENTS AT A COMMUNITY HOSPITAL

AUTHORS: Zayd Ahmad, Brook Jacobs, Anh Nguyen

OBJECTIVE: Identify potential clinical, stewardship, and financial benefits associated with the implementation of the Bloodstream Culture Identification Panels in the inpatient setting.

SELF ASSESSMENT QUESTION: What is one area in which the implementation of the BCID Panels may indirectly impact patient outcomes?

BACKGROUND: This study was designed to evaluate the benefit of the Bloodstream Culture Identification (BCID) Panels in reducing time to appropriate intervention of antimicrobial therapy in critically ill adults with bloodstream infections.

METHODOLOGY: This study was a single-center, pre-post intervention, retrospective analysis including adults admitted to medical ICU with positive bloodstream cultures. The ePlex® BCID Panels were implemented in April 2021. The primary endpoint was time to appropriate antimicrobial intervention. Secondary endpoints were incidence of ICU length-of-stay, acute kidney injury, *Clostridioides difficile* infections, number of escalations and number of de-escalations, hospital length-of-stay, 90-day readmission, and in-hospital mortality.

RESULTS: The patients in the post-intervention group had a reduction in time to appropriate antimicrobial therapy of 17.6 hours. This difference was statistically significant (p = 0.018). ICU length-of stay was 16.3 days in the pre-intervention group and 15.1 days in the post-intervention group. Incidence of acute kidney injury did not differ significantly between the two groups. No incidences of *Clostridioides difficile* infection occurred. Hospital length of stay, 90-day readmission, and in-hospital mortality were similar between the two groups.

CONCLUSIONS: The findings reaffirm evidence from previous trials that the implementation of the BCID is a useful tool for faster adjustments to appropriate antimicrobial therapy. These tools help to advance antimicrobial stewardship directives and limit unnecessary or ineffective therapies. However, determining the direct clinical impacts of their use remains difficult.

8:30am – 8:50am | **Evaluation of Provider-Specific Empiric Anti-Infective Prescribing in a Community Hospital** Room G

Presenters: Jacob Risen

TITLE: Evaluation of Provider-Specific Empiric Anti-Infective Prescribing in a Community Hospital

AUTHORS: Jacob Risen, Heather Gibson, Joslyn Sikkenga, Andrew Kessell

OBJECTIVE: Understand how to develop a process to assess individual provider orders for broad-spectrum anti-invectives.

SELF ASSESSMENT QUESTION: What are three common infections that could benefit from a reduced use of broad-spectrum anti-infectives in patients that lack risk factors?

BACKGROUND: Design a process to determine if there is a difference in the number of orders for broad-spectrum anti-infectives in select disease states between providers.

METHODOLOGY: Providers that ordered antibiotics between January 1, 2021 and September 1, 2021 for patients with a diagnosis of pneumonia, urinary tract infection, or skin and soft tissue infections were included. Targeted broad-spectrum antibiotics include meropenem, imipenem/cilastatin, cefepime, or piperacillin/tazobactam. Data analyzed included the total number of antibiotics ordered by each provider for each disease state and number of orders for each of the listed targeted broad-spectrum antibiotics. Providers will be grouped based on their area of practice, hospitalist or intensivist. Orders to be excluded from this study include patients being treated by infectious disease providers, patients less than 18 years of age, or any order not meeting inclusion criteria.

RESULTS: In process

CONCLUSIONS: In process

8:30am – 8:50am L **Dosing and Monitoring of Unfractionated Heparin in the Cirrhosis Population** Room K

Presenters: Mitchell Hutson

TITLE: Dosing and Monitoring of Unfractionated Heparin in the Cirrhosis Population

AUTHORS: Mitchell S. Hutson, John R. Yates, Sara Catherine S. Pearson, Anthony S. Rowe, Nicholas Allen

OBJECTIVE: Determine if heparin regimens for venous thromboembolism should be altered for patients with cirrhosis

SELF ASSESSMENT QUESTION: Patients with cirrhosis experience what coagulation changes when compared to patients without a diagnosis of cirrhosis?

BACKGROUND: Patients with cirrhosis experience complex hemostatic changes. Many assume these patients are only prone to bleeding events; however, multiple studies show increased rates of venous thromboembolism compared to the general population. Heparin remains a commonly used parenteral anticoagulant in the acute care setting. Unfortunately, literature surrounding heparin dosing and monitoring in the cirrhosis population is lacking.

METHODOLOGY: Patients who received a continuous heparin infusion between January 1, 2020 and October 1, 2021 were screened for inclusion. Exclusion criteria include patients diagnosed with COVID-19, patients with genetic coagulopathies, patients on heparin for less than 12 hours without a therapeutic PTT, and those on concomitant intra-arterial heparin or alteplase. The primary endpoint is heparin dose at a therapeutic PTT level. Pertinent secondary endpoints include time to therapeutic PTT, bleeding per the International Society on Thrombosis and Hemostasis (ISTH) bleeding definition, secondary venous thromboembolism, length of hospital stay, change in platelet count, and mortality. It was determined that 64 subjects in each cohort provides 80 percent power to detect a difference of 11 percent for the primary outcome.

RESULTS: Mean heparin rate in patients with cirrhosis was 14.2 units/kg/hr compared to 16.1 units/kg/hr in the non-cirrhosis population ($p = 0.037$). Furthermore, patients with cirrhosis achieved a therapeutic PTT in approximately 30 hours compared to 20 hours for non-cirrhosis patients ($p = 0.0292$).

CONCLUSIONS: Patients with cirrhosis require a lower heparin infusion rate to achieve a therapeutic PTT when compared to patients without a cirrhosis diagnosis. These patients also experienced a prolonged time to a therapeutic PTT value. Clinical outcomes, such as bleeding and secondary thombosis were not different between the two groups.

8:30am – 8:50am P **Impact of Enhanced Surgical Recovery on Patient Opioid Requirements Following Cesarean Delivery** Room B

Presenters: Amie Sauer

TITLE: Impact of Enhanced Surgical Recovery on Patient Opioid Requirements Following Cesarean Delivery

AUTHORS: Amie Sauer, Kendra Spilkin, Susan Publow

OBJECTIVE: Determine the impact of an ESR order set in the perioperative care of patients who undergo Cesarean delivery.

SELF ASSESSMENT QUESTION: Which of the following are potential therapeutic options in ESR for C-section delivery?

BACKGROUND: Enhanced surgery recovery (ESR) has been evaluated in the setting of different surgical procedures to improve quality of patient care. ESR is a standardized, perioperative program that creates a focused care process. The goal is to improve patient outcomes without increasing the risk of complications. It focuses on preoperative strategies, intraoperative management, and post-operative care. Strategies include nonopioid analgesia, avoiding prolonged fasting before surgery, and early mobilization. The American College of Obstetricians and Gynecologists recommends a stepwise, multi-modal and non-opioid analgesia approach as first-line treatment following cesarean (C-section) delivery. Previous studies have demonstrated ESR resulted in increased multimodal use, reduced inpatient opioid requirements, decreased post-operative length of stay, and reduced complications. The purpose of this study is to evaluate the impact of ESR following a C-section delivery.

METHODOLOGY: Patients ages 18 to 89 years of age who underwent planned C-section delivery pre- and post-ESR implementation were evaluated as part of a single-center, retrospective chart review. The primary objective was to compare opioid requirements following C-section delivery. Spanning from January 2018 to July 2021, three time periods were evaluated including the pre-implementation phase, the removal of intravenous narcotics phase, and the post-ESR implementation phase.

RESULTS: In progress

CONCLUSIONS: In progress

8:30am – 8:50am D **Standard ferrous sulfate dosing effect on neonatal red blood cell transfusions** Room H

Presenters: Aubrey Slaughter

TITLE: Standard ferrous sulfate dosing effect on neonatal red blood cell transfusions

AUTHORS: Aubrey Slaughter, Courtney Campbell, Katelyn Hood, Quyen Pham

OBJECTIVE: At the conclusion of my presentation, the participant will be able to identify if an increased standard ferrous sulfate supplementation impacts the number of red blood cell transfusions in the neonatal intensive care unit.

SELF ASSESSMENT QUESTION: What adverse clinical outcomes may be associated with increased red blood cell transfusions in neonates?

BACKGROUND: Infants with low birth weights are at higher risk of iron deficiency and poor health outcomes. Early supplementation with ferrous sulfate can help reduce low hemoglobin and hematocrit levels. However, the optimal strategy for repletion in preterm neonates is lacking. Previous neonatal intensive care unit (NICU) feeding protocols at the Children's Hospital of Georgia ranged from 2 to 4 mg/kg/day based on specific weight categories. In July 2020, the protocol was updated to increase ferrous sulfate supplementation to 6 mg/kg/day in all infants initiated on feeding protocol admitted to the NICU, regardless of weight. Starting adequate iron supplementation when infants are initiated on a feeding protocol may lead to a decreased need for transfusions. The purpose of this study is to determine if increased standard ferrous sulfate supplementation impacts the number of RBC transfusions in the NICU.

METHODOLOGY: This is a single-site, retrospective chart review of patients who were less than 1800 grams at birth or less than 34 weeks gestation age who were admitted to the NICU and started on a feeding protocol between July 1, 2019 and July 31, 2021. The primary outcome is the number of RBC transfusions in the NICU. Secondary outcomes include adverse clinical outcomes of RBC transfusions, need for respiratory support, and side effects of ferrous sulfate. Statistical methodology includes descriptive statistics for patient demographics and chi-squared test for the primary outcome.

RESULTS: Of the 314 patients analyzed, the average gestational age was 29.8 weeks, 166 patients (53%) were male, and the average NICU length of stay was 45 days. The average number of red blood cell (RBC) transfusions in the post-group was 1.1 per patient compared to 1 per patient in the pre-group (p=0.709).

CONCLUSIONS: Overall, the increased standard ferrous sulfate dose did not result in a statistically or clinically significant decrease in the number of RBC transfusions per patient. Patients who received a RBC transfusion had lower baseline hemoglobin values and were more likely to experience an adverse clinical outcome, such as bronchopulmonary dysplasia or necrotizing enterocolitis.

8:30am – 8:50am T **Improving transitions of care between in-patient and acute rehabilitation area within a single facility** Room A

Presenters: Trent Settles

TITLE: Improving transitions of care between in-patient and acute rehabilitation area within a single facility

AUTHORS: Trent Settles PharmD, Lila Newman PharmD, Kathy Calloway-Sykes, PharmD, MBA

OBJECTIVE: To identify the average number of discrepancies per patient when performing medication reconciliation in the admission process within a community hospital to an acute rehabilitation setting

SELF ASSESSMENT QUESTION: Which of the following is NOT one of the data points utilized when observing MEDCOINS?

BACKGROUND: Review the current transitions of care process from the inpatient setting to the acute rehabilitation area within the same hospital and determine the type of errors occurring in the current design

METHODOLOGY: Utilizing the facility's electronic medical record, patients that will be discharged from inpatient services to acute rehabilitation within the same facility were identified and assessed on the correct medications being continued from admission to the hospital through admission to rehab. Patients will be stratified based on their MEDCOINS score: medication count, comorbidity count, and health insurance status: >10 or more medications, >6 or more comorbidities and whether the patient had insurance or not. Nursing managers on the acute rehabilitation floor were contacted and asked their biggest issues that they notice when patients are admitted to rehab from the inpatient setting. Pharmacists and providers were contacted and asked their biggest concerns with both the order entry and order verification processes and their thoughts on how to address these issues to make the transition process more efficient. The market director of clinical informatics was contacted and demonstrated how to properly discharge a patient and admit them to the rehabilitation floor.

RESULTS: The average number of total discrepancies were 2.7 per patient. Common discrepancies were wrong dose, wrong directions for use, wrong frequency, and medications that should have been discontinued upon discharge still being on the admission medication list. The average patient reviewed had 14 medications upon admission to the rehabilitation floor. The average number of comorbidities were 6.7 per patient. All patients reviewed had insurance upon admission to the rehabilitation floor. The average length of stay was 13.4 days per patient.

CONCLUSIONS: The results show the need for a change in the current medication reconciliation process. The average patient had greater than 10 medications and 6 comorbidities, which are endpoints shown to have more errors based on the MEDCOINS scoring method. Meetings with the acute rehabilitation nursing manager gave hope towards the pharmacy department taking over medication reconciliation and lessening the burden on the nursing staff. Re-education of medication reconciliation processes may be an effective alternative if pharmacy is not involved in the medication reconciliation process. Future ideas could compare a pharmacy technician-led medication reconciliation program and use this data as a comparator group.

8:50am – 9:10am A **EVALUATING THE DOCUMENTATION OF HEPATITIS VACCINATIONS IN VETERANS ELECTRONIC MEDICAL RECORD** Room L

Presenters: Ryan Dushak

TITLE: EVALUATING THE DOCUMENTATION OF HEPATITIS VACCINATIONS IN VETERANS ELECTRONIC MEDICAL RECORD

AUTHORS: Ryan Dushak, Dorothy Jenrette, Rachel Madden, Jessi Shelton

OBJECTIVE: Describe the accuracy of hepatitis vaccination documentation in Veterans' immunization records pre and post implementation of a templated immunization note.

SELF ASSESSMENT QUESTION:How does adding a templated immunization note contribute to patients' overall healthcare?

BACKGROUND: In adults, hepatitis-B vaccination is recommended for patients with no evidence of prior infection but are at high risk of acquiring infection. Ensuring that patients are properly vaccinated, and that vaccinations are documented correctly is extremely important in protecting overall health. The purpose of this project is to review hepatitis vaccine orders to ensure that vaccinations are documented accurately and to assess the effectiveness of a templated immunization note that was implemented in 2019.

METHODOLOGY: This was a quality improvement project at a Veterans Affairs Medical Center, consisting of a medication order database evaluation to identify eligible patients followed by a medical record review. All patients with hepatitis A-B or hepatitis-B vaccine orders between 1/1/2017 and 7/31/2021 were included. We compared the patient's immunization record to text in progress notes to determine the accuracy of documentation. We updated the record in instances where the immunization was not recorded. The primary outcome was the percentage of immunizations administered which matched the immunization record. The secondary outcome was to determine identifiable causes of inaccuracy and to provide nursing education on documentation. Patients on hemodialysis at an outside facility and employees were excluded.

RESULTS: Out of 1477 administered vaccines, the immunization documentation was accurate 66% of the time prior to the implementation of the templated immunization note and 93% accurate afterwards.

CONCLUSIONS: Documentation accuracy improved from 66% to 93% following implementation of the templated immunization note. The most common cause of inaccuracy was "encounter coding for vaccinations" not being used. This error rate improved from 33.5% to 6% after the implementation of the templated note.

Ryan.Dushak@va.gov

8:50am – 9:10am B **Evaluation of management of alcohol use disorder in Veterans by a clinical pharmacy specialist integrated within the primary care setting** Room I

Presenters: Bianca Creith

TITLE: Impact of a clinical pharmacy practitioner managing alcohol use disorder in a primary care setting
AUTHORS: Bianca Creith, Austin Smith, Michelle Colvard, Rebecca Cripps
OBJECTIVE: Increase access to medications for alcohol use disorder via medication evaluation and prescribing by a clinical pharmacist embedded in primary care
SELF ASSESSMENT QUESTION: Which Alcohol Use Disorder Identification Test-Consumption (AUDIT-C) score is considered "high-risk drinking" and would likely benefit from pharmacotherapy and psychosocial interventions?
BACKGROUND: Three medications are currently FDA-approved for treatment of AUD. Despite availability of pharmacotherapy, medication for AUD (MAUD) is infrequently offered and prescribed. Studies show that management of AUD within primary care leads to higher treatment engagement, greater utilization of pharmacotherapy, and greater reductions in heavy drinking days. This resident-led clinic seeks to increase access to and provide medications for AUD within the primary care setting and to serve as an extension of the primary care provider in addressing alcohol-related concerns.
METHODOLOGY: This is a quality improvement initiative aimed at increasing access to MAUD within the primary care setting (PACT) at the VA Tennessee Valley Healthcare System. Any patient with a formal diagnosis of AUD or excessive alcohol consumption may be appropriate for referral. In addition to referrals, patients with a diagnosis of an alcohol use disorder or a positive AUDIT-C will be identified via VA dashboards. Data points collected will include the following: age, gender, race, last AUDIT-C score, date of last AUDIT-C, date of last primary care appointment, and date of last mental health appointment if applicable. Manual chart review will be completed for all patients extracted. Patients suitable for clinic enrollment will be contacted via telephone regarding enrollment or a chart review note will be documented alerting PACT team members to consider referral if the patient has an upcoming primary care appointment. Patients with the following will be excluded: history of polysubstance use (dependent on/using more than one substance aside from alcohol), going through active or anticipated acute alcohol withdrawal symptoms, requires a higher level of care (e.g. high risk for suicide flag, schizophrenia), and unstable mental health status (e.g. psychiatric admission within the past 6 months).
RESULTS: In progress
CONCLUSIONS: In progress

8:50am – 9:10am B **Financial impact of a pharmacist-led transitions of care program in the primary care setting**

Presenters: Austin Rich Room J

TITLE: Financial impact of a pharmacist-led transitions of care program in the primary care setting
AUTHORS: Austin Rich, Mackenzi Meier, Ashley Woodhouse, Elizabeth Clements
OBJECTIVE: Identify the potential benefits of a pharmacist-led transitions of care (TOC) program in the primary care setting
SELF ASSESSMENT QUESTION: Which of the following is a potential benefit of a pharmacist-led TOC program in the primary care setting?
BACKGROUND: Pharmacist-led transitions of care (TOC) programs have been shown to reduce healthcare costs and improve patient outcomes; however, there are limited studies applying pharmacist-led TOC services in primary care settings. This study’s primary objective is to determine the number of pharmacist-initiated TOC encounters needed to financially sustain a pharmacist-led TOC program in the primary care setting.
METHODOLOGY: An IRB-waived retrospective chart review was performed on active, adult patients of St. Joseph’s/Candler Primary Care – Eisenhower who were discharged from St. Joseph’s or Candler Hospitals between September and December 2021. Patients were included if they had their initial post-discharge TOC call completed by a pharmacist within two business days of discharge and met transitional care management (TCM) billing criteria established by Centers for Medicare and Medicaid Services. Data, including reimbursement rate, TCM billing code, 30-day readmission, and average time spent on TCM services, was collected.
RESULTS: Twenty-five TCM calls were completed through the pharmacist-led program during the study period. Fifty-two percent (n=13) had a corresponding TCM visit that was billed utilizing 99495 (n=6) and 99496 (n=7) billing codes. On average, 34 minutes were spent on each patient, with 3.3 interventions made, and $240.21 reimbursed per visit.
CONCLUSIONS: The TOC program estimates an annual revenue generation of $97,804, while only requiring approximately 592 hours (0.3 full-time equivalent pharmacist hours), using the results of this study and estimated number of eligible patients. The results of this study suggest that a pharmacist-led TOC program shows potential for sustainability and financial growth in the primary care setting.

8:50am – 9:10am C **Evaluation of Rates of Recurrent Venous Thromboembolism and Major Bleeding in Patients That Underwent Reduced-Dose Direct Oral Anticoagulation Therapy** Room H

Presenters: Taylor Guelda

TITLE: Evaluation of Rates of Recurrent Venous Thromboembolism and Major Bleeding in Patients That Underwent Reduced-Dose Direct Oral Anticoagulation Therapy

AUTHORS: Taylor Guelda, Jeremy Bennett, Catrina Hill

OBJECTIVE: Evaluate the safety and efficacy of reduced-dose direct oral anticoagulation (DOAC) therapy for recurrent venous thromboembolism (VTE) and major bleeding at a single-center institution.

SELF ASSESSMENT QUESTION: Which DOACs are FDA approved at a reduced-dose to decrease the risk of VTE recurrence?

BACKGROUND: CHEST 2016 guidelines recommend treatment of VTE with therapeutic anticoagulation with a DOAC or vitamin K antagonist (VKA) for a minimum of 3 months. Previous trials have supported the use of reduced-dose DOAC therapy, however, these guidelines do not offer strong recommendations for reduced dosing in extended-phase therapy.

METHODOLOGY: This project is a randomized, single-center, quality improvement, retrospective chart review of patients aged 18 years or older on reduced-dose DOAC therapy with either apixaban or rivaroxaban for a VTE event after initially being treated for a minimum of 3 months. Patients with an indication for therapeutic dose anticoagulation therapy or an indication for anticoagulation other than VTE were excluded. For all patients included in this study, baseline demographics, safety, and efficacy data points were collected including but not limited to risk factors, CMP, CBC, ED visits, hospital admissions, and discontinuation rates.

RESULTS: 83 eligible patients were included in this review. The median age was 66 years, 47% had an index event of PE, 53% were on apixaban, the median BMI was 29, and 39.8% of the reduced-dose DOAC recommendations came from the specialty of Hematology/Oncology. Both the primary endpoint of rate of VTE recurrence and safety endpoint of major bleeding occurred in 0% of the population; 2.4% of patients experienced non-major bleeding. No patients discontinued therapy.

CONCLUSIONS: Reduced-dose DOAC therapy appears to be effective at preventing VTE recurrence while not providing an increased risk of bleeding in patients with a prior history of VTE.

8:50am – 9:10am R **Evaluation of an Antibiotic Selection Tool for Patients with Urinary Tract Infections Discharged from the Emergency Department** Room E

Presenters: Landon Stewart

TITLE: Evaluation of an Antibiotic Selection Tool for Patients with Urinary Tract Infections Discharged from the Emergency Department

AUTHORS: Landon F. Stewart, Renato Aranda, Jason Dover, Alan Moore

OBJECTIVE: Describe the implementation of an antibiotic selection tool for the treatment of urinary tract infections (UTIs) in the emergency department (ED).

SELF ASSESSMENT QUESTION: What challenge in the ED may affect appropriate antibiotic utilization?

BACKGROUND: Assess the impact of a pharmacist developed antibiotic selection tool on appropriate outpatient prescribing patterns for the treatment of UTIs in the ED.

METHODOLOGY: This is a quasi-experimental retrospective study evaluating the implementation of an antibiotic selection tool in the ED. The pre-intervention group is May-July 2020 and the post intervention group is May-July 2021. Patients were included if they were discharged from the ED within the specified time periods with a diagnosis of acute cystitis or early pyelonephritis and were >19 years old.

RESULTS: A total of 100 patients, 50 in each group, were analyzed in this study. Appropriate antibiotics were selected in 39/50 (78%) of the pre-intervention group and 42/50 (84%) of the post-intervention group ($p = 0.611$). Appropriate antibiotic duration occurred in 25/50 (50%) of the pre-intervention group and 34/50 (64%) of the post intervention group ($p = 0.103$). The composite of appropriate antibiotic and duration occurred in 23/50 (46%) of the pre-intervention group and 32/50 (64%) of the post treatment group, $p = 0.107$.

CONCLUSIONS: There was a trend towards improved appropriate antibiotic selection and duration seen in the post intervention group, however it was not statistically significant. Use of an antibiotic selection tool may improve appropriate antibiotic use in the emergency department, but other studies are needed to confirm this.

8:50am – 9:10am R **Neuromuscular blockade compared to no neuromuscular blockade in patients with acute respiratory distress syndrome: A Retrospective Cohort Study** Room D

Presenters: Martin Gordon

TITLE: Neuromuscular blockade compared to no neuromuscular blockade in patients with acute respiratory distress syndrome: A Retrospective Cohort Study

AUTHORS: Martin Gordon, Maelen Ignacio, Sarah Frye, Sanyia Khan, Karen Bryson

OBJECTIVE: At the conclusion of the presentation, the participant should be able to summarize the mortality difference between patients with moderate to severe acute respiratory distress syndrome receiving early continuous administration of a neuromuscular blocker compared to those patients who did not receive neuromuscular blockers.

SELF ASSESSMENT QUESTION: True or False: A difference was found in in-hospital mortality when patients with moderate to severe acute respiratory distress syndrome receive early continuous infusion of a neuromuscular blocker compared to patients with moderate to severe acute respiratory distress syndrome who do not receive a neuromuscular blocker.

BACKGROUND: The treatment approach for patients with acute respiratory distress syndrome (ARDS) is multi-factorial and includes strategies such as lung-protective ventilation and prone positioning. Pharmacologic interventions include a conservative fluid management strategy, corticosteroids, and neuromuscular blockers (NMBs). NMBs can facilitate mechanical ventilation by improving ventilator dyssynchrony. However, recent data has questioned their efficacy in the setting of ARDS. The purpose of this study was to evaluate the safety and efficacy of early continuous infusion of NMBs in patients with moderate to severe ARDS compared to patients not receiving early continuous infusion of NMBs regardless of sedation levels.

METHODOLOGY: This was a retrospective cohort study comparing the outcomes associated with patients with a diagnosis of moderate to severe ARDS receiving early NMBs versus those not receiving NMBs. To be eligible, patients needed to be admitted to an intensive care unit (ICU), be mechanically ventilated, and have a diagnosis of moderate to severe ARDS. The intervention group received continuous NMBs within 48 hours of ARDS diagnosis, and the control group did not receive continuous NMBs within 48 hours of diagnosis. Patients receiving a one-time dose of a NMB for procedures were not excluded. The primary endpoint was in-hospital mortality. Secondary outcomes were ICU mortality, days requiring mechanical ventilation, ICU length of stay, and hospital length of stay. A subgroup analysis was conducted on patients who were COVID-19 positive.

RESULTS: A total of 248 patient charts were provided and 147 charts were reviewed at random. A total of 57 patients were excluded for various reasons and 90 patients were included in the analysis. This provided the study a power of 90%. There were 51 patients assigned to the NMB group and 39 patients were assigned to the group with no NMB. Baseline characteristics were unevenly distributed between the two treatment arms. At the end of the study, 70.6% of patients in the NMB group died in the hospital vs 61.5% in the group not receiving NMBs ($p = 1.0000$). There were no significant differences between the two groups with respect to most of the secondary outcomes including ICU mortality (70.6% vs 61.5%, $p = 1.0000$), ICU length of stay (11 days vs 8 days, $p = 0.0986$), or hospital length of stay (15 days vs 13 days, $p = 0.1468$). However, there was a significant difference noted in days requiring mechanical ventilation (9 days vs 6 days, $p = 0.0394$). There was no significant difference in the safety outcomes of new onset atrial fibrillation (7.8% vs 12.8%, $p = 0.4934$), supraventricular tachycardia (9.8% vs 10.3%, $p = 1.0000$), and barotrauma (19.6% vs 23.8%, $p = 0.7960$).

CONCLUSIONS: Among patients with moderate to severe ARDS, there was no significant difference in in-hospital mortality for patients who received early continuous infusion of NMB compared to those who did not. No statistical differences were seen when analyzing most of the secondary endpoints or any of the safety outcomes. There was a difference in days requiring mechanical ventilation, with results favoring the group not receiving NMBs. The disparities in steroid utilization and prone positioning between the two groups are confounders that cannot be ignored as these are interventions that have shown mortality benefit in historical trials. Further investigation is needed to elucidate the mortality benefit of neuromuscular blockers in patients with moderate to severe ARDS.

8:50am – 9:10am R **Treatment of Acute Exacerbation of COPD in the Emergency Department; What Keeps Patients from Representing?** Room C

Presenters: Sandrah Almond

TITLE: Treatment of Acute Exacerbation of COPD in the Emergency Department; What Keeps Patients from Representing?

AUTHORS: Sandrah-Ann Almond, William Wilkie, Brant Niedenthal, Aubrie Rafferty

OBJECTIVE: Identify factors that may contribute to high representation rates in patients who present to the emergency department for treatment of an acute exacerbation of COPD.

SELF ASSESSMENT QUESTION: What percent of patients that present to the ED for an AECOPD will represent within 30 days?

BACKGROUND: Acute exacerbation of COPD (AECOPD) is a major healthcare expense and leads to a significant resource utilization. Up to 82.2% of patients with AECOPD who present to the emergency department (ED) will represent to the health system within 30 days and as much as 50% of these patients do not receive appropriate therapy or placement. This study aims to determine if patients treated for AECOPD with intravenous (IV) steroids in the ED and are then sent home have higher 30-day representation rates.

METHODOLOGY: This is a multi-hospital, retrospective, institutional review board approved, study at Mission Health System. Patients will be included if they present to the ED between January 1, 2018 and December 31, 2019 for the management of an AECOPD and are discharged from a Mission Health System ED. Patients will be excluded if they do not live within the 18 pre-defined counties, leave against medical advice, or if their representation was not deemed to be COPD-related. Baseline demographics, including age, sex, medical insurance, smoking status, ED COPD treatment regimen, discharge COPD medications, and re-presentation data will be collected. The primary outcome of this study is to evaluate the impact of intravenous corticosteroids on representation. Additional data will aim to identify presences of additional risk factors that place patients at a high risk of representation.

RESULTS: In progress

CONCLUSIONS: In progress

8:50am – 9:10am I **De-escalation of broad spectrum anti-infectives utilizing a pharmacist led penicillin allergy questionnaire** Room G

Presenters: Marwa Woday

TITLE: De-escalation of broad spectrum anti-infectives utilizing a pharmacist led penicillin allergy questionnaire

AUTHORS: Marwa Woday and Komal Patel

OBJECTIVE: Describe the impact of a penicillin allergy questionnaire on the reduction of broad-spectrum antibiotic use.

SELF ASSESSMENT QUESTION: Does a pharmacist-led penicillin allergy questionnaire have an impact on appropriately de-escalating antibiotics?

BACKGROUND: Penicillin allergy labels are highly prevalent among hospitalized patients, with up to 10% of the population reporting one. This often deters providers from prescribing narrow and appropriate therapy which can increase the risk of resistance. The purpose of this study was to determine if a pharmacist-led penicillin allergy questionnaire would reduce the number of patients who remained on broad-spectrum antibiotics due to a listed penicillin allergy that is not anaphylactic in nature. AdventHealth Redmond has a very robust antimicrobial stewardship program that includes weekly interdisciplinary rounds and daily antimicrobial chart review.

METHODOLOGY: This was a single center, retrospective study conducted at a community teaching hospital. Pharmacists conducted the penicillin allergy questionnaire with patients who were selected utilizing our clinical monitoring system and were on aztreonam or meropenem. Primary outcome was the percent of patients who were de-escalated from aztreonam or meropenem pre and post intervention. Secondary outcomes included the number of patients who experienced C. difficile or who experienced an allergic reaction.

RESULTS: 20 patients were included in the pre-intervention and 22 were included in the post-intervention group. Percent de-escalation in the pre-intervention and post-intervention group was (13 [65%] vs 16 [72%], p value = 0.299). There were no occurrences of C. difficile or allergic reactions post de-escalation in either group.

CONCLUSIONS: Use of a penicillin allergy questionnaire did not result in statistically significant results for any of the outcomes. We concluded this may occur since we have a robust antimicrobial stewardship program in place.

8:50am – 9:10am I **Utility of a Risk Assessment Model in Predicting 30-day Unplanned Hospital Readmission in Adult Patients Receiving Outpatient Parenteral Antibiotic Therapy** Room F

Presenters: Ethan Brenneman

TITLE: Utility of a Risk Assessment Model in Predicting 30-day Unplanned Hospital Readmission in Adult Patients Receiving Outpatient Parenteral Antibiotic Therapy

AUTHORS: Ethan Brenneman, Jason Funaro, Richard Drew, Michael Yarrington, Hui-Jie Lee

OBJECTIVE: Define the risk factors for unplanned readmission in OPAT patients and explain the validation process of a risk prediction model.

SELF ASSESSMENT QUESTION: What risk factors are most associated with readmission in OPAT patients?

BACKGROUND: Validate and refine an established 30-day unplanned hospital readmission risk assessment model for adult patients receiving outpatient parenteral antibiotic therapy (OPAT).

METHODOLOGY: A retrospective review of adult patients who were discharged from Duke University Hospital or Duke Regional Hospital and enrolled in the Duke University Health System OPAT program between July 1, 2019 and February 1, 2020 was conducted. The review captured the 6 patient risk predictors based on the established model: age, Charlson comorbidity score, number of prior hospitalizations in the preceding 12 months, concurrent receipt of more than one IV antimicrobial agent, type of infection, and mode of OPAT delivery. Additional possible readmission risk factors were captured: aminoglycoside use, vancomycin use, OPAT delivery in a Skilled Nursing Facility, and history of IV drug abuse. The discriminative ability of the model to predict 30-day unplanned hospital readmission was validated with the collected data. A logistic regression model fitted with the additional risk factors was conducted to determine their impact on the discriminative ability of the model.

RESULTS: The primary analysis included 470 distinct OPAT episodes. When comparing Duke OPAT patients with those of the UK model, Duke patient were sicker (mean Charlson Comorbidity Score 3 vs 1), were treated for deeper seeded infections, and received OPAT through different modes. Overall the 30-day unplanned readmisision rate was 20.0%. The UK model was unable to discriminate between patients with readmission and those without. The additional risk factors were also non-significant between the groups and the updated model could not predict 30-day readmission risk.

CONCLUSIONS: The UK 30-day unplanned readmission model did not predict patient risk of readmission for the Duke OPAT population.

8:50am – 9:10am L **Process of Implementing Xarelto for VTE Prophylaxis and Analyzing Cost Savings and Patient Outcomes** Room K

Presenters: Hannah Gipson

TITLE: Process of Implementing rivaroxaban for VTE Prophylaxis and Analyzing Cost Savings and Patient Outcomes

AUTHORS: Hannah Gipson, Pharm.D.; Jonathan Spry, Pharm.D.,BCPS

OBJECTIVE: To discuss the implementation process of rivaroxaban for VTE prophylaxis and analyze the potential for cost savings in comparisons to equivalent alternative therapies.

SELF ASSESSMENT QUESTION: In what patient would rivaroxaban not be appropriate for VTE prophylaxis?

BACKGROUND: In 2019, rivaroxaban was approved by the FDA for the prevention of venous thromboembolism (VTE) in acutely ill hospitalized patients who are at risk for thromboembolic complications during their admission but are not at high risk of bleeding. The purpose of this project is to implement rivaroxaban as a treatment option for VTE prophylaxis in medical patients who meet appropriate usage criteria. A VTE advisory is currently implemented in the electronic system for patients who are potential candidates for VTE prophylaxis. At our institution, rivaroxaban has a significant cost reduction in comparison to its equally efficacious predecessors on the advisory for VTE prophylaxis. Patient’s quality of life can also benefit from its once daily oral dosing.

METHODOLOGY: Literature was reviewed prior to requesting addition of rivaroxaban to the current VTE prophylaxis advisory. Because the current VTE advisory does not include rivaroxaban, data was collected on current medication selections for VTE prophylaxis prior to its planned addition. Initially the updated order sets for the VTE advisory will be created for medical patients. Medical staff will be educated on the availability of its usage once the order set is implemented into the electronic system. Outcomes measured after including rivaroxaban on the VTE advisory for medical patients will include both safety and efficacy. A cost analysis will be performed between VTE prophylaxis options and treatment selections.

RESULTS: In progress

CONCLUSIONS: In progress

8:50am – 9:10am P **Morphine milligram equivalents of discharge opioids among inpatient spinal cord injury patients treated with transdermal buprenorphine: a descriptive analysis** Room B

Presenters: Julie Parker

TITLE: Morphine milligram equivalents of discharge opioids among inpatient spinal cord injury patients treated with transdermal buprenorphine: a descriptive analysis

AUTHORS: Julie Parker, Dina Nakhleh, Carly Warner

OBJECTIVE: At the conclusion of this presentation the participant will be able to describe the impact of inpatient transdermal (TD) buprenorphine use in spinal cord injury (SCI) patients.

SELF ASSESSMENT QUESTION: What are the risks of opioid overuse in SCI patients?

BACKGROUND: SCI pain management requires multimodal treatment strategies to treat both neuropathic and nociceptive pain. Opioid overuse in the SCI population places patients at increased risk of falls, hypotension, urinary retention, and constipation. The purpose of this study is to describe how inpatient use of TD buprenorphine, an extended-release opioid, impacts the quantity of opioid prescriptions at discharge.

METHODOLOGY: This was a retrospective chart review of 93 SCI patients who received TD buprenorphine for two or more weeks during their inpatient stay at Shepherd Center. Patients were excluded if TD buprenorphine was used for opioid use disorder or cancer pain, discharged to higher level of care, or had a primary diagnosis other than SCI. Baseline characteristics as well as primary and secondary endpoints will be analyzed via descriptive statistics.

RESULTS: Of the 92 patients included, 70 were discharged with opioid prescriptions. The average MME among discharge opioid prescriptions was 40 MME, with most prescriptions being between 20 and 45 MMEs. The most commonly prescribed opioids were tramadol (49%) and acetaminophen/codeine (31%).

CONCLUSIONS: A total of 76% of the spinal cord injury patients received an opioid prescription at discharge after receiving transdermal buprenorphine while inpatient. Of those patients with a discharge opioid prescription, 24% had MME >50 and 17% had concurrent benzodiazepine, sedative or hypnotic prescriptions.

8:50am – 9:10am T **Design and integration of pharmacy services in a hospital at home model** Room A

Presenters: Noah Fawcett

TITLE: Design and integration of pharmacy services in a hospital at home model

AUTHORS: Noah Fawcett, Beth Williams, Meredith Hollinger, Minal Patel

OBJECTIVE: Describe the design, implementation, and impact of pharmacist provided services in a Hospital at Home population.

SELF ASSESSMENT QUESTION: What is one disease state in which a pharmacist can impact patient care in the hospital at home setting?

BACKGROUND: Pharmacy integration in the Hospital at Home care model will explore a novel mechanism of clinical pharmacy services. Through this study, the system will identify services that are most beneficial when acute care is continued in the home. The desired outcome is to address a current gap in health care and provide a framework for other health systems to address this gap. Future phases will focus on objective endpoints related to value-based care.

METHODOLOGY: In this prospective, single-center study, pharmacy support will target specific patients who meet pre-specified inclusion criteria. Descriptive statistics will be utilized to describe the design, implementation, and impact of pharmacy services in the Hospital at Home model. The primary outcome is the total number of pharmacy services provided. Other outcomes to be analyzed include number of patients reviewed by pharmacists, number and type of interventions, errors prevented, and time spent by pharmacy personnel. The health system will utilize results from this study to determine the feasibility and scalability of continued clinical pharmacy services in this care model.

RESULTS: In progress

CONCLUSIONS: In progress

9:10am – 9:30am B **Evaluation of a bilingual pharmacist-managed outpatient diabetes program** Room I

Presenters: Rachele Hollis

TITLE: Evaluation of a bilingual pharmacist-managed outpatient diabetes program

AUTHORS: Rachele Hollis; Hiba Yacout; Bradley L. Smith; Allison Leidheiser

OBJECTIVE: Identify the utility of a bilingual pharmacist-led disease state model and future directions for research.

SELF ASSESSMENT QUESTION: How can pharmacists make an impact in diabetes care regarding diabetes management?

BACKGROUND: The purpose of this study is to compare HgbA1c lowering in diabetes management before and after implementation of bilingual clinical pharmacy services.

METHODOLOGY: A single-center, retrospective chart review conducted on patients treated by a physician-led disease state model (control group) compared to a pharmacist-led model (intervention group). Patients were included if at least two hemoglobin A1c (HgbA1c) readings two months apart, a baseline HgbA1c of greater than or equal to 9%, a diabetes diagnosis, Spanish as preferred language, and at least one follow-up appointment.

RESULTS: Ninety-three patients were included with 45 in the control group and 48 in the intervention group. Baseline demographics were similar between groups with an overall average age of 47.3 years (±10.1 years), mostly female (60.2%), Hispanic (100%) and uninsured (96.7%). The intervention group achieved a higher mean change in HgbA1c from baseline (2.13% vs 1.43%, p=0.123). Patients achieved HgbA1c values of less than 9% at the same rate with 25 patients in each group. More patients in the intervention group achieved a HgbA1c value of less than 7% (6 vs 5, p=0.915).. The control group had more encounters (294 vs 227, p=0.003) and less patients lost to follow-up (10 vs 35, p

9:10am – 9:30am B **Implementation of a Pharmacist-Led Osteoporosis Screening and Management Clinic in a Veteran Population** Room J

Presenters: Taylor DeRocha

TITLE: Implementation of a Pharmacist-Led Osteoporosis Screening and Management Clinic in a Veteran Population

AUTHORS: Taylor DeRocha, Leia Kent, Lauren Howard, Lisa Ortiz, Aparna Krishnamurthy

OBJECTIVE: Evaluate the impact of expanding pharmacist-led osteoporosis screening and management in a veteran population.

SELF ASSESSMENT QUESTION: In which way(s) can pharmacists have an impact in the management of osteoporosis?

BACKGROUND: Expand pharmacist services by recruiting, screening, educating, and treating patients regarding osteoporosis and its complications.

METHODOLOGY: Population management tools were utilized to identify women ≥ 65 years of age and patients currently prescribed alendronate. Patients were contacted to provide education regarding osteoporosis, evaluate for inclusion and exclusion criteria, and set up a Dual-energy X-ray Absorptiometry (DEXA) scan, if appropriate. DEXA scan results were analyzed, and recommendations were made regarding pharmacologic therapy. For patients receiving a bisphosphonate for treatment of osteoporosis, investigators determined if the patient was eligible for a drug holiday.

RESULTS: Fourteen patients who were identified as meeting inclusion criteria were contacted by the primary investigator. Nine patients agreed to be referred to complete a DEXA scan, and 8 scans have been scheduled and completed. Education regarding risk factors for osteoporosis was provided to 10 veterans. A total of 33 pharmacologic intervention recommendations were made for 9 unique patients. Interventions included initiating calcium supplementation, continuing calcium or vitamin D supplementation, increasing calcium or vitamin D doses, initiating alendronate, continuing alendronate, and discontinuing alendronate.

CONCLUSIONS: Pharmacy services were expanded by implementing pharmacist-led screening and management of osteoporosis. Nine patients were referred to complete a DEXA scan and a total of 33 pharmacologic intervention recommendations were made and accepted by the primary care Clinical Pharmacist Practitioner (CPP). Clinical Pharmacist Practitioners within the Fayetteville VA Health Care Center are in a position to continue to provide excelled patient care through this service expansion.

9:10am – 9:30am C **A Single-Visit Telemedicine Pharmacotherapy Transitions of Care Clinic Following Percutaneous Coronary Intervention Within the Veterans Affairs Healthcare System** Room H

Presenters: Amanda Searls

TITLE: Impact of a Single-Visit Telemedicine Pharmacotherapy Transitions of Care Clinic Following Percutaneous Coronary Intervention Within the Veterans Affairs Healthcare System

AUTHORS: Amanda Searls, PharmD, BCPS, Nikki Sherwood, PharmD, BCPS, Emily Young PharmD, BCPS, BCCP and Jakob Fann, PharmD, BCCP

OBJECTIVE: To analyze the impact of cardiology clinical pharmacist intervention on patient adherence to dual antiplatelet therapy (DAPT) after a one-time post percutaneous intervention (PCI) follow up pharmacotherapy telehealth visit

SELF ASSESSMENT QUESTION:What impact can a one-time post PCI follow up pharmacotherapy telehealth visit have on patient care?
A. Improve prescribing rates of some optimal medical therapy
B. Increase number of patients reaching their BP goals
C. Assess medication adherence to antithrombotic therapy during the time frame with the highest risk of stent thrombosis
D. All of the above.

BACKGROUND: The highest rate of stent thrombosis primarily occurs within the first 30 days after percutaneous coronary intervention (PCI) in all-comer registry data and acute coronary syndrome trials. A one-time pharmacist run, post PCI clinic was created for follow up within the 30-day, high risk period for stent thrombosis at TVHS in January 2021. The purpose of this quality improvement initiative was to evaluate if a one-time pharmacist telehealth intervention improves patient adherence to DAPT, blood pressure control, prescribing of optimal medical therapy (OMT), 30-day all-cause and cardiovascular (CV) related hospitalizations and mortality.

METHODOLOGY: This was a single center, retrospective, cohort study. All patients underwent PCI with stenting or balloon angioplasty between January 2020 and January 2022. There were no exclusions from this data analysis. Those who underwent PCI between January 2020 through December 2020, prior to the post PCI pharmacotherapy clinic implementation, were compared to those who underwent PCI between January 2021 and January 2022, to evaluate the impact of the post-PCI clinic. These visits were conducted within seven days of the PCI or subsequent hospital discharge. The primary outcome was adherence to DAPT at the four to six week interventional cardiology follow-up clinic. Secondary outcomes included rate of prescribing of OMT, rate of controlled blood pressures, 30-day all-cause and CV-related hospitalizations and mortality.

RESULTS: Baseline characteristics were similar between the two groups. There was no difference found in DAPT adherence between the control and intervention group (97% vs. 98%, p=0.7193). The intervention group had a higher rate of patients reaching the BP goal <130/80 mmHg, and patients with prescriptions for SGLT2i and antianginal agents at the time of the interventional follow up; however, these differences were nonsignificant. There were lower rates of all-cause and cardiovascular deaths, but higher rates of all cause and cardiovascular related hospitalizations in the intervention group.

CONCLUSIONS: Pharmacist follow up in the post-PCI pharmacotherapy clinic contributed to improvements in blood pressure, increased prescribing rates of some optimal medical therapy, and decreased rates of all-cause and cardiovascular related death. The higher rates of hospital admission in the intervention group may be contributed to greater patient caution earlier in the COVID-19 pandemic and/or better education by the PharmD on when to seek urgent medical attention.

9:10am – 9:30am R **Assessment of Outcomes with Desmopressin for Antiplatelet Reversal in Trauma Patients** Room D

Presenters: Montana Mack

TITLE: Assessment of Outcomes with Desmopressin for Antiplatelet Reversal in Trauma Patients

AUTHORS: Montana Mack, Lindsay Harris, Erika Herman, Michael Wegner, Julie Rajotte-Caron, William Shillinglaw

OBJECTIVE: Define the potential benefit of desmopressin utilization for reversal of antiplatelet medications in trauma patients.

SELF ASSESSMENT QUESTION: Which of the following is/are a mechanism of action supporting the use of desmopressin for antiplatelet reversal in trauma patients? Select all that apply.

A.Increases plasma levels of von Willebrand factor

B.Enhances platelet aggregation to vascular endothelium

C.Reduction in bleeding time

D.All of the above

BACKGROUND: Examine the clinical outcomes of trauma patients across 181 hospitals, who were treated with desmopressin in the emergency department for the reversal of any preinjury antiplatelet agent (APA) compared to other trauma patients who did not receive desmopressin.

METHODOLOGY: This is a retrospective comparison study between consecutive patients who received desmopressin and those who did not. Eligible patients are those who: (1) presented to any HCA hospital with a trauma diagnosis (2) presented between July 1st, 2019 and July 1st, 2020 (3) were taking a preinjury APA and (4) were administered desmopressin in the emergency department (desmopressin group only). A random sample of patients will be utilized for the control group

RESULTS: There were 14,427 patient encounters identified across the HCA Healthcare System between July 1st 2019 to July 1st 2020 in which a patient greater than 18 years old was diagnosed with a trauma injury and had a documented antiplatelet home medication. Of those patients, 15 received a dose of desmopressin, 3 of which received a dose on day one of admission. At Mission Hospital, 116 patients were identified as receiving at dose of desmopressin within the established time period with a pre-injury APA listed as a home medication. Across both groups, the most common antiplatelet home medication was aspirin. Completed results are pending.

CONCLUSIONS: In progress.

9:10am – 9:30am R **Efficacy and Safety of Weight-Based vs. Fixed Dose 4-Factor Prothrombin Complex Concentrate for the Reversal of Direct Oral Anticoagulants in the Setting of Intracranial Hemorrhage** Room C

Presenters: Annie Nikodem

TITLE: Efficacy and Safety of Weight-Based vs. Fixed Dose 4-Factor Prothrombin Complex Concentrate for the Reversal of Direct Oral Anticoagulants in the Setting of Intracranial Hemorrhage

AUTHORS: Annie Nikodem, Derrick Clay, Sarah Frye, Robert Steed

OBJECTIVE: Evaluate the efficacy and safety of weight-based and fixed dose strategies of 4-Factor Prothrombin Complex in the reversal of Direct Oral Anticoagulants in intracranial hemorrhage.

SELF ASSESSMENT QUESTION: True/False – A fixed dose strategy 4F-PCC is likely as effective and safe as a weight-based strategy for DOAC reversal in ICH.

BACKGROUND: Four-Factor Prothrombin Complex Concentrate (4F-PCC) is a hemostatic agent containing factors II, VII, IX, and X. Current evidence suggests that 4F-PCC is effective for the reversal of Direct Oral Anticoagulants (DOACs). There is a lack of evidence comparing the use of weight-based and fixed dose strategies for DOAC reversal in intracranial hemorrhage (ICH). The purpose of this study is to compare the efficacy and safety of weight-based and fixed dose strategies for DOAC reversal in ICH.

METHODOLOGY: In this retrospective cohort study, patients who received weight-based 4F-PCC or fixed dose 4F-PCC for reversal of any DOAC in the setting of ICH were included for review. The primary outcome is effectiveness of 4F-PCC within 24 hours of administration as determined by the expansion of hematoma volume on a repeat head computed tomography. The primary safety outcome is occurrence of thromboembolic events within 7 days after administration. Secondary outcomes include time to administration, need for repeat dose, change in thromboelastographic parameters, and cost.

RESULTS: A total of 36 patients were included in the study and received either fixed (27 patients) or weight-based (9 patients) doses of 4F-PCC. The fixed dose group received a mean dose of 1,981 U (25 U/kg) while the weight-based group received a mean dose of 4,056 U (44 U/kg). There was no significant difference between groups for worsened repeat head CTs ($p=1.00$), or mortality at 14 days ($p=0.69$). Neither group experienced thromboembolic events within 7 days. The total cost of 4F-PCC was significantly lower in the fixed dose group ($p<0.05$).

CONCLUSIONS: A fixed dose strategy of 4F-PCC was as effective and safe as weight-based strategy for the reversal of DOACs in ICH, and it was associated with a significant cost reduction.

9:10am – 9:30am R **EVALUATION OF THE IMPACT OF A CLINICAL PHARAMCIST ON THE POST-DISCHARGE CULTURE REVIEW PROCESS IN THE EMERGENCY DEPARTMENT** Room E

Presenters: Jacob Kaufman

TITLE: EVALUATION OF THE IMPACT OF A CLINICAL PHARAMCIST ON THE POST-DISCHARGE CULTURE REVIEW PROCESS IN THE EMERGENCY DEPARTMENT

AUTHORS: Jacob Kaufman, Anne Poundstone, Brittany Till, Ryan Rickles, Lauren Wright

OBJECTIVE: Identify potential interventions a clinical pharmacist can make on a post-discharge culture review process.

SELF ASSESSMENT QUESTION: What was the most commonly recommended intervention?

BACKGROUND: Patients with suspected infections are often discharged from the emergency department (ED) on empiric antibiotics as culture data is not finalized and causative organisms and corresponding susceptibilities are unknown. Baptist Medical Center South (BMCS) currently utilizes a nurse practitioner model for post-discharge culture review and patient call back. The purpose of this study is to evaluate the impact of adding a clinical pharmacist to a post-discharge culture review process in the ED.

METHODOLOGY: A single-center, IRC approved prospective study from October 17, 2021 to December 2, 2021. Clinical pharmacists and PGY1 pharmacy resident in the ED assumed responsibility for the post-discharge culture review process and evaluated all cultures to determine if an intervention was warranted, then collaborate with the nurse practitioner to make any therapy adjustment recommendations. The primary objective evaluated the number and types of clinical interventions. Secondary objectives evaluated types of cultures reviewed, number of positive cultures not treated with empiric therapy, and total days of antimicrobial therapy reduced.

RESULTS: 112 cultures required pharmacist intervention of various types including discontinuing antimicrobial therapy (59%), requires additional treatment (25%), resistant to empiric therapy (8%), and bug/drug mismatch (6%). Urine cultures (60%) and STD screens (35%) were the most common types of cultures reviewed. The study found 28 total cultures identified as positive that did not receive empiric therapy and a total of 426 days of antimicrobial therapy were spared.

CONCLUSIONS: This study showed a pharmacist driven post-discharge culture review resulted in more timely culture review, patients initially discharged without antibiotics with positive post-discharge cultures received treatment, and a decrease in unnecessary antimicrobials.

9:10am – 9:30am I **Initiating Area Under the Curve (AUC) dosing of Vancomycin at a Community Teaching Hospital**

Presenters: Victoria Simmons Room F

TITLE: Initiating Area Under the Curve (AUC) dosing of Vancomycin at a Community Teaching Hospital

AUTHORS: Victoria Simmons, Stephen Eure, Chris Nixon, Doug Carroll

OBJECTIVE: To initiate and evaluate AUC dosing for vancomycin at DCH Health System

SELF ASSESSMENT QUESTION: What is the goal AUC per the 2020 guidelines?

BACKGROUND: In 2020, the “Therapeutic monitoring of vancomycin” consensus guidelines recommended to target an AUC of 400-600 in patients with serious MRSA infections over traditional trough-only monitoring. This recommendation ensures efficacy while reducing the risk for nephrotoxicity. The purpose of this project is to update the current practice for vancomycin dosing at DCH health system to ensure compliance with the current guidelines.

METHODOLOGY: The methods are three-fold, education, implementation and clinical significance. Education for pharmacists was conducted through in-services and training sessions. Pharmacists’ knowledge on AUC and the institution’s policy was evaluated through surveys before and after education was administered. Determining the method for completing AUC dosing was the first component of the implementation process. The feasibility of using a first order kinetics calculator was compared to using a Bayesian kinetic software; then each available software system was evaluated. Once the method for dosing was selected, a policy was created. After the policy was implemented, adherence to the policy was assessed on 15 randomized patients. Lastly, 50 patients who received trough-guided dosing were compared through retrospective chart review to 50 patients who received AUC-guided dosing for instances of acute kidney injury.

RESULTS: DoseMeRx, was chosen as the Bayesian method for AUC dosing, and a policy was created, with 93.3% adherence. The AUC dosing policy did not reduce the rates of AKI in this sample, 18% vs 22%.

CONCLUSIONS: AUC dosing was successfully implemented at DCH Health Systems. Pharmacists are knowledgeable and satisfied with the initiative. Further evaluations need to be conducted since the sample did not see a reduction in the rates of AKI rates.

9:10am – 9:30am L **Comparison of time to inpatient hypoglycemia treatment before and after implementation of a standardized nurse-driven protocol in a rural community teaching health system** Room K

Presenters: Abigail Comer

TITLE: Comparison of time to inpatient hypoglycemia treatment before and after implementation of a standardized nurse-driven protocol in a rural community teaching health system

AUTHORS: Abigail Comer, Kristen Keen, Ruthanne Baird, Lori Duke, Justin Hodges, Steven Johnson

OBJECTIVE: At the conclusion of my presentation, the participant will be able to identify non-pharmacologic and oral treatment options suitable for inpatient hypoglycemic treatment.

SELF ASSESSMENT QUESTION: Which clinical findings are appropriate indications for IV dextrose use to treat inpatient hypoglycemia?

BACKGROUND: As intravenous (IV) dextrose is frequently in short supply and is significantly more costly when compared to non-pharmacologic and oral treatment options, a protocol was implemented to encourage nursing staff to choose a non-pharmacologic dietary or oral pharmacologic option for inpatient hypoglycemia values less than 70 mg/dL before choosing IV dextrose. The purpose of this research project is to determine the effectiveness of the standardized protocol as a process improvement measure in reducing the time to treatment. Providing timely and cost-effective treatment options to manage inpatient hypoglycemia may reduce IV dextrose use and improve clinical outcomes of affected patients.

METHODOLOGY: Patients were eligible for inclusion if they were ≥18 years of age, were admitted ≥24 hours to an inpatient floor at either Betsy Johnson Hospital or Central Harnett Hospital and had at least one point-of-care blood glucose reading of <70 mg/dL. If patients were placed on an insulin drip at any time or if their medical chart lacked appropriate documentation, they were excluded. The primary objective compared the time for a nurse to administer treatment for inpatient hypoglycemia pre- and post-implementation of a standardized nursing protocol. Secondary objectives evaluated the number of interventions needed for each hypoglycemic event, the difference in pharmacologic and non-pharmacologic interventions, and the difference in IV dextrose use pre- and post-implementation.

RESULTS: A total of 149 hypoglycemic events (78 pre-implementation, 71 post-implementation) met inclusion for the study. A statistically significant difference in the mean time to treatment was found (10.1 minutes vs. 4.6 minutes, $p<0.001$). There was no difference found between the number of interventions needed to treat hypoglycemia, the type of intervention used, or the use of IV dextrose pre- and post-implementation.

CONCLUSIONS: The new protocol implementation significantly reduced the time to treatment for patients experiencing a hypoglycemic event.

9:10am – 9:30am M **PROCESS IMPROVEMENT AND IMPLEMENTATION OF A CERTIFIED TECHNICIAN VERIFICATION PROGRAM AT THE RALPH H. JOHNSON VA MEDICAL CENTER** Room L

Presenters: Kari J. Parker, PharmD.

TITLE: **PROCESS IMPROVEMENT AND IMPLEMENTATION OF A CERTIFIED TECHNICIAN VERIFICATION PROGRAM AT THE RALPH H. JOHNSON VA MEDICAL CENTER**

AUTHORS: Kari J. Parker, PharmD, Rachel O. Stogner, PharmD, Anne Parnell, PharmD, MBA

OBJECTIVE: To evaluate the implementation of a technician verification program on accuracy required to prepare, check, and deliver medications to Pyxis cabinets throughout the medical center.

SELF ASSESSMENT QUESTION: Based on the information provided, what are some patient safety measures that were implemented to ensure best practices of technician verification?

BACKGROUND: Tech-Check-Tech (TCT) allows a pharmacy technician to perform the final check of medications prepared by another technician. The effect of a TCT program on the time required to process medications in a hospital pharmacy has not been previously reported. A study conducted by Reed et al. (2011) in an academic medical center hospital observed the time pharmacists spent on product verification decreased by 94.5% when technician product verification was initiated. Previous research show that pharmacists spend a substantial amount of time performing product verification whereas trained pharmacy technicians can perform the same task with similar accuracy rates to pharmacists.

METHODOLOGY: Eligible technicians are those with at least 6 months experience in an inpatient or institutional pharmacy setting, must hold a current state pharmacy technician or pharmacy intern license. All technicians and interns were provided a packet to use a guide for successful completion of the course. First, they are required to complete didactic training and virtual learning via online learning. The written exam required a passing score of ≥ 90% to proceed to the validation period. During the validation period, a “filling” technician was asked to fill the

unit dose medications and the technician in training would verify the medications filled. A licensed pharmacist provides a second verification check to assess for accuracy. During the initial implementation, time and scheduling conflicts were an issue due to COVID-19. However, after making necessary changes for ease of completion, the mean time for completion averaged two weeks per technician.

An approved list of medications was implemented for technician verification, however, a list of unapproved medication (i.e. licensed pharmacist verification only) was created and provided to staff prior to the implementation of the training period. These medications are listed below:
Medications that CAN be checked by a technician include:
•Capsules or tablets that are prepacked and verified in the TCGx (pre-exchange meds/unit dose only)
•Community-Based Outpatient Clinic (CBOC) automated dispensing cabinet (ADC) restocks
•Bulk medications that only require labeling for barcode medication administration (BCMA) prior to dispensing (i.e., inhalers, creams, eye solutions—NOT repackaged)
•Crash cart trays
•Emergency medication kits

Medications that CANNOT be checked by a technician include:
•High-alert medications (i.e., insulin)
•Medications listed on the do not tube list (i.e., vaccines)
•IV sterile compounded medications (IV room products)
•Controlled substances
•Bulk medications that are manually repackaged (i.e., liquids drawn up into syringes for oral administration)
•Medications that are not scannable or fail to scan in BCMA
•Capsules and tablets that are manually pre-packed and labeled with a BCMA label

RESULTS: Nine technicians were included in the implementation of the technician verification program. Currently, we have successfully certified two out of our 9 technicians with a 100% accuracy rate in verification. Implementation is still in progress due to unforseen staffing limitations.

CONCLUSIONS: Although full implementation of the process improvement is still in progress. Based on the two technicians that have successfully completed the program, our service is confident that this implementation will help to provide the best care to our veterans.

9:10am – 9:30am O **Real-world data on the incidence and management of blinatumomab toxicities in adults with minimal residual disease and relapsed or refractory acute lymphoblastic leukemia** Room B

Presenters: Rebecca Farley

TITLE: Real-world data on the incidence and management of blinatumomab toxicities in adults with minimal residual disease and relapsed or refractory acute lymphoblastic leukemia
AUTHORS: Rebecca Farley, Eva Karam, Melhem Solh
OBJECTIVE: Identify the variation in blinatumomab dosing for patients with MRD and R/R ALL.
SELF ASSESSMENT QUESTION: What is the initial dose of blinatumomab for a patient being treated for MRD ALL?
BACKGROUND: Blinatumomab is a bispecific monoclonal antibody that is administered as a continuous infusion and requires dose escalation in relapsed or refractory (R/R) acute lymphoblastic leukemia (ALL); whereas patients with minimal residual disease-positive (MRD) ALL are initiated at the target dose. The purpose of this study was to evaluate the real-world incidence of cytokine release syndrome (CRS) and/or neurotoxicity requiring treatment interruption between MRD and R/R ALL.
METHODOLOGY: This single-center, retrospective study included patients ≥18 years of age who received at least one dose of blinatumomab for MRD or R/R ALL between October 30th, 2018 to December 1st, 2021. The primary outcome was incidence of documented CRS and/or neurotoxicity requiring treatment interruption. Management of toxicities was also evaluated in patients requiring blinatumomab interruption.
RESULTS: Overall, 34 patients met inclusion criteria which comprised of 15 (44.1%) MRD ALL and 19 (55.9%) R/R ALL encounters. The incidence of CRS and/or neurotoxicity requiring treatment interruption between MRD and R/R patients was 41.2% and 21.1% (p=0.28), respectively.
CONCLUSION: This retrospective review suggests there is no significant difference in the incidence of CRS and/or neurotoxicity requiring blinatumomab itnerruption between MRD and R/R ALL. Baseline characteristics are currently under review to determine possible risk factors for toxicites. Proposed risks factors and toxicity management strategies will be utilized in a prevention alorgithm in order to minimize toxicity.

9:10am – 9:30am T **Identifying Barriers to Meds to Beds Utilization** Room G

Presenters: Sydney Madison

TITLE: Identifying Barriers to Meds to Beds Utilization

AUTHORS: Sydney Madison, Molly Knostman, Erin Neal, Rusty Catlin

OBJECTIVE: Understand common reasons that providers and patients choose not to utilize meds to beds services.

SELF ASSESSMENT QUESTION: True or False: Concern regarding the time to receive a prescription is the most common reason that patients do not choose to use the meds to beds service.

BACKGROUND: Hospital meds to beds programs aim to improve patient care by ensuring timely access to discharge medications before the patient leaves the hospital. Benefits of meds to beds programs described in the literature include improved

medication adherence, higher patient satisfaction scores, and reduced readmissions resulting from medication misuse. Despite known benefits of these programs, only 50% of patients discharged from Vanderbilt University Medical Center utilize the meds to beds service. The purpose of this study was to identify the current barriers to meds to beds utilization.

METHODOLOGY: This was a prospective, descriptive study of barriers to meds to beds utilization. A series of surveys were developed and distributed to both patients and staff members. Patient surveys were incorporated into standard post-discharge surveys.

Employee surveys were distributed by email from departmental leadership. Each of the surveys aimed to identify the frequency of meds to beds utilization, as well as key reasons the service was not chosen. Survey responses were used to identify improvements that could be implemented into the meds to beds program.

RESULTS: In progress

CONCLUSIONS: In progress

9:10am – 9:30am T **Impact of Pharmacy Resident-driven Medication Reconciliation on Patients at High Risk of Hospital Readmission** Room A

Presenters: Katrina Phelps

TITLE: Impact of Pharmacy Resident-driven Medication Reconciliation on Patients at High Risk of Hospital Readmission

AUTHORS: Katrina Phelps, Rachel Langenderfer, Ryan Lally, Megan Ritter, Evan McDonald, Brittany NeSmith, Matthew Timmons, Taylor Servais

OBJECTIVE: List potential interventions made through a pharmacy-driven medication reconciliation program.

SELF ASSESSMENT QUESTION: What is one outcome that a pharmacy-driven medication reconciliation program may provide?

BACKGROUND: Pharmacists play a key role in preventing medication errors during transitions of care and preventing hospital readmissions through medication reconciliation (MR) programs. This project will retrospectively evaluate the implementation of a standardized pharmacy resident-driven MR program for patients at high risk for readmission as defined by HRRP.

METHODOLOGY: This study is a single-center, retrospective review of a pharmacy resident-driven MR program including patients at high risk of readmission defined by HRRP. The primary objective is to determine the number of interventions identified during the MR. Secondary objectives include all-cause unplanned hospital readmission rates within 30 days of discharge, and types of interventions made. The electronic health record for each patient will be reviewed for unplanned readmissions to the hospital within 30 days of the index admission.

RESULTS: Fifty-three high-risk patients were included in the study. Pharmacy intervention recommendations were accepted by providers for nine patients (9/53; 17.0%) with a total of 13 successful interventions. The two most commonly involved medication classes were anticonvulsants (3/13; 23.1%) and antidepressants (6/13; 46.2%). Discrepancies on the admission MR were identified for 46 (46/53; 86.8%) patients with a median of three discrepancies per patient (range 0-14). The most common type of discrepancy was an incorrect or unnecessary drug. The 30-day all-cause readmission rate was 35.8% (19/53) for the total patient population and one patient expired within 30 days since index admission.

CONCLUSIONS: The small sample size may have resulted in readmission rates that do not reflect the true effect of the implementation of a MR program, however, a pharmacy-driven MR program provides value in clarifying prior to admission medications and may prevent drug-related adverse events.

9:30am – 9:50am B **Clinical Pharmacy Specialist (CPS) Evaluation of Glucagon-Like Peptide-1 Receptor Agonist (GLP-1) Therapy Benefit Leading to Possible Follow-Up and Intervention** Room I

Presenters: Lee Arphai

TITLE: Clinical Pharmacy Specialist (CPS) Evaluation of Glucagon-Like Peptide-1 Receptor Agonist (GLP-1) Therapy Benefit Leading to Possible Follow-Up and Intervention

AUTHORS: Lee Arphai, Lauren Rass, Amber Cardoza, Michael Robinson

OBJECTIVE: Explain how clinical pharmacy specialists at a Veterans health site can utilize GLP-monitoring to make potential interventions and optimize overall diabetes care.

SELF ASSESSMENT QUESTION: Describe one way a clinical pharmacy specialist at a Veterans health site can utilize GLP-1 monitoring to optimize diabetes care.

BACKGROUND: For patients lacking significant A1c reduction after a reasonable trial with GLP-1 therapy, pharmacists can play an important role in determining the potential reasons for lack of efficacy and using this information to optimize diabetes care. The objective of this project is to identify patients who lack significant improvement in A1c after initiation of GLP-1 therapy and assess for potential causes. Additionally, this project aims to demonstrate the impact of CPS in providing appropriate interventions for diabetes management via GLP-1 monitoring.

METHODOLOGY: Eligible Veterans in the Central Alabama Veterans Health Care System (CAVHCS) outpatient setting met a set of predetermined inclusion criteria including diagnosis of type 2 diabetes, “active” GLP-1 prescription, $\geq$6 weeks of GLP-1 therapy, a current A1c $\geq$7.5%, and a decrease in A1c $\leq$0.49% since GLP-1 initiation. Once Veterans were identified through data extraction, electronic health records were reviewed to determine potential interventions for GLP-1 therapy and other diabetes-related care. Finally, Veterans and/or prescribers were contacted by CPS with potential interventions, and results of the attempts were documented in the patient chart.

RESULTS: This project was implemented over a 5–6-month period from October 2021 to March 2022, with the first two months used for initial chart review prior to clinic integration. Approximately 73 Veterans met inclusion, with 18 excluded and 55 being further assessed for CPS interventions. When comparing specific characteristics at the time of GLP initiation to time at chart review, the group as a whole demonstrated an increase in average A1c and a decrease in average weight. However, as individual values were analyzed, 69% of Veterans experienced no change or an increase in A1c while 47% experienced no change or an increase in weight. The most common *potential* interventions prior to contacting the Veteran were dose increase of GLP-1, dose increase of other diabetes medications, lab orders, and adherence/tolerance assessments. The most common *actual* interventions were dose increase of GLP-1, initiation of other diabetes medications, and lab orders.

CONCLUSION: The overall benefits of using GLP-1 monitoring to drive CPS-led interventions for GLP-1 deprescribing and optimization of diabetes medication management remains unclear. The decision to deprescribe a GLP-1 was not always straightforward. Limitations included “cold calls,” integration into busy CPS clinics, and the need for follow-up before making certain interventions.

9:30am – 9:50am B **IMPACT OF A CLINICAL PHARMACY SPECIALIST ON THE PRESCRIBING RATES OF PHARMACOTHERAOY FOR ALCOHOL USE DISORDER** Room J

Presenters: Anna Green

TITLE: IMPACT OF A CLINICAL PHARMACY SPECIALIST ON THE PRESCRIBING RATES OF PHARMACOTHERAOY FOR ALCOHOL USE DISORDER

AUTHORS: Anna Green, Rashia A. Fambro

OBJECTIVE: Identify pharmacotherapy options for the treatment of alcohol use disorder.

SELF ASSESSMENT QUESTION: True or False: Naltrexone, acamprosate, disulfiram, and topiramate are all recommended by various guidelines for the treatment of alcohol use disorder.

BACKGROUND: It is estimated that only 7.7% of patients diagnosed with alcohol use disorder (AUD) receive appropriate pharmacotherapy. The project assesses the impact incorporation of a clinical pharmacy specialist (CPS) has on prescribing rates for AUD pharmacotherapy.

METHODOLOGY: This prospective quality improvement project included patients ≥18 years of age with an active AUD diagnosis not in remission and not on an active prescription for pharmacotherapy for AUD with an AUDIT-C score ≥6. Patients were identified using a dashboard and were contacted to discuss pharmacotherapy options for AUD. Patients were initiated on pharmacotherapy if agreeable and follow up was completed as appropriate.

RESULTS: In progress

CONCLUSIONS: In progress

9:30am – 9:50am C **Evaluating Warfarin Initiation and Concomitant INR Levels in the Cardiovascular Surgery Population Who Underwent Mechanical Cardiac Valve Replacement** Room H

Presenters: Andrew Rowe

TITLE: Evaluating Warfarin Initiation and Concomitant INR Levels in the Cardiovascular Surgery Population Who Underwent Mechanical Cardiac Valve Replacement

AUTHORS: Andrew Rowe, Kaitlin Moulton, Tim Lewis

OBJECTIVE: Identify if utilizing a warfarin dosing guideline would decrease the rate of elevated INR levels in cardiovascular (CV) surgery patients at the University of Alabama at Birmingham (UAB) Hospital

SELF ASSESSMENT QUESTION: Which patient population had the highest incidence of supratherapeutic INR levels?

BACKGROUND: Patients who undergo mechanical heart valve replacement require long-term anticoagulation using vitamin K antagonists. At our institution, it was discovered that patients managed by the CV surgery service had the most incidences of elevated INR levels. Elevated INR level for this metric was defined as any single INR of 5 or higher at any point after initiating warfarin while inpatient. A plan was formulated on how to improve this safety outcome associated with supratherapeutic INR levels. The warfarin dosing guideline was reinforced with CV surgery providers in July 2021 after this metric was reviewed. CV surgery providers agreed to follow the current UAB warfarin dosing guidelines. The purpose of this study is to identify if applying our current warfarin dosing guidelines could help with reducing supratherapeutic INR levels. Another intention of this study was to identify any risk factors in the CV surgery population that could correlate with elevated INR levels.

METHODOLOGY: This is a single-center, retrospective study of CV surgery patients that underwent mechanical heart valve replacement between July 2020 to December 2020 and July 2021 to Dec 2021. Patients were included if they underwent mechanical cardiac valve replacement within either of the two time frames. The following patients were excluded: patients with a left ventricular assist device (LVAD), pregnant patients, and patient on warfarin prior to admission. The primary objective is to review and compare warfarin dosing and concomitant INR levels in the CV surgery population who underwent mechanical cardiac valve replacement in the specified before and after timeframes. The primary endpoints include the number of participants initiated on warfarin therapy while inpatient who had an INR level of 5 or higher and the incidence of major bleeding events. Key secondary outcomes include the average warfarin daily dose, the number of patients with at least one supratherapeutic INR value while on warfarin therapy while inpatient, the average difference between INR at discharge and the lower end of the patient’s goal INR range, use of reversal agents and/or blood products, and the incidence of clotting events.

RESULTS: A total of 67 patients (34 and 33 in the pre- and post-education groups, respectively) who were initiated on warfarin after receiving a mechanical heart valve replacement were evaluated. The pre- and post-education groups did not differ significantly with respect to both of the primary outcomes, but overall reductions of both INR levels of 5 or higher (2 patients to 1 patient; P = 0.88) and major bleeding events (1 event to 0 events; P = 1.0) were seen between the two groups. Statistical analysis was not completed for the secondary outcomes. The average daily dose of warfarin decreased from 4.6 to 3.6 mg/day, the number of patients with at least one supratherapeutic INR decreased from 7 to 3, the average difference between INR at discharge and the lower end of the patient's goal INR range increased from 0.42 to 0.65, the use of reversal agents and/or blood products decreased from 1 to 0, and there were no clotting events in either group. The dosing guidelines were followed correctly for 12% of patients in the pre-education group and 42% in the post-education group.

CONCLUSIONS: While there were no significant outcomes in regards to the primary outcomes, there was an 3.5-fold increase in proper dosing after instution specific dosing protocol education was provided.

9:30am – 9:50am Y **Identifying and Managing Patients with Prediabetes in the Community Pharmacy Setting using the National Diabetes Prevention Program** Room G

Presenters: Kirsten Doremus

TITLE: Identifying and Managing Patients with Prediabetes in the Community Pharmacy Setting using the National Diabetes Prevention Program

AUTHORS: Kirsten Doremus, Minnie Newman, Courtney E. Gamston, Spencer Durham

OBJECTIVE: Be able to identify and manage patients with prediabetes in the community setting.

SELF ASSESSMENT QUESTION: Identify one barrier to implementing the NDPP in the community pharmacy setting.

BACKGROUND: According to the Centers for Disease Control and Prevention (CDC), 88 million adults have prediabetes, yet over 84% remain unaware. Individuals with diabetes spend approximately 2.3 times more annually on medical expenses than those without. Pharmacists can help delay or prevent progression from prediabetes to diabetes mellitus type 2 (T2DM) in the community pharmacy setting by identifying these patients and providing the National Diabetes Prevention Program (NDPP) lifestyle management curriculum. Participation in the NDPP is associated with a 58% reduction (71% for individuals age 60 and older) in the progression to T2DM and improvement in other health markers

METHODOLOGY: Eligible participants will be utilized using the Prediabetes Risk Test (PRT) and reports from the pharmacy software. The PRT was printed out and available in the pharmacies and, associated grocery stores, and a link to complete the form online was provided on the store's social media accounts. A report of current patients 60 years of age and older not currently diagnosed with diabetes was generated using the pharmacy software. Patients were contacted directly by pharmacy staff and invited to participate. Overweight and obese individuals with an A1C in the prediabetes range (5.7-6.4%), either from a physician's office or point-of-care testing performed at the pharmacy, were eligible to participate in the NDPP offered through the pharmacy. The primary outcomes were change in A1C, body weight, physical activity and blood pressure.

RESULTS: In progress.

CONCLUSIONS: In progress.

9:30am – 9:50am R **Evaluation of Transitioning from Intravenous to Subcutaneous Insulin after Diabetic Ketoacidosis Resolution in the Intensive Care Units within the DCH Health System** Room E

Presenters: Tanya Tye

TITLE: Evaluation of Transitioning from Intravenous to Subcutaneous Insulin after Diabetic Ketoacidosis Resolution in the Intensive Care Units within the DCH Health System

AUTHORS: Tanya Tye, Christen Anderson Freeman, Alston Poellnitz

OBJECTIVE: Describe an appropriate transition from intravenous to subcutaneous insulin at diabetic ketoacidosis (DKA) resolution.

SELF ASSESSMENT QUESTION: What criteria are required for DKA resolution?

BACKGROUND: The aim of this quality improvement project is to evaluate the current subcutaneous insulin prescribing trends after DKA resolution and associated outcomes at a community hospital.

METHODOLOGY: Patients were included in this institutional review board approved, dual-center, retrospective cohort study if they were at least 18 years of age, admitted from May 2021-August 2021 with a primary diagnosis of DKA requiring ICU admission, and received an insulin infusion for at least 6 hours. The primary outcome of successful DKA transition was a composite outcome including patients who met biochemical criteria for DKA resolution, initiation of subcutaneous basal insulin at time of transition, and euglycemia for 24 hours after subcutaneous administration. Secondary outcomes included incidence of rebound DKA requiring intravenous insulin, incidence of hyperglycemia and hypoglycemia, average duration of ICU care, and average basal insulin dose (units/kg) at time of transition.

RESULTS: 195 patient charts were reviewed and 49 met inclusion criteria. Of those 49 patients, 91.8% had a history of diabetes. 20.4% of patients met the primary composite outcome. 75.5% of patients were prescribed a basal insulin at transition.

CONCLUSIONS: Patients were more likely to be euglycemic for 24 hours after transition if their subcutaneous insulin regimen included a basal insulin component.

9:30am – 9:50am R **Incidence of new-onset atrial fibrillation in patients that receive dexmedetomidine compared to midazolam in the intensive care unit** Room D

Presenters: Connor Floyd

TITLE: Incidence of new-onset atrial fibrillation in patients that receive dexmedetomidine compared to midazolam in the intensive care unit

AUTHORS: Connor Floyd, PharmD ; Sara Anne Meyer, PharmD, BCPS ; John Carr, PharmD, BCPS, BCCCP ; Joseph Crosby, PhD, RPh, FAFPE ; Caitlin Williams, PharmD Candidate 2023

OBJECTIVE: To determine if dexmedetomidine reduces rates of new-onset atrial fibrillation when compared to midazolam in critically-ill patients.

SELF ASSESSMENT QUESTION: What is the proposed mechanism for how dexmedetomidine may lower rates of atrial fibrillation occurrence?

BACKGROUND: Dexmedetomidine is an alpha-2 agonist indicated for sedation and adjunct anesthesia, commonly utilized in the intensive care (ICU) setting. Bradycardia is a common adverse effect of dexmedetomidine use, and the mechanism is likely due to the partial nodal blocking properties of dexmedetomidine. This nodal blockade has the theoretical benefit of limiting arrhythmias, and in particular, atrial fibrillation. As patients in the ICU setting have an increased risk of developing new-onset atrial fibrillation, this study was designed to evaluate the potential benefit of dexmedetomidine in limiting the development of atrial fibrillation.

METHODOLOGY: This investigation was a retrospective, observational cohort, chart-review in a two-hospital health system. Patients were included if they were admitted to the ICU from May 1, 2019 to May 31, 2021 and received either dexmedetomidine or midazolam. Midazolam was chosen as the sedative comparator as it does not possess the same nodal blocking properties nor adverse effect profile as dexmedetomidine. Patients would be excluded if they had a prior documented medical history of atrial fibrillation, documented cardiac surgery in the past seven days, history of heart transplant, or if they received dexmedetomidine and midazolam concomitantly. The primary outcome was incidence of new-onset atrial fibrillation (NOAF) during the ICU stay. Secondary outcomes included length of ICU stay, length of hospital stay, and incidence of bradycardia or hypotension that required intervention. Additional data collected include the patient's age, sex, height, weight, cardiac history, APACHE-II scores, and medications the patient received that may impact atrial fibrillation occurrence. Chi-square analysis was used to compare the categorical data while a t-test was used for the continuous data. A multivariate model was used to account for differences in APACHE-II scores, and a p-value of < 0.05 will be used to determine statistical significance.

RESULTS: 545 patients received either dexmedetomidine or midazolam while in the ICU from May 1, 2019 to May 31, 2021. The dexmedetomidine group comprised of 260 patients and the midazolam group comprised of 285 patients. Of the patients in each group, 84 were excluded in the dexmedetomidine group and 92 were excluded in the midazolam group. A past medical history of atrial fibrillation was the most common reason for exclusion in both groups (29 in the dexmedetomidine group and 30 in the midazolam group). The final number of patients included were 176 in the dexmedetomidine group and 193 in the midazolam group. The primary outcome of NOAF was met in 28 of dexmedetomidine patients and in 50 of the midazolam patients (16% vs 26%, p=0.037). The average hospital lengths of stay were similar between the dexmedetomidine and midazolam groups (16.3 vs 15.9, p=0.673). ICU lengths of stay were also similar (13.97 vs 13.16, p=0.856). Rates of bradycardia were similar between the two groups (49% vs 42%, p=0.203). The midazolam group had higher rates of hypotension (53% vs 68%, p=0.014).

CONCLUSIONS: Critically-ill patients are at an increased risk of developing NOAF, which can increase mortality and prolong hospital stays. The aim of this study was to evaluate whether dexmedetomidine may provide any benefit in preventing NOAF. We found that significantly fewer patients developed NOAF while receiving dexmedetomidine versus midazolam (16% vs 26%, p=0.037). APACHE-II scores, cardiac history, hospital lengths of stay, and ICU lengths of stay did not significantly differ between groups. Dexmedetomidine may provide some protection against NOAF development when compared to midazolam, however more data is needed to delineate the risks and benefits of this sedative.

9:30am – 9:50am R **Sedation following long-acting paralytics in the emergency department** Room C

Presenters: Katherine Blowe

TITLE: Sedation following long-acting paralytics in the emergency department

AUTHORS: Katherine Blowe, Ginger Gamble, Khushboo Patel

OBJECTIVE: Identify the time to sedation initiation post intubation based on paralytic agent used.

SELF ASSESSMENT QUESTION: Does the administration of a long-acting paralytic result in a longer time to initiation of sedation post-intubation?

BACKGROUND: Paralytic agents are administered following induction agents to promote muscle relaxation during rapid sequence intubation (RSI). Long-acting paralytics such as rocuronium, which has a duration of 30-60 minutes, are administered following an induction agent, which may have an estimated duration of around 15 minutes or less based on induction agent chosen. The difference in durations of these two medications poses a risk of patient awareness while paralyzed. The purpose of this study is to assess if there is a difference in time to initiation of sedation in patients who received a long-acting neuromuscular blocker (NMB) versus a short-acting NMB for intubation.

METHODOLOGY: This single center, retrospective review included adult patients who received rocuronium or succinylcholine for RSI in the emergency department between July 2016 and September 2021. A total of 1324 were screened and 1053 patients were included for analysis.

RESULTS: The median time to sedation following paralytic administration was significantly different based on paralytic received; 14 and 10 minutes in the rocuronium and succinylcholine groups, respectively (p= 0.0003). Of the patients who received a paralytic agent in the emergency department, 193 (18%) did not receive sedation or an opioid within the first 60 minutes post-intubation.

CONCLUSIONS: Administration of rocuronium was associated with a longer median time to sedation when compared to patients who received succinylcholine. Many patients did not receive a sedation agent following the administration of paralytics for RSI. These findings present an opportunity to improve time to sedation for patients receiving paralytics to decrease the risk of patient awareness while paralyzed.

9:30am – 9:50am I **Impact of Utilizing BCID II FilmArray® Blood Panels with Antimicrobial Stewardship on Decreasing the Time to Optimal Antibiotic Therapy** Room F

Presenters: John Ngo

TITLE: Impact of Utilizing BCID II FilmArray® Blood Panels with Antimicrobial Stewardship on Decreasing the Time to Optimal Antibiotic Therapy

AUTHORS: John Ngo, Deanne Tabb, Ann Truong

OBJECTIVE: Evaluate the use of antimicrobial stewardship with BCID II FilmArray® blood panels on the time to optimal antibiotic therapy before and after BCID FilmArray® implementation

SELF ASSESSMENT QUESTION: What are the clinical benefits to using the BCID II in regards to antimicrobial stewardship?

BACKGROUND: Bloodstream infections are a significant cause of morbidity and mortality. The increase in bacterial resistance has led to the widespread use of broad-spectrum antibiotics until sensitivities are known for de-escalation or escalation. This approach potentially selects for more resistant strains of bacteria and exposes patients to unnecessary adverse effects from empiric broad antibiotics. Additionally, costs for increased length of stay, selection of unnecessary medications, and laboratory monitoring are all potentially increased.

Molecular technology has been used for the past several years to identify organisms quicker. The BCID II FilmArray® panel can identify organisms within about one hour following a positive blood culture report. With this technology, rapid identification will assist in quickly escalating or de-escalating therapy, resulting in improved time to optimal antibiotic treatment.

METHODOLOGY: This is a retrospective chart review of all patients with bacteremia pre and post BCID II FilmArray® blood panel implementation from July to October 2021. The primary endpoint is to determine the number of days to optimal antibiotic therapy 1 month before and 3 months after the implementation of the BCID II FilmArray® blood panels. The secondary endpoints are to determine the frequency of changes in antibiotic therapy before and after the implementation of the BCID II FilmArray® blood panels and the incidence of each resistant gene associated with multidrug-resistant bacteria.

RESULTS: In progress

CONCLUSIONS: In progress

9:30am – 9:50am L **Appropriateness of Proton Pump Inhibitor Prescribing for Stress Ulcer Prophylaxis through Admission and Post-operative Order Sets** Room K

Presenters: Sydney Butler

TITLE: Appropriateness of Proton Pump Inhibitor Prescribing for Stress Ulcer Prophylaxis through Admission and Post-operative Order Sets

AUTHORS: Sydney Butler, Rebecca Satterwhite

OBJECTIVE: Assess appropriateness of PPI prescribing for SUP prescribed through admission and post-operative order sets

SELF ASSESSMENT QUESTION: Should PPIs for SUP be removed from admission and post-operative order sets?

BACKGROUND: Although stress ulcer prophylaxis (SUP) is an important component in the management of critically ill patients, the overuse and misuse of proton pump inhibitors (PPIs) is common. The purpose of this study is to determine the incidence of inappropriate PPI prescribing for SUP when ordered off admission and post-operative order sets.

METHODOLOGY: This was a retrospective medication use evaluation that included patients who were 18 years of age or older and were prescribed an IV or PO PPI for SUP through an admission or post-operative order set. A report of all PPIs prescribed from January 1st, 2021, through January 31st, 2021, was generated and appropriateness was assessed in addition to the number of inappropriate PPIs continued at discharge. A pharmacist driven PPI reduction protocol was implemented in November 2021 and orders from November 21st, 2021, through December 21st, 2021, were assessed for appropriateness.

RESULTS: One-hundred twenty-one (64.7%) patients in the pre-implementation group had a PPI prescribed inappropriately through an order set for SUP. Of the PPIs prescribed inappropriately, 14 (11.6%) were continued on discharge. After implementation of the pharmacist driven PPI reduction protocol, 46 (40%) patients had a PPI prescribed inappropriately through an order set. Of the 46 orders prescribed inappropriately, 25 (54.3%) were discontinued per protocol by a pharmacist and only 1 was continued on discharge.

CONCLUSIONS: The majority of PPIs used for SUP that are prescribed through admission and post-operative order sets are prescribed inappropriately. Pharmacists can play an important role in the reduction of PPI use. PPIs should be removed from admission and post-operative order sets due to inappropriate prescribing when readily available on order sets.

9:30am – 9:50am N **Stroke Prevention Outcomes Following Cryptogenic Stroke: A Retrospective Study** Room L

Presenters: Elise Grove

TITLE: Stroke Prevention Outcomes Following Cryptogenic Stroke: A Retrospective Study

AUTHORS: Elise Grove, Lindsay Harris, Robin Jones, Joshua Lewis, Alexander Schneider

OBJECTIVE: Describe the impact of post-cryptogenic stroke management on recurrent ischemic stroke of any type.

SELF ASSESSMENT QUESTION: What is the recommended management of patients following a cryptogenic stroke?

BACKGROUND: Secondary prevention following a cryptogenic stroke is similar to that of other ischemic stroke subtypes despite the fact that patients who experience a cryptogenic stroke typically have fewer atherosclerotic and cardio-embolic risk factors. Patients who experience a cryptogenic stroke likely require alternative post-stroke management and there has been little-to-no progress regarding the secondary prevention of this stroke subtype in recent years. The purpose of this study is to evaluate the impact of post-cryptogenic stroke pharmacologic and non-pharmacologic management on recurrent ischemic stroke and survivability.

METHODOLOGY: The institutional review board approved this multi-center, retrospective study. Any patient who experienced a cryptogenic stroke, was treated at Mission Health System from January 1, 2018 to December 31, 2020 and had at least one additional encounter in the electronic medical record system was eligible for study inclusion. All follow-up encounters following the index stroke noted in the electronic medical record system were reviewed for additional data collection. Patients who experienced a severely disabling stroke (modified Rankin score > 4), had closure of patent foramen ovale, or were statin intolerant were excluded. Data points collected include patient risk factors for ischemic stroke, pre- and post-stroke medications, duration and method of long-term cardiac monitoring, recurrent ischemic stroke, and survival status. The data was reviewed by a multi-disciplinary team that assessed the recurrence of ischemic stroke and survivability from the time of discharge following the index stroke until December 31, 2020.

RESULTS: In Progress

CONCLUSIONS: In Progress

9:30am – 9:50am

O **The Effect of Dosing Schedule on the Incidence of Immune-Related Adverse Events (irAEs) and Infusion Reactions in Patients Receiving Immunotherapy** Room B

Presenters: Solmaz Karimi

TITLE: The Effect of Dosing Schedule on the Incidence of Immune-Related Adverse Events (irAEs) and Infusion Reactions in Patients Receiving Immunotherapy

AUTHORS: S Karimi, T Brown, A Salama, B Hanks, B Liu, A Erkanli, H Lee

OBJECTIVE: Explain the difference in the incidence of irAEs and infusion reactions between alternate dosing schedules of pembrolizumab and nivolumab.

SELF ASSESSMENT QUESTION: What is the difference between incidence of irAEs in patients receiving alternative dosing schedules of pembrolizumab and nivolumab?

BACKGROUND: Pembrolizumab and nivolumab are programmed death receptors-1 blocking antibodies FDA-approved for a variety of malignancies. Nivolumab and pembrolizumab were initially approved at flat doses of 240mg Q2W and 200mg Q3W, respectively. Recently, extended dosing schedules were approved for both nivolumab (480mg Q4W) and pembrolizumab (400mg Q6W) following the results of pharmacokinetic simulation models.

METHODOLOGY: In this single-center, retrospective study, adult subjects (n=171) who received at least two doses of the study drugs at one of the dosing schedules at Duke University Health System between January 2018 and June 2021 were included. Subjects were excluded if they received concurrent chemotherapy, prior immunotherapy, pre-medications to prevent infusion reactions, or received the study drugs at both dosing regimens. The primary endpoint was the frequency of any grade immune-related adverse events (irAEs) within 6 months of treatment initiation. A secondary endpoint was the frequency of any grade infusion reactions.

RESULTS: The incidence of any grade irAE was 40% and 46% in patients who received nivolumab 240mg Q2W and 480mg Q4W, respectively. The incidence of any grade irAE was 34% and 47.6% in patients who received pembrolizumab 200mg Q3W and 400mg Q6W, respectively. Patients who received nivolumab 480mg Q4W had a higher incidence of infusion reactions compared to those who had nivolumab 240mg Q2W (10% vs. 4%). Patients who had pembrolizumab 200mg Q2W had a higher incidence of infusion reactions compared to those who had pembrolizumab 400mg Q6W (6% vs. 0%).

CONCLUSIONS: The incidence of irAEs and infusion reactions were not significantly different among patients receiving nivolumab or pembrolizumab at either dosing schedules.

9:30am – 9:50am 1 **Impact of proton pump inhibitor utilization on infectious adverse events after kidney transplantation** Room A

Presenters: Teresa Gennaro

TITLE: Impact of proton pump inhibitor utilization on infectious adverse events after kidney transplantation

AUTHORS: Teresa Gennaro, Heather Snyder, Erika Meredith, Fizza Abbas

OBJECTIVE: Evaluate the safety of PPI therapy in kidney transplant recipients compared to those receiving H2RA or no acid suppressant therapy.

SELF ASSESSMENT QUESTION: What impact did the use of PPIs post-kidney transplant have on infectious adverse events?

BACKGROUND: Kidney transplant recipients are at an increased risk for gastrointestinal (GI) events post-transplantation. High dose proton pump inhibitor (PPI) therapy has been linked to increased rates of Clostridioides difficile infection (CDI) and pneumonia. The purpose of this study was to evaluate the safety of PPI therapy in kidney transplant recipients.

METHODOLOGY: This was a single-center, retrospective chart review of adult patients who received a solitary kidney transplant at Emory Transplant Center between July 1, 2015 and February 28, 2020. Patients were placed into two study arms: those on PPI for at least 4 weeks within 3 months post-transplant versus patients receiving histamine-2 receptor antagonist (H2RA) or no acid suppressant therapy. The primary outcome was a composite of infectious adverse events, including CDI and pneumonia, at 18-months post-transplant. Secondary outcomes included incidence of CDI, pneumonia, GI ulcer, GI bleed, and gastritis.

RESULTS: Of the 1,221 patients screened, 1,079 patients met inclusion criteria with 434 patients in the PPI group and 645 in the non-PPI group. Baseline characteristics were similar between groups. Patients in the PPI group experienced higher rates of infectious adverse events (24.9% vs. 17.8% in the non-PPI arm; p=0.005) which was driven by pneumonia (20% vs. 13.8%, p=0.006). Rates of CDI were similar between groups (7.8% PPI vs. 5.4% non-PPI, p=0.113). More patients in the PPI group experienced GI events compared to those not on PPI therapy: GI ulcer 2.3% vs. 0.3% (p=0.002), GI bleed 5.5% vs. 0.6% (p<0.001), and gastritis 5.5% vs. 0.9% (p<0.001), respectively.

CONCLUSION: Efforts should be made to limit the duration and prescribing of PPIs in kidney transplant recipients without a clear indication.

9:50am – 10:10am B **Evaluate the Change in Hemoglobin A1c (HbA1c) in Patients Formerly Managed By a Pharmacist-Run Ambulatory Care Clinic** Room J

Presenters: Lauren Bou-Ghazale

TITLE: Evaluate the Change in Hemoglobin A1c (HbA1c) For Patients Formerly Managed in a Pharmacist-Run Ambulatory Care Clinic

AUTHORS: Lauren Bou-Ghazale, Elizabeth Oldham, Andrew Bundeff, Andrew Hwang

OBJECTIVE: Identify any changes in mean HbA1c for patients with diabetes after discontinuation of management by a clinical pharmacist.

SELF ASSESSMENT QUESTION: What is the effect on HbA1c upon discontinuation of diabetes management with a clinical pharmacist in this study?

BACKGROUND: Diabetes is a chronic condition commonly managed by clinical pharmacists. Research has demonstrated pharmacists' effectiveness in lowering HbA1c compared to usual provider-based care. At our health center, employee-health plan beneficiaries received the benefit of a $0 or reduced copay for diabetes medications upon meeting the requirement of routine diabetes visits with a clinical pharmacist. In 2021, this requirement terminated and the benefit extended to all beneficiaries. Therefore, the purpose of this study is to measure the impact on glycemic control in patients who discontinued routine pharmacist visits.

METHODOLOGY: This is a single-center, retrospective, chart review of patients followed by a pharmacist from January 1, 2020 through March 31, 2021. Patients included had type II diabetes, were $\geq$18 years old, not pregnant, and not using an insulin pump. The baseline visit was defined as the last pharmacist visit within the study period. The follow-up HbA1c was defined as the most recent one upon chart review and at least 5 months after the baseline visit. The primary and secondary endpoints are the mean change in HbA1c and number of antihyperglycemic agents from baseline to follow-up, respectively. Statistical analysis includes descriptive statistics for baseline characteristics, paired t-test for the primary endpoint, and the McNemar test for the secondary endpoint.

RESULTS: A total of 590 patients were screened and 131 were included in analysis. The primary outcome revealed a baseline HbA1c of 7.3% and a follow-up HbA1c of 7.41% [0.11% (1.22), p=0.326]. There were no statistically significant differences for the primary and secondary outcomes.

CONCLUSIONS: This was a unique study population, primarily of healthcare workers, that had a controlled HbA1c at baseline. Due to the lack of significance in the primary endpoint, it may be appropriate to limit or have less frequent pharmacist visits for well-controlled patients.

9:50am – 10:10am B **EVALUATION OF ACUTE KIDNEY INJURY FOLLOWING THE INITIATION OF EMPAGLIFLOZIN IN A VETERAN POPULATION** Room I

Presenters: Megan Adams

TITLE: EVALUATION OF ACUTE KIDNEY INJURY FOLLOWING THE INITIATION OF EMPAGLIFLOZIN IN A VETERAN POPULATION

AUTHORS: Megan Adams, PharmD, Richard Burnett, PharmD

OBJECTIVE: Identify the rate of acute kidney injury following the initiation of empagliflozin therapy in a veteran population.

SELF ASSESSMENT QUESTION: Should close laboratory monitoring be required in patients initiated on empagliflozin therapy?

BACKGROUND: Conflicting evidence regarding the risk of acute kidney injury with SGLT2i use remains unanswered. The purpose of this project is to evaluate within a VA Health Care System the association between empagliflozin use and acute kidney injury in patients prescribed empagliflozin.

METHODOLOGY: Eligible patients are those prescribed empagliflozin from January 2020 to July 2021. Patients were excluded if they did not have labs within six months prior to therapy initiation or throughout the duration of therapy. Retrospective chart reviews will be completed to assess age, sex, race, duration of therapy, reason for termination of therapy if applicable, adverse drug reactions to therapy if applicable, kidney function prior to initiation of empagliflozin and throughout treatment duration and additional potential causes of acute kidney injury. Acute kidney injury was defined as a rise in serum creatinine greater than or equal to 0.3mg/dL following the initiation of empagliflozin.

RESULTS: In progress.

500 patients were randomly selected from the sample using a random number generator to be evaluated. 405 patients were included in the study, of which 93 patients were identified that had a rise in serum creatinine >0.3mg/dL following the initiation of empagliflozin. 95 patients were excluded from the study (89 patients did not have labs following therapy initiation & 6 patients did not have labs prior to therapy initiation). Final results of the study are pending the completion of retrospective chart reviews of the 93 patients identified in the study to evaluate other potential causes of acute kidney injury.

CONCLUSIONS: In progress.

9:50am – 10:10am C **Evaluation of Post-Discharge Thromboprophylaxis in a COVID-19 Cohort** Room H

Presenters: Cindy Doan

TITLE: Evaluation of Post-Discharge Thromboprophylaxis in a COVID-19 Cohort

AUTHORS: Cindy Doan; Kyle Ames; Bethany Marshall; Carmen M. Piccolo

OBJECTIVE: Provide provider education on the appropriateness of extended thromboprophylaxis in COVID-19 patients.

SELF ASSESSMENT QUESTION: When is it appropriate to initiate extended thromboprophylaxis post-discharge in COVID-19 patients?

BACKGROUND: The intention of this study is to determine the safety and efficacy of post-discharge thromboprophylaxis in a COVID-19 cohort.

METHODOLOGY: The cohort study is composed of COVID-19 patients 18 years of age or older, prescribed post-discharge thromboprophylaxis that were readmitted within 90 days. Patients discharged on apixaban or rivaroxaban are categorized into high risk or low risk based on the modified International Medical Prevention Registry on Venous Thromboembolism (IMPROVE) VTE score. The primary outcome is a composite of major and minor bleeds. Secondary outcomes include the incidence of venous and arterial thromboembolism, individual components of the primary composite outcome, appropriateness of post-discharge thromboprophylaxis based on the modified IMPROVE VTE and IMPROVE bleed score, and appropriateness of the dose based on renal function and indication.

RESULTS: 42 patients were included in the study. There was a higher incidence of major and minor bleeds in the high-risk group [3 of 28 (10.7%)] compared to the low-risk group [1 of 14 (7.14%)]. There was a higher incidence of VTE in the low-risk group [2 of 14 (14.2%)] compared to the high-risk group [2 of 28 (7.14%)]. There was a higer incidence of arterial thrombosis in the high-risk group [2 of 28 (7.14%)] compared to the low-risk group [0 of 14 (0.00%)]. All of these outcomes were not found to be statistically significant. Incidence of major bleeds were similar in both treatment groups. The incidence of minor bleeds were higher in the high-risk group [1 of 28 (3.57%)] compared to the low-risk group [0 of 14 (0.00%)].

CONCLUSIONS: No statistical difference was found between the 2 treatment groups for the primary and secondary outcomes. This study did not show a difference in DVT prophylaxis post-COVID.

9:50am – 10:10am Y **Impact of Changing Antiretroviral Therapy Regimens on Adherence for Patients with HIV** Room G

Presenters: Libbie Portteus

TITLE: Impact of Changing Antiretroviral Therapy Regimens on Adherence for Patients with HIV

AUTHORS: E Portteus, KM Anderson, B Lawson, K Trotta, E Schoenborn

OBJECTIVE: Identify reasons for nonadherence to antiretroviral therapy (ART) and describe how changing medication regimens can affect adherence.

SELF ASSESSMENT QUESTION: What were the most common reasons for ART regimen change?

BACKGROUND: An estimated ART adherence of 75-80% is necessary for HIV viral suppression, preventing transmission and resistance. Common reasons for nonadherence include complex medication regimens, adverse effects, and access issues. Different strategies have been studied to address specific causes of nonadherence such as changing patients' ART regimens. At the study site, ART adherence is assessed by Proportion of Days Covered (PDC). The purpose of this study is to promote a better understanding of the impacts regimen changes have on ART PDC

METHODOLOGY: This was an IRB-exempted retrospective cohort, quality improvement study conducted in a specialty location of a large, national chain pharmacy. The primary outcome was to compare ART adherence for adults with HIV, clinically managed by a specialty pharmacy, before and after changing ART regimens. Secondary outcomes included reasons for changing and adherence in patients before and after changing from a more complex to less complex regimen. Participants included adults with HIV, changing ART regimens between February 1, 2020 and September 1, 2021. Patients were excluded if they changed regimens more than once. PDC data was collected from the pharmacy dispensing system, and patient-reported data about barriers to adherence was collected from the pharmacy's clinical platform. Difference between PDC 180 days pre- and post-ART change was analyzed with a paired t-test.

RESULTS: 44 patients were included in the analysis. Pre-change and post-change PDC are 94.5% and 94.25%, respectively, with a p-value of 0.8502, indicating no difference. The reasons for change are drug-drug interaction (7%), insurance (7%), newer medication available (7%), decreased pill burden (13%), side effects (34%), and unknown (32%).

CONCLUSIONS: Changing ART regimens does not provide a significant difference in adherence.

9:50am – 10:10am R **Evaluation of Equivalence of IV Push versus IV Intermittent Infusion Administration of Cefepime in Critically Ill Patients** Room C

Presenters: Zachary Halbig

TITLE: Evaluation of Equivalence of IV Push versus IV Intermittent Infusion Administration of Cefepime in Critically Ill Patients

AUTHORS: Zachary Halbig; Ryan Hefty; Trisha Branan; Christopher Bland; Susan Smith

OBJECTIVE: Describe differences in treatment failure with IV intermittent infusion and IV push administration of cefepime in critically ill patients.

SELF ASSESSMENT QUESTION: Which outcomes, when comparing IVPB to IVP administration of cefepime, appear to be associated with increased treatment failure in the critically ill population?

BACKGROUND: As a result of national fluid shortages from Hurricane Maria in 2018, administration of cefepime at Piedmont Athens Regional (PAR) was transitioned from IV intermittent infusion (IVPB) to IV push (IVP). IVP administration could result in a higher risk of adverse events and in decreased bactericidal activity due to a shorter time of free drug concentration exceeding the minimum inhibitory concentration. These potential effects of IVP administration could be more prevalent in the critically ill population. The equivalence of IVP administration versus IV intermittent infusion of cefepime has not been evaluated, but is critical for confirming safety and efficacy.

METHODOLOGY: This is a single center, IRB-exempt, retrospective, observational pre/post-protocol change study of patients who received cefepime at PAR by IVPB (8/14/2015 through 8/13/2018) or IVP (8/14/2018 through 8/13/2021). Patients were identified by pharmacy dispensing logs of cefepime and included in the study if they were ≥18 years of age, admitted to the intensive care unit (ICU) and received cefepime for at least 72 hours. Patients were excluded if they were infected with a cefepime non-susceptible pathogen, were pregnant, or received both IVP and IVPB administrations. The primary outcome was treatment failure, which was defined as a composite of escalation of antibiotic regimen or all-cause mortality. Secondary outcomes include adverse drug events (as documented in the EMR), days of cefepime therapy, total days of antibiotic therapy, and ICU and hospital length of stay. Statistical analyses were completed using IBM SPSS Statistics Version 28. Categorical variables, including the primary outcome, were compared using the Chi-squared test and reported as number (proportion) while continuous variables were evaluated using the Mann-Whitney U test and were reported as median (interquartile range). Binary logistic regression was applied to the primary outcome. Variables agreed upon by the investigators a priori include age, gender, race/ethnicity, source of infection, duration of antibiotic therapy, SOFA score, and cefepime administration route. For all analyses, alpha less than 0.05 was considered significant.

RESULTS: A total of 285 patients were included, 87 in the IVPB group and 198 in the IVP group. Median age of patients were 73 (68-81) and 67 (58-76) years, respectively, with the majority being Caucasian and male. The median SOFA score was similar between groups at 6 and 5, respectively (p=0.184). Pneumonia was the most common source of infection (55% vs 51%, p=0.267). In the IVPB and IVP groups respectively, 83% and 69% were diagnosed with sepsis. Treatment failure occurred in 18% (n=16) of the IVPB group and 27% (n=54) of the IVP group (p=0.109) with escalation of therapy occurring in 2% (n=2) versus 9% (n=18) (p=0.093) and all-cause mortality occurring in 18% (n=16) versus 22% (n=44) (p=0.339). There was no significant difference in drug-induced ADR (p=0.915), total days of cefepime (6 vs 6 days, p=0.314) or antibiotic (9 vs 10 days, p=0.194) therapy, or ICU (6 vs 7 days, p=0.06) or hospital (11 vs 13 days, p=0.148) length of stay. In binary logistic regression, SOFA score (OR 1.274, 95% confidence interval [CI]1.157 – 1.404) and IVP administration of cefepime (OR 2.4, 95% CI 1.149 – 5.017) were independently associated with treatment failure.

CONCLUSIONS: Limitations of this study include the retrospective design and significant difference in number of patients between the two groups. Despite these limitations, the study observed a 2.4 times increase in treatment failure in critically ill patients that received IVP compared to IVPB cefepime. These data provide evidence that the current practice of IVP administration of cefepime should be reevaluated as it may not be as efficacious as IVPB in the critically ill population. Future research will evaluate the suspected differences in pharmacokinetic parameters between these two administration routes and will compare these administration routes in non-critically ill patients.

9:50am – 10:10am R **Impact of Standardized Titratable Drip Instructions on the Prevention of Delirium in Patients in Intensive Care Unit of a Community Hospital** Room D

Presenters: Allyson Ritter

TITLE: Impact of Standardized Titratable Drip Instructions on the Prevention of Delirium in Patients in Intensive Care Unit of a Community Hospital

AUTHORS: Allyson Ritter, Josh Chestnutt, Aayush Patel, Jillian Davis

OBJECTIVE: Identify if the implementation of standardized sedation titration instructions reduces the incidence of delirium and coma in the ICU.

SELF ASSESSMENT QUESTION: What clinical benefits were associated with the implementation of standardized sedation titration instructions?

BACKGROUND: The Awakening and Breathing Coordination, Delirium monitoring/management, and Early exercise/mobility, and Family engagement (ABCDEF) bundle is a standardized treatment approach that aims to decrease complications of sedation in the intensive care unit (ICU). Current guidelines recommend targeting light sedation in mechanically ventilated patients to avoid adverse outcomes like delirium which may increase days requiring mechanical ventilation, ICU length of stay, and mortality. Strategies to decrease ICU delirium at the study facility have resulted in the implementation of standardized titration instructions for sedative infusions. The purpose of this study is to determine if implementation of standardized titration instructions for sedation infusions decreased the incidence of delirium and improved titration compliance in the ICU.

METHODOLOGY: This was an IRB approved retrospective chart review of 100 mechanically ventilated patients requiring light sedation with at least one of the following sedatives infusions: propofol, dexmedetomidine, fentanyl, midazolam, and ketamine during two independent 3 month time periods before and after implementation of standardized sedation titration instructions. As of October 3, 2021, all sedation infusion orders were required to include standardized sedation titration instructions to notify nursing of the specific starting rate, individualized titration rate, and patient specific RASS target. Nurse made titrations at bedside to achieve targeted light sedation with goals set by providers as RASS of 0 to -1. Patients that were younger than 18, pregnant, breast-feeding or required deep sedation were excluded. The primary objective was to determine if the implementation of standardized sedative titration instructions increases the percentage of days alive without coma or delirium during a 7-day intervention period.

RESULTS: In process

CONCLUSIONS: In process

9:50am – 10:10am G **Pharmacy Student Attitudes towards a Career in Older Adult Care** Room L

Presenters: Emma Williams

TITLE: Pharmacy Student Attitudes towards a Career in Older Adult Care
AUTHORS: Emma Williams, Shannon D. Rice, Tasha Woodall, Autumn Neff, Mollie Ashe Scott
OBJECTIVE: Describe factors that either encourage or discourage student pharmacists to pursue a career or additional training in geriatrics and how these factors can be utilized to encourage exploration of geriatric pharmacy careers.
SELF ASSESSMENT QUESTION: Which of the following are key factors that encourage student pharmacists to pursue additional training in geriatrics?
BACKGROUND: The United States healthcare workforce is underprepared to meet the needs of the growing older adult population. The primary purpose of this study is to examine the reasons why current pharmacy students are interested or not interested in pursuing a career or postgraduate training in geriatrics and to evaluate factors that influence this choice.
METHODOLOGY: This is a prospective, qualitative research study that utilizes a Qualtrics survey informed by focus group discussions among second and third year Doctor of Pharmacy students of one public school of pharmacy. Through open thematic coding of the focus group transcripts, key factors either encouraging or discouraging student pharmacists from pursuing geriatric training were then incorporated into the survey for distribution among two schools of pharmacy.
RESULTS: Focus group participants (n=8) most commonly identified job security (13 instances), relationship value add (12 instances), and past positive experiences with older adults (9 instances) as encouraging factors that promoted interest. Inadequate geriatric exposure (17 instances), emotional impact of death and dying (13 instances), and heightened professional liability (8 instances) were the most common discouraging factors. Results from the Qualtrics survey are currently in progress.
CONCLUSIONS: Among focus group participants, factors including job security, positive experiences with older adults, and the importance of relationships in practice encourage student pharmacists to pursue older adult care, while other factors like emotional impact, professional liability, and inadequate exposure to geriatrics discourage them. Survey results from a larger cohort of student pharmacists are pending. These results will be used to explore didactic, experiential and co-curricular opportunities that could encourage more student pharmacists to seek careers in older adult care.

9:50am – 10:10am I **Effectiveness of Nafcillin versus Cefazolin for the Treatment of Methicillin-Susceptible Staphylococcus aureus Bacteremia or Endocarditis** Room F

Presenters: Ashley Byrd

Comparative Effectiveness of Nafcillin versus Cefazolin for the Treatment of Methicillin-Susceptible *Staphylococcus aureus* Bacteremia or Endocarditis
Authors: Ashley Byrd, PharmD; Avery Shawen, PharmD, BCPS; and Molly Thompson, PharmD, BCPS
Objectives:

- Determine the rate of treatment success in patients receiving nafcillin or cefazolin to treat MSSA bacteremia or endocarditis
    - Treatment success defined as a composite of absence of fevers (<37.9°C), improvement in white blood cell (WBC) count (either 20% reduction from peak WBC and/or return to normal range), and negative blood cultures.
    - Evaluate adverse drug reactions related to nafcillin and cefazolin
    - Assess pharmacoeconomic impact of cefazolin or nafcillin to treat MSSA bacteremia or endocarditis

Purpose/Background:
The purpose of this study is to assess the efficacy and safety of cefazolin compared with nafcillin to treat methicillin-susceptible *Staphylococcus aureus* (MSSA) bacteremia or endocarditis.
Current American Heart Association guidelines for infective endocarditis (IE) recommend nafcillin as the preferred treatment for methicillin-susceptible *Staphylococcus aureus* infective endocarditis or bacteremia and list cefazolin as an alternative treatment for these indications. The use of cefazolin to treat MSSA infective endocarditis and bacteremia has increased in recent years due to cefazolin's favorable tolerability profile and dosing regimen, compared with nafcillin. Several studies have demonstrated that cefazolin has similar efficacy in treating MSSA bacteremia and infective endocarditis when compared to nafcillin therapy.
A 2017 study by McDaniel et. al. assessed the comparative effectiveness of cefazolin versus nafcillin when treating MSSA bacteremia. This study found a statistically significant difference in 30-day and 90-day mortality

when comparing cefazolin with nafcillin. The authors concluded that cefazolin reduces risk of mortality and demonstrated similar rates of recurrent infection compared with nafcillin when treating MSSA bacteremia.

Methods:

This study is a single center, retrospective cohort analysis of hospitalized patients being treated for methicillin-susceptible *Staphylococcus aureus* (MSSA) bacteremia or endocarditis during an inpatient medical or surgical admission from January 2021 to February 2022. The study protocol was designated as exempt research by the health system Institutional Review Board. Patients were included for analysis if they were 18 years or older and received at least one dose of nafcillin or cefazolin for MSSA bacteremia or endocarditis. MSSA bacteremia was defined as at least one S. aureus–positive blood culture susceptible to either methicillin or oxacillin by antimicrobial susceptibility testing. MSSA endocarditis defined by the Duke Criteria and/or clinical diagnosis by expert provider. Patients were excluded if they were also being treated for pneumonia or central nervous system (CNS) infection. The electronic medical record was used to collect patient demographics, medication order details, microbiologic study results, laboratory test results and provider progress notes.

The primary efficacy outcome analyzes cefazolin treatment success compared with nafcillin treatment success. Treatment success defined as improvement in white blood cell count (WBC), absence of fevers and negative blood cultures. Treatment failure defined as persistent infection (lack of clinical response after at least 3 days of either cefazolin or nafcillin monotherapy) or recurrent infection (elevated WBC, fevers and/or return of infection symptoms) within 30 days after cefazolin or nafcillin therapy completion.

Additional secondary outcomes include time to negative blood cultures, duration of antimicrobial therapy and hospital length of stay. Safety outcomes include reports of adverse reactions and increased laboratory parameters, specifically serum creatinine. Appropriate statistical analysis will be conducted based on the type of data being examined.

Results:

Primary Outcome Treatment Success: In this cohort of patients assessed, cefazolin met the criteria for treatment success in 100% of patients treated, however there was no statistical difference in treatment success when comparing nafcillin with cefazolin.Cefazolin did have a statistically significant reduction in fevers. There was no statistical difference in improved white blood cell count and negative blood cultures between the two groups.

Secondary Efficacy Outcomes: There were no statistical difference between groups for time to first negative blood culture, duration of therapy, hospital length of stay, all-cause 30-day readmission or all-cause mortality.

Secondary Safety Outcomes: Nafcillin had 7 adverse reactions reported whereas cefazolin had 3 adverse reactions reported, however there was no statistical difference in adverse reactions. The most common adverse reaction reported in the nafcillin group was allergic interstitial nephritis, which was reported in 2 patients and for the cefazolin group rash was reported more frequently, which also occurred in 2 patients. I would also like to point out the cytopenia that occurred in the nafcillin group included thrombocytopenia and leukopenia, which occurred in the same patient.

Conclusion:

Similar rate of treatment success when cefazolin compared to nafcillin for treatment of MSSA bacteremia or endocarditis.

Adverse events were not significantly different between groups.

Cefazolin had a lower incidence of overall adverse reactions, however, did not reach statistical significance threshold.

Early discontinuation of antibiotics exhibited a statistically significant difference.

All patients in the nafcillin group continuing therapy in the outpatient were switched to cefazolin prior to discharge for continuation of therapy.

Cefazolin for MSSA endocarditis or bacteremia was safe and effective.

Self-Assessment Question:

Is cefazolin a safe and effective initial treatment for methicillin-susceptible *Staphylococcus aureus* (MSSA) bacteremia or endocarditis?

9:50am – 10:10am O **Comparing Oral Oncolytic Outcomes Before and After Implementation of a Clinical Pharmacy Specialist and Integrated Service Model Within the Clinic** Room B

Presenters: Vishal Shah

TITLE: Comparing Oral Oncolytic Outcomes Before and After Implementation of a Clinical Pharmacy Specialist and Integrated Service Model Within the Clinic

AUTHORS: Vishal Shah, Amber Draper, Sarah Caulfield, Alyssa Billmeyer, Mehmet Bilen

OBJECTIVE: To evaluate the operational and clinical impact that the implementation of a clinical pharmacy specialist and integrated service model can have in a genitourinary (GU) oncology clinic

SELF ASSESSMENT QUESTION: What benefits can be seen with the implementation of clinical pharmacy specialist and an integrated service model within an outpatient oncology clinic?

BACKGROUND: The treatment paradigm for oncology care has shifted from a purely infusion-based model to home administration of oral therapies. Although most oncology medications require strict monitoring and close follow up to ensure overall effectiveness of therapy, there are a variety of factors that may negatively impact a patient's course of treatment (high costs, access, complex regimens, etc.). As such, it is important to assess the impact different stakeholders have on patient outcomes associated with home administration of oral chemotherapy. With the rise of health-system specialty pharmacies in the last several years, limited data exists showcasing the value an integrated service model has on patient outcomes. An integrated service model allows clinical pharmacy specialists to play a tremendous role within clinic, serving as the medication expert and liaison between the patient and all stakeholders that may be involved with the patient's medication.

METHODOLOGY: This study is a retrospective chart review of patients receiving cabozantinib or sunitinib for renal cell carcinoma who started their treatment between January 1st, 2009, and May 31st, 2021. At Emory Healthcare, pharmacists were embedded into the GU oncology clinic in 2017 alongside the integration of the inhouse specialty pharmacy. Primary outcomes include time to treatment and time on treatment (using prescription data claims) before and after implementation of the clinical pharmacy specialists and specialty pharmacy integration. Secondary outcomes include overall survival, provider assessed progression free survival, occurrence of adverse effects, clinical treatment delays, and number of dose reductions.

RESULTS: In Progress

CONCLUSIONS: In Progress

9:50am – 10:10am S **Analysis of pharmacist role in benzodiazepine taper via e-consult** Room E

Presenters: Kyle Owens

TITLE: Analysis of pharmacist role in benzodiazepine taper via e-consult

AUTHORS: Kyle Owens, PharmD, BCPS, Michelle Colvard, PharmD, BCPP

OBJECTIVE: The primary objective of this analysis is to describe outcomes of benzodiazepine tapers with pharmacists involvement via e-consult.

SELF ASSESSMENT QUESTION: Which of the following is NOT a long term risk with long-term benzodiazepine use:

a. worsening of post-traumatic stress disorder

b. risk to fetal health

c. development of metabolic syndromes

d. potential for abuse / addiction

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 post-traumatic stress disorder 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.

METHODOLOGY: This project is a retrospective single-center chart review to be completed. All patients who had a benzodiazepine taper e-consult in the study time period will be included in the study. Data extraction will be performed manually and via data warehouse extraction to complete chart reviews.

RESULTS: Pending

CONCLUSIONS: Pending

9:50am – 10:10am 1 **Conversion between sirolimus and everolimus in orthotopic heart transplant recipients** Room A

Presenters: Thomas Wert

TITLE: Conversion between sirolimus and everolimus in orthotopic heart transplant recipients

AUTHORS: Thomas Wert, Madeline Morrison, Stephanie Heeney

OBJECTIVE: Identify an appropriate conversion strategy between mechanistic target of rapamycin inhibitors (mTORi).

SELF ASSESSMENT QUESTION: Do mTOR inhibitors have similar pharmacokinetic and pharmacodynamic parameters and should they be converted on a 1:1 basis?

BACKGROUND: Sirolimus (SRL) and everolimus (EVL) are mTORi that may be utilized as part of an immunosuppression regimen in orthotopic heart transplant (OHT) recipients. mTORi play a useful role in preventing or slowing progression of cardiac allograft vasculopathy (CAV), however, historically they have been poorly tolerated, sometimes necessitating a change between agents or to alternate therapies. The current literature surrounding a conversion between mTORi are incongruent, thus the purpose of this study was to assess the concentration/dose (C/d) ratio for each medication around the time of conversion to identify an appropriate conversion strategy between these medications.

METHODOLOGY: This was a retrospective study of adult OHT recipients who were converted from SRL- to EVL- based immunosuppression regimens (or vice versa). The primary outcome was the C/d ratio of SRL to EVL. The secondary outcomes included changes in hematologic labs, lipid labs, and patient-reported intolerances.

RESULTS: 17 patients were included, accounting for 18 total records. Most were transplanted for non-ischemic cardiomyopathy. The majority were white males with an average BMI of 30.7 kg/m2 and average age at transplant of 50.5 years. The C/d ratio of SRL:EVL was 1.98. EVL appeared better tolerated, with 93% of patients reporting resolution of intolerances with conversion from SRL to EVL, though most patients were initially on SRL and we did not have complete follow-up in some patients on EVL. The hemoglobin was higher in the EVL group, but other collected laboratory parameters were similar between groups.

CONCLUSIONS: When converting between SRL and EVL, a 1:2 daily dose ratio may be more appropriate in OHT recipients. A conversion also seems to improve patient tolerability.

10:20am – 10:40am A **Analysis of Clinical Drug Information Inquiries Posed by Healthcare Practitioners through a Mobile, Web-based Platform** Room L

Presenters: Dylan Brown

TITLE: Analysis of Clinical Drug Information Inquiries Posed by Healthcare Practitioners through a Mobile, Web-based Platform

AUTHORS: Dylan Brown, Neil Patel, Ashish Advani, Rebecca Hoover

OBJECTIVE: To determine clinical needs of healthcare providers by characterizing type and frequency of drug information inquiries posed by healthcare practitioners via a mobile- and web-based drug information platform developed and maintained by pharmacists.

SELF ASSESSMENT QUESTION: What is the greatest clinical drug information need of healthcare practitioners?

BACKGROUND: The role of drug information has evolved within the landscape of clinical pharmacy, and a standard taxonomy to classify drug information inquiries is lacking. The purpose of this study is to determine the greatest clinical needs of healthcare providers by characterizing type and frequency of drug information inquiries posed according to a prespecified taxonomy.

METHODOLOGY: A retrospective, database analysis was conducted to analyze the types and frequencies of drug information inquiries posed by healthcare practitioners in an institutional and ambulatory setting during a commercial pilot and over 4 months. Healthcare practitioners included physicians, physician's assistants, pharmacists, nurse practitioners, and public health advocates. The primary objective was to classify inquiries according to a prespecified taxonomy in order to evaluate the types of inquiries healthcare providers entertain. Due to the timing of this analysis, the frequency of COVID-related questions was also evaluated.

RESULTS: During the commercial pilot (March 30, 2021 to August 23, 2021), 249 drug information inquiries were posed. There were 781 inquiries posed during the 4-month analysis (March 2021 to June 2021). The most frequent category of questions asked during the commercial pilot was "Treatment" (209; 84%), and a total of 11 (5%) COVID-related questions were asked. The most frequent category of questions asked during 4-month analysis was "Treatment" (610; 78%), and a total of 66 (8%) COVID-related questions were asked. The most frequent "Treatment" subcategory of inquiries posed in either data set was "Drug of Choice/Efficacy/Comparative Efficacy".

CONCLUSIONS: Based on our analysis, efficacy-related inquiries were the most frequently asked, indicating healthcare providers are in high demand of clinical efficacy drug information to help improve patient outcomes.

10:20am – 10:40am B **Assessing the Impact of a Pharmacy-Based Educational Intervention on Glucagon Utilization in a Primary Care Population** Room I

Presenters: Jenci Anzalone

TITLE: Assessing the Impact of a Pharmacy-Based Educational Intervention on Glucagon Utilization in a Primary Care Population

AUTHORS: Jenci Anzalone, PharmD; Laura Schalliol, PharmD, BCGP, BCACP; Collin Haney, PharmD; Lindsey Allan, PharmD; Kim Zitko, PharmD, BCGP, BCACP

OBJECTIVE: Evaluate the impact of a pharmacy based educational intervention on glucagon utilization within a high risk primary care population.

SELF ASSESSMENT QUESTION: What are the intranasal option(s) available to treat severe hypoglycemic episodes.

A. Gvoke
B. Glucagon Emergency Kit
C. Baqsimi-**
D. Zegalogue
E. GlucaGen Hypokit

BACKGROUND: The American Diabetes Association categorizes hypoglycemia into categories. The current categories are based off of 3 levels; level 1 is blood glucose

10:20am – 10:40am B **EVALUATING THE IMPACT OF REMOTE BLOOD GLUCOSE MONITORING ON TIME TO A1C IMPROVEMENT AND CONTROL** Room J

Presenters: Alyse Battles

TITLE: EVALUATING THE IMPACT OF REMOTE BLOOD GLUCOSE MONITORING ON TIME TO A1C IMPROVEMENT AND CONTROL

AUTHORS: Alyse Battles, Erin Pace, Stephanie Hale

OBJECTIVE: Describe the Impact of remote blood glucose monitoring on A1c improvement and control.

SELF ASSESSMENT QUESTION: What is one benefit in implementing remote blood glucose monitoring?

BACKGROUND: The incorporation of technology in diabetes management has been recommended by the American Diabetes Association (ADA). There are limited studies to assess the impact of remote self-monitored blood glucose (SMBG). The purpose of this study is to evaluate the impact of remote SMBG on A1c control in type 2 diabetic patients within an integrated healthcare system.

METHODOLOGY: This is a retrospective descriptive study including adult patients with type 2 diabetes receiving care from a team of panel managers and enrolled in a remote SMBG program. Patients will be excluded if they are pregnant, using U500 insulin, baseline A1c < 8% or being followed by endocrinology. Patient eligibility will be assessed between 09/01/2018 – 06/30/2021 with A1c follow-up through 12/29/2021. The primary outcome is to compare the average A1C at baseline and the average A1C drawn at least 3 months after enrolling. Secondary outcomes include the percent of patients who reached A1c

10:20am – 10:40am C **Retrospective Review Evaluating the Impact of Clinical Decision Support Implementation for Heparin-Induced Thrombocytopenia Testing** Room H

Presenters: Brooke Lucas

TITLE: Retrospective Review Evaluating the Impact of Clinical Decision Support Implementation for Heparin-Induced Thrombocytopenia Testing

AUTHORS: Brooke Lucas, Amanda Guffey, Erik Turgeon, Samantha Schmidt

OBJECTIVE: Identify the impact of a clinical decision support tool on HIT testing.

SELF ASSESSMENT QUESTION: What are the 4Ts?

BACKGROUND: Heparin-induced thrombocytopenia (HIT) is a complication of exposure to heparin in which an immune response leads to the development of a hypercoagulable state. The 4Ts clinical scoring system assesses the likelihood of a HIT diagnosis. Implementation of a clinical decision support tool may help avoid the costs associated with unnecessary testing and alternative anticoagulation. The purpose of this study is to evaluate the impact of clinical decision support on the ordering of HIT platelet factor 4 (PF4) antibody tests in patients with a low-probability.

METHODOLOGY: Pre-intervention data was collected from September 15, 2020 to March 15, 2021 and post-intervention from September 15, 2021 to March 15, 2022. Clinical decision support involved the implementation of a 4Ts calculator in the electronic health record (EHR). At the point of order entry for HIT PF4 antibody tests with low-probability, end users received notification of the 4Ts score and its interpretation. The primary endpoint was the percent of patients ordered a HIT PF4 antibody test with a low-probability of HIT. Secondary endpoints included the cost per test prevented and the percent of patients with a low-probability receiving alternative anticoagulation.

RESULTS: The pre-intervention group consisted of 95 low-probability patients with 100% of patients ordered a HIT PF4 antibody test. The post-intervention group consisted of 94 low-probability patients with 59% of patients ordered a HIT PF4 antibody test ($p = 0.016$).

CONCLUSIONS: Implementation of a clinical decision support tool at the point of order entry decreased the frequency of unnecessary HIT PF4 antibody testing and its related costs.

10:20am – 10:40am R **Evaluation of the safety of nonsteroidal anti-inflammatory drug use in acute traumatic brain injury** Room C

Presenters: Mary Katherine Cella Shultz

TITLE: Evaluation of the safety of nonsteroidal anti-inflammatory drug use in acute traumatic brain injury

AUTHORS: Mary Katherine Cella Shultz, Jennifer Beavers, Susan Hamblin, Leanne Atchison

OBJECTIVE: Describe the risk of intracranial hemorrhage progression or development with nonsteroidal anti-inflammatory drug use within 14 days of an acute traumatic brain injury

SELF ASSESSMENT QUESTION: True/False: Nonsteroidal anti-inflammatory drug use is a risk factor for expansion or new development of intracranial hemorrhage in acute traumatic brain injury.

BACKGROUND: Nonsteroidal anti-inflammatory drugs (NSAIDs) are a crucial component of a multimodal analgesia regimen in polytrauma. Nonetheless, NSAID use after a traumatic brain injury (TBI) is controversial due to concern for expansion or new development of an intracranial hemorrhage (ICH). The purpose of this study was to determine if NSAIDs administered within 14 days of initial injury in patients with TBI leads to an increase in intracranial bleed compared to patients who did not receive NSAIDs.

METHODOLOGY: A single-center, retrospective study was conducted in adult patients with a TBI diagnosis admitted to the trauma service at an accredited level 1 trauma center between January 1st, 2018 and August 31st, 2021. Patients were evaluated if they received at least one dose of a NSAID while inpatient within 14 days of initial injury. The primary endpoint was the incidence of a clinically significant increase or new development of ICH. Secondary outcomes included repeat neurosurgery intervention, NSAID-related adverse effects, neurological outcomes, and functional status at discharge.

RESULTS: A total of 1,037 patients were included with 303 patients in the NSAID group and 734 patients in the control group. There was no difference found in clinically significant increase or new development of ICH with 5.6% in the NSAID group and 5.9% in the control group (P = 0.877). There was no difference in repeat neurosurgical interventions with 0.7% in the NSAID group and 1.9% in the control group (P = 0.138). NSAIDs increased the risk of acute kidney injury with 17.5% in the NSAID group and 12.7% in the control group (P = 0.042). There was no difference in the incidence of gastrointestinal bleed incidence or functional status at discharge between the two groups.

CONCLUSIONS: NSAIDs do not increase the risk of ICH progression or development in patients with acute TBI within 14 days of the initial injury.

10:20am – 10:40am R **Incidence of Acute Kidney Injury in Traumatic Brain Injury Patients Treated with Hypertonic Saline** Room D

Presenters: Jessica Briscoe

TITLE: Incidence of Acute Kidney Injury in Traumatic Brain Injury Patients Treated with Hypertonic Saline
AUTHORS: Jessica Briscoe, Megan VanBerkel Patel, Breanna Carter
OBJECTIVE: Determine the incidence of acute kidney injury in traumatic brain injury patients treated with hypertonic saline.
SELF ASSESSMENT QUESTION: What are two adverse events associated with hyperchloremia?
BACKGROUND: Hypertonic saline (HTS) is the mainstay of pharmacologic treatment for severe traumatic brain injury (TBI) to mitigate secondary injury, as it reduces intracranial pressure and improves cerebral perfusion pressure. Literature focused on the effects of supraphysiological hyperchloremic solutions indicates that it may induce clinically-significant hyperchloremia and subsequently increase the risk of acute kidney injury (AKI) and hyperchloremic metabolic acidosis. Despite a wealth of literature confirming adverse effects of hyperchloremia, many studies excluded the TBI population. This study seeks to examine the impact of hypertonic saline therapy on renal function in patients with traumatic brain injury.
METHODOLOGY: This retrospective, observational study will identify patients via the institutional trauma registry at a Level-1 Trauma, Academic Medical Center. Inclusion criteria are diagnosis of TBI, age of at least 12 years, admission to the surgical critical care service, ICU length of stay of at least 72 hours, and administration of at least 24 hours of continuous HTS or 500mL of cumulative HTS boluses. Patients with known renal dysfunction prior to admission will be excluded. Information regarding patients' admission serum creatinine, Injury Severity Score and Abbreviated Injury Scale - Head will collected along with baseline and discharge Glasgow Coma Scale. Total daily chloride load will be calculated from HTS, other fluids, medication diluents, and sodium chloride tablets. The primary outcome is the incidence of AKI in TBI patients receiving HTS. AKI will be defined using KDIGO serum creatinine-based criteria, and incidence of AKI will be assessed throughout HTS administration and for 48 hours after discontinuation. Secondary outcomes are the incidence of hyperchloremic metabolic acidosis and the correlation between chloride load and development of AKI.
RESULTS: In progress
CONCLUSIONS: In progress

10:20am – 10:40am I **Evaluation of oral stepdown beta-lactam therapy for urinary tract infections caused by Enterobacterales** Room G

Presenters: Landon Johnson

TITLE: Evaluation of oral stepdown beta-lactam therapy for urinary tract infections caused by Enterobacterales
AUTHORS: Sarah Eudaley, Landon Johnson, Samuel Yahr, Hannah Payne, Spencer Elliott, Samantha Yeager
OBJECTIVE: Describe oral stepdown treatment for urinary tract infections.
SELF ASSESSMENT QUESTION: True/false - Oral beta-lactams are associated with a lower rate of hospital readmission and ED presentation compared with oral fluoroquinolones.
BACKGROUND: Compare treatment outcomes for patients diagnosed with a urinary tract infection after completing intravenous antibiotic to oral stepdown therapy with a beta-lactam or fluoroquinolone.
METHODOLOGY: Eligible patients with cystitis or pyelonephritis were included if they received ≤ 3 days of IV beta-lactams followed by oral stepdown with a beta-lactam or fluoroquinolone. Patients were further selected based on additional inclusion and exclusion criteria based on the protocol. Charts were reviewed to collect demographic and outcomes data. The primary endpoint of this study was a composite of hospital readmission or ED visit within 30 days of expected treatment completion. The secondary endpoints include the individual components of the primary endpoint, infection recurrence post-therapy, and time to infection-related readmission.
RESULTS: 152 patients were included in the final analysis. The rate of hospital readmission or ED visit within 30 days of expected treatment completion was 15% and 12% for beta-lactams and fluoroquinolones, respectively (p=0.768). There were 5 recurrent infections in the beta-lactam group and no recurrent infections in the fluoroquinolone group (p=0.589)
CONCLUSIONS: The results of this single-center retrospective cohort study show a similar rate of hospital readmission or ED visit after treatment with an oral beta-lactam or fluoroquinolone. Further investigation is ongoing pertaining to multivariable analyses.

10:20am – 10:40am | **Real world use of dalbavancin as directed therapy for S. aureus bacteremia** Room F

Presenters: Dillon Frazier

TITLE: Real world use of dalbavancin as directed therapy for S. aureus bacteremia

AUTHORS: J. Dillon Frazier, Laura Leigh Stoudenmire, Jamie L. Wagner, Daniel B. Chastain

OBJECTIVE: Describe how dalbavancin use may improve patient outcomes in SAB.

SELF ASSESSMENT QUESTION: Which of the following characteristics of dalbavancin is/are advantageous compared to traditional parenteral therapy?
a)Extended half-life allowing for less frequent dosing
b)Improved adherence
c)Improved patient satisfaction
d)All the above

BACKGROUND: Staphylococcus aureus bacteremia (SAB) poses significant challenges and traditionally requires prolonged courses of parenteral antibacterials for successful treatment. Patients unable to receive outpatient parenteral antimicrobial therapy often remain hospitalized or are placed into post-acute care facilities to receive weeks of treatment. The purpose of this study was to compare dalbavancin to standard of care (SOC) as directed therapy for patients with SAB.
METHODOLOGY: This retrospective cohort study compared readmission rates between patients treated with dalbavancin to SOC as directed therapy for SAB between January 1, 2016, and August 31, 2021, at a community teaching hospital.

Patients at least 18 years old who received at least one dose of dalbavancin or at least one week of SOC as directed therapy for SAB at the time of discharge were included. The SOC group consisted of patients transferred from the main hospital to one of the post-acute care facilities in a surrounding county to complete parenteral antibacterials. Patients were excluded if they were treated for polymicrobial infections with organisms other than S. aureus, had a creatinine clearance less than 30 mL/min, or were not evaluated by the Infectious Diseases consult service.

The primary outcome was readmission rates within 30 days of completion of therapy. Secondary outcomes included readmission rates within 60 and 90 days after completion of therapy, as well as antibacterial regimen adherence. Only readmissions related to management or complications of the previously treated infection(s) were considered.

RESULTS: 27 patients were included in each group. Baseline demographics and clincal characteristics were similar between groups. MSSA was the most commonly seen pathogen in both groups. The most common sources of bacteremia were endovascular and osteoarticular. Readmission rates were similar within 30 (15% in dalbavancin group vs 22% in SOC, p=0.484), 60 (19% vs 22%), and 90 (19% vs 22%) days after completion of therapy. Higher antibacterial regimen adherence rates were seen in the dalbavancin group (89% vs 44%, p <0.001).

CONCLUSIONS: Dalbavancin may be a reasonable alternative to SOC for treatment of SAB

10:20am – 10:40am L **Safety and Efficacy of Dual Antiplatelet Therapy as Secondary Prevention after Non-Minor Stroke** Room K

Presenters: Jacqueline Downey

TITLE: Safety and Efficacy of Dual Antiplatelet Therapy as Secondary Prevention after Non-Minor Stroke
AUTHORS: Jacquie Downey, Nathan Pinner, Jessica Starr, Sarah Blackwell, Kenda Germain
OBJECTIVE: Describe the effects of dual antiplatelet therapy (DAPT) when used following a non-minor stroke
SELF ASSESSMENT QUESTION: Is it safe and efficacious to use DAPT as secondary prevention in patients with non-minor stroke?
BACKGROUND: The 2019 guidelines for the acute management of ischemic stroke recommend use of aspirin/Plavix for 21-90 days in patients with minor stroke, and the 2021 guidelines for secondary stroke prevention also support this recommendation. Patients at this facility tend to be started on DAPT regardless of stroke severity, suggesting a deviance from recommended practice.
METHODOLOGY: This was a retrospective chart review approved by the Institutional Review Board. Patients were included if they were adult patients (age > 18) admitted from January 2013-January 2020 with new non-minor ischemic stroke and on an appropriate dose of at least one antiplatelet agent started within 1 week of symptom onset. Patients were excluded if they had a diagnosis of hemorrhage or other stroke etiology, a bleeding disorder, a modified Rakin scale (mRS) score > 2, a clear indication for anticoagulation, or if they were pregnant/breastfeeding. The primary endpoint was major bleeding events within 3 months. Key secondary endpoints included recurrent stroke or transient ischemic attack (TIA) within 1 year, minor bleeding within 3 months, and cardiovascular events. Student's t-test and descriptive statistics will be used to analyze the results.
RESULTS: 887 patients were screened, and 158 patients met inclusion criteria. 90 patients received DAPT, and 68 patients received antiplatelet monotherapy. 3 patients receiving DAPT and 1 patient receiving monotherapy experienced a major bleed. 1 patient receiving DAPT and 2 patients receiving monotherapy experienced a minor bleed.
CONCLUSIONS: Use of DAPT showed a comparable risk of bleeding to antiplatelet monotherapy.

10:20am – 10:40am P **Effects of Opioid Tapering and Discontinuation on Overdose and Suicide in the Veteran Population** Room B

Presenters: Claire Brandt

TITLE: Effects of Opioid Tapering and Discontinuation on Overdose and Suicide Rates in the Veteran Population
AUTHORS: Lauren Bell, Claire Brandt, Timothy Atkinson
OBJECTIVE: Describe preliminary findings about the association of overdose or death by suicide and opioid tapering efforts
SELF ASSESSMENT QUESTION: How does opioid tapering affect risk of opioid overdose or death by suicide?
BACKGROUND: In fiscal year (FY) 2013, the VA launched the Opioid Safety Initiative (OSI); its effectiveness was assessed by comparing patterns of opioid deprescribing between FY 2013 and 2017. The present study builds on that assessment, with its purpose to identify veterans on chronic opioid therapy that had either a reduction or discontinuation of opioid therapy during FY 2017 through 2020 and to determine if there is an association between overdose or death by suicide and tapering efforts.
METHODOLOGY: A national VA retrospective database extraction was completed by VAMedSAFE and chart review at 18 sites will be conducted. Patients that were on opioid therapy for chronic, noncancer-related pain who were subsequently tapered or discontinued were included for analysis. In addition to the primary objective above, secondary objectives include the identification of risk factors associated with death by suicides or suicide attempts; this includes concurrent mental health comorbidities and logistics of the opioid taper. Opioid taper logistics include reason for taper, patients' response to opioid taper initiation, speed, starting MEDD, percent of MEDD reduction, use of nonopioid medications, use of non-pharmacologic interventions for pain, and presence of withdrawal symptoms. Other secondary objectives included identification of patients transitioned to buprenorphine products and whether pharmacists were involved in the taper process.
RESULTS: National aggregate analysis in progress
CONCLUSIONS: National aggregate analysis in progress

10:20am – 10:40am T **Impact of pharmacist-led discharge medication optimization and reconciliation program** Room A

Presenters: Halee Parham

TITLE: Impact of pharmacist-led discharge medication optimization and reconciliation program

AUTHORS: Halee S. Parham, T. Wells, H. McLeod, D. Thompson, E. Hudson

OBJECTIVE: At the conclusion of this presentation, the participant will be able to recognize the most common types of medication inaccuracies identified by a pharmacist-led discharge medication optimization and reconciliation service.

SELF ASSESSMENT QUESTION: Which of the following was the most common medication inaccuracy identified during the pharmacist-led discharge medication optimization and reconciliation service?

A.Medication duplication

B.Inappropriate dose

C.Unintentional omission

D.Inappropriate or wrong medication

BACKGROUND: The purpose of this study is to evaluate the impact of a pharmacist performing guideline-directed discharge medication optimization and reconciliation to prevent additional provider visits, emergency department visits, hospital readmissions, and medication-related harm. This study utilized the LACE readmission risk score to identify patients at highest risk for readmission. The LACE index is based on 4 factors which are length of stay, acuity of admission, comorbidities, and number of emergency department visits in the past 6 months.

METHODOLOGY: This study is a prospective, single-centered, descriptive quality improvement study. An Epic-generated, real-time list of patients with discharge orders from Cape Fear Valley Medical Center with a high LACE readmission score was utilized in this study. The service was provided January 1, 2022 – January 31, 2022 between the hours of 0930-1800, Monday through Friday. A member of the research team monitored the patient list throughout the day while the service was being provided to identify eligible patients for the medication optimization and reconciliation service.

RESULTS: There were 301 medication lists reviewed by a pharmacist during the service. A total of 125 medical lists contained at least one inaccuracy, and there were 156 total medication inaccuracies. The most common medication inaccuracies identified were “inappropriate or wrong medication” (28.8%) and “inappropriate dose” (25.6%).

CONCLUSIONS: A pharmacist performing a discharge optimization and reconciliation service decreases medication inaccuracies and improves guideline-directed medication therapy at discharge.

10:40am – 11:00am A **EVALUATION OF COST SAVINGS WITH PHARMACIST CLINICAL INTERVENTIONS IN ANTIMICROBIAL STEWARDSHIP AND STRESS ULCER PROPHYLAXIS** Room L

Presenters: Adrian Gavre

TITLE: EVALUATION OF COST SAVINGS WITH PHARMACIST CLINICAL INTERVENTIONS IN ANTIMICROBIAL STEWARDSHIP AND STRESS ULCER PROPHYLAXIS

AUTHORS: Adrian Gavre, Hyeseung Kang, Dewayne Cross

OBJECTIVE: Describe and evaluate a process that equates clinical pharmacist interventions to cost savings.

SELF ASSESSMENT QUESTION: True or False: All pharmacist interventions result in cost savings.

BACKGROUND: To determine the total amount of direct cost savings of clinical pharmacist interventions in antimicrobial stewardship (AMS) and stress ulcer prophylaxis (SUP)

METHODOLOGY: This study was a single-center, cost-minimization analysis. A list of clinical pharmacist interventions from November 1st, 2020 to November 1st 2021 was gathered through the electronic health record. Interventions analyzed were limited to IV to PO interchanges and dose/frequency adjustments for AMS and SUP. A list of medications was compiled based on the interventions evaluated and a price per dose was calculated based on the pricing from the pharmaceutical distributor. The total cost saved per intervention was calculated by comparing the daily cost of drug administration pre-intervention to the daily cost of drug administration post-intervention.

RESULTS: This study evaluated 702 interventions made by five pharmacists. Out of 702 interventions, 572 were included in the final analysis. AMS dose/frequency adjustments saved the most money at $2,370.79 followed by AMS IV to PO interchange with $1458.05 and finally, SUP dose/frequency adjustment at $61.74. SUP IV to PO interchanges lost $1,985.43. This is attributed to interventions that changed IV Protonix to PO esomeprazole suspension, which was more expensive.

CONCLUSIONS: The total cost saved by the interventions studied was $1905.15. Limitations to this study include the limited scope of interventions studied. Additionally, the total cost saved is likely an underestimate, as this study only calculated costs related directly to drug prices. Additional reviews for different therapeutic classes should occur to identify potential areas of cost savings.

10:40am – 11:00am B **IMPACT OF PHARMACIST MANAGED UNCONTROLLED DRUG RESISTANT HYPERTENSION** Room J

Presenters: Britney Youngchild

TITLE: IMPACT OF PHARMACIST MANAGED UNCONTROLLED DRUG RESISTANT HYPERTENSION

AUTHORS: Britney Youngchild

OBJECTIVE: This evaluation explores the impact of a CPP on managing uncontrolled drug resistant hypertension at VA outpatient clinics in South Carolina.

SELF ASSESSMENT QUESTION: What impact do clinical pharmacists have on managing patients with drug resistant hypertension in the primary care setting?

BACKGROUND: This evaluation assesses how pharmacists manage those with drug resistant hypertension.

METHODOLOGY: Patients were included between the ages of 18 to 86 years old with a diagnosis of hypertension and a blood pressure (BP) > 130/80 and on > 3 antihypertensive medications. The data query included patients referred to a Clinical Pharmacist Practitioner (CPP) between April 1, 2021 and June 30, 2021 with a six month follow up period. This retrospective evaluation utilized a medical record review to determine if there was a significant difference in BP, use of antihypertensive medications, and if appropriate monitoring was completed.

RESULTS: Sixty-six patients were included in this evaluation. At the end of the follow up period, there was an average reduction in systolic BP of 23 mmHg and average reduction in diastolic BP of 9 mmHg ($p<0.001$).

10:40am – 11:00am B **Pharmacist Impact on Hypertension and Diabetes Outcomes** Room I

Presenters: Christopher Walston

TITLE: Pharmacist Impact on Hypertension and Diabetes Outcomes

AUTHORS: Chris Walston, Patrick Gregory, David Halpern, Hui-Jie Lee, Frances Hung, Ben Smith

OBJECTIVE: Describe the impact of embedded clinical pharmacy services

SELF ASSESSMENT QUESTION: What is the optimal number of clinical pharmacist visits required to obtain the greatest net therapeutic benefit for hypertension and diabetes?

BACKGROUND: Despite widely available treatment options, management of hypertension and diabetes remains a challenge for many health care providers, especially those in primary care settings. Clinical pharmacists are well-positioned to assist in the management of patients with complex, chronic conditions such as hypertension and diabetes and have previously demonstrated a positive impact on outcomes associated with these disease states. However, the optimal utilization of a clinical pharmacist resource remains unknown. This study seeks to determine the number of clinical pharmacy visits beyond which point offers no additional net clinical benefit.

METHODOLOGY: As a single-center, retrospective cohort, we evaluated blood pressure (BP) and A1c readings from patients with uncontrolled hypertension or diabetes at a primary care clinic associated with a large, academic health system. A paired t-test was used to assess change in BP and A1c between baseline and 12 months. To examine the relationship between the number of clinical pharmacist visits and the change in BP and A1c at 12 months, a linear model using a restricted cubic spline to represent the number of CPP visits was fit, adjusting for baseline BP, A1c, and risk factors.

RESULTS: 212 patients were included in our hypertension cohort and 174 patients were included in our diabetes cohort. At 12 months, we oberved a mean absolute reduction of 12.76 mmHg in SBP, 6.92 mmHg in DBP, and 1.7% in A1c. There was a statistically significant decrease in SBP, DBP, and A1c at all time intervals between baseline and 12 months. There was no clinically significant additional decrease in BP or A1c at 12 months in patients who had more than 1 clinical pharmacist visit.

CONCLUSIONS: Clinical pharmacist interventions significantly decrease BP and A1c in patients with hypertension or diabetes and may be best utilized by seeing more patients for only one visit.

10:40am – 11:00am C **Efficacy and safety of inpatient guideline-directed medical therapy (GDMT) titration during hospitalization for acute decompensated heart failure (ADHF)** Room H

Presenters: Kayla Rose

TITLE: Efficacy and safety of inpatient guideline-directed medical therapy (GDMT) titration during hospitalization for acute decompensated heart failure (ADHF)

AUTHORS: Kayla Rose, Erika Schoenborn

OBJECTIVE: Identify the impact of inpatient titration of GDMT on hospital-free survival and mortality.

SELF ASSESSMENT QUESTION: Does inpatient up-titration of GDMT lead to better outcomes?

BACKGROUND: The benefit of outpatient titration of GDMT for heart failure with reduced ejection fraction (HFrEF) has been well-established. However, there is a lack of evidence for inpatient titration of GDMT during ADHF. This study aims to assess the effects of inpatient titration of anti-renin-angiotensin-aldosterone system (anti-RAAS) agents and evidence-based beta blockers (EBB) in patents admitted for ADHF.

METHODOLOGY: This retrospective study included patients ≥ 18 years old with HFrEF (LVEF ≤ 40%) admitted between January and December 2020 for ADHF. Exclusion criteria were contraindication(s) to anti-RAAS or EBB agents, acute coronary syndrome (ACS) or stroke within 3 months of hospitalization, or lack of follow-up information post-discharge. The primary outcome was hospitalization-free survival at 30 days. Secondary outcomes included one-year mortality rate and incidences of adverse effects.

RESULTS: 109 admissions were identified with 46 unique patients analyzed in the primary outcome. Titrated patients (n=11) experienced escalation of outpatient GDMT dosing. Stable dosing patients (n=21) remained on their outpatient GDMT, and down-titrated patients (n=14) experienced a de-escalation of their outpatient GDMT. Zero patients in the titrated group, 5 (11%) in the stable dosing group, and 3 (7%) in the down-titrated group experienced readmission at 30 days (p=0.17). Zero patients in the titrated group experienced one-year mortality versus 6 (13%) and 4 patients (9%) in the stable and down-titrated groups, respectively (p=0.15). Of 7 patients that discontinued GDMT, 5 discontinued because of hypotension.

CONCLUSIONS: There was no statistically significant difference between groups for hospitalization-free survival rate at 30 days and one-year mortality. Hypotension was the most common cause of discontinuation of GDMT. Clinical importance of the primary outcome and one-year mortality should be considered as no patients in the titrated group experienced these outcomes.

10:40am – 11:00am R **Blood Pressure Lowering Effect of Hydralazine vs Labetalol in Patients with Acute Ischemic Stroke** Room C

Presenters: Boone Seagle

TITLE: Blood Pressure Lowering Effect of Hydralazine vs Labetalol in Patients with Acute Ischemic Stroke
AUTHORS: Lindsey Arthur, Ashley Costello, Lisa Gibbs, Stephanie Smith
OBJECTIVE: Assess the antihypertensive effects of hydralazine compared to labetalol as initial management in patients with acute ischemic stroke who need acute blood pressure lowering to qualify for thrombolytic therapy.
SELF ASSESSMENT QUESTION: The 2019 AHA/ASA guidelines for AIS offers the following antihypertensive agents for patients otherwise eligible for emergency reperfusion therapy except that blood pressure is >185/110 mmHg, except:
a)Nicardipine
b)Nitroprusside
c)Labetalol
d)Clevidipine

BACKGROUND: Elevated blood pressure is frequently present in patients presenting with acute ischemic stroke (AIS). The 2019 AHA/ASA Guidelines for The Early Management of Patients with AIS offers hydralazine and labetalol as two of the antihypertensive options for patients who are otherwise eligible for alteplase except that blood pressure is greater than 185/110 mmHg. The use of alteplase is limited by a treatment window of up to 3-4.5 hours from symptom onset, therefore effective blood pressure lowering is crucial.
METHODOLOGY: This is a single center, retrospective chart review of adult patients presenting with AIS and elevated blood pressure >185/110 mmHg who received hydralazine or labetalol for initial blood pressure lowering prior to alteplase between September 2018 – August 2021. The primary outcome assesses time to goal blood pressure

10:40am – 11:00am R **Comparison of Sedative and Opioid Requirements in Patients Receiving Fentanyl Versus Hydromorphone While on Extracorporeal Membrane Oxygenation** Room D

Presenters: Ashontae Gloudoua

TITLE: Comparison of Sedative and Opioid Requirements in Patients Receiving Fentanyl Versus Hydromorphone While on Extracorporeal Membrane Oxygenation
AUTHORS: Ashontae Gloudoua, William Bibb, Adam Wiss
OBJECTIVE: Identify if there is a difference in sedative and opioid requirements between patients who receive fentanyl versus hydromorphone while cannulated for extracorporeal membrane oxygenation (ECMO).
SELF ASSESSMENT QUESTION: In patients cannulated for ECMO, is there a difference in sedative and opioid requirements between fentanyl or hydromorphone?
BACKGROUND: To determine if there is a difference in sedative and opioid requirements between patients who receive fentanyl versus hydromorphone while cannulated for ECMO.
METHODOLOGY: A single center, retrospective chart review was conducted of adults cannulated for ECMO between November 1, 2019 and October 31, 2021, who received either continuous infusion fentanyl or hydromorphone. The primary outcome was the difference in median daily fentanyl equivalents received in the first 7 days. Secondary outcomes included the difference in median daily fentanyl equivalents in the first 14 days, incidence of delirium and coma, and sedative requirements.
RESULTS: A total of 54 patients were included. Compared to the fentanyl group, patients in the hydromorphone group were younger (47 years vs 59 years, p=0.004), had a higher incidence of venovenous ECMO (96% vs 15%, p

10:40am – 11:00am R **Evaluation of a Fixed Dose 4F-PCC Protocol for Warfarin Related Intracranial Hemorrhage** Room E

Presenters: Victoria Hunt

TITLE: Evaluation of a Fixed Dose 4F-PCC Protocol for Warfarin Related Intracranial Hemorrhage

AUTHORS: Victoria Hunt, Aayush Patel, Kelly Carter, Matthew McAllister

OBJECTIVE: Evaluate the effectiveness of a fixed dose 4F-PCC protocol for the reversal of warfarin related ICH.

SELF ASSESSMENT QUESTION: What are the two proposed benefits of fixed dose 4F-PCC?

BACKGROUND: Warfarin is a commonly used anticoagulant with known adverse effects such as bleeding. Prothrombin Complex Concentrate (Human) is a four-factor prothrombin complex concentrate (4F-PCC) FDA approved for the reversal of warfarin induced life-threatening hemorrhage. FDA approved dosing is based on pretreatment INR and weight. Doses can range from 25 mg/kg to 50 mg/kg. The American College of Cardiology recommends using either a weight-based dosing or fixed-dose dosing regimen. Studies looking into fixed dosing showed similar efficacy between weight-based and the fixed-dose regimens. Gilbert, et al. also found similar efficacy between dosing regimens, but found a mortality benefit with the fixed dose regimen due to decreased thromboembolic events. On 03/01/2021 our institution implemented a fixed dose 4F-PCC protocol for warfarin related ICH. The purpose of this study was to evaluate the fixed dose 4F-PCC protocol for the reversal of warfarin related intracranial hemorrhage (ICH).
METHODOLOGY: This was an IRB approved, retrospective chart review to assess patients who received 4F-PCC for the reversal of warfarin related ICH before and after implementation of a fixed-dose protocol. The primary objective was to evaluate the difference in INR reduction between the two groups. The pre-implementation group assessed patients from May 1st, 2020 to February 28th, 2021. The post-implementation group assessed patients from March 1st, 2021 to December 31st, 2021. The primary objective was to evaluate the ability of the fixed-dose regimen to reverse the INR to ≤1.4 compared with the weight-based dosing strategy. The secondary objectives include change in cerebral blood volume, hemostasis, additional doses of 4F-PCC, and mortality between groups.

RESULTS: 349 patients were screened and 23 were included for analysis. The number of patients who acheived an INR of ≤1.4 was 16 (70%). No pateints included in analysis received an additional dose of 4F-PCC during the analized time period. Mortality, defined as survival to hospital discharge was 5 (22%).

CONCLUSIONS: 4F-PCC was effective at lowing INR to ≤1.4. Zero patients were identified as receiving an additional dose of 4F-PCC and in-hospital mortality was simliar to previously reported studies looking at fixed-doses of 4F-PCC.

10:40am – 11:00am | **Clinical and Financial Impact of a Multiplex Rapid Diagnostic Pneumonia Panel in Critically Ill Patients** Room G

Presenters: Jayda Esplund

TITLE: Clinical and Financial Impact of a Multiplex Rapid Diagnostic Pneumonia Panel in Critically Ill Patients
AUTHORS: Esplund J, Taylor A, Stone T, Palavecino E, Kilic A, Ohl C, Luther V, Beardsley J
OBJECTIVE: Describe the impacts of the BioFire® FilmArray® Pneumonia Panel (PNA panel) in an academic medical center
SELF ASSESSMENT QUESTION: What is the predicted impact of the PNA panel on antimicrobial treatment duration?
BACKGROUND: The BioFire® FilmArray® Pneumonia Panel (PNA panel) detects select bacterial and viral respiratory pathogens and certain antimicrobial resistance genes within 75 minutes of testing. The PNA panel was implemented in adult ICUs at our institution, an 885-bed academic medical center, in November 2021. The purpose of this study is to evaluate the clinical and financial impact of the PNA panel.
METHODOLOGY: This single-center, retrospective cohort study compared patients prior to (January - March 2021) and after (January - March 2022) implementation of the PNA panel. Adult ICU patients with a quantitative culture obtained by bronchoalveolar lavage (BAL) or tracheal aspirate (TA) during the study periods were screened in random order until 25 patients per month meeting study criteria were identified. Patients with another infection, other than bacteremia with the same causative pathogen, who required treatment with antibiotics in the previous 14 days or a quantitative BAL or TA culture within the previous 72 hours or who died within five days after culture was obtained were excluded. The primary outcome was time to antimicrobial change based on microbiologic test results within five days from obtaining the respiratory culture. Secondary outcomes included time to adequate therapy in patients who were not on adequate antimicrobial therapy, number of patients with antibiotic escalation and de-escalation changes based on culture and/or PNA panel results, correlation of the PNA panel and respiratory culture results, and number of times therapy de-escalated based on PNA panel results was re-escalated based on culture results. Financial analysis compared costs related to antimicrobials, respiratory viral panel tests, vancomycin serum level monitoring, and PNA panel.
RESULTS: In progress
CONCLUSIONS: To be determined

10:40am – 11:00am | **Efficacy of a Pharmacy Resident Driven Beta-Lactam Allergy Assessment** Room F

Presenters: Michael Shaw

TITLE: Efficacy of a Pharmacy Resident Driven Beta-Lactam Allergy Assessment
AUTHORS: Michael Shaw, Ryan Lally, Rachel Langenderfer, Brittany NeSmith, Julie Cash
OBJECTIVE: List some of the risks associated with using alternative agents to beta-lactams
SELF ASSESSMENT QUESTION: When compared to alternatives, the use of beta-lactams is associated with which of the following?
BACKGROUND: Beta-lactam antibiotics are currently the most used class of antibacterial agents, accounting for 65% of all prescriptions for injectable antibiotics in the United States. It is estimated that 10% of the population is labeled as allergic to a beta-lactam, with penicillin being the most reported offending agent. Upon closer examination, up to 98% of patients who are labeled with a beta-lactam allergy are found to tolerate beta-lactams. The purpose of this study is to assess the efficacy of a pharmacy resident driven beta-lactam allergy assessment on identifying or clarifying charted beta-lactam allergies.
METHODOLOGY: This is a single-center, retrospective review of a pharmacy resident driven beta-lactam allergy assessment. The allergy assessment consists of a chart review and a three-question interview. The primary outcome of this study is a composite of the following interventions: allergy de-labeling, reaction specification, and/or identification of previously tolerated beta-lactams. Secondary outcomes include patients who were re-labeled if de-labeling occurred, patients who received beta-lactam therapy after changes occurred to their charted allergy, and impact on hospital utilization of beta-lactam alternative antibiotics.
RESULTS: Between September 13, 2021 and December 17, 2021, 42 patients with a charted beta-lactam allergy were interviewed. The most common beta-lactam allergy reported was penicillin (90.5 %). Of the interviewed patients, 95.2 % met at least one of the components of the primary endpoint. Specifying the previous toleration of beta-lactam agents was the most common intervention, occurring after 78.6 % of interviews. Complete de-labeling of the patient's beta-lactam allergy occurred after 38.1 % of the interviews conducted.
CONCLUSIONS: A pharmacy-resident driven beta-lactam allergy assessment is effective at clarifying beta-lactam allergies, including the complete de-labeling of erroneous beta-lactam allergies.

10:40am – 11:00am L **Evaluation of pharmacy conducted medication histories on high-risk medication errors** Room K

Presenters: Natalie Delozier

TITLE: Evaluation of pharmacy conducted medication histories on high-risk medication errors

AUTHORS: Natalie Delozier, C. Tilton, S. Naidu, H. Calev, N. Metzger, V. Crichlow, T. Leong

OBJECTIVE: Describe the impact of pharmacy personnel completing medication histories.

SELF ASSESSMENT QUESTION: What impact do pharmacy personnel have on high-risk medication errors in medication histories?

BACKGROUND: Errors related to high-risk medications may have an impact on patient care including incorrect medications during admission and discharge leading to safety concerns. The purpose of this study is to highlight the importance of obtaining accurate medication histories to prevent errors in high-risk medications for specific inpatient care settings by utilizing pharmacy personnel to perform medication histories.

METHODOLOGY: A retrospective study was performed evaluating errors made on medication histories that involved high-risk medications. Three subgroups admitted from 08/01/2020-08/31/2021 (patients [1] admitted to the intensive care unit and transferred to a direct care team on an internal medicine floor; [2] admitted to the direct care hospital internal medicine team; and [3] admitted to an internal medicine teaching service) were assessed. The primary outcome was the percentage of medication histories with ≥1 high-risk medication errors when comparing medication histories completed by non-pharmacy personnel to pharmacy personnel. Secondary outcomes included total number of errors per medication history and number of omissions, commissions, and duplications by subgroup. We estimated the proportions of (non-pharmacy personnel) medication histories with ≥1 high-risk medication errors (compared to the pharmacy personnel medication history) and 95% confidence interval as a binary outcome.

RESULTS: Among the study population, 20 (55.6%) subgroup 1 patients, 25 (71.4%) subgroup 2 patients, and 56 (75.7%) subgroup 3 patients had ≥1 high-risk medication errors in their medication history.

CONCLUSIONS: The subgroup of patients admitted to an internal medicine teaching service had the highest percentage of high-risk medication errors in medication histories. All three subgroups would benefit from medication histories completed by pharmacy personnel to reduce the incidence of high-risk medication errors in medication histories.

10:40am – 11:00am P **Financial Impact of Decreased Opioid Syringe Sizes in the Operating Room** Room B

Presenters: Sejal Shah

TITLE: Financial Impact of Decreased Opioid Syringe Sizes in the Operating Room

AUTHORS: Sejal Shah, Megan Hintz, Sarah Hardeman, Jason Buehler, Aimee Pehrson, Che Solla

OBJECTIVE: Describe the impact of reducing opioid syringe sizes in the operating room.

SELF ASSESSMENT QUESTION: What is the benefit of having reduced opioid syringe sizes in the operating room?

BACKGROUND: Evaluate if the amount of opioids administered in the operating room will decrease due to the reduced opioid syringe sizes – and thus decrease overall costs – without affecting patient outcomes.

METHODOLOGY: This single-center, retrospective, observational cohort study included patients > 18 years old undergoing general anesthesia during any one of the following surgeries between January 2019 to June 2019 or July 2020 to December 2020 at The University of Tennessee Medical Center: cystolithotripsy, prostatectomy, anterior cervical discectomy and fusion (ACDF), posterior lumbar interbody fusion (PLIF), laparoscopic cholecystectomy or Roux-en-Y. Demographics gathered included age, sex, surgery type, weight, prior substance use, and history of any mood disorder. Data regarding opioid medication use in the operating room obtained were amounts of morphine, hydromorphone, oxycodone and fentanyl administered, amount of hydromorphone and fentanyl waste, and total morphine milligram equivalents (MME). Amounts of morphine, hydromorphone, oxycodone and fentanyl administered, and total MME in the post-anesthesia care unit (PACU) was collected. Other patient-specific data collected were PACU length of stay, average visual analog scale (VAS) score, average Face, Legs, Activity, Cry, Consolability scale (FLACC) score and occurrence of post-operative nausea/vomiting (PONV).

RESULTS: Overall cost of hydromorphone and fentanyl increased ($p<0.0001$). The cost of hydromorphone increased ($p<0.0001$) whereas the cost of fentanyl decreased ($p<0.001$). The amount of hydromorphone administered was showed no difference ($p=0.48$) and fentanyl decreased ($p<0.001$). Both the waste of hydromorphone and fentanyl was decreased ($p<0.001$). There were no differences in patient-centered outcomes - pain ($p=0.079$), length of stay ($p=0.705$), and post-op nausea/vomiting ($p=0.11$).

CONCLUSIONS: This study showed mixed results for changes in cost and usage of opioids, a decrease in waste of opioids, and no difference in patient care when hydromorphone and fentanyl were packaged in smaller syringe/vial sizes in the operating room.

10:40am – 11:00am T **Discharge Medication Reconciliation Process Improvement at a Community Hospital** Room A

Presenters: Brittany Shelton

TITLE: Discharge Medication Reconciliation Process Improvement at a Community Hospital
AUTHORS: B. Shelton, S. Grimes, D. Yates, R. Lucas, F. Pruss, E. Pollard, L. Ladd
OBJECTIVE: Identify the benefits of adding a pharmacist review of medications at hospital discharge.
SELF ASSESSMENT QUESTION: What is one common area of pharmacotherapy that pharmacists can make medication-related recommendations at discharge?
BACKGROUND: The purpose of this study is to assess the effects of adding a pharmacist discharge medication reconciliation review prior to discharge.
METHODOLOGY: This was a single-center, prospective study that took place from September 1st, 2021 through December 17th, 2021. Eligible patients included those who were ≥18 years old, did not have COVID-19, and did not have comfort care or hospice orders.
The study was split into two phases. During the first phase, discharges took place without a pharmacist review before patients were discharged. A pharmacist then retrospectively reviewed electronic medical records and determined what recommendations they would have made to the discharging provider. During phase two, a pharmacist performed a prospective chart review prior to discharge and sent recommendations to the discharging provider the morning of discharge. Recommendations from both phases were assessed to see which ones were followed/accepted.
The primary endpoint was the absolute change in interventions completed without a pharmacist review of medications at discharge vs. with a pharmacist review of medications at discharge. Secondary endpoints included 30-day readmission rates, clinical pharmacist time spent, and classification and severity of interventions.

RESULTS: In Progress
CONCLUSIONS: In Progress

11:00am – 11:20am B **Development and Implementation of a Systematic Prescribing Protocol for Continuous Glucose Monitoring (CGM) Devices within a Family Medicine Practice** Room J

Presenters: Kelly Jamieson

TITLE: Development and Implementation of a Systematic Prescribing Protocol for Continuous Glucose Monitoring (CGM) Devices within a Family Medicine Practice
AUTHORS: Kelly Jamieson, Irene Ulrich, Anne ("Andy") Warren
OBJECTIVE: Describe the design and implementation of a protocol to expand prescribing of CGM devices at a family medicine center.
SELF ASSESSMENT QUESTION: How can pharmacists expand access to CGM services?
BACKGROUND: Continuous glucose monitoring (CGM) devices have been shown to improve diabetes control while also reducing the incidence of hypoglycemia, particularly among patients receiving intensive insulin therapy. Insurance coverage of CGM devices varies, potentially limiting access. However, within the last year, Medicare updated their criteria for CGM coverage. As a result, Medicare beneficiaries no longer need to self-monitor blood glucose at least 4 times daily in order to qualify for coverage of a CGM device. As insurance coverage and access to CGM continues to change, we recognized the need for an organized approach to identify patients eligible for CGM in an effort to expand prescribing among patients at our family medicine practice.
METHODOLOGY: We conducted a literature search to determine which patients have been shown to benefit most from CGM. We combined these patient characteristics with a summary of insurance coverage requirements to create a list of criteria to identify patients eligible for CGM. Based on these criteria, student learners will perform chart reviews to identify eligible patients, reach out to provide education regarding the benefits of CGM, and gauge patient interest in obtaining a CGM. Patients who demonstrate interest will then be contacted by a pharmacist for additional education prior to submitting a prescription. Upon receiving their CGM device, patients will be encouraged to schedule an appointment with our pharmacy clinic for initial CGM placement. Both patient interest and refusal will be documented to capture the full scope of patients eligible for CGM and to compare this to the number of patients who successfully initiated CGM therapy. Any patient-specific barriers to CGM will also be recorded.
RESULTS: In progress.
CONCLUSIONS: In progress.

11:00am – 11:20am B **Evaluation of a Comprehensive Diabetes Management Service for Veterans Identified by a Population Health Dashboard** Room I

Presenters: David Mercer

TITLE: Evaluation of a Comprehensive Diabetes Management Service for Veterans Identified by a Population Health Dashboard

AUTHORS: David Mercer, Courtney E. Gamston, Kimberly Braxton Lloyd, Garret Aikens, Pamela Stamm

OBJECTIVE: To demonstrate the impact of a comprehensive diabetes service in veteran patients.

SELF ASSESSMENT QUESTION: What are 3 common interventions performed in a telepharmacy-based diabetes service?

BACKGROUND: The prevalence of uncontrolled type 2 diabetes in the veteran population is approximately 25%. Pharmacist management of diabetes in this population has been shown to improve diabetes-related outcomes. Telepharmacy is widely used within the VA to provide disease state management services. This study aims to evaluate a pharmacist-led, telepharmacy-based comprehensive diabetes management service that utilizes the tools of population health management to identify veterans with uncontrolled diabetes.

METHODOLOGY: Veterans without an annual A1c or an A1c> 9% were identified utilizing population health dashboards. Eligible patients were contacted by phone to provide disease state management services including medication management, lifestyle counseling, vaccine recommendations, and referrals for additional care. The impact of this service was assessed through evaluation of the change from baseline in A1c (primary outcome). Secondary outcomes included change in fasting blood glucose, number and types of medications initiated, blood pressure (BP) change, and resolution of drug-related problems.

RESULTS: In Progress

CONCLUSIONS: In Progress

11:00am – 11:20am C **Comparing Efficacy of Clevidipine versus Nicardipine in Blood Pressure Management of Surgical Patients** Room H

Presenters: Michael Byers

TITLE: Comparing Efficacy of Clevidipine versus Nicardipine in Blood Pressure Management of Surgical Patients

AUTHORS: Michael Byers, Jessica Chen, Naadede Badger-Plange, Leah Cochran, Heather Powell, Deidra Garrett, Disa Patel

OBJECTIVE: At the conclusion of the presentation, a participant will be able to compare the efficacy of clevidipine or nicardipine for blood pressure management during the operative period for cardiac and neurosurgery patients.

SELF ASSESSMENT QUESTION: Which calcium channel blocker was the most effective in keeping blood pressure within goal for surgical patients?

BACKGROUND: An estimated 50% of the cardiac and neurosurgery patient population exhibit acute hypertension requiring intravenous anti-hypertensive management to combat life-threatening arterial bleeding, myocardial ischemia, or cardiac failure during the operative period. Clevidipine and nicardipine are two calcium channel blockers routinely used for management of hypertension. The purpose of this study was to compare the efficacy of clevidipine compared to nicardipine in blood pressure (BP) management in surgical patients

METHODOLOGY: Retrospective chart review of all patients ≥ 18 years undergoing cardiac or neurosurgery requiring clevidipine or nicardipine for BP management between January 1, 2021, and February 2022. The primary endpoint was percentage of time within goal of systolic BP < 140 mmHg. Secondary endpoints included length of hospital stay, length of ICU stay, 30-day mortality, incidence of new acute kidney injury (AKI), incidence of new onset atrial fibrillation, BP goal reached within 4 minutes, and cost of therapy. Categorical data will be analyzed with a Fisher’s exact test with a 2x2 contingency table and continuous data will be analyzed via a two-sided unpaired student’s t-test with a 95% confidence interval.

RESULTS: 22 patients included in the clevidipine group and 50 patients included in the nicardipine group. Systolic BP was maintained < 140 mmHg 75.4% of the time for clevidipine versus 76.9% for nicardipine ($p = 0.408$). Incidence of AKI 6 for clevidipine versus 2 for nicardipine ($p = 0.004$). Cost of clevidipine therapy was $73.09 vs. $35.11 for nicardipine ($p < 0.001$).

CONCLUSIONS: No statistically significant difference in percentage of time systolic BP maintained within goal of < 140 mmHg. Higher incidence of AKI and cost of therapy observed with clevidipine.

11:00am – 11:20am R **Evaluating the Effect of a Dosing and Titration Protocol on Dexmedetomidine-Induced Hypotension in Trauma Patients** Room D

Presenters: Peyton Kurtz

TITLE: Evaluating the Effect of a Dosing and Titration Protocol on Dexmedetomidine-Induced Hypotension in Trauma Patients

AUTHORS: Peyton Moon Kurtz, Jason Vanlandingham, Leslie Roebuck

OBJECTIVE: At the conclusion of my presentation, the participant will be able to describe the effects of a dexmedetomidine dosing and titration protocol.

SELF ASSESSMENT QUESTION: Which of the following is FALSE:
A)Dexmedetomidine is an alpha-2 receptor agonist associated with hypotension
B)There is no consensus on appropriate dexmedetomidine dosing and titration
C)Implementation of the study protocol led to increased exposure to dexmedetomidine
D)Implementation of the study protocol led to decreased rates of hypotension in the per-protocol group

BACKGROUND: Dexmedetomidine is an alpha-2 receptor agonist commonly used as a continuous infusion for sedation and analgesia; however, dose-dependent hypotension and bradycardia may limit its utility. Despite its widespread use, there is no consensus on appropriate dosing and titration of dexmedetomidine. The objective of this study was to determine whether a formal dexmedetomidine dosing and titration protocol is associated with decreased rates of hypotension in trauma patients.

METHODOLOGY: This pre-post intervention study included patients that were admitted by the trauma service and received dexmedetomidine for ≥6 hours. Patients were excluded if they were hypotensive or on vasopressors at dexmedetomidine initiation. The primary outcome was incidence of hypotension. Secondary outcomes included dosing and titration practices, initiation of a vasopressor, incidence of bradycardia, and time to goal Richmond Agitation Sedation Score (RASS). Discrete and continuous data were analyzed using the Chi-Squared and Mann-Whitney U tests, respectively.

RESULTS: 126 patients were reviewed and 59 met inclusion criteria; 30 in the pre-intervention group and 29 in the post-intervention group. The groups were similar at baseline with the exception of age (56 vs. 68 years, p=0.048) and use of an alternative concurrent sedative infusion (50% vs. 24%, p=0.040). Overall protocol adherence in the post group was 34% with a median of 1 violation per patient. Rates of hypotension were similar between the groups (60% vs. 45%, p=0.243), but significantly lower in the post group patients with zero protocol violations (60% vs. 20%, p=0.029). The post group also had a significantly lower maximal dose (1.1 vs. 0.7 mcg/kg/hr). There were no significant differences in initiation of a vasopressor, incidence of bradycardia, or time to goal RASS.

CONCLUSIONS: Adherence to a dexmedetomidine dosing and titration protocol significantly decreased incidence of hypotension and exposure to dexmedetomidine without increasing time to goal RASS in trauma patients.

11:00am – 11:20am R **Evaluating the effect of N-acetylcysteine in non-acetaminophen induced acute liver failure** Room E

Presenters: Jay Adams

TITLE: Evaluating the effect of N-acetylcysteine in non-acetaminophen induced acute liver failure
AUTHORS: Jay Adams, Van Bui, Katie McDaniel
OBJECTIVE: Discuss the effects of NAC on LFTs in patients with NAI-ALF.
SELF ASSESSMENT QUESTION: What effects did NAC have on outcomes in patients with NAI-ALF?
BACKGROUND: Background/Purpose: To evaluate the effect of N-acetylcysteine (NAC) on liver function tests (LFTs) in patients treated for non-acetaminophen induced acute liver failure (NAI-ALF).
METHODOLOGY: This was a case-controlled, retrospective chart review conducted at a large academic medical center. Patients 18 years or older admitted for NAI-ALF between January 2015 and July 2021 were included in the analysis. The primary endpoint was to evaluate the effect of NAC on liver function tests (LFTs) from baseline to 72 hours after completion of NAC therapy. The secondary endpoints were to evaluate NAC prescribing patterns in NAI-ALF, assess the effect of NAC on intensive care unit (ICU) and hospital length of stay (LOS), and evaluate the effects of NAC on other serological markers of liver function.
RESULTS: Seventy patients met inclusion criteria for the analysis. NAC had a significant effect on LFTs 72 hours after completion of therapy compared to the non-NAC cohort (-2978 IU/L vs. +1028 IU/L; p = 0.001). The median dose of NAC was 300 mg/kg [interquartile range (IQR) 277.2 – 376.5] over a median of 21 hours [IQR 5.0 – 22.3] for a total median dose of 27,150 mg [IQR 16,665.0 – 36,075.0]. Overall, there was no significant difference in the median ICU and hospital LOS. There was no significant difference in the effect of NAC on INR or total bilirubin.
CONCLUSIONS: Administration of IV NAC significantly decreased LFTs from baseline when compared to standard of care alone.

11:00am – 11:20am R **Evaluating the Timing of Antibiotic Administration in Sepsis to Identify Barriers Contributing to Delays in the Emergency Department** Room C

Presenters: Jo Brooks

TITLE: Evaluating the Timing of Antibiotic Administration in Sepsis to Identify Barriers Contributing to Delays in the Emergency Department
AUTHORS: Jo Brooks, Dora Hall, Sarah Cullen
OBJECTIVE: To identify potential barriers to antibiotic administration in the emergency department.
SELF ASSESSMENT QUESTION: How does timing of antibiotic administration differ from the previous sepsis guideline recommendation?
BACKGROUND: Delays in antibiotic administration in septic patients are associated with worse outcomes and an increase in mortality. The purpose of this study is to evaluate the timing of antibiotic administration in critically ill, septic patients and identify contributing factors leading to delays in antibiotic administration in the emergency department (ED).
METHODOLOGY: This retrospective, single center, observational chart review included adult patients admitted through the ED into the intensive care unit who received vancomycin and piperacillin/tazobactam between August 2021 and October 2021. The primary endpoint was the proportion of patients who received antibiotics at > 3 hours or ≤ 3 hours. Secondary endpoints included the administration of vasopressors, timing of culture collection, time to order verification, and ICU length of stay.
RESULTS: 51 patients met inclusion criteria for the study. The proportion of patients who received antibiotics within three hours was 78% (p=0.003). There was a greater proportion of patients who had cultures collected prior to antibiotic administration and central lines placed prior to antibiotics in the greater than 3-hour group but these were not statistically significant. Vasopressor administration prior to antibiotics also occurred in 45% of patients in the greater than 3-hour group (p=0.01). A 3-day difference in the median ICU length of stay was noted in the greater than 3-hour group, which was not statistically significant.
CONCLUSIONS: The majority of cases met Center of Medicare and Medicaid (CMS) measures for antibiotic administration within 3 hours, but a larger sample size may be required to appropriately assess statistical significance. Improvements in timing may be possible by providing nursing education on compatibility of infusions and peripheral vasopressor administration.

11:00am – 11:20am I **Evaluation of the impact of linked probiotic orders with broad-spectrum antibiotics on healthcare facility-onset Clostridioides difficile infection rates** Room G

Presenters: Tera Jones

TITLE: Evaluation of the impact of linked probiotic orders with broad-spectrum antibiotics on healthcare facility-onset Clostridioides difficile infection rates

AUTHORS: Tera Jones, Serina Tart, Dustin Bryan

OBJECTIVE: Evaluate the effect of co-prescribing a probiotic with broad-spectrum antibiotics on CDI rates in a high-risk patient population.

SELF ASSESSMENT QUESTION: Which antibiotics are considered high-risk for causing Clostridioides difficile?

BACKGROUND: Probiotics have been studied to prevent Clostridioides difficile infection (CDI) with variable reported efficacy. In 2016, Cape Fear Valley Medical Center (CFVMC) implemented a linked probiotic order to three broad-spectrum antibiotics utilized in the health system. A prior quality improvement project in 2017 showed reduced CDI rates in the probiotic study group but was not statistically significant. Since then, an expanded protocol linking a probiotic to additional antibiotics has been implemented. This project will determine the impact of the new protocol on CDI rates and will compare outcomes to prior results.

METHODOLOGY: This single center, retrospective, quality improvement, cohort study used a retrospective chart review of 25 random hospital-onset CDI (HO-CDI) adult inpatients from January 1, 2020, to May 31, 2021, to establish high-risk CDI patient population characteristics. Then a generated financial report included all patients fitting the pre-determined criteria for analysis, within the study period, to calculate CDI rates. The primary objective was to evaluate the effect of co-prescribing a probiotic with an expanded list of broad-spectrum antibiotics on CDI rates in a high-risk patient population. Secondary objectives included describing the high-risk patient population with HO-CDI at CFVMC, evaluating probiotic utilization and the frequency of patients discharged with probiotics.

RESULTS: In progress

CONCLUSIONS: In progress

11:00am – 11:20am I **Remdesivir Utilization and Outcomes in the Treatment of SARS-CoV-2 Within a Rural Healthcare System** Room F

Presenters: Rachel Crowder

TITLE: Remdesivir Utilization and Outcomes in the Treatment of SARS-CoV-2 Within a Rural Healthcare System

AUTHORS: Rachel Crowder, Alexas Polk, Katherine Miller, Eric Locklear

OBJECTIVE: To assess the factors that lead to poor outcomes in patients diagnosed with SARS-CoV-2 and are treated with remdesivir

SELF ASSESSMENT QUESTION: True or False: Most patients diagnosed with SARS-CoV-2 infection and treated with remdesivir were discharged before day 20

Answer: True

BACKGROUND: As of June 2021, the IDSA guidelines recommend remdesivir be administered to patients hospitalized with severe SARS-CoV-2 infection. Studies have shown reduced recovery time in patients diagnosed with SARS-CoV-2 who were treated with remdesivir. The purpose of this study was to evaluate the outcomes of adult patients hospitalized in a rural healthcare system with a laboratory-confirmed diagnosis of SARS-CoV-2 and treated with at least one dose of remdesivir during a six-month period.

METHODOLOGY: This retrospective, observational study evaluated adult patients admitted to a rural healthcare system with a laboratory-confirmed diagnosis of SARS-CoV-2 and treated with at least one dose of remdesivir from March 1, 2021 to August 31, 2021. Patients were evaluated for reasons for early discontinuation of therapy if a full course was not completed. The primary objective was to assess patient clinical and admission status after a full remdesivir course on days five, ten, twenty and forty-five. The primary outcome measures included the need for supplemental oxygen at the aforementioned time points or at discharge, intensive care unit length of stay, hospital length of stay, laboratory-confirmed superimposed bacterial pneumonia or bacteremia, and mortality. The secondary objectives were thirty, sixty, and ninety-day readmission or mortality.

RESULTS: 57% of patients completed a full course of remdesivir with the average length of therapy being 4.3 days. Average hospital length of stay was 10 days and 40% of patients were discharged on supplemental oxygen. The total mortality rate was 25.9%.

CONCLUSIONS: The high rate of early remdesivir discontinuation could validate the efficacy of remdesivir or expose the overuse of the medication. Prolonged hospitalizations were often driven by the need for supplemental oxygen.

11:00am – 11:20am L **Pharmacist Centered Interventions on Smoking Cessation and Alcohol Use Disorder Management at Hospital Admission and Discharge** Room K

Presenters: Wendy Zheng

TITLE: Pharmacist Centered Interventions on Smoking Cessation and Alcohol Use Disorder Management at Hospital Admission and Discharge

AUTHORS: Wendy Zheng, Merideth Allen, Cassidy Moses

OBJECTIVE: Demonstrate the impact of pharmacist interventions in smoking cessation and alcohol use disorder through improvement of the facility's ORYX measures.

SELF ASSESSMENT QUESTION: What type of interventions can inpatient clinical pharmacists make during medication reconciliations?

BACKGROUND: The purpose of this quality improvement (QI) project was to improve facility ORYX measures, which are used by Joint Commission for hospital accreditation, and to decrease morbidity and mortality outcomes associated with tobacco and excessive alcohol use. Per Joint Commission, upon admission and discharge patients should be screened, counseled, and offered treatment for smoking cessation and alcohol use disorder (AUD).

METHODOLOGY: The data collection period was from March – November 2021. The admission and discharge medication reconciliation templates were updated to include a section for tobacco and alcohol use assessments. Pharmacists performing admission and/or discharge medication reconciliations were to offer smoking cessation and/or AUD education and treatment options. Referral to outpatient services for continuity of care were performed at discharge. While this healthcare system has two campuses, implementation of these changes only applied to the West campus. Selected patient charts were audited, and retrospective chart reviews were performed by a quality assurance committee each month to finalize the facility's ORYX measures.

RESULTS: During the pre-intervention period, the ORYX measures averaged 69% and 57% for smoking cessation offered upon admission and discharge (TOB20 and TOB40) with AUD treatment offered upon admission and discharge averaging 31% and 18% (SUB20 and SUB40), respectively. For the post-intervention period, the ORYX measures averaged 79% and 69% for TOB20 and TOB40, while SUB20 and SUB40 averaged at 33% and 31%, respectively. Throughout the study period between August through November, 200 patients were discharged from the West campus. Out of the 200 patients discharged, 197 (99%) were screened for tobacco use and 185 (93%) were screened for alcohol use. 49 of 60 identified tobacco users (82%) were offered smoking cessation therapy. 18 patients (37%) accepted treatment and 12 patients (24%) were referred to an ambulatory care pharmacist for continuity of care and management. 19 of 32 patients (59%) screened with a positive AUDIT-C were offered treatment for potential AUD; however, only 4 patients (21%) accepted treatment.

CONCLUSIONS: Pharmacist interventions on the West campus have had a positive impact on ORYX measures. These quality improvement measures will be expanded to the remaining inpatient facility, a high-intensity psychiatry unit and domiciliary, on the East campus to continue improving ORYX measures for the entire facility.

11:00am – 11:20am M **RAPID RESPONSES DUE TO SUBSTANCE-INDUCED RESPIRATORY DEPRESSION IN A COMMUNITY HOSPITAL SETTING** Room L

Presenters: Victoria Owens

TITLE: RAPID RESPONSES DUE TO SUBSTANCE-INDUCED RESPIRATORY DEPRESSION IN A COMMUNITY HOSPITAL SETTING

AUTHORS: Victoria Owens, Lauren Whitfield, Stephanie Smith, Nancy Goodbar, Sara Beth Sears

OBJECTIVE: Identify modifiable and non-modifiable factors that increase risk of substance-induced respiratory depression.

SELF ASSESSMENT QUESTION: What is one modifiable risk factor for substance-induced respiratory depression?

BACKGROUND: Opioids provide effective analgesia but are accompanied by risks, including respiratory depression. Risk is increased among individuals with pre-existing pulmonary or cardiac disease, obesity, and renal or hepatic insufficiency. Risk is further increased when opioids are used concomitantly with central nervous system (CNS) depressants.

METHODOLOGY: This study was a retrospective analysis that aimed to evaluate the primary outcome of rapid responses due to substance-induced respiratory depression and to assess differences in prevalence among patients receiving opioids and CNS depressants concomitantly in comparison to opioids alone. Enrollment criteria included adults aged 18 years and older who received naloxone. Patients presenting to the hospital for substance-induced respiratory depression, those located in the emergency department during time of naloxone administration, and those receiving oral naloxone for opioid-induced constipation were excluded. Secondary outcomes included mortality following rapid response, morphine milligram equivalents (MME) per day, the use of non-opioid analgesia, and the use of opioids prior to admission (PTA).

RESULTS: Of the 585 patients that were reviewed for inclusion, 85 patients met criteria for inclusion in the final analysis. Rapid responses due to substance-induced respiratory depression occurred in 61% of patients receiving opioids only (N=23) and in 57% of patients receiving opioids and CNS depressants (N=62), with no difference between groups (P=0.714).

CONCLUSIONS: There was no difference in rates of rapid response events between groups. Significant findings included larger MME/day, and greater use of non-opioid analgesia and use of opioids PTA in patients who received opioids and CNS depressants compared to those who received opioids alone.

11:00am – 11:20am P **Evaluation of Ketamine Infusions in Chronic Pain Patients at Tennessee Valley Healthcare System (TVHS)** Room B

Presenters: Justin Petway

TITLE: Evaluation of Ketamine Infusions in Chronic Pain Patients at Tennessee Valley Healthcare System (TVHS)

AUTHORS: Justin Petway, Courtney Clarke, Meredith Crumb, Timothy Atkinson

OBJECTIVE: Describe the efficacy of ketamine infusions for chronic pain long-term

SELF ASSESSMENT QUESTION: What is the long-term efficacy of ketamine infusions for reduction in chronic pain?

BACKGROUND: VA is an ideal location to assess the use and impact of ketamine infusions for those suffering with chronic pain conditions. There exists gaps in current literature related to the long-term effectiveness of ketamine infusions for chronic pain conditions. The purpose of this project is to evaluate the efficacy of ketamine infusions for chronic pain long-term in the Veteran population.

METHODOLOGY: Eligible Veterans receiving ketamine infusion(s) for chronic pain, from 1/16/16 to 9/30/20 were included. Retrospective chart review was conducted to collect data regarding efficacy of ketamine infusions, to include pain scores, pain evaluation, and patient report.

RESULTS: In Progress

CONCLUSIONS: In Progress

11:00am – 11:20am 1 **Incidence and Timing of Cytomegalovirus Infection Following Kidney or Kidney-Pancreas Transplant** Room A

Presenters: Rachel Marchi

TITLE: Incidence and Timing of Cytomegalovirus Infection Following Kidney or Kidney-Pancreas Transplant

AUTHORS: Rachel Marchi, Rachel Stephens, Melissa Laub, Meredith Lopez, Imran Gani, Jennifer Waller

OBJECTIVE: Evaluate the incidence and timing of cytomegalovirus infection one year following kidney or kidney-pancreas transplant.

SELF ASSESSMENT QUESTION: What was the incidence of cytomegalovirus infection and average time to infection once valganciclovir prophylaxis was completed?

BACKGROUND: Evaluate the incidence and timing of cytomegalovirus infection one year following kidney or kidney-pancreas transplant and identify whether certain baseline characteristics, other than cytomegalovirus serostatus, place patients at higher infection risk.

METHODOLOGY: This was a single-center, retrospective chart review of adult patients who received a kidney or kidney-pancreas transplant between January 1, 2016 and June 30, 2020 with one year of follow-up. Patients were included if they were at least 18 years of age and classified as either high-risk (cytomegalovirus donor positive/recipient negative) or intermediate-risk (cytomegalovirus donor negative/recipient positive or donor positive/recipient positive) for infection. Patients considered low risk for infection, experienced graft loss, or became pregnant were excluded.

RESULTS: The final study cohort consisted of 273 patients. The average age of subjects was 52 years (standard deviation = 13.3), 58% were male, and 67% were African American. Eighteen patients (6.59%) developed cytomegalovirus infection within one year of transplant. Of those individuals, only seven patients (38.9%) were classified as high-risk. Of the 18 patients who developed an infection, three were on prophylaxis therapy. Among those with a cytomegalovirus infection and not receiving valganciclovir prophylaxis, the average time from transplant to infection was 164 days (standard deviation = 85 days) and the average time from end of prophylaxis to infection was 55.9 days (standard deviation = 71.1 days).

CONCLUSIONS: The incidence of cytomegalovirus infection within one year of transplant was similar to national statistics. No risk factors were identified placing patients at higher risk for infection. The average time off prophylaxis to infection was approximately 60 days; therefore, routine viral surveillance during the first two months off valganciclovir could be considered.

11:20am – 11:40am B **Impact of Pharmacist Driven Telemedicine Services in Hematopoietic Stem Cell Transplant (HSCT) Long-term Care Clinic in a Veteran Population** Room I

Presenters: Azur Eckley

TITLE: Impact of Pharmacist Driven Telemedicine Services in Hematopoietic Stem Cell Transplant (HSCT) Long-term Care Clinic in a Veteran Population

AUTHORS: Azur Eckley, David Eplin, Kendall Shultes, Rachel Hammers, Bipin Savani

OBJECTIVE: The learner will be able to identify types of interventions of pharmacist in a LTC HSCT clinic.

SELF ASSESSMENT QUESTION: Which of the following were the most common interventions completed by the LTC HSCT pharmacist?

A.Medication reconciliation

B.Chemotherapy monitoring

C.Vaccine recommendations

D.Diabetes management

BACKGROUND: Hematopoietic Stem Cell Transplant (HSCT) is a curative therapy for many hematologic malignancies. Patients undergoing allogeneic HSCT are high-risk patients with complex medication regimens including: anti-rejection medications, infection prophylaxis, other post-transplant complication prophylaxis in addition to their chronic medications for co-morbid conditions. At the VA Tennessee Valley Healthcare System (TVHS), there are 3 stages of care once a patient received an allogeneic transplant: inpatient transplant, outpatient post-transplant (Days +14 to +100), and long-term care (LTC) transplant (post-departure from the transplant facility). Currently, TVHS has a Clinical Pharmacy Specialist (CPS) involved in the inpatient and outpatient settings. The purpose of this quality improvement initiative was to evaluate the impact of pharmacist services on continuity of care for long-term HSCT patients, vaccine completion rates, and immunosuppression/chemotherapy monitoring.

METHODOLOGY: Patients were identified for enrollment based on a referral from a CPS, nurse practitioner (NP), or physician (MD). Patients with a history of allogeneic transplant were an automatic referral from the CPS at departure and scheduled for a 2-week and 6-week post-departure visit. During these visits the pharmacist conducted a medication reconciliation, assessed for medication errors or lapses in therapy, and provided medication counseling deemed necessary by clinical judgement. In addition to these two medication reconciliation visits, patients were also automatically scheduled for a vaccine assessment 6-months post-transplant. Patients with complex medication regimens or undergoing significant changes could also be referred by either the NP or MD. Finally, patients identified by the HSCT NP/MD as needing medication assistance were also seen by the LTC HSCT pharmacist.

RESULTS: In progress

CONCLUSIONS: In progress

11:20am – 11:40am B **Utilization of Empagliflozin in Veterans Diagnosed with Heart Failure with Reduced Ejection Fraction and Type 2 Diabetes Mellitus** Room J

Presenters: Skylar Grass

TITLE: Utilization of Empagliflozin in Veterans Diagnosed with Heart Failure with Reduced Ejection Fraction and Type 2 Diabetes Mellitus

AUTHORS: Skylar Grass, Leslie Barker, Christina Laird, Linda Clark, et al.

OBJECTIVE: Define the qualities of a potential candidate who would benefit from starting empagliflozin and identify the roles of clinical pharmacy specialists in the management of heart failure.

SELF ASSESSMENT QUESTION: Veterans were found not to be an appropriate candidate to start on an SGLT-2i for all the reasons EXCEPT:

BACKGROUND: Within the Gulf Coast Veterans Health Care System (GCVHCS), Patient Aligned Care Team (PACT) pharmacists manage pharmacotherapy for clinically stable heart failure patients in a primary care setting. Data from the EMPEROR trial have demonstrated that sodium-glucose transport protein 2 inhibitor (SGLT-2i) use among heart failure patients with reduced ejection fraction (HFrEF) improves cardiovascular outcomes. This quality improvement project aims to use PACT pharmacists to identify appropriate candidates for SGLT-2i initiation and increase utilization of this new standard of care among HFrEF patients within GCVHCS.

METHODOLOGY: Patients were identified with a diagnosis of heart failure and reduced ejection fraction and not currently prescribed an SGLT-2i. These patients were further stratified with an additional diagnosis of diabetes mellitus. Utilizing the national VA heart failure dashboard, CPSs (clinical pharmacy specialists) will be given a list of HFrEF patients with diabetes mellitus that are not currently prescribed an SGLT-2i. CPSs will evaluate if the patient is a clinically appropriate candidate for SGLT-2i initiation then contact the patient to discuss initiation and follow-up management. Data collection began on November 1, 2021 and continued for 5 months. The primary endpoint is the number of Veterans who are eligible and agreeable to be started on an SGLT-2i after speaking with a CPS. Secondary endpoints include undocumented non-VA SGLT-2i use, changes in kidney function, adverse events, utilization of heart failure PharmD tool, and percentage of those excluded from the project due to a contraindication of the drug.

RESULTS: As of November, the diabetes dashboard reports a total of 331 T2DM patients with HF only without SGLT-2i. Due to criteria set for PACT CPS to manage heart failure, the total was narrowed down to 112 patients. 14 Veterans agreed to start an SGLT-2i after speaking with a CPS. 59% were not considered candidates for an SGLT-2i due mainly to UTI risk (7) and traveling Veteran (4).

CONCLUSIONS: In line with the most recent recommendations, PACT CPSs play a key role in the multidisciplinary approach for treatment optimization of both heart failure and diabetes. With a current local score of 13.8%, a positive impact was also seen in the rate of HFrEF patients on an SGLT-2i. Utilization of CPSs in the management of other chronic disease states may lead to better health outcomes for Veterans and alleviate unwarranted financial cost.

11:20am – 11:40am C **VALIDATION OF A HEPARIN-INDUCED THROMBOCYTOPENIA RISK STRATIFICATION TOOL IN POST-SURGICAL CARDIOVASCULAR PATIENTS** Room H

Presenters: shahristan rashid

TITLE: VALIDATION OF A HEPARIN-INDUCED THROMBOCYTOPENIA RISK STRATIFICATION TOOL IN POST-SURGICAL CARDIOVASCULAR PATIENTS

AUTHORS: Shahristan Rashid, Sabrina Dunham, Tudy Hodgman

OBJECTIVE: At the conclusion of my presentation, the participant will be able to identify an appropriate risk stratification tool to appropriately predict the risk of HIT in post-surgical cardiovascular patients.

SELF ASSESSMENT QUESTION: Which of the following factors can contribute to thrombocytopenia in critically ill post-surgical cardiovascular patients?

A. Medications

B. Acute blood loss

C. CPB

D. CRRT

E. All of the above

BACKGROUND: Heparin induced thrombocytopenia (HIT) is a potentially life threatening immune- mediated adverse event occurring in 0.1-3% of post-surgical cardiovascular (CV) patients. The 4T score is the gold standard risk stratification tool to assess the likelihood of HIT in medical patients with limited applicability in post-surgical CV patients who commonly experience post-operative thrombocytopenia due to a variety of factors. The Cardiopulmonary Bypass (CPB) and HIT Expert Probability (HEP) scoring tools were developed to better evaluate the risk of HIT in post-surgical cardiovascular patients.

METHODOLOGY: This study was a retrospective chart review comparing the 4T, CBP, and HEP scoring tools in post-surgical CV patients. Eligible patients were identified by lab reports of Enzyme Linked Immunosorbent Assay (ELISA) and/or Serotonin Release Assay (SRA) tests. Patients included were aged 19-89, and admitted to the Cardiovascular Intensive Care Unit (CVICU) or the Coronary Care Unit (CCU) with post-operative thrombocytopenia and suspected HIT. CV surgery was defined as coronary artery bypass graft (CABG), aortic dissection repair, and aortic or mitral valve replacements. Patients not meeting the stated inclusion criteria were excluded. Descriptive statistics were utilized to characterize the predictive value of the varying scoring tools when compared to corresponding ELISA and/or SRA results. The 4T, CPB, and HEP scoring tools were utilized to risk stratify and were subsequently compared to the ELISA and/or a SRA results to determine the primary endpoint of accurate prediction.

RESULTS: A total of 291 patients received ELISA and/or SRA testing between January 2019 - July 2021. An interim analysis of 60 patients met the criteria and had complete data. A total of 5 patients her HIT positive and 55 patients were HIT negative. There was no difference in age, gender, BMI, race, baseline platelet counts, or nadir in both groups. A high 4T score (>6) was significantly more likely in the HIT positive group (60% vs 5%; p=0.005). The CPB score of 2 or more was not significantly more likely in the HIT positive group (33% vs 25%; p=0.76). The HEP score of 2 or more had a significantly higher predictability (100% vs 62%; p=0.08). The overall sensivity and specificity of the CPB were 33 & 75 and HEP scores were 100 & 38.

CONCLUSIONS: Trends identified in this interim analysis included a higher specificity towards identifying HIT with the CPB scoring tool, but more precise sensitivity with the HEP scoring tool. A high 4T score (>6) was significant to differentiate between HIT positive and negative patients.

11:20am – 11:40am Y **Health-Care Professional's and Patient's Perspective and Opinions of Pharmacist Conducted Point-Of-Care Testing for Infectious Diseases** Room G

Presenters: Ryan A. Norton

TITLE: Health-Care Professional's and Patient's Perspective and Opinions of Pharmacist Conducted Point-Of-Care Testing for Infectious Diseases

AUTHORS: Ryan Norton, Amanda McEvoy, Patricia H. Fabel, Tessa Hastings, Nathan Rouse

OBJECTIVE: Identify barriers that health-care professionals have against pharmacist-led point-of-care testing for infectious diseases

SELF ASSESSMENT QUESTION: What are some common barriers against pharmacist-led point-of-care testing for infectious disease?

BACKGROUND: Analyze health-care professionals and patient's perspective and opinions of pharmacists conducting point-of-care testing for group A streptococcal pharyngitis, influenza virus, human immunodeficiency virus (HIV), and hepatitis C virus (HCV).

METHODOLOGY: Two cross-sectional 10 question surveys were used to assess health-care professionals and patient perceptions and opinions of pharmacist conducted point-of-care testing. An electronic survey was distributed to health-care professionals (physicians, nurse practitioners, physician assistants, and pharmacists) within a national employer-based health care company. Another survey was administered by a clinical pharmacist in person via paper to patients of an employer-based health clinic within South Carolina.

RESULTS: A total of 188 health-care professionals participated in the survey which consisted of 163 non-pharmacist professionals and 25 pharmacists. From the survey results, 60% of non-pharmacist health-care professionals had some level of comfort with pharmacist conducting point-of-care testing and 67% had comfort with pharmacist interpreting point-of-care testing. While 84% of pharmacist felt comfortable conduction point-of-care testing and interpreting point-of-care testing. Total of 17 patient surveys were administered with similar questions, all patient responses were unanimously in favor of pharmacist-led point-of-care testing

CONCLUSIONS: From the survey that was conducted, majority of health-care professionals that participated in this study have some level of comfort with pharmacist administering and interpreting point-of-care testing of acute infectious diseases if training and additional education is provided. Due to the small amount of patient respondents, and the narrow-targeted population there was not enough data to draw conclusions.

11:20am – 11:40am R **Evaluation of the effect of angiotensin II on hemodynamic response in patients with vasoplegia post cardiac surgery** Room D

Presenters: Caitlin Fellers

TITLE: Evaluation of the effect of angiotensin II on hemodynamic response in patients with vasoplegia post cardiac surgery

AUTHORS: Caitlin Fellers, Timothy Lewis, Domagoj Mladinov

OBJECTIVE: Describe the effect of angiotensin II in comparison to hydroxocobalamin and/or methylene blue on hemodynamic response.

SELF ASSESSMENT QUESTION: Was there a significant difference in percentage change of norepinephrine equivalents for patients receiving angiotensin II in comparison to the control group at 60 minutes?

BACKGROUND: Vasoplegia occurs in 5 to 25% of patients post cardiac surgery and necessitates the addition of vasoactive medications to optimize organ perfusion. Patients who have refractory hypotension despite traditional vasopressor use may be given methylene blue, hydroxocobalamin or angiotensin II despite limited evidence to support their role in vasoplegia. A post-hoc analysis of cardiac surgery patients from the ATHOS III trial demonstrated an increase in blood pressure in patients who received angiotensin II. The objective of this project is to assess the hemodynamic response to angiotensin II compared with methylene blue and/or hydroxocobalamin in patients with vasoplegia post cardiac surgery.

METHODOLOGY: This will be a retrospective chart review of patients who have documented administration of angiotensin II, methylene blue or hydroxocobalamin within 24 hours after cardiac surgery. Propensity matching may be utilized to match patients who received angiotensin II compared to those who only received only methylene blue and/or hydroxocobalamin.

RESULTS: In Progress

CONCLUSIONS: In progress

11:20am – 11:40am R **Steroids in Traumatic Head and Spinal Cord Injuries: Impact on Hospital Length of Stay** Room C

Presenters: Karley Wilson

TITLE: Steroids in Traumatic Head and Spinal Cord Injuries: Impact on Hospital Length of Stay

AUTHORS: Karley Wilson, Lizzy Robinette, Andrew Conner

OBJECTIVE: At the conclusion of my presentation, the participant will be able to identify the effects of steroid use in traumatic head and spinal cord injuries on hospital length of stay.

SELF ASSESSMENT QUESTION: What is one adverse effect that can prolong patient length of stay associated with corticosteroid use?

BACKGROUND: In traumatic head and spinal cord injury the primary role of intensive care is to prevent, detect, and reverse any secondary neuronal injury. Corticosteroids are thought to be beneficial due to secondary inflammation that occurs after injury, however, there is not sufficient evidence to support this practice.

METHODOLOGY: In this single-center, retrospective study, patients with either traumatic head or spinal cord injury will be evaluated. The primary outcome that will be assessed is the median hospital length of stay of patients with traumatic head and spinal cord injuries who received corticosteroids, compared to those who did not. Secondary outcomes include the rates of in-hospital mortality, ICU mortality, and adverse events associated with corticosteroid use.

RESULTS: 137 patients were included in the IRB-approved study. The primary outcome in the corticosteroid group was 9 days vs 5 days in the control group (P=0.0595). Of the secondary objectives, ICU length of stay, frequency of infection, and frequency of hyperglycemia were found to be increased in the corticosteroid group when compared to the control group.

CONCLUSIONS: The primary outcome was not statistically significant, however there were multiple secondary outcomes that were found to be clinically significant. Because of this we believe it is important to educate physicians and staff about these results and reinforce current guideline recommendations and thoroughly investigate the necessity of corticosteroid use in this patient population.

11:20am – 11:40am I **Comparison of recurrence rates for urinary tract infections among inpatient rehabilitation patients treated for 7 days versus 10 days** Room F

Presenters: Kristina Carbone

TITLE: Comparison of recurrence rates for urinary tract infections among inpatient rehabilitation patients treated for 7 days versus 10 days

AUTHORS: Kristina Carbone, Lauren Wilcox, Carly Warner, Virginia Davis

OBJECTIVE: At the conclusion of this presentation, the participant will be able to compare initial versus recurrent urinary tract infections (UTIs) based on 7 days versus 10 days of antibiotic therapy in spinal cord injury (SCI) and brain injury (BI) patients.

SELF ASSESSMENT QUESTION: What risk factors do SCI and BI patients have for UTIs?

BACKGROUND: Bladder management in SCI and BI patients is complex, involving catheterization and functional abnormalities, leading to increased infections. UTI treatment duration in these populations is poorly defined. The purpose of this study is to determine whether a 10-day duration will decrease recurrence rates to help standardize treatment duration.

METHODOLOGY: This study was a retrospective cohort study of 69 randomly selected inpatient rehabilitation patients at Shepherd Center treated for UTI between July 1, 2019 and July 31, 2021. The primary objective was to compare UTI recurrence for patients completing 7 days (+/- 1 day) versus 10 days (+/- 1 day) of antibiotic therapy.

RESULTS: Of the 69 patients included, 51 had a recurrent UTI. In the 7 day group, 28% of patients did not have any recurrent UTIs, and in the 10 day group, 23% of patients did not have a recurrent UTI. E. coli was the most common organisms seen in both initial and recurrent UTIs, and sulfamethoxazole/trimethoprim and cephalexin were the two most common antibiotics used for treatment.

CONCLUSIONS: There was no statistically significant difference in recurrences when treating initial UTIs in spinal cord or brain injury patients for 7 versus 10 days.

11:20am – 11:40am L **Evaluation of prophylactic enoxaparin dosing in hospitalized obese patients at a community teaching hospital.** Room K

Presenters: Rachel Pecora

TITLE: Evaluation of prophylactic enoxaparin dosing in hospitalized obese patients at a community teaching hospital.

AUTHORS: Rachel Pecora, Christen Freeman, Douglas Carroll

OBJECTIVE: Define evidence based utilization of prophylactic enoxaparin for thromboprophylaxis in obese patients.

SELF ASSESSMENT QUESTION: What is an appropriate enoxaparin regimen for a patient with a body mass index of 42 kg/m2?

BACKGROUND: Obesity has been identified as an independent risk factor of venous thromboembolism (VTE) formation. Low molecular weight heparins, like enoxaparin, are commonly used for prevention of VTE in hospitalized patients. Current expert consensus and literature recommends increased doses of prophylactic therapy for VTE prevention in obese patients. The purpose of this project is to identify areas for improvement through characterization of the prescribing patterns of prophylactic enoxaparin in hospitalized obese patients at DCH.

METHODOLOGY: This was a retrospective chart review of hospitalized patients with a body mass index of 40 kg/m2 or greater receiving enoxaparin for DVT prophylaxis. Eligible patients were identified through a system report, randomized for inclusion, and evaluated for appropriate enoxaparin regimen based on inclusion and exclusion criteria. Appropriate regimens were considered to be 40 mg twice daily, 60 mg twice daily, and 60 mg daily.

RESULTS: One hundred patients were included in this review. Twelve patients (12%) were prescribed an appropriate enoxaparin regimen for DVT prophylaxis. No thrombosis or bleeding events were reported during admission or within thirty days of discharge.

CONCLUSIONS: The majority of patients reviewed were not prescribed appropriate enoxaparin regimens supported by the literature. This demonstrates a need for education among prescribers.

11:20am – 11:40am N **Efficacy and Safety of Fixed Dose vs. Titratable 3% Hypertonic Saline Infusion for the Treatment of Cerebral Edema** Room L

Presenters: Mary Sheffield

TITLE: Efficacy and Safety of Fixed Dose vs. Titratable 3% Hypertonic Saline Infusion for the Treatment of Cerebral Edema

AUTHORS: Mary E. Sheffield, John Carr, Sabrina Croft

OBJECTIVE: Compare efficacy and safety of continuous infusion 3% hypertonic saline dosing strategies among neurocritical care patients with cerebral edema.

SELF ASSESSMENT QUESTION: What is the most common target plasma sodium range when utilizing hypertonic saline for cerebral edema?

BACKGROUND: Hyperosmolar therapy is recommended to treat elevated intracranial pressure and cerebral edema, however little evidence exists to definitively guide treatment selection or management. The purpose of this study was to compare efficacy and safety of continuous infusion 3% hypertonic saline (HTS) dosing strategies among neurocritical care patients with cerebral edema.

METHODOLOGY: We performed retrospective analysis of adult patients admitted from April 1, 2018 to October 31, 2021 who received continuous infusion 3% HTS for severe cerebrovascular disease diagnosis. Patients were divided into 2 groups based on use of nurse-titrated protocol with goal sodium level of 145–155 mmol/L versus fixed-dose infusions titrated based on new physician orders. Patients who received HTS < 6 hours, < 2 laboratory values during infusion, or experienced signs of brain herniation at admission were excluded. The primary composite outcome was incidence of severe hypernatremia, hyperchloremia, and hypokalemia. Key secondary outcomes included time to goal sodium level, time within goal sodium range, titration details, and adverse events.

RESULTS: Forty patients were included. Nurse-titrated HTS had a non-statistically significantly lower incidence of electrolyte abnormalities compared to those who received fixed dose HTS (55% vs. 70%, p=0.333). Utilization of the nurse-titrated protocol resulted in a non-statistically significantly faster time to goal sodium level of 17.4 hours, compared to 25.6 hours in the fixed-dose group (p=0.424). Patients on nurse-titrated HTS maintained a goal sodium level for a longer period of time compared to fixed-dose regimen (53 hours vs 35 hours, p=0.116). Rates of adverse effects were similar between both groups.

CONCLUSIONS: The use of nurse-titrated protocol versus fixed-dose HTS resulted in similar sodium parameters and comparable outcomes. Utilization of the nurse-titrated protocol resulted in faster time to goal and longer period within goal sodium range, however this difference was not statistically significant. Further research is warranted to optimize and standardize HTS administration.

11:20am – 11:40am O **IMPACT OF A CLINICAL PHARMACY SPECIALIST ON PATIENT SAFETY AND COST SAVINGS IN A HEMATOLOGY/ONCOLOGY CLINIC** Room B

Presenters: Lacey Glover

TITLE: IMPACT OF A CLINICAL PHARMACIST PRACTITIONER ON COST SAVINGS AND PATIENT SAFETY IN A HEMATOLOGY/ONCOLOGY CLINIC

AUTHORS: Lacey Glover, Kendra Brookshire, Barbie Gleaton

OBJECTIVE: Describe the impact of cost savings the Clinical Pharmacist Practitioner contributes to the hematology/oncology clinic.

SELF ASSESSMENT QUESTION: What areas can a clinical pharmacist practitioner help cut costs in a hematology/oncology clinic?

BACKGROUND: To evaluate the role the Clinical Pharmacist practitioner plays on cost savings and patient safety in the hematology/oncology clinic at a specific Veterans Affairs Health Care System.

METHODOLOGY: This project consisted of a retrospective chart review. The interventions were evaluated to determine cost savings and patient safety. Cost savings endpoints included dose rounding, IV to PO conversions, and formulary substitutions identified by the pharmacist. Patient safety endpoints included prevention of adverse effects and prevention of hospitalizations. This review also included comparing the interventions of the oncology pharmacist versus PACT (Patient Aligned Care Team/Primary Care) pharmacist to understand if there is a difference in the standard of care for specialty versus non-specialty trained pharmacists when the PACT pharmacists fill in for the oncology specialist.

RESULTS: Full analysis of the results are still pending. Preliminary results include evaluation of 144 oncology pharmacy encounters. The hematology/oncology pharmacist helped save an estimated $18,346 in FY21. The pharmacist also prevented and managed a total of 98 adverse reactions in FY21. In addition, the clinical pharmacist utilized their scope of practice 77 times by either ordering medications or labs. Analysis of the covering PACT pharmacist is still ongoing.

CONCLUSIONS: The Clinical Pharmacist Practitioner in the hematology/oncology clinic was crucial in preventing adverse drug reactions and cost savings to the healthcare system.

11:20am – 11:40am S **Appropriate Use of Melatonin for the Treatment of Insomnia in Hospitalized Patients with a Diagnosed Psychiatric Disorder** Room E

Presenters: Tamia Jones

TITLE: Appropriate Use of Melatonin for the Treatment of Insomnia in Hospitalized Patients with a Diagnosed Psychiatric Disorder

AUTHORS: Tamia Jones, Abigayle Campbell, Ashley Costello, Lisa Gibbs, Lauren Whitfield

OBJECTIVE: Describe the impact melatonin had on the sleep duration of adult patients admitted to inpatient psychiatric center.

SELF ASSESSMENT QUESTION: Patients with which psychiatric diagnosis were more likely to be prescribed melatonin while admitted?

A. Bipolar Disorder

B. Depression

C. Anxiety

D. Schizophrenia

E. Multiple

F. Other

BACKGROUND: Insomnia may be a common sleep disturbance among patients with psychiatric disorders. The CDC defines insufficient sleep as < 7 hours per night. Guideline directed treatment of insomnia for these patients focuses on optimizing treatment of their psychiatric condition prior to initiating pharmacologic therapy for insomnia. This study aimed to evaluate melatonin use and its impact on sleep among this patient population.

METHODOLOGY: A single-center retrospective chart review was conducted on patients ≥18 years old admitted for ≥48 hours between June 2020 and June 2021 to the inpatient psychiatric center of a community hospital who received melatonin. The primary objective was the average number of hours of sleep per night. Secondary objectives include escalation of melatonin dose or frequency, the requirement of an additional sleep agent, and continuation of melatonin upon discharge. Patients were grouped by the frequency of melatonin administration: < 4 days, 5 to 6 days and ≥ 7 days.

RESULTS: Of 280 patients admitted to the inpatient psychiatric center during the study period, 168 met inclusion criteria and 149 (88.7%) of them received melatonin scheduled. Melatonin duration groups were: 82 (55.8%) < 4 days, 14 (9.5%) 5 to 6 days and 51 (34.7%) had duration days ≥ 7. The average sleep time per day among all duration groups was 7.09 hours. There was no significant difference in sleep time among the three duration groups (p=0.125).

CONCLUSIONS: Evaluating real world data, melatonin use did not have a significant impact on sleep duration among patients with psychiatric disorders admitted to a community hospital inpatient psychiatric center.

11:20am – 11:40am 1 **Preemptive intravenous immune globulin therapy in sensitized lung transplant recipients** Room A

Presenters: Jessica Goldsby

TITLE: Preemptive intravenous immune globulin therapy in sensitized lung transplant recipients

AUTHORS: Jessica Goldsby, Kristi Beermann, John Reynolds

OBJECTIVE: Describe the incidence of donor specific antibody (DSA) development in sensitized lung transplant recipients (LTR).

SELF ASSESSMENT QUESTION: Use of preemptive intravenous immune globulin (IVIG) in sensitized LTR may impact which outcomes?

BACKGROUND: Sensitized LTR are at increased risk for development of DSA, which has been associated with higher rates of rejection and worse post-transplant survival. A calculated panel reactive antibody (cPRA) quantifies sensitization status and has been used by our center to determine the need for IVIG therapy in the perioperative setting. The aim of this study was to describe clinical outcomes in sensitized LTR who received preemptive IVIG compared to those who did not.

METHODOLOGY: This retrospective review included adults who received a lung transplant at Duke University Hospital between August 2014 and September 2020. LTR included had cPRA ≥ 25, negative T and B cell cross matches, received basiliximab induction, and survived at least 30 days post-transplant. LTR who received multi-organ transplant, antithymocyte globulin induction, belatacept, or additional desensitization therapies were excluded. A historical cohort of LTR receiving preemptive IVIG was compared to a cohort of LTR that did not receive IVIG. The primary endpoint was DSA development within 12 months post-transplant. Secondary endpoints include incidences of acute cellular rejection (ACR), antibody-mediated rejection (AMR), and chronic lung allograft dysfunction (CLAD) at 12 months as well as primary graft dysfunction (PGD) at 72 hours post-transplant.

RESULTS: Fifty-nine patients were included, 42 in the IVIG group and 17 in the non-IVIG group. DSA development within one year was 33.3% and 58.8% in the IVIG and non-IVIG groups (odds ratio 2.88, p=0.13), respectively. Incidences of PGD, acute rejection, AMR, and CLAD were similar between groups.

CONCLUSIONS: DSA development was numerically lower in the IVIG group compared to the non-IVIG group, however this difference was not statistically significant. Final conclusions will be made once select confounders are evaluated.

11:40am – 12:00pm B **IMPLEMENTATION OF A PHARMACIST-LED HYPOTHYROIDISM CLINIC AND ITS IMPACT ON SYMPTOM MANAGEMENT AND CONCOMITANT DISEASE STATES OF AFFECTED VETERANS**

Presenters: Riawna Kelly Room I

TITLE: IMPLEMENTATION OF A PHARMACIST-LED HYPOTHYROIDISM CLINIC AND ITS IMPACT ON SYMPTOM MANAGEMENT AND CONCOMITANT DISEASE STATES OF AFFECTED VETERANS

AUTHORS: Riawna Kelly, Kelsey Metts, Deborah Hobbs

OBJECTIVE: The objective is to improve hypothyroidism symptom management in patients with primary hypothyroidism and then assess for improved lipid profiles (in hyperlipidemia patients) and A1c percentage (in diabetic patients)

SELF ASSESSMENT QUESTION: How has implementing a pharmacist led hypothyroidism clinic impacted Veteran's labs including thyroid panel, lipid profile, and A1c percentage?

BACKGROUND: Establish a pharmacist-led hypothyroidism clinic at the Carl Vinson VA Medical Center to improve symptom management and concomitant disease state outcomes.

METHODOLOGY: These authors, with the assistance of an informatics pharmacist, pulled all Veterans who receive care at Carl Vinson VA Medical Center in Dublin, Georgia with TSH > 4.2 uIU/mL and/or a free T4 < 0.93 ng/dL in the past year with or without hyperlipidemia and type 2 diabetes mellitus. Chart reviews were conducted to assess for any patients who met the following exclusion criteria:

•Those prescribed Cytomel as augmentation for depression
•Those diagnosed as having:
oHashimoto's thyroiditis
oCoronary artery disease with unknown duration of therapy
oPregnancy
oDrug induced elevated TSH (i.e dopamine antagonists, amiodarone, oral cholecystogram dye)
•A1c > 10%
•LDL > 190 mg/dL

The selected patients were enrolled into a thyroid clinic. The pharmacist made initial contact via telephone. During initial visit, education and plan for medication optimization was provided. Patients were scheduled for a 3-week follow-up for symptom relief then a 6 week follow up with appropriate labs ordered. Authors compared thyroid panel, lipid profile, and A1c percentage before and after enrollment in hypothyroidism clinic.

RESULTS: In progress

CONCLUSIONS: In progress

11:40am – 12:00pm B **Pharmacist Influence on Documentation of Contraceptives in Women on Category D or X Medications in an Academic Primary Care Setting** Room K

Presenters: Kendall Foshee

TITLE: Pharmacist Influence on Documentation of Contraceptives in Women on Category D or X Medications in an Academic Primary Care Setting

AUTHORS: Kendall A. Foshee, Brittany N. White, J. Lacie Bradford, Elizabeth Close

OBJECTIVE: Evaluate the rates of contraception documentation and counseling in women of childbearing age prescribed a teratogenic medication before and after pharmacist intervention.

SELF ASSESSMENT QUESTION: Women of childbearing age should receive counseling about teratogenicity risk when prescribed which classes of medications?

BACKGROUND: Categories D and X medications including ACE Inhibitors, Angiotensin II Receptor Blockers, statins, warfarin, and some antiepileptics can cause fetal harm or even death when taken during pregnancy. The risk of conception while taking teratogenic medications may be minimized with contraceptive education, however, studies suggest that rates of patient counseling and documentation of contraception status are low. The purpose of this study is to assess the current rate of contraceptive documentation, increase the documentation of patient contraception status, counsel women regarding the importance of contraception, and increase rates of pharmacologic contraception use in women of childbearing age prescribed potentially teratogenic medications.

METHODOLOGY: This retrospective chart review with prospective pharmacist intervention included women 18 to 45 years old currently prescribed an ACE Inhibitor, Angiotensin II Receptor Blocker (ARB), statin, warfarin, or teratogenic antiepileptic medication from an academic Family Practice clinic. Demographic information and current documentation of contraception use was collected from the EHR. Patients were contacted by a pharmacist via telephone or during primary care visits and were asked standardized questions, received contraceptive counseling, and were assessed for the necessity of follow-up with a primary care provider. Data regarding contraception initiation or changes in teratogen use were collected following primary care follow-up. The primary outcome of this study is the incidence of documentation of contraceptive use status before and after pharmacist intervention. Secondary outcomes include rate of pharmacist-provided patient counseling, incidence of documented follow-up with provider, and incidence of change in drug therapy to alternative medication.

RESULTS: In progress

CONCLUSIONS: In progress

11:40am – 12:00pm B **Population Health Outcomes in Diabetes Care: Pharmacist Impact on Hemoglobin A1c Reduction** Room J

Presenters: Courtney McDonald

TITLE: Population Health Outcomes in Diabetes Care: Pharmacist Impact on Hemoglobin A1c Reduction

AUTHORS: Courtney McDonald, Jamie Crossman, Jennifer Hayes, Lori Hornsby

OBJECTIVE: To explain the impact of a pharmacist led diabetes program in patients with type 2 diabetes within the healthcare system.

SELF ASSESSMENT QUESTION: What is the impact of a having an on-site pharmacist involved in a diabetes population health initiative?

BACKGROUND: Diabetes mellitus is a chronic disease affecting millions of Americans. Managing diabetes can be burdensome and complex to both the physician and patient. Evidence for opportunities to impact diabetes and its outcomes has grown, leading to development of population health improvement initiatives to prevent burden and reduce long-term complications. The pharmacist's role has expanded in a variety of practice settings, allowing for improved outcomes in diabetes. A pharmacist-led population health initiative was created within a family medicine clinic with pharmacists on site to target patients with diabetes mellitus and A1c >9% for intervention. The pharmacists review patient charts, contact patients via telephone, make recommendations to providers, schedule follow-up appointments with providers, and, upon provider referral, see patients in clinic for management of diabetes. During clinic visits pharmacists work with patients to provide diabetes education and glycemic control, and discuss goals, complications, lifestyle modifications, and manage medications. The purpose of this study is to evaluate the impact of a pharmacist-led diabetes program in patients with type 2 diabetes within the healthcare system.

METHODOLOGY: A retrospective chart review was conducted to evaluate the effectiveness of the pharmacist-led diabetes initiative in a clinic with pharmacists on site between August 1, 2021 through February 28, 2022. Patients with type 2 diabetes mellitus and A1c greater than 9% were included. The primary outcome was percentage of patients achieving A1c <9% in the group with pharmacist intervention compared to those that did not receive pharmacist intervention.

RESULTS: A total of 360 patients were included (160 intervention, 200 non-intervention). Patients achieving A1c <9% was 52 (33.5%) and 58 (29.7%); p=0.446 in the intervention and non-intervention groups respectively. The intervention group had a higher a1c at baseline versus the non-intervention group at 11.3 versus 10.9 respectively (p= 0.213).

CONCLUSION: In conclusion, pharmacists' intervention can improve patient outcomes including decreased A1c, follow-up, and percent of patients on guideline-directed therapy. Our studied showed that even over a short period of time and a higher baseline A1c, the percent of patients achieving A1c <9% was increased.

11:40am – 12:00pm Y **Assessment of patient reported outcomes with injectable CGRP mAb therapy for migraine prophylaxis managed by a health-system specialty pharmacy** Room G

Presenters: Ashley Hutchison

TITLE: Assessment of patient reported outcomes with injectable CGRP mAb therapy for migraine prophylaxis managed by a health-system specialty pharmacy

AUTHORS: Ashley Hutchison, Kathy Bricker, Kyle Hansen, Sara Newman, Jen Young

OBJECTIVE: Describe the role of a pharmacist in assisting patients with migraine manage their disease state and medications.

SELF ASSESSMENT QUESTION: What area(s) of migraine management can a patient benefit from pharmacist intervention?

BACKGROUND: The purpose of this study is to evaluate Patient-Reported Outcomes Measurement Information System addressing 10 global health items (PROMIS-10) outcomes in migraine patients receiving injectable calcitonin gene-related protein (CGRP) monoclonal antibody (mAb) therapy dispensed by Atrium Health Wake Forest Baptist specialty pharmacy services. Scoring occurs at initiation of therapy and at pre-determined follow-up timeframes based on PROMIS-10 score severity.

METHODOLOGY: This study is single-centered, retrospective review of PROMIS-10 scores with CGRP mAbs dispensed by specialty pharmacy from January 2018 to July 2021. Scores were documented at medication initiation and at least once post-medication initiation. The primary outcome is percent change in PROMIS-10 global score from medication initiation to first follow up. Secondary outcomes are maximum percent change in PROMIS-10 global scores, mean percent change in PROMIS-10 global scores, percent change in PROMIS-10 individual question scores, change in PROMIS-10 global score category before and after pharmacist-driven intervention, migraine-related healthcare utilization, and migraine days per month.

RESULTS: Of 126 patients initiating CGRP mAb therapy with PROMIS-10 assessment offered, 14 patients completed the assessment with both an initial and follow-up score. The overall average PROMIS-10 global score decreased by 1.8 points (24.4 vs. 22.6) from initiation to first follow up ($p>0.05$). The average number of patient-reported migraine days decreased by 7.8 days (18.3 vs. 10.5) to first follow up ($p<0.05$).

CONCLUSION: CGRP mAb therapies have been shown to reduce the number of migraine days, yet these patients still experience reductions in patient-reported mental and physical health. In addition to comprehensive pharmacy services, these patients may need additional resources to manage common comorbid psychological disease states frequently seen with migraine.

11:40am – 12:00pm R **Analyzing the Effects of NATE Platform Utilization on Glycemic Control in Critically-Ill Adults**
Presenters: Caroline Worley Room C

TITLE: Analyzing the Effects of NATE Platform Utilization on Glycemic Control in Critically-Ill Adults

AUTHORS: Caroline Worley and Michael-Dane Saavedra

OBJECTIVE: At the conclusion of my presentation, the participant will be able to suggest interventions utilizing NATE along with a glycemic control protocol to effectively correct hyperglycemia in critically-ill adults.

SELF ASSESSMENT QUESTION: What intervention may a pharmacist suggest based on information provided by NATE and the hyperglycemia protocol?

BACKGROUND: Glycemic control in the critical care setting has become a vital measure used to help decrease morbidity and mortality especially in patients with sepsis, trauma, or stroke. Uncontrolled blood glucose can cause further complications for critically ill patients, like increasing the risk of infection, lengthening hospital stay, impairing wound healing, and furthering damage to vital organs (kidney, liver, adrenal). It is often difficult to maintain glycemic control in the ICU due to high-dose steroids, fluctuating nutrition, and other comorbidities that may affect a patient's blood glucose levels. Multiple studies (e.g. NICE-SUGAR trial) have shown the benefits of tighter glycemic control in patients being treated in the ICU. Though glycemic control may range 120-180 mg/dL depending on the facility, this protocol will use a goal of <180 mg/dL to coincide with the NATE application. NATE (Next-gen Analytics for Treatment and Efficiency) is an application developed by HCA Healthcare that delivers a visual representation of patient data, designed to assist health care providers in prioritizing workflow and providing quality patient care. One specific aspect, the glucose overlay, helps with identifying opportunities for intervention in glucose management for critically-ill patients.

METHODOLOGY:Initial data collection will take place in the intensive care units at Parkridge East Hospital and Parkridge Medical Center (SICU and MICU) to observe current level of NATE implementation. Three glucose point-of-care (POC) results will be recorded daily for each ICU patient on two different occasions (start-of-shift and end-of-shift). These measures will reflect the most recent blood glucose (BG) result, the highest BG result in the last 24 hours, and the lowest BG result in the last 24 hours. Additionally, the patient's 24-hour insulin usage, sliding scale status, and pertinent medications will be recorded. Following six weeks of observation, critical care patients (in MICU only) will be assessed daily prior to rounds using NATE in order to evaluate 24-hour history of hyperglycemia and the need for implementation of a pharmacist-led treatment protocol. Based on this protocol, the goal will be to address all patients in RED and to implement one of the following therapeutic changes: 1) Initiation of a sliding scale insulin protocol, 2) Enhancing a patient's sliding scale regimen, 3) Initiating or increasing a basal-bolus insulin regimen, 4) Initiating an insulin infusion. It will then be determined if the therapeutic intervention changed the patient to GREEN and how long it took for the intervention to take effect. VigiLanz reports will be assessed to determine if implementation of a hyperglycemia protocol in the ICU improved the number of pharmacy surveillance alerts generated by VigiLanz.

RESULTS: Twenty-five patients were admitted to PMC ICU between January 1st, 2022 and April 15th, 2022 with average blood glucose and admit of 276 mg/dL. After 67 interventions, the average time to normoglycemia was 50.7 hours, ranging from 3 hours to 152 hours with a median of 32.5 hours. There was no clinical significance in the reduction of VigiLanz activations, coorelating to timely glycemic control.

DISCUSSION: Results of this study neglected to show clinical significance in the reduction of VigiLanz activations correlating to reduction in patients' blood glucoses (primary objective). A glycemic control protocol was developed to assist providers in correcting hyperglycemia in critically ill patients in the intensive care unit (secondary objective). NATE can be used as an extra tool in combination with VigiLanz activations and hyperglycemia protocol to assist pharmacists, nursing, and physicians in patient care. Suggest projecting the NATE glucose overlay in intensive care units for easy access to patient blood glucose information. Systems like Glucommander™ and EndoTool® may provide more accurate and efficient options for glucose management in a hospital setting.

11:40am – 12:00pm R **Comparison of amiodarone versus lidocaine for cardiac arrests from ventricular fibrillation (VF) or pulseless ventricular tachycardia (pVT)** Room D

Presenters: Sebin Yang

TITLE: Comparison of amiodarone versus lidocaine for cardiac arrests from ventricular fibrillation (VF) or pulseless ventricular tachycardia (pVT)

AUTHORS: Sebin Yang, Alexas Polk, Daniel Schroder, Kristen Womble-Smith, Nicole Tipton, Neelou Tabatabai-Yazdi

OBJECTIVE: To assess the impact of various antiarrhythmic drugs in shock-refractory VF/pVT cardiac arrest on return of spontaneous circulation (ROSC)

SELF ASSESSMENT QUESTION: True/False. Observed ROSC rate was higher when lidocaine was administered compared to amiodarone.

BACKGROUND: The American Heart Association updated the advanced cardiovascular life support guidelines, recommending consideration of either amiodarone or lidocaine for shock-refractory VF/pVT cardiac arrest. This update was based on a randomized controlled trial of out-of-hospital cardiac arrests, which demonstrated significantly higher ROSC prior to arrival to the emergency department in patients who received lidocaine compared to placebo. However, neither antiarrhythmic medication statistically significantly improved survival to hospital discharge. The purpose of this study is to assess the impact of amiodarone or lidocaine in shock-refractory VF/pVT cardiac arrests presenting to or occurring at UNC Health Southeastern.

METHODOLOGY: This retrospective, observational study evaluated adult patients who received parenteral amiodarone or lidocaine along with standard care for shock-refractory VF/pVT cardiac arrest between December 1st, 2021 and March 31st, 2022. Patients were included if they were at least 18 years of age and received amiodarone or lidocaine for VF/pVT cardiac arrest. The primary outcome measure was the rate of ROSC and secondary outcome measures included the number of defibrillations prior to administration of an antiarrhythmic, time to administration of antiarrhythmic, time to ROSC after administration, and survival to hospital discharge.

RESULTS: A total of 64 cardiac arrests occurred during the study period. Nine cases of VF/pVT met inclusion criteria; six received amiodarone and three received lidocaine at their recommended doses. Baseline demographics were statistically similar between the two groups. 67% of patients in both groups achieved ROSC (P=1). Two patients in each group survived and were transferred to ICU, but no patient survived to hospital discharge.

CONCLUSIONS: Neither amiodarone nor lidocaine had a more significant impact on ROSC in VF/pVT.

11:40am – 12:00pm | **AUC/MIC Vancomycin Dosing Versus Traditional Trough-Based Vancomycin Dosing on Initial Therapeutic Concentrations in Obese Patients** Room F

Presenters: Kallie Arthur

TITLE: AUC/MIC Vancomycin Dosing Versus Traditional Trough-Based Vancomycin Dosing on Initial Therapeutic Concentrations in Obese Patients

AUTHORS: Serina Tart, Brock Dorsett, Riley Bowers

OBJECTIVE: To assess the rate of achievement of initial goal vancomycin concentration in obese patients receiving AUC-based dosing compared to traditional trough-based dosing.

SELF ASSESSMENT QUESTION: What AUC/MIC ratio should be targeted in AUC-based vancomycin dosing?

BACKGROUND: Recently updated guidelines from the American Society of Health-System Pharmacists (ASHP) with the Infectious Diseases Society of America (IDSA) for vancomycin dosing and monitoring state that trough-only monitoring is no longer recommended. The updated guidelines recommend an individualized target AUC/MIC ratio of 400 to 600 mg*h/L be attained to achieve clinical efficacy and minimize adverse events. However, vancomycin dosing in obese patients can be challenging due to the physiological changes in this population.

METHODOLOGY: Adult patients hospitalized at Cape Fear Valley Medical Center weighing at least 100 kilograms with a BMI of at least 30 kg/m2 who received inpatient vancomycin therapy with at least one documented vancomycin concentration were retrospectively reviewed in this single-center cohort study. The primary endpoint of the study was to compare the number of obese patients achieving initial goal concentration for AUC/MIC vancomycin dosing versus traditional vancomycin dosing. Rates of acute kidney injury, drug accumulation in subsequent vancomycin concentrations, and the total daily vancomycin dose needed to achieve initial therapeutic concentration were also described.

RESULTS: A total of 142 patients were included in the study with 84 patients in the trough-based vancomycin dosing group and 58 patients AUC/MIC vancomycin dosing group. The achievement of inital vancomycin goal concentration occured in 30 patients (35.7%) in the trough-based dosing group and 30 patients (51.7%) in the AUC/MIC vancomycin dosing group (p=0.058). Acute kidney injury occured in 7 patients (8.3%) and 1 patient (1.7%) in the trough-based and AUC/MIC vancomycin dosing groups, respectively. Vancomycin accumulation occured in 15 patients (17.9%) in the trough-based group and 17 patients (12.0%) in the AUC/MIC group. The mean total daily vancomycin dose was 3157 mg in the trough-based group and 3004 mg in the AUC/MIC group.

CONCLUSIONS: AUC/MIC vancomycin dosing resulted in greater achievement of initial goal concentration compared to traditional trough-based vancomycin dosing. Rates of acute kidney injury, number of patients accumulating vancomycin, and total daily vancomycin doses were lower in patients receiving AUC/MIC vancomycin dosing. The results from this study support the 2020 ASHP/IDSA guidelines preference for AUC-based vancomycin dosing.

11:40am – 12:00pm O **Impact of concomitant CYP2D6 inhibitors on outcomes of patients with lymphomas receiving (R)-CHOP-based therapies** Room L

Presenters: Rachel Gilmore

TITLE: Impact of concomitant CYP2D6 inhibitors on outcomes of patients with lymphomas receiving (R)-CHOP-based therapies

AUTHORS: Rachel Gilmore; Bradley Yelvington; Ryan Miller; Leena Choi; Elizabeth McNeer

OBJECTIVE: Describe the clinical impact of theoretical interactions between CYP2D6 inhibiting medications and doxorubicin-containing chemotherapy regimens for the treatment of lymphomas.

SELF ASSESSMENT QUESTION: True or False: The concomitant use of a CYP2D6 inhibitor with CHOP or R-CHOP for the treatment of lymphomas results in a higher risk of chemotherapy dose reductions, delays, or adverse event leading to hospitalization.

BACKGROUND: CHOP and R-CHOP are mainstays of therapy for many subtypes of non-Hodgkin's lymphoma (NHL), but drug interactions can present challenging therapeutic dilemmas. The prescribing information for the anthracycline agent doxorubicin, one of the chemotherapeutics in the (R-)CHOP regimens, lists concurrent use of CYP2D6 inhibitors as a contraindicated drug interaction. This recommendation is based on a theoretical risk of increased doxorubicin concentrations and therefore increased adverse effects, but lacks any supporting clinical data. The purpose of this study was to evaluate the real-world risk of increased adverse events in patients with lymphomas treated concomitantly with a doxorubicin-containing regimen and a CYP2D6 inhibitor.

METHODOLOGY: A single-center, retrospective cohort study was performed at an academic medical center including patients ≥18 years of age with lymphoma who received at least one cycle of CHOP or R-CHOP. Cohorts were matched using propensity scoring. The primary outcome was a composite of incidence of chemotherapy dose reductions, delays in receipt of chemotherapy, and hospitalization for chemotherapy-related adverse event. Secondary outcomes included each component of the composite primary endpoint, incidence of grade 3 and 4 toxicities, and complete remission rate.

RESULTS: 66 patients were included in the analysis, with 22 patients in the CYP2D6 inhibitor group. The median age was 68 years old; most patients were male (56%) and white (97%). The most common lymphoma diagnosis was diffuse large B-cell lymphoma (70%), most common regimen was R-CHOP (74%), and median number of cycles received was 6. The frequency of patients experiencing any component of the composite primary endpoint did not show statistically significant difference between groups (p=0.862). There was no significant difference in frequency of any component of the composite endpoint when compared individually. Rates of adverse events analyzed between groups also did not show statistically significant difference, and rates of complete remission were similar between groups.

CONCLUSIONS: In this small, single-center study, no significant difference was detected in chemotherapy delays, dose reductions, or adverse events leading to hospitalization based on concomitant receipt of a CYP2D6 inhibitor. Classification of concomitant doxorubicin and CYP2D6 inhibitors as contraindicated should be examined further in larger, prospective, and more long-term studies.

11:40am – 12:00pm O **Implementation and Evaluation of a Fast Track Laboratory Monitoring Protocol for Immune Checkpoint Inhibitor Therapies** Room B

Presenters: Behren Ketchum

TITLE: Implementation and Evaluation of a Fast Track Laboratory Monitoring Protocol for Immune Checkpoint Inhibitor Therapies

AUTHORS: E. Behren Ketchum, Amber B. Clemmons, Katherine Saunders

OBJECTIVE: The participant should be able to define a standardized laboratory monitoring protocol for immune checkpoint inhibitors.

SELF ASSESSMENT QUESTION: Does a standardized laboratory monitoring protocol improve infusion center throughput?

BACKGROUND: Immune checkpoint inhibitors (ICIs) are used for treatment of solid malignancies and Hodgkin lymphoma. ICIs have unique side effect profiles, including endocrinopathies, that require different monitoring in comparison to cytotoxic chemotherapy. Cycles are generally every two to six weeks, and responders without severe toxicity typically continue therapy for a prolonged duration. However, no specific laboratory monitoring intervals are established for ICIs. Therefore, labs may be drawn as frequently as every dose. Data from the Georgia Cancer Center in 2020 showed that laboratory parameters are drawn frequently (> 80% of cycles), the majority are drawn on the day of treatment (94%), and a small portion (< 1% total labs) led to clinical intervention.

METHODS: A single-center retrospective chart review evaluated patients enrolled in the ICI Fast Track for Laboratory Monitoring Protocol from September 1, 2021 to February 28, 2022. Adult patients on single agent ICI or ipilimumab/nivolumab for 6 months or longer with stable laboratory parameters were included in the study. Patients were excluded if they were receiving concomitant chemotherapy or oral targeted agent or had prior immune-mediated toxicities from ICIs unless sufficiently treated or stable. The fast track protocol required laboratory parameters to be drawn every 3 months and allowed for outpatient laboratory draws within 14 days of treatment to be used for order processing. The primary outcome is protocol adherence. Secondary outcomes include safety, defined as frequency of actionable results, chairs that skipped labs, and time-savings.

RESULTS: Of fifty-two eligible patients, twelve were enrolled in the protocol. All patients met enrollment criteria. Labs were drawn infrequently (<50% of cycles) and often on the day of treatment (>75%). Infusion chairs rarely required lab draws (32%), which resulted in an estimated time savings of 58.5 hours. No labs had actionable results.

CONCLUSIONS: Fast Track for Laboratory Monitoring Protocol allowed for less frequent blood draws and shortened chair times for stable patients receiving ICI infusions without affecting patient safety. Improvement in clinic throughput may enhance nursing and patient satisfaction, while conserving resources and optimizing clinic flow. Future directions include implementation of education and processes to increase enrollment.

11:40am – 12:00pm D **Evaluating Time to Clinical Improvement Using Escalated Meropenem Empiric Treatment for Late Onset Sepsis in the Neonatal Intensive Care Unit** Room H

Presenters: Devin Archer

TITLE: Evaluating Time to Clinical Improvement Using Escalated Meropenem Empiric Treatment for Late Onset Sepsis in the Neonatal Intensive Care Unit

AUTHORS: Devin Archer, Sara Hughes, Caroline Gresham, Marianne Ray

OBJECTIVE: To determine if there is a difference in time to clinical improvement for patients receiving empirically escalated meropenem for the treatment of late onset sepsis.

SELF ASSESSMENT QUESTION: Does meropenem improve a patient's time to clinical improvement when escalated from standard of care treatment for late onset sepsis?

BACKGROUND: Late onset sepsis (LOS) is defined as sepsis that presents after 72 hours of life in neonates. Unlike adults, a consensus of clinical practice guidelines on diagnosing sepsis in premature neonates is lacking and requires further research. Previously conducted clinical trials have defined the diagnosis of neonatal sepsis as identifying a pathogen via positive culture, in addition to other abnormal clinical and laboratory findings including: white blood cell count (WBC), C-reactive protein (CRP), procalcitonin (PCT), and platelet count. Broad spectrum antibiotics are first line therapy for LOS treatment and historically are ampicillin, gentamicin, nafcillin, and vancomycin. Alternatively, meropenem is a broad-spectrum agent sometimes used in the neonatal intensive care unit (NICU) to treat severe infections such as meningitis and pneumonia. Meropenem is typically reserved for multi-drug resistant pathogens. The purpose of this study was to determine if there was a difference in time to clinical improvement for LOS treatment between patients receiving empirically escalated meropenem and standard of care (SOC) antibiotics.

METHODOLOGY: This was a single-center, retrospective observational cohort study in a 23-bed NICU. The primary outcome was to determine if there was a difference in time to clinical improvement between patients that received escalated meropenem empiric therapy and those that received SOC antibiotics. Clinical improvement was defined as meeting two of the following: CRP < 1 mg/L, WBC < 15,000 cells/mm3, or the absence of vasopressor use. SOC antibiotics were classified as ampicillin, gentamicin, nafcillin, and/or vancomycin. Secondary outcomes included investigating antibiotic appropriateness based on cultures, treatment duration, and mortality. An additional subgroup analysis was conducted utilizing a neonatal sepsis risk stratification score (Neonatal Sequential Organ Failure Assessment, nSOFA) that was composed from a 2020 multicenter retrospective cohort study. Inclusion criteria were NICU patients with LOS initiated on SOC antibiotics for at least 48 hours between January 2017 and April 2021 that had a positive blood culture and/or two of the following components: CRP > 1 mg/L, WBC > 15,000 cells/mm3, or the presence of vasopressor use. Patients were excluded if they did not receive SOC treatment for a minimum of 48 hours, meropenem was initiated before 48 hours of SOC antibiotics, or if patients received any other empiric agent not included in the primary objective. Patients were identified through chart review and both patient demographic and clinical data pertinent to the study outcomes were collected for data analysis. All continuous data was analyzed using the Mann Whitney U test and reported as a median and interquartile ranges. All categorical data was analyzed using a chi square test for significance. Statistical significance was assessed using an alpha value of 0.05.

RESULTS: A total of 35 patients were included in the study. 22 patients were included in the SOC group, and 13 patients were included in the meropenem group. Baseline WBC and CRP were not statistically different; however, vasopressor use at baseline was significantly higher for the meropenem group (76.9% vs. 22.7%, p = 0.002). There was no difference in any of the three components of the primary outcome: time to reach WBC <15,000 cells/mm3 (reported in median [IQR] SOC vs. meropenem - 84.5 [50.3-190.3] hours vs. 174.1 [108.5-310.5] hours, p = 0.254), time to reach CRP <1 mg/L (97 [50.1-128.5] hours vs. 136 [85-170] hours, p = 0.289), and time to reach vasopressor free status (104.8 [92-108] hours vs. 59.1 [43.6-114.1] hours, p = 0.503). Total duration of antimicrobial therapy was significantly higher in the meropenem group (102.6 [63.8-161.9] hours vs. 282 [222-313.8] hours, p < 0.001). A median of 149.8 [57-174] hours was observed for the duration of meropenem therapy. There was no difference in number of positive blood cultures (68.1% vs. 61.5%, p = 0.689) or de-escalation of antimicrobial treatment based on culture sensitivities (60% vs. 100%, p = 0.172). Two patients died in the meropenem group due to LOS, and the SOC group had no deaths. The median composite nSOFA score for the cardiovascular component was significantly higher in the meropenem group (0 [0-1] vs. 2 [IQR 2-3], p = 0.004). Composite nSOFA scores were also significantly higher in the meropenem group (0.5 [0-2.75] vs. 4 [2-6], p = 0.007).

CONCLUSIONS: There was no difference in time to clinical improvement between patients receiving empirically escalated meropenem and SOC antibiotics. Duration of antimicrobial therapy was significantly longer in the meropenem treatment arm. At baseline, meropenem patients required more vasopressor support compared to the SOC patients. The presence of vasopressor support contributed to the increased cardiovascular and total composite nSOFA scores for the meropenem group, which demonstrated a significant difference between the two intervention arms. The higher nSOFA score predicts a higher risk for mortality, and two patients in the meropenem group did not survive. All meropenem patients that had a positive culture were de-escalated based on culture sensitivities. Based on the findings of this study, after receiving at least 48 hours of empiric SOC antibiotics, meropenem does not improve time to clinical improvement – with respect to WBC, CRP, and vasopressor use – in the treatment of LOS.

11:40am – 12:00pm S **Adjunctive phenobarbital administration compared to benzodiazepine monotherapy for alcohol withdrawal in an academic medical center** Room E

Presenters: Mallory Stringer

TITLE: Adjunctive phenobarbital administration compared to benzodiazepine monotherapy for alcohol withdrawal in an academic medical center

AUTHORS: Mallory Stringer, Eric Shaw, Stephanie Lesslie

OBJECTIVE: The objective of this study is to evaluate the adjunctive use of an institution-specific phenobarbital order set compared to monotherapy with a CIWA-based benzodiazepine protocol in patients being treated for acute alcohol withdrawal.

SELF ASSESSMENT QUESTION: Is the adjunctive use of phenobarbital a safe and efficacious approach compared to benzodiazepine monotherapy for acute alcohol withdrawal management?

BACKGROUND: Chronic alcohol use can lead to adaptive changes in central nervous system (CNS) neurotransmission, causing inadequate response to benzodiazepines, which are first-line for alcohol withdrawal. Growing evidence for early phenobarbital use in acute alcohol withdrawal management has demonstrated favorable outcomes, including decreased intensive care unit (ICU) admissions, reduced benzodiazepine requirements, and shorter hospital length of stay (LOS). Current evidence consists of various phenobarbital dosing regimens, with some limited to specific inpatient areas and complex protocol designs.

METHODOLOGY: This retrospective study was conducted in a 622-bed academic medical center. Adult patients who received the study institution’s phenobarbital for alcohol withdrawal order set or benzodiazepine alcohol withdrawal protocol were identified for inclusion. Patients were excluded if they had epilepsy, a positive pregnancy test, outpatient phenobarbital use, left against medical advice or were discharged within 24 hours. Benzodiazepine-only patients were matched to the adjunctive phenobarbital group based on alcohol withdrawal severity. The primary outcome was the difference in hospital length of stay (LOS) between the two groups.

RESULTS: Of 324 screened patients, 29 patients were included in the adjunctive phenobarbital group and 29 patients were included in the benzodiazepine-only group. No significant difference in hospital LOS was noted between groups (6.1 days vs. 6.6 days, p=0.654). Episodes of hypotension and seizure were similar between groups.

CONCLUSIONS: Adjunct phenobarbital use for alcohol withdrawal is an equally safe and efficacious approach compared to benzodiazepine monotherapy.

11:40am – 12:00pm 1 **Outcomes of Preoperative Use of Midodrine in Kidney Transplant Patients** Room A

Presenters: Amber Hannah

TITLE: Outcomes of Preoperative Use of Midodrine in Kidney Transplant Patients

AUTHORS: Amber Hannah, Caroline Gatzke, Kelley Baxter, Kwame Asare

OBJECTIVE: Describe how outcomes of transplant recipients on midodrine pretransplant compare to outcomes of the general population within the program.

SELF ASSESSMENT QUESTION: Does midodrine use prior to kidney transplant impact delayed graft function, graft failure and mortality?

BACKGROUND: Currently, there are over 120,000 individuals waiting for lifesaving organ transplants in the U.S., and of these, 100,791 await kidney transplants. Demand for a kidney transplant exceeds supply, therefore, programs must evaluate patients based on comprehensive and cardiovascular fitness. End-stage renal disease on dialysis is associated with symptomatic hypotension, and midodrine may be used for management. There are no clear guidelines regarding the risk associated with midodrine use preoperatively. Studies show conflicting data with determining positive or negative outcomes.

METHODOLOGY: This was a retrospective, single center study on patients admitted to ASTHW for kidney transplant on midodrine preoperatively between January 1, 2016 until October 31, 2020. Patients were separated into two different groups: midodrine versus non-midodrine and were matched on a 1:2 ratio and follow-up period of 1 year. Primary endpoint was a composite of delayed graft function, graft failure, and patient survival. Secondary endpoints were readmission and emergency department visits within 90 days post-transplant and cardiac complications.

RESULTS: Thirty-nine patients were included; 13 patients in the midodrine group and 26 patients in the non-midodrine group. The primary and secondary outcomes exhibited no significant difference between the two groups.

CONCLUSIONS: There were no significant differences in primary or secondary outcomes of transplant recipients. Midodrine should not be a factor that negatively impacts kidney transplant evaluation or listing.